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Seminar 1 9:00 AM-3:00 PM

THE “NUTS AND BOLTS” OF BEHAVIORAL INTERVENTION DEVELOPMENT: STUDY DESIGNS, METHODS AND FUNDING OPPORTUNITIES

Susan M. Czajkowski, Ph.D.[1], Sylvie Naar, PhD[2], Deborah Ellis, PhD[2], Elizabeth Towner, PhD[2], Lynda Powell, PhD[3], Walter Dempsey, Ph.D. (Statistics); B.S (Math w/ Honors); B.A. (Economics, Statistics) all at the University of Chicago[4], Jesse Dallery, Ph.D.[5], Kenneth E. Freedland, PhD[6], Christine M. Hunter, PhD[7], Frank Perna, EdD, PhD[8]

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This seminar will provide investigators who are interested in the design and preliminary testing of health-related behavioral interventions an opportunity to (1) learn about a new framework for behavioral treatment development -- the ORBIT model (see http://psycnet.apa.org/psycinfo/2015-03938-001/); (2) learn about appropriate study designs and methods for early-phase behavioral intervention research, including which methods are appropriate at each phase of the behavioral intervention development process; (3) apply the ORBIT model and knowledge about relevant methodologies to their own behavioral treatment development projects; and (4) identify early-phase translational research funding opportunities and develop grant applications to support intervention development research. The format will include didactic presentations, question and answer sessions, and small group discussion in which participants will be provided with advice to help them design their own behavioral intervention development project. NIH scientists will provide information on suitable funding opportunity announcements and advice on how to develop applications for NIH support. Extramural behavioral scientists will describe their own experiences in designing behavioral intervention development studies, bringing these “lessons learned” to bear in advising seminar attendees on their individual projects.

Didactic presentations will provide detailed information about methodologies and study designs most applicable to the early phases of behavioral intervention development (e.g., qualitative research, single-case designs, dose-finding studies, adaptive and fractional factorial designs, and pilot and feasibility studies), with ample time allotted for questions and discussion. In addition, experiential and small-group activities will deepen participants’ knowledge of and skills needed for designing a behavioral intervention development program, allowing time for tailored advice and feedback. Participants will also be asked to submit in advance a 1-2 page synopsis (e.g., abstract, research aims, hypotheses, methods) of a behavioral intervention development project, which can be one they are considering submitting for funding, along with specific questions they may have regarding the process of behavioral intervention development. These will be discussed in small groups led by NIH staff and senior investigators, allowing participants to receive detailed feedback and advice to enhance the quality of their grant applications for designing and optimizing behavioral interventions.

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Seminar 2 9:00 AM-3:00 PM

DETERMINING THE APPROPRIATE MIND-BODY MODALITY FOR GREATER CLINICAL OUTCOMES

Brad S. Lichtenstein, Doctorate of Naturopathic Medicine

Bastyr University, Lake Forest Park, WA

Mindfulness and mindfulness-based approaches have increased in popularity over the past decade as useful modalities for stress reduction. However, it is important to remember that mindfulness is only one of many self-soothing mind-body medicine strategies. Unfortunately, researchers and clinicians typically focus on one particular method, failing to address variations in individual stress response patterns. Acknowledging the necessity for a person-centered approach to care, determining which of the numerous mind-body approaches that is best suited for the individual is paramount. To address this issue, Smith proposed a self-stress theory recognizing that individuals maintain heightened nervous system arousal by responding to stressors in one of six particular psycho-physiological patterns. Each of these patterns, interestingly, corresponds to a group of mind-body techniques. To obtain optimal improvement, selecting the mind-body strategy that best matches the self-stressed target is imperative. This does not suggest that only one mind-body approach alone should be reserved for one particular stressed response target. Instead, patterns can be considered guidepost to navigate the field of mind-body practices.

This workshop will introduce 6 self-stress psycho-physiological patterns (posture, muscles, breathing, body focus, emotions, and attention) and how to identify them. Next the corresponding mind-body medicine techniques will be examined and experienced. The mind-body modalities covered will include: 1) movement/therapeutic exercise/yoga, 2) progressive muscle relaxation, 3) breathwork, 4) autogenic training, 5) guided imagery/hypnosis/self-talk, and 6) mindfulness.

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Seminar 3 9:00 AM-3:00 PM

EVALUATING MEASURES USING ITEM RESPONSE THEORY

Ruben Castaneda, NA

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Eager to roll out a research project, researchers often overlook the importance of proper measurement. Taking a measure at face value may be tempting, but improper measures may result in a low powered study at best, and reaching a completely wrong conclusion at worst. This course will introduce you to topics in IRT. I will go over the basics of measurement starting from selecting a proper model, evaluating the impact of each item and evaluating the measure as a whole. We will go over strategies for getting the most out of your measure using data in the behavioral sciences.

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Seminar 5 9:00 AM-3:00 PM

THE NUTS AND BOLTS OF DEVELOPING, TESTING, & IMPLEMENTING DYADIC INTERVENTIONS FOR CANCER PATIENTS & THEIR INFORMAL CAREGIVERS

Hoda Badr, PHD[1], Erin Kent, PhD[2], Wendy Demark-Wahnefried, PhD RD[3], Betty Ferrell, PhD, MA, FAAN, FPCN[4], Karen Kayser, PhD, MSW[5], Jean-Philippe Laurenceau, Ph.D.[6], Matthew Loscalzo, LCSW[7], Julia H. Rowland, PhD[8], Tracey A. Revenson, PhD[9], Deborah A. Kashy, Ph.D.[10]

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Traditional approaches for addressing health outcomes and health behaviors after the diagnosis of cancer have focused on either the patient or his/her primary caregiver (often the patient's partner or another close family member). However, cancer often exacts a heavy toll on both patients and their caregivers, as well as their relationships by challenging established communication patterns, roles, and responsibilities. Interest in the development of psychosocial and behavioral interventions that address the patient-caregiver dyad as a unit is growing. These dyadic interventions often seek to leverage the relationship between patient and caregiver to affect behavioral change or to enhance the quality of life of one or both partners. Despite growing interest in dyads as a promising focus of intervention, little guidance regarding the development and design of dyadic interventions or how to implement and disseminate them in oncology clinical care settings is currently available.

This seminar will provide attendees an opportunity to:

1. Learn about the growing field of dyadic interventions in cancer, including accomplishments and remaining research/practice knowledge gaps, theoretical models, and therapeutic approaches;
2. Examine appropriate study designs for different phases of the intervention development and testing process (e.g., qualitative research, dose-finding studies, pilot studies, RCTs, and effectiveness-implementation hybrid designs) as well as approaches for analyzing dyadic data;
3. Identify methodological challenges involved in dyadic research (e.g., recruitment/retention issues, choice of control group, tailoring for the individual vs dyad);
4. Discuss challenges related to clinical uptake/implementation;

5. Apply knowledge gained about relevant approaches and methodologies to their own research questions.

The format will include didactic presentations from NIH and extramural researchers, question and answer sessions, and small group activities/discussions in which participants will be provided with advice to help them in designing their own dyadic intervention project. Throughout the workshop, the emphasis will be on designing programs with an eye toward implementation. Toward that end, presenters will describe their own experiences in developing, testing, and implementing different types of dyadic interventions, bringing these “lessons learned” to bear in advising seminar attendees on their individual projects. In addition, experiential and small-group activities will deepen participants’ knowledge and skills needed for designing dyadic interventions, allowing time for tailored advice and feedback from both the presenters and the group. Funding opportunities will also be discussed.

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Seminar 6 9:00 AM-11:45 AM

THE FOUNDATIONS OF IMPLEMENTATION SCIENCE: TOPICS, OUTCOMES, AND METHODS

Paul A. Estabrooks, PhD[1], Samantha Harden, PhD[2], Mark Stoutenberg, PhD, MSPH[3]

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Implementation science is generally defined as the study of methods to promote the integration of research findings and evidence-based interventions within healthcare policy and practice—though the methods and scientific contributions for implementation science can also be generated in community and other organizational contexts outside of healthcare systems. The National Institutes of Health Dissemination and Implementation Research in Health program announcement describes research objectives that include supporting innovative approaches to identify, understand, and overcome barriers to the adoption, adaptation, integration, scale-up and sustainability of evidence-based interventions, tools, policies, and guidelines. Unfortunately, scientists that focus on implementation research are confronted by the challenge of identifying epistemological approaches, developing research methods that balance internal and external validity in their work, and attempting to speed the translation of evidence into clinical and community practice settings. The purpose of this workshop will be to review implementation science theories, research methods, and outcomes and provide opportunities to apply these concepts to an ongoing program of research. Specifically, Dr. Mark Stoutenberg will provide an overview of implementation science definitions and concepts from the perspective of addressing the health of underserved populations in Miami. He will also review the Consolidated Framework for Implementation Research and highlight advances in measurement and tools to assess implementation initiation and sustainability. Dr. Samantha Harden will present on implementation science outcomes, including a focus on the RE-AIM framework and applications for physical activity promotion. In addition, she will focus on pragmatic measurement of implementation outcomes as they relate to adaptation over time. Dr. Paul Estabrooks will provide examples of hybrid effectiveness implementation designs developed to reduce the delay between the identification of efficacious clinical approaches and translation into typical practice. He will provide examples of HEI designs that blend effectiveness and implementation research into three distinct, but overlapping trial types. This blending may lead to confusion in that often there may be 2 distinct levels of scientific manipulation—one, at the level of the patient or participant that is intended to change a behavioral or health outcome and one at the level of the practitioner that is intended to improve the implementation quality of the clinical practice. Finally, Drs. Stoutenberg, Estabrooks, and Harden will lead workshop participants through key considerations in developing an implementation science grant proposal using sound theory, methods, and outcomes.

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Seminar 7 9:00 AM-11:45 AM

WHAT YOU NEED TO KNOW ABOUT WRITING GRANTS: TIPS AND TECHNIQUES FROM EXPERTS

Lara Traeger, PhD[1], Felicity Harper, PhD[2], Jamilia Sly, Ph.D.[3], Qian Lu, Ph.D.[4]

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This session focuses on how to integrate successful grantsmanship strategies into your career. First, a panel of experts in cancer and ethnic minority & multicultural health research will address key tips for developing grant proposals, with specific attention to NIH R03s, R21s, R01s and similar mechanisms. Then, we will demonstrate a study section review for two previously-selected proposals. Finally, we will host three roundtables on 1) balancing grant writing with other work demands, 2) interpreting grant critiques: when to keep trying and when start fresh, and 3) lessons learned: rookie mistakes and strategies for success. Attendees will be able to discuss their questions with diverse clinical research experts; observe the study section process; gain insight into research career considerations; and participate in the roundtables.

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Seminar 9 9:00 AM-11:45 AM

THE NEW ACCEPTANCE AND COMMITMENT THERAPY APPROACH FOR CHRONIC PAIN AND HEADACHE

Maria Karekla, Ph.D.

University of Cyprus, Nicosia, Nicosia, Cyprus

The application of Acceptance and Commitment Therapy (ACT) for the treatment of chronic pain is well established and indeed ACT is considered an empirically supported treatment for such chronic and debilitating problems. This workshop will present the latest developments in ACT manuals for the treatment of chronic pain and headache for increasing well-being of sufferers. The latest application of these new protocols will be discussed based on findings from the European Union funded research project “ALGEA” (the Greek word for suffering). The main aim of the project was to examine the efficacy of ACT for the treatment of chronic pain and examine the mechanisms and processes of change in this approach. 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 chronic pain. 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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Seminar 10 9:00 AM-11:45 AM

HARD TO MAINTAIN BEHAVIOR CHANGE: AN INTRODUCTION TO CEOS THEORY

Ron Borland, PhD

Cancer Council Victoria, Melbourne, Victoria, Australia

This seminar provides a brief introduction to CEOS theory, with a focus on how it reconceptualises a range of challenging issues within behavioral medicine. The theory is elaborated in Borland, Understanding Hard to Maintain Behaviour Change: A Dual Process Approach. Oxford, Wiley-Blackwell. 2014). Behaviour is theorised to be the result of the moment by moment interaction between internal needs (operational processes) in relation to environmental conditions, and for humans this is augmented by goal-directed, executive action which can overcome immediate contingencies to create net affective force for action which is the end pathway to action. This conceptualisation postulates a key role for emotions as signals to executive processes about internal states and relationships with the context. Affective force can come from memories of direct experience, vicarious experience, emotionally-charged communications mediated through stories the person generates and are available to them at the point of action. Executive behaviour, ie, goal seeking, can only occur when the operational processes have been activated to support it, and this requires overcoming any competing action tendencies. This seminar outlines the key postulates of the theory, then shows via examples taken from the authors 30 years of experience in tobacco control, how the theory helps make sense and provide new insights around how to communicate most effectively, and how to facilitate self-regulatory processes, which it conceives as much more than self-control. It also will show how the theory provides a framework for understanding the contributions and limitations of virtually all existing behaviour change techniques. It is hoped attendees will come away with a heightened understanding of the potential of dual process approaches to behaviour and behaviour change and new insights into their areas of practice and research.

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Seminar 11 9:00 AM-11:45 AM

DYNAMIC SYSTEMS MODELING FOR HEALTH IN A SOCIAL CONTEXT

Jonathan E. Butner, Ph.D., Cynthia Berg, Ph.D.

University of Utah, Salt Lake City, UT

Real-time, daily diary, longitudinal methodologies to health research have generated a boon of data through time. For example, intensive measurement has been applied to health behaviors broadly (e.g., healthy eating, exercise, smoking) and for managing chronic illnesses (adherence, coping). Such data are complicated to analyze in a coherent, theory-driven manner. This seminar examines dynamical systems modeling with the goal of preparing participants to apply these techniques in their own research.

Attractor dynamics depict health data over time as a function of temporal patterning within a larger system. For example, many individuals with a chronic illness coordinate multiple behaviors numerous times in a day to promote adherence. Such behaviors occur within multiple social relationships (parents, friends, spouses) that can support or interfere with adherence behaviors. Dynamic systems models capture how these elements may be coordinated to either maintain homeostasis or create changes in how health behaviors are regulated.

Dynamic systems modeling captures the patterning among these elements of the system. The simplest of these patterns is a homeostatic one, where stability is examined as to how quickly the system returns to homeostasis after being perturbed. This simple representation can be captured within regression for a single time series, and multilevel modeling for multiple time series, by treating change in a variable as the dependent variable and the current value of the variable as the predictor.

Moving from a single outcome in time to two simultaneous outcomes expands homeostasis to include cyclical patternings. Such is the case when we examine the relationship of two behaviors (e.g., adherence and support of a close relationship). Analytically, this takes the regression and multilevel models and expands them to a form of the actor-partner model.

Some discussion will be provided of further expansions including continuous time model equivalents, models where there are more than one underlying temporal pattern (e.g. two different homoeostatic points, moving between them), and more complex patterning. Examples and code will be illustrated in SPSS and R.

The advantage of these models is that they can identify factors that may drive change toward better or worse health behaviors and capture the dynamic nature of these behaviors within the social context.

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Seminar 13 12:15 PM-3:00 PM

ADVERSE CHILDHOOD EXPERIENCES AND ADULT HEALTH OUTCOMES: EPIGENETICS, PSYCHONEUROIMMUNOLOGY, AND BRAIN-BASED THERAPY

John B. Arden, PhD, ABPP

Institute of Brain Potential, Sebastopol, CA

The Adverse Childhood Experiences (ACEs) seminar presents a wide variety of factors having multidirectional causal relationships between ACEs: resulting in stress, depression, anxiety, the immune system, and gene expression. The interaction between all these factors has been by illuminated by studies examining ACEs and the effects of life style factors on the incidence of health and psychological problems. There are significant relationships between immune system function, stress, insecure attachment, anxiety, depression, poor nutrition, bad quality sleep, physical inactivity, and neurophysiological dysregulation. For example, insecure attachment, deprivation, and child abuse contribute to anxiety and depression in far more extensive ways then was believed. Some of these dysregulating effects includes the epigenetic down regulation of the cortisol receptors, the stress induced activation of the sympathetic nervous system, and the breakdown of the neuroendocrine system. The excessive release of cortisol can result in the eventual development of hypocortisolism with the simultaneous excessive levels of epinephrine and norepinephrine which in turn, stimulate the release of proteins called pro-inflammatory cytokines. Chronically high levels of these cytokines adversely affect the central nervous system, resulting in autoimmune diseases, as well as physiological symptoms including lethargy, achiness, and disturbances in mood, cognition, and promoting withdrawal behaviors that contribute to major depression and anxiety. This seminar will address recovery from all these problems.

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Seminar 14 3:15 PM-6:00 PM

APPLICATION OF BEHAVIOR CHANGE PRINCIPLES IN APP-BASED, MOBILE HEALTH INTERVENTIONS

Kirstin Aschbacher, Ph.D. & Licensed Psychologist

UCSF/ Jawbone, San Francisco, CA

This seminar will introduce you to the skills needed to translate empirically supported behavior change techniques to a mobile health, or App-based setting. You will learn through concrete examples of how lifestyle & weight loss interventions have been designed, deployed, and tested in the context of a major Silicon Valley company's App and wearables.

The facilitator holds experience as a licensed Clinical Psychologist, an Assistant Professor at University of California, San Francisco (UCSF), and a Behavioral Data Scientist employed with a major Silicon Valley company. This seminar will discuss the challenges of deploying interventions in an integrated system, which includes an App and a tracking band, united by machine learning algorithms. Key objectives of the system are to provide users with personalized behavior change strategies.

The seminar will be geared so as to benefit both trainees and established investigators. The facilitator will discuss specific examples of how he/she developed and implemented longitudinal weight loss interventions in an industry setting. These examples will provide you with *content knowledge*, including: 1) Tips for translating behavior change principles to App settings, 2) Best practices in experimental design for A/B tests (or App-based randomized controlled trials (RCTs)), and 3) Key considerations in the analysis of your results: The pros and cons of machine learning versus traditional statistical techniques. You will also gain *process knowledge*, including: 1) What to focus on when pitching collaborations with industry, 2) How scale changes everything, and 3) Using a "Minimum Viable Product (MVP)" orientation to rapidly scale mini-interventions to larger interventions. Finally, attendees will obtain an overview of the terminology and concepts needed to bridge the gap and develop productive collaborations between academia and industry.

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Seminar 15 3:15 PM-6:00 PM

PUTTING PATIENT DATA INTO ACTION: THE USE OF PATIENT-GENERATED HEALTH DATA IN CLINICAL CARE AND RESEARCH

Robin R. Austin, DNP, DC, RN-BC[1], Katherine Kim, PhD, MPH, MBA [2], Ellen Beckjord, PhD, MPH[3], Bradford W. Hesse, PhD[4], Ashley Wilder Smith, PHD, MPH[5], Sherri Sheinfeld Gorin, PhD, FSBM[6], Julie A. Wright, PhD[7], Jessica Y. Breland, PhD[8], Miho Tanaka, PhD, MPH[9], Pei-Yun Sabrina Hsueh, PhD[10]

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Patient generated health data (PGHD), produced either directly through patient reported outcome tools or indirectly through passive sensing devices, has become an important behavioral consideration in healthcare. According to the Department of Health and Human Services, PGHD can provide information about how patients are doing between clinical visits; it can be gathered on an ongoing, longitudinal basis; it can provide relevant information for preventive and chronic care management; and it can improve patient safety through ongoing monitoring of adverse events during treatment. PGHDs are increasing in recognition and usage across health systems. The focus of this preconference is designed to inform, educate, and update colleagues on PGHD used for behavior medicine research. We will present the current state-of-the-science and related evidence for PGHD. This preconference will explore three areas: (1) presentations from individuals currently working with PGHD for research; (2) presentations from individuals currently working to implement PGHD within clinical settings and systems for use by providers and clinicians; and (3) discussions (in small groups, led by the presenters) about the potential barriers to implementing the use of PGHD and about innovative solutions to these PGHD barriers. Participants will also be able to work in small groups to develop strategies for implementing and using PGHD in their own healthcare settings. Through this workshop, participants will be able to engage in deeper discussion and dialogue with leaders in the field as well as fellow participants related to best practices and barriers to the use of PGHD in research, clinical care, and policy.

Goals/Objectives for the Pre-conference:

- Understand the use and current state of patient generated health data
- Describe current trends and opportunities for research using patient generated health data
- Identify best practices in and potential barriers to the use of patient generated health data.

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Seminar 16 3:15 PM-6:00 PM

HOW CAN SOCIAL NETWORK ANALYSIS HELP ME UNDERSTAND THE INFLUENCE THAT THE FAMILY ENVIRONMENT HAS ON INDIVIDUAL HEALTH BEHAVIORS?

Enrique Ortega, PhD / MPH[1], Emily Coviello, B.S.[2], Karen Carranza, BS[3]

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Research in the health sciences has traditionally focused on assessing individual attributes to understand and predict individual health outcomes. Social Network Analysis (SNA) methods allow investigators to inquire how such individual attributes develop and become normative by considering the individual within a social context. This seminar will discuss and demonstrate how to apply SNA assessment methods to the field of family dynamics in order to investigate the potential effects that family social relationships may have on individual health decision making processes, and the evolvement of individual health practices.

SNA involves the study of how individuals monitor their social networks and make use of the information presented within these networks to modify, among other aspects, their health attitudes and behaviors. SNA research conceptualizes the individual's environment as a network to understand the reference points that an individual faces in their daily lives. SNA research allows researchers to describe the patterns of interactions that an individual perceives within their social network and to investigate how these interactions may affect their health choices. These research domains are important for investigators interested in assessing group health factors and outcomes such as those possibly tied to community and public health efforts. Social network analyses investigations are currently benefiting from advances in computer science and graphing technologies that allow researchers to visually depict the social networks of individuals and how networks influence individual conditions. While such visual depictions are at the forefront of other fields such as geography and biology, applications to the field of behavioral health can allow social health scientists to further understand the links between individual health and its link with group health patterns.

The present seminar will discuss SNA methods of assessment to understand how individuals perceive and cognitively represent the family networks that surround them; and how these perceptions inform their individual health knowledge and behaviors. The application of SNA methods will be discussed and demonstrated through 3 case studies which have utilized such methods to inquire how family network dynamics inform the development of health promotion practices, emotional regulation, and healthy lifestyle choices.

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Seminar 17 3:15 PM-6:00 PM

VARIANCE MODELING OF ECOLOGICAL MOMENTARY ASSESSMENT (EMA) DATA

Donald Hedeker, Ph.D.

University of Chicago, Chicago, IL

For longitudinal data, mixed models include random subject effects to indicate how subjects influence their responses over the repeated assessments. The error variance and the variance of the random effects are usually considered to be homogeneous. These variance terms characterize the within-subjects (error variance) and between-subjects (random-effects variance) variation in the data. In studies using Ecological Momentary Assessment (EMA), up to thirty or forty observations are often obtained for each subject, and interest frequently centers around changes in the variances, both within- and between-subjects. Also, such EMA studies often include several waves of data collection. In this seminar, we focus on an adolescent smoking study using EMA at both one and several measurement waves, where interest is on characterizing changes in mood variation associated with smoking. We describe how covariates can influence the mood variances, and also describe an extension of the standard mixed model by adding a subject-level random effect to the within-subject variance specification. This permits subjects to have influence on the mean, or location, and variability, or (square of the) scale, of their mood responses. Additionally, we allow the location and scale random effects to be correlated. These mixed-effects location scale models have useful applications in many research areas where interest centers on the joint modeling of the mean and variance structure. Computer application using SAS NLMIXED and the freeware MIXREGLS program will be described and illustrated.

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Wednesday

March 29, 2017

6:00 PM-7:00 PM

A001 6:00 PM-7:00 PM

60 MINUTES FOR HEALTH: PILOTING AN INNOVATIVE BEHAVIORAL INTERVENTION PROMOTING RETENTION IN HIV CARE

Laramie R. Smith, PhD[1], K. Rivet Amico, PhD[2], Chinazo Cunningham, MD, MS[3]

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Sustained retention in HIV medical care is a key health behavior for the long-term health of people living with HIV (PLWH) and reduced HIV transmission via viral suppression. In the US, the CDC estimates 60% of PLWH are not retained in HIV care, yet to date, the few evidence-based retention-promoting interventions available are resource and time intensive to implement. The current study piloted *60 Minutes for Health*, a theory-based, low-resource single-session intervention designed to be implemented in a busy clinic setting by a health educator, to PLWH who have had a recent (≥6-months) gap in care. Intervention content was informed by the Information Motivation Behavioral Skills model and delivered via Motivational Interviewing. A series of guided activities aimed to identify and reduce faulty heuristics guiding HIV care attendance, enhance motivation to maintain care via personal health goals, and build skills for coping with negative affect towards living with HIV and increase self-efficacy for navigating the logistics of maintaining care amidst competing priorities. Participants were randomized to *60 Minutes for Health* (n=8) or a theory-based, diet and nutrition time-and-attention control intervention (n=8). Medical records were abstracted to measure number of quarters (3-month intervals) with an HIV care visit, and group differences in visit attendance over time were characterized and evaluated with independent group t-tests. Groups did not differ in the number of quarters with a visit 12-months prior to baseline ($t_{(14)=}0.894$, $p_{(2\text{-tail})=}0.386$). A substantial trend identified 75% of the retention arm vs. 50% of the control arm had at least one visit in the first two quarters ($t_{(14)}=0.149$, $p_{(1\text{-tail})}=0.167$). Over the entire 12-month follow-up, retention intervention participants had dramatically more quarters with documented care visits (M=2.75, SD=1.28) than those in the comparison condition (M=1.38, SD=1.60), which did reach significance ($t_{(14)}=1.898$, $p_{(1\text{-tail})}=0.039$; Cohen's d=0.946). Findings suggest the *60 Minutes for Health* intervention may promote better adherence to HIV care among PLWH with a history of poor retention.

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A002 6:00 PM-7:00 PM

A COACH BY ANY OTHER NAME: HEALTH COACHING TERMINOLOGY, ASSOCIATIONS, PREFERENCES, AND EXPECTATIONS

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Health coaching can promote health behavior change in contexts including health insurance plans, workplace wellness programs, and primary care clinics. Online coaching programs may offer additional flexibility for patients who need it. Little is known, however, about people's preferences for health coach terminology or the characteristics and services they expect from coaching. This formative study was conducted to inform the design of an online health coaching program. We interviewed 25 adults enrolled in employer-sponsored health insurance plans (mean age = 42, age range 28-63; 68% women; 76% white). A semi-structured interview was conducted to explore associations with, and preferences for, health coaching terminology. Card sort exercises elicited reactions to 31 coaching terms (e.g., navigator, guide). Participants also answered open-ended questions about coaching. Interviews were transcribed and coded by two trained coders. Preferred terms for people assisting with behavior change included coach, advisor, counselor, specialist, and consultant. One dimension that differentiated terms was education/training (expert) vs. life experience (supporter). Most participants expected coaches to have extensive experience, but none believed a coach had to have lived through the same experience as the person being coached. Many participants believed coaches are successful in motivating health behavior change when they hold people accountable to their goals. Participants valued coaches' empathy, listening skills, and ability to motivate. Most participants did not anticipate negative consequences of working with coaches, but a few expressed reservations about data security, poor advice, or too-frequent contact. Results suggest that some coaching terms are more strongly endorsed than others, and that people generally have positive expectations of coaching. Future research will compare this sample with Medicaid-insured individuals to explore whether and how

preferences differ. Online coaching programs should reflect participants' preferences for coaching terms and attributes of coaches, and find ways to reassure participants about perceived negative effects of coaching.

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A003 6:00 PM-7:00 PM

A NOVEL MODEL TO SUPPORT LIFESTYLE INTERVENTIONS IN CANCER SURVIVORS: UNDERGRADUATE STUDENTS AND MULTIMODAL SOFTWARE PLATFORM

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Background: There are an estimated 15.5 million cancer survivors in the U.S. Lifestyle interventions that promote healthy eating and physical activity hold promise to improve survival and quality of life. Efforts to test and develop scalable, cost-efficient models for the delivery of lifestyle behavior interventions is an active area of research.

Purpose: To describe the integration of a health coaching training program developed for undergraduate (UG) students and its effect on cancer survivors.

Methods: The University of Arizona Behavioral Measurements and Interventions Shared Resource (BMISR) at the University of Arizona (UA) Cancer Center in collaboration with Arizona Research Labs developed a cloud-based software platform for the delivery of eHealth coaching (telephone, SMS, email) for lifestyle intervention research. A 120 hour standardized health coaching training program was developed for UG students in nutrition science and public health for the delivery of lifestyle interventions. Training for health coaches is grounded in cognitive behavior theory with integration of the health belief model utilizing motivational interviewing to guide behavior change. In addition, health coaches are trained in nutrition and physical activity areas specific to cancer survivors including GI health, neuropathy, and fatigue.

Results: Since 2012, over 900 patients (predominantly cancer survivors) have received health coaching from 20 trained UG health coaches at BMISR. Evidence for behavior change within one cohort of survivors, when comparing baseline to 12 month data suggests average increase in 5.2 MET-hour /week, reduction in dietary fat of 14 grams/day as well as increases of 3 servings/day in vegetable/fruit and 8.5 grams fiber. UG students trained utilizing this model have been highly successful in achieving professional goals with 5 securing dietetic internships and 4 entering graduate training programs. Importantly, this model for intervention delivery is cost-effective, with each coaching session costing less than $12.00.

Conclusion: Novel, student-engaged approaches that integrate resources and expertise across academic campuses can result in the provision of lifestyle interventions that are mutually beneficial for patient populations, researchers and students.

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A004 6:00 PM-7:00 PM

A PILOT STUDY TO EVALUATE A HEALTHY LIFESTYLE BEHAVIOR CHANGE PROGRAM

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Data consistently show that few Americans are physically active and follow a healthy diet even though these behaviors have been shown to be associated with maintaining normal body weight, reduced risk of chronic diseases, and overall health. It is important to identify programs to help people be engaged in and reinforced for making healthy lifestyle changes.

HMR, with over 30 years of experience in weight management, conducted a 12-week pilot study to evaluate the effect of a novel healthy lifestyle behavior change program on health and quality of life. A lifestyle survey was developed to create a Healthy Eating & Physical Activity Profile. Individual profiles had activity and healthy diet scores as well as a total Healthy Lifestyle Score (HLS). The lifestyle survey was completed at baseline, weeks 4, 8 and 12. Quality of life (QoL) was evaluated at baseline and week 12 using the RAND 36-item Health Survey. The primary endpoint for the study was change from baseline in HLS, an indication of change in measured healthy lifestyle behaviors.

Participants kept simple records on physical activity (PA) and vegetable/fruit servings (V/F) each day using an HMR mobile app. Participants who expressed interest in weight loss (98%) were sent a wireless scale and were instructed to weigh weekly. Hour-long weekly group coaching sessions were conducted over the phone by trained health coaches.

62 participants enrolled (56 women, 6 men) with a mean starting weight of 218.3 lbs. (range: 149-364). 93.5% completed the 12 week pilot. Preliminary data (n=50) show a mean of 1054 and 2636 PA calories/wk and 9.9 and 34.3 V/F servings (full-cup) at baseline and at week 12, respectively. The total HLS score was 50.1 at baseline and 92.0 on the post-survey (range of possible scores is 0-120). The mean weight change was 8.2 lbs. On the post-study survey, 96.5% felt somewhat or very much more optimistic about their overall health and QoL and 94.6% were more optimistic about managing their weight. 91% said they would recommend the program to family, friends or colleagues. On the RAND Survey, all 8 scales improved from baseline with the greatest improvement in role capabilities due to physical health and energy.

Overall, participants were able to use the HLS as a tool to identify specific steps in making lifestyle changes. Despite modest weight loss, participants made dietary and PA changes and the improvement in QoL was substantial for most.

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A005 6:00 PM-7:00 PM

A THEORY-BASED SMART PHONE APP TO PROMOTE SAFETY BEHAVIORS

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BackgroundThe leading cause of death to children after the age of 1 is motor vehicle crashes, and child safety seats (CSS) are known to reduce this risk by between 50-80%. Parents' use of CSS with their older children (> 4years) is low, and misuse is widespread. Health care settings offer an ideal time to communicate with parents, yet there are many missed opportunities to do so, especially in emergency departments (EDs) where clinicians' time is very limited. Therefore we developed a theory-based, stand-alone, smart phone app to promote correct CSS use that does not rely on clinicians to communicate potentially life-saving information. We tested the efficacy of the app in an RCT conducted in a pediatric ED in Maryland and one in Arkansas

Methods Parents with children 4-7 years old were recruited in the ED waiting rooms where they downloaded the Safety in Seconds app to their smart phone, and completed a baseline assessment of behavior and beliefs. Based on their responses, a personalized feedback report with tailored education was immediately delivered in the app. Those randomized to the intervention group received CSS messages; those in the control group received fire safety messages. The assessment and messages were developed following the Precaution Adoption Process Model. Development of the app and the application of behavioral theory to messaging will be further described in the presentation. A follow-up survey was conducted 3 months later.**Results**A total of 707 parents completed follow-up, and there were no demographic differences between the two study groups. Compared to the control group, the intervention group was significantly more likely to report using the correct type of car seat for their child's age and size (77% vs. 68%; $p < 0.01$), more likely to report their child rides in the back seat (96% vs. 91%; $p < 0.01$), and more likely to report having had their seat inspected by a car seat technician (41% vs. 20%; $p < 0.01$). Significant results were maintained when adjusted for behaviors reported at baseline. **Conclusions** A theory-based, tailored educational program delivered via smartphone app can improve parents' use of car safety seats to protect their children.

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A006 6:00 PM-7:00 PM

AN ONLINE DAILY FEEDBACK INTERVENTION IMPROVES SUN PROTECTION AMONG PATIENTS WITH AN ELEVATED RISK OF SKIN CANCER

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Every year, over two million people are diagnosed with skin cancer. The primary method recommended for skin cancer prevention is reducing ultraviolet radiation (UVR) exposure. However, sun protection is often inadequate, even among higher risk patients. To assist patients' efforts to reduce their skin cancer risk, the present study provided daily personalized feedback on UVR exposure.

This study tested 1) the effectiveness of a 14-day online intervention that provided daily color-coded feedback illustrating duration of UVR exposure on specific body sites, and 2) theoretically derived predictions on how feedback impacts the process of reducing UVR exposure. Participants (*N*=47; 53.3% women, mean age=49.87) were recruited from dermatology clinics and had an elevated risk of skin cancer; most (63.8%) had a skin cancer history, including 44.7% with melanoma. Participants were randomly assigned to a feedback, self-monitoring, or control condition. For feedback participants, the 14-day intervention included daily sun-protection reminders, self-reports of sun exposure, color-coded feedback diagrams, and survey items on health-relevant cognitions and emotions. To control for the potential benefit of reporting one's behavior, self-monitoring participants completed these assessments but did not receive feedback. Control participants only received daily reminders.

At baseline, then 1 and 2 months later (and during the intervention, if applicable), sun exposure was measured by the Minutes of Unprotected Sun Exposure (MUSE) Inventory, which assesses the duration of sun exposure after accounting for the use of any sun protection methods (e.g., sunscreen, hat). During the intervention, feedback participants reported less sun exposure than self-monitoring participants. In both of these conditions, participants reported higher perceptions of goal fulfillment for sun exposure on intervention days when their sun exposure was lower, and these perceptions predicted higher self-efficacy for sun protection. Only feedback participants reported a decrease in sun exposure from baseline to the 2-month follow-up; significant decreases were reported for the lower face, arms, and lower legs, which are common sites for melanoma. Tanning was also assessed by reflectance spectroscopy, an objective measure of skin color. These measurements did not change over time or by condition, potentially because they were taken on a limited number of

body sites (wrist, upper face) for which reported exposure did not decrease substantially.

This study supports the feasibility and effectiveness of an online, daily feedback intervention for sun exposure among higher risk patients. Future directions include testing it among other populations and investigating additional mechanisms (e.g., changes in goals) through which feedback operates.

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A007 6:00 PM-7:00 PM

ASSESSING THE THEORETICAL FIDELITY OF BEHAVIOR CHANGE INTERVENTIONS USING TAXONOMY CODING

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Background: In studies of head-to-head comparisons of theoretically-different behavior change interventions it is important to have good theoretical fidelity of the interventions designed and tested. The development of a taxonomy coding system for 93 behavior change techniques (Michie, 2013) provides a standardized approach to determining the types and dose of behavior change techniques used in interventions.

Purpose: **The purpose of this report is to** describe the use of taxonomy coding to assess the theoretical fidelity of behavior change interventions currently being tested in a randomized trial for weight management in adolescents. One intervention was based on cognitive-behavioral theory, the other intervention was based on system process improvement theory.

Methods: Following training in the coding process and the establishment of acceptable interrater reliability, the Behavior Change Technique Taxonomy (BCTTv1) was used by two coders to independently code intervention materials (teaching plans, handouts) of two 12-month family-focused interventions for adolescent weight management (25 90-minute face-to-face sessions each).

Results: Findings showed that there were distinct differences in the types of behavior change techniques used in the two interventions. The cognitive behavioral intervention predominately used behavior change techniques associated with goal setting and problem-solving, whereas these techniques were negligibly used in the system process improvement intervention. Alternatively, the use of behavioral experiment, behavioral instruction, behavioral practice, behavioral contract, and commitment were used to a much greater extent in the system process improvement intervention. Thus, the behavior change techniques used in the two interventions did reflect the different theoretical foundations of the interventions.

Conclusions: In conclusion, the use of a behavior change technique taxonomy was useful to assess the extent to which intervention components reflected the underlying theories of different interventions. Greater application of intervention taxonomy coding has the potential to assist behavioral scientists to design more efficient and effective behavior change interventions.

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A008 6:00 PM-7:00 PM

ASSOCIATION BETWEEN SPIRITUALITY AND INTERVENTION ADHERENCE IN A MIND-BODY PILOT STUDY AMONG AFRICAN AMERICANS

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Mind-body (MB) practices have been shown to be effective for improving various health outcomes. Spirituality is an important cultural component in the African American community, and culturally-adapted MB interventions have potential for reducing health disparities. However, little is known about the role of spirituality in MB intervention adherence. A mixed-method approach was used to examine the association between spirituality and intervention adherence in an MB pilot study among African American churchgoers. Participants were recruited through an existing church partnership, and eligible participants (*N*=50) were randomized to an MB intervention (*n*=26) or wait-list control (*n*=24) group. Participants in the MB intervention (*M* age=50.1 years, *M* BMI=33.9 kg/m^2) attended 16 MB sessions over 8 weeks. Spirituality was assessed at baseline (T1) and post-intervention (T2) with the Functional Assessment of Chronic Illness Therapy Spiritual Wellbeing Scale (FACIT-Sp). A subsample of MB participants (*n*=6) completed an optional in-depth exit interview consisting of questions assessing motivators and barriers to intervention attendance. Among those in the MB intervention, increases in spirituality were associated with increased session attendance (β=.697, *p*=.033). A thematic content analysis of the interview transcripts identified spirituality as a key motivator for participants' intervention attendance. Results suggest that spirituality may play an important role in intervention adherence in an African American church-based population. Church-based MB interventions should aim to incorporate and foster spirituality as a strategy to overcome barriers to intervention adherence among African Americans.

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A009 6:00 PM-7:00 PM

BIDIRECTIONAL LONGITUDINAL ASSOCIATIONS BETWEEN SMOKING AND AFFECT IN CANCER PATIENTS USING VARENICLINE TO QUIT SMOKING

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Background: During a quit attempt, low positive affect (PA) and high negative affect (NA) predict relapse to smoking. In this study we evaluated bidirectional longitudinal associations between smoking and PA/NA in cancer patients treated with varenicline. Methods: Smokers (≥5 cigarettes/week) who were diagnosed with cancer within 5 years were recruited for an ongoing 24-week trial of extended duration varenicline plus behavioral counseling. Data were drawn from the 12-week open-label phase. Smoking was assessed via self-reported number of cigarettes in the past 24 hours (CPD). PA/NA were assessed using the Positive and Negative Affect Scale. Data were collected at pre-quit (PQ), target quit day (TQD), week 4 (W4), and week 12 (W12). We evaluated cross-lagged panel models for NA and PA using PROC CALIS in SAS. We assessed autocorrelations (e.g. PQ CPD to TQD CPD) and cross-lagged associations (e.g. PQ CPD to TQD NA). Error covariances (e.g. PQ CPD and PQ PA) were included in each model. Results: Participants (N=93 with complete data) were 48% female, 33% racial minority, and 59 years old on average. Goodness-of-fit statistics were adequate for both models (NA: SRMR=0.09, AGFI=0.71, RMSEA=0.18, BCFI=0.87; PA: SRMR=0.07, AGFI=0.81, RMSEA=0.12, BCFI=0.96). Autocorrelations were strong within PA (path coefficients: 0.81-0.85) and NA (0.52-0.66), *p*spspspsConclusion: Using novel statistical methodology we found that self-reported smoking within the past 24 hours accounted for up to 22% of variance in later NA, but not PA, through 12 weeks of treatment. Neither NA nor PA predicted later smoking. Among cancer patients treated for nicotine dependence, the lack of association between PA and smoking suggests that varenicline may especially modulate PA, independent of smoking status.

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A010 6:00 PM-7:00 PM

BRIEF COUNSELING AND EXERCISE REFERRAL SCHEME: A PRAGMATIC TRIAL IN MEXICO.

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Introduction: The effectiveness of clinical-community linkages for the promotion of physical activity (PA) has not been explored in low and middle-income countries (LMICs). It was assessed the effectiveness of a primary-care based, 16-week intervention rooted in behavioral theory approaches to increase compliance with aerobic PA recommendations.

Methods: Pragmatic cluster randomized trial.Patients with diagnosis (< 5 years) of hypertension, 35-70 years of age, self-reported as physically inactive, with a stated intention to engage in PA, and attending primary health care centers (PHCC) in the Social Security health system in Cuernavaca, Mexico. Out of a total of 23 PHCCs, four were selected based on proximity (5 km radius) to a center with PA programs and trained personnel and randomized to a brief PA counseling (BC) (n=2) or an exercise-referral (ER) (n=2) intervention. The study was conducted between 2011 and 2012. Change in objectively-measured PA levels (ActiGraph GT3X accelerometers) at baseline, 16 and 24 weeks. Intention-to-treat analyses were used to assess the overall effectiveness of the intervention overall and according to ER intervention attendance. Longitudinal multilevel mixed-effects analysis considering the interaction (time by intervention) were conducted, each model was also adjusted by baseline value of the outcome measure, demographic and health variables, social support, PA self-efficacy and barriers.

Results: Minutes/week of moderate-to-vigorous physical activity (MVPA) objectively-measured increased by, 40 and 53 minutes in the ER and BC groups, respectively ($p=0.59$). Participants attending> 50% of ER program sessions increased their MVPA by 104 minutes/week and their compliance with aerobic PA recommendations by 23.8%, compared to the BC group (both $p < 0.05$).

Conclusions: Both BC and ER led to modest improvements in PA levels, with no significant differences between groups. Adequate adherence with the ER program sessions led to

significant improvements in the compliance with aerobic PA recommendations compared to BC. These results provide evidence to help guide the development and implementation of programs integrating standardized PA assessment, counseling and referrals via clinical-community linkages in Mexico and other LMICs in the region.

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A011 6:00 PM-7:00 PM

CELL PHONE USE WHILE DRIVING: DOES PEER-REPORTED USE PREDICT EMERGING ADULT BEHAVIOR

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Secondary task engagement such as cellphone use while driving is a common public health concern among adolescents and emerging adults. Cell phone use among this population contributes to the high rates of fatal car crashes. Peer engagement in similar risky driving behaviors, such as cell phone use, could affect adolescent driving behavior. The present study investigates the association between peer and emerging adult cell phone use while driving. Binomial logistic regression analyses, adjusting for gender, race/ethnicity, parental education, and family affluence, showed that participants with peers who reported the first year after high school frequently texting while driving, were significantly more likely to text while driving the following year (odds ratio, 3.01; 95% CI, 1.19 to 7.59; P=0.05) . The findings are consistent with peer influence on the prevalence of texting while driving among emerging adult.

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A012 6:00 PM-7:00 PM

CHANGES IN SEDENTARY BEHAVIORS AMONG LATINAS IN A PHYSICAL ACTIVITY INTERVENTION

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Greater time spent in sedentary behaviors is associated with increased risk for poor health outcomes. Emerging research has demonstrated that sedentary behaviors are distinct from physical activity and that existing interventions to increased physical activity do not meaningfully impact sedentary behaviors. The purpose of this study was to examine changes to sedentary time among Spanish-speaking Latinas in a randomized controlled trial of a physical activity intervention.

Sedentary time and moderate to vigorous physical activity (MVPA) were measured via accelerometer at baseline, 6 and 12 months. Using a series of generalized linear models, we examined intervention effects on mean sedentary time at follow-up, controlling for baseline and wear time.

Participants (n=205) were a mean age of 39 years (SD=10.5) with the majority self-identified as Mexican (84.4%), White (51.7%) and First Generation (81%). Overall, participants were sedentary an average of 62.03 hours per week (SD=18.18). Results showed significant intervention effects such that those randomized to the Intervention arm had significantly higher mean minutes of objectively measured sedentary time at 6 and 12 months, p's < .05. Compared to the control group, participants in the Intervention arm were sedentary for 146 more minutes/week at 6 months and 254 minutes/week at 12 months (p=.02). As a subsequent step, we added MVPA into the model as the Intervention group had significantly greater increases in min/week of MVPA than the control group (mean differences=31.0, SE=10.7, p < .01). The Intervention group spent significantly more minutes being sedentary than the control group even after controlling for time in MVPA. Furthermore, more time spent in MVPA was positively associated with more sedentary time (p=.04).

These results emphasize that sedentary behavior and physical activity are distinct behaviors,

and suggest that, as participants increase MVPA, they may compensate by also increasing sedentary time. Physical activity interventions may need to simultaneously address decreasing sedentary time in order to maximize health benefits.

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A013 6:00 PM-7:00 PM

COPING STYLE AND DIABETES DISTRESS AS PREDICTORS OF HABIT STRENGTH FOR INSULIN USE AMONG ADULTS WITH TYPE 2 DIABETES

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Habits are important processes for health behavior maintenance. Strong habits are automatic and are formed by repeating a behavior in a stable context. Coping styles can influence how often a behavior that is perceived to be stressful is performed and thus may influence the formation of strong habits. In particular, an avoidance-oriented coping style may hamper the formation of strong habits because behaviors that are avoided are repeated less frequently. In contrast, task-oriented styles involve problem-solving and planning and may facilitate the development of strong habits by promoting behavioral repetition. This study tested prospective associations between dispositional coping styles (avoidance-, task-, and emotion-oriented) and habit strength for insulin use. Coping strategies are activated under conditions of stress, so diabetes distress was tested as a moderator. Diabetes distress was hypothesized to moderate the association between avoidance-oriented coping and habit strength for insulin use, and the association between task-oriented coping and habit strength. The association between emotion-oriented coping and habit strength was explored. Participants were 77 adults with type 2 diabetes who were insulin-naïve at baseline and initiated insulin therapy during the 3- or 4-year follow-up waves. Coping styles and diabetes distress were measured at baseline. Habit strength for insulin use was measured at the follow-up wave that insulin use was first reported. Diabetes distress moderated the association between avoidance-oriented coping and habit strength ($p = .02$, $\Delta R^2_{interaction} = .07$); avoidance-oriented coping was inversely associated with habit strength if diabetes distress was relatively high, but not if diabetes distress was average or low. Diabetes distress also moderated the association between task-oriented coping and habit strength ($p = .0497$, $\Delta R^2_{interaction} = .05$). Contrary to expectations, task-oriented coping was inversely associated with habit strength if diabetes distress was relatively high or average, but not when diabetes distress was low. This may be attributable to the vigilance and deliberative decision-making that accompanies task-oriented coping. Emotion-oriented coping was not associated with habit strength. Results indicated that specific coping styles were prospectively associated with habit strength for insulin use if diabetes distress was relatively high. Previously, studies have generally examined if properties of the target behavior influence the development of habits. This study highlights the utility of exploring dispositional characteristics as predictors of habit formation. Future research could

explore the effectiveness of delivering simple habit formation interventions to individuals with task- or avoidance-oriented coping styles who are experiencing high levels of diabetes distress.

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A014 6:00 PM-7:00 PM

CORRELATES OF FLU VACCINE BEHAVIOR AND VACCINE INTENTIONS AMONG COLLEGE STUDENTS

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Background. Influenza (flu) vaccination rates are lowest among college students, yet research in this population is limited. This study examined correlates of flu vaccine behaviors and intentions, and reasons for not getting vaccinated.

Methods. An online survey was emailed to a random sample of 3,201 full-time undergraduate students between 18 and 25 years of age. Multivariate logistic regression was used to determine associations between demographic (n=5), psychosocial (n=3), and environmental (n=10) influences on past flu vaccine behaviors and flu vaccine intentions.

Results. Of the 450 respondents, 36% received a flu vaccine in the past year, and nearly 45% intended to get vaccinated for the coming season. Being Hispanic (AOR=0.36, 95%CI 0.15-0.90), having very good health (AOR=0.47; 95%CI 0.26-0.86), and using pharmacy/health department (AOR=0.55, 95%CI 0.36-0.85) or family/friends (AOR=0.53, 95%CI 0.34-0.82) as sources of flu vaccine information were associated with lower odds of receiving the flu vaccine in the past year. Belief that advertising increased one's likelihood of getting vaccinated was associated with higher odds of receiving the flu vaccine in the past year (AOR=2.18, 95%CI 1.41-3.35). Flu vaccine intentions were lower for African Americans (AOR=0.37, 95%CI 0.15-0.91) and those using Internet/social media as a source of flu vaccine information (AOR=0.38; 95%CI 0.38-0.93). Flu vaccine intentions were higher among those concerned about flu (AOR=1.97, 95%CI 1.10-3.53) and those aware of the cost and location of campus flu vaccine services (AOR=1.67, 95%CI 1.11-2.52). The most frequently reported reasons for not getting vaccinated were never getting the flu (33.73%), unlikely to get sick from the flu (32.13%), and concerns that the vaccine causes the flu (31.33%).

Discussion. Flu vaccination behaviors and vaccine intentions in this sample are below the national target of 70%. Results revealed differences in correlates of past flu vaccine behaviors and intentions that could inform campus-wide programs to promote flu vaccination rates, particularly among racial/ethnic minorities. Given that most college students are in good health, behavioral intervention messages should target perceived flu susceptibility and severity, while accurately addressing misconceptions about flu vaccine safety, as well as vaccine cost and location to reduce barriers and increase accessibility.

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A015 6:00 PM-7:00 PM

DEPRESSION AND ANXIETY PREDICTING RUMINATION’S IMPACT ON HEALTH BEHAVIORS: A DAILY DIARY STUDY

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Rumination, or thinking passively, negatively, and repetitively, is a common cognitive process, and is associated with poor health behaviors. Rumination may impact health behaviors through two distinct behavioral pathways: acting too quickly (impulsivity) or not acting at all (amotivation). Anxiety and depression may be differential predictors of the behavioral manifestations of rumination, and may be able to predict its effect on health behavior patterns. Our purpose was to test whether individuals reporting anxiety who ruminate will then act impulsively and those reporting depression who ruminate will then not act (amotivation) in the context of daily health behaviors. We recruited 285 college students (mean age=19.3; 76.8% female; 79.4% Caucasian) and had them complete a baseline survey and an 11-day online daily diary survey. Variables assessed included baseline trait depression and anxiety (DASS-21), and daily rumination (RRS), impulsivity (BIS-11), and amotivation (GMS-28), all specifically in the context of daily health behaviors, such as fruit, vegetable, and alcohol intake, exercise, and sexual risk taking behavior. Participants completed an average of 9.72 of 11 daily diary days, or 88.3% compliance. Results showed that rumination predicted health behaviors through both impulsivity and amotivation. Mediation models revealed that baseline anxiety predicted daily rumination ($\beta = .060$, p = p = .051), and that baseline depression predicted rumination ($\beta =.057$, p = p = .055). We found that 17% of the association between rumination and exercise was explained by impulsivity, and 29% of the association between depression and motivation was explained by rumination. In additional post-hoc analyses, rumination was shown to predict health behaviors above and beyond depression and anxiety, demonstrating that rumination is an important, and perhaps more proximal, predictor of health behaviors. These results showed that those who report depression or anxiety are likely to experience more daily rumination and the deleterious behavioral manifestations of that rumination, which the affects health behavior engagement or avoidance. Future behavioral health interventions can perhaps specifically target impulsivity in those reporting anxiety and amotivation in those reporting depression in order to promote healthy behaviors.

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A016 6:00 PM-7:00 PM

DESCRIPTIVE ASSESSMENT OF IMPLEMENTATION INTENTIONS IN A MOBILE ECOLOGICAL MOMENTARY INTERVENTION FOR SMOKING CESSATION

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Introduction: The present study explores the types of implementation intentions (IIs) that young Korean smokers enact to avoid smoking lapse during a cessation attempt. Though IIs have demonstrated success in previous smoking cessation studies, assessment of the types of IIs smokers select and whether or not they have been enacted *in situ* has been rare. Mobile health applications delivering ecological momentary assessments (EMA) have enabled researchers to observe this process in real-time, allowing for exploration of II enactment, adjustment, and failure to enact during high-risk smoking situations (HRSS) associated with smoking.

Methods: Korean American emerging adult (KAEA) participants (N=16) responded to EMAs (n=1,351) following at least five self-scheduled HRSS each day over 4 weeks using “MyQuit USC”, a mobile smoking cessation app. Following each HRSS, participants indicated whether or not they completed the specific II they scheduled with each HRSS at baseline. IIs were categorized based on the primary method for avoiding lapse and HRSS were categorized by types of smoking contexts: social, emotional, and habitual. We report descriptive statistics on the most commonly enacted IIs overall and by HRSS type. Patterns of II completion over time are also summarized.

Results: II enactment was assessed using EMA during 1,351 HRSS. Among those, 712 IIs were enacted, with 71.5% completed during the initially scheduled, i.e. “congruent”, HRSS. The distraction/substitution methods (e.g., chew gum) were the most commonly enacted IIs, accounting for 41.5% of the total IIs completed across all congruent HRSS types. Among the original IIs that were not followed, 67.3% were replaced with an alternate method, with 37% of them being performed during the congruent HRSS. The averaged proportion of overall II completion across participants increased over the 4 weeks from 48.3% to 59.4%. IIs in congruent HRSS had an increase in completion proportion from 60.1% to 71.2% over the 4 weeks.

Conclusions: These preliminary results provide insight on commonly enacted IIs for each HRSS type during a cessation attempt among KAEA smokers. Future versions of MyQuit USC will incorporate these findings to develop a more context-relevant cessation aid. Specifically, information about an individual’s II enactment patterns may be leveraged to adapt the provision of real-time individualized support, e.g. alternative IIs, according to personally relevant HRSS.

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A017 6:00 PM-7:00 PM

A LONGITUDINAL ANALYSIS OF SOCIAL SUPPORT RECEIVED FROM AN ONLINE COMMUNITY FOR CANCER SURVIVORS AND CAREGIVERS

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Introduction: Cancer survivors and caregivers increasingly use online communities, but little research has shown the efficacy of these communities for improving social support. The American Cancer Society's Cancer Survivors Network (CSN) is an online social networking community where survivors and caregivers can exchange information and emotional support regarding the cancer experience. The purpose of this study was to examine whether CSN use increases social support among cancer survivors and caregivers.

Methods: CSN members completed web surveys at baseline (T1) and 3-months (T2; N = 821). Perceived Emotional/Informational Social Support from CSN (SSCSN) was measured using items adapted from previously validated instruments. Member-reported use of CSN features was summarized in two scores: 1) *Interactive Use* involved contributing to the community (e.g., posting to discussion boards, chatting, writing blogs); 2) *Reading* was limited to information consumption (e.g., reading discussion boards or blogs). Dichotomized *Interactive* scores from T1 and T2 were used to create four groups reflecting patterns of use: Low-Low (low use at T1 and T2), Low-High (low use at T1 and high use at T2), High-Low or High-High. Similar groups were created for *Reading*. Two separate generalized linear models were used to assess whether patterns of *Reading* or *Interactive Use* predicted SSCSN at T2, controlling for SSCSN at T1 and covariates (age, gender, race, marital status, education, perceived health, cancer status).

Results: The sample was mostly female (72%), white (87%), survivors (90%) with a mean age of 54.9 (sd = 10.4) years. Using LS-means with Low-Low *Interactive Use* as the referent group, the Low-High group was 0.58 points higher on SSCSN (95%CI: 0.15-1.00), and the High-High group was 0.42 points higher on SSCSN (95%CI: 0.14-0.70). For *Reading*, only the High-High group had a higher LS-means SSCSN (.31; 95%CI: 0.10-0.53) than the Low-Low group.

Discussion: Our results show that CSN use leads to higher levels of social support from that community by approximately half a point on the 5-point SSCSN scale. Interactive use (e.g.,

posting to discussion boards) seems particularly important, whereas passive reading, alone, was associated with greater perceived social support only when reading levels were consistently high. The literature suggests that the perceived social support provided by CSN helps survivors and caregivers adapt to and cope with cancer.

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A018 6:00 PM-7:00 PM

A MODEL OF LONELINESS, SLEEP, AND DEPRESSION AMONG LUNG CANCER PATIENTS ON ACTIVE ONCOLOGIC TREATMENT: A DAILY DIARY STUDY

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Background: Loneliness predicts important health outcomes such as depression and mortality in both healthy and medical populations. Hawkley and Cacioppo (2010) suggest that sleep quality and daytime functioning (i.e., alertness, fatigue) may be mechanisms through which loneliness predicts health morbidity. Loneliness has been associated with poor sleep quality and subsequent impaired daytime functioning among older adults. Yet, no study has investigated associations between loneliness, sleep quality, and daytime functioning within a medical population. Loneliness is a prevalent concern among lung cancer (LC) patients, who also evidence high rates of sleep disturbance and depression. As such, it is important to 1) understand the extent to which loneliness predicts depression among LC patients and 2) investigate whether sleep quality and daytime dysfunction mediate the posited relationship between loneliness and depression. **Method:** Participants (n=33) were men and women receiving treatment for LC. Participants completed a sleep diary at home for seven days. They answered questions about sleep quality at the start of every morning and about loneliness and daytime functioning at the end of each day. Participants also completed the Center for Epidemiologic Studies-Depression scale (CES-D) at the end of the week. Serial mediation was conducted to test the hypothesis that loneliness predicts poor sleep quality, which in turn predicts daytime dysfunction, which in turn predicts higher depressive symptom severity. **Results:** Loneliness and CES-D scores were significantly related (r = .53, p = .001). The relationship between loneliness and depression symptom severity was significantly mediated by daytime dysfunction (b = 4.05, SE = 2.47, 95% CI [0.57, 11.66]) but not by sleep quality (b = 0.40, SE = 2.40, 95% CI [-0.99, 3.75]). Loneliness was unrelated to sleep quality (b = -4.85, SE = 9.20, 95% CI [-23.56, 13.87]), and sleep quality was the only variable in the serial mediation model that was not a significant predictor of depressive symptom severity (b = -0.08, SE = 0.06, 95% CI [-0.20, 36.52]). **Conclusions:** Findings indicate that loneliness is a significant predictor of depressive symptom severity among LC patients and that daytime dysfunction, but not sleep quality, partially mediates this relationship. Although many LC patients evidence poor sleep quality, our results suggest that daytime dysfunction is a more potent predictor of depression in this sample.

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A019 6:00 PM-7:00 PM

A SYSTEMATIC REVIEW OF THE EFFECT OF PATIENT NAVIGATION ON SATISFACTION WITH CANCER CARE

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Cancer is a leading cause of death in the United States, with disparate effects on racial-ethnic minorities and lower socioeconomic groups. Patient navigation (PN) is a supportive patient-centered model in which an individual guides a patient through the medical system and helps him or her overcome barriers to healthcare. It is not known whether PN is associated with increasing satisfaction with cancer care. A systematic review was conducted to assess studies between the years 1995 and 2016 to integrate findings pertaining to the effectiveness of patient navigation in the context of satisfaction with cancer care. To be included, studies were required to evaluate patient navigation related to cancer care, include a comparison group, and measure patient satisfaction with care after the PN intervention. Nine studies met inclusion criteria, but only five (one randomized controlled trial [RCT] and four observational studies) had adequate data for meta-analysis. Sample sizes for each individual study at baseline ranged from 44 to 1,788 participants, with 4,210 patient satisfaction surveys completed. Additionally, the type of cancer care (i.e., head and neck cancer, breast cancer) among studies was greatly varied, as was the methodological quality of studies. Results from the pooled observational studies' data showed a statistically non-significant association between PN and satisfaction with cancer care [standardized mean difference (SMD)=0.39; 95% Confidence Interval (CI):-0.02, 0.80, p=.06]. Additionally, results from the only RCT included in the final analysis showed a significant increase in satisfaction with cancer care when PN was implemented (SMD: 2.30; 95% CI:1.79, 2.80, $p < .001$). The contrast in findings, in addition to the fact that half of the studies were rated as being weak methodologically, indicates a need to conduct studies of higher quality to further investigate whether patients who receive PN are more satisfied than those who do not.

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A020 6:00 PM-7:00 PM

“I DIDN’T KNOW THERE WERE OTHER OPTIONS”: USING BRECONDA TO ASSIST WOMEN AT HIGH BREAST CANCER RISK WITH SURGICAL DECISION MAKING

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Introduction: Women at risk for hereditary breast cancer may opt for risk reducing mastectomy. Part of this decision-making entails preference-based decisions regarding whether, and how, to restore breast shape after mastectomy. We developed an online decision aid, BRECONDA, to assist with this decision-making. In a randomised controlled trial we compared the efficacy of BRECONDA with a general educational booklet.
Methods: Women at risk (N=87), who were recruited into the multicentre web-based trial from hereditary cancer clinics, completed baseline questionnaires including measures of decisional conflict, satisfaction with information and knowledge. Participants were then randomly assigned to either: 1) Intervention (INT) - received unlimited access to BRECONDA and an information booklet about breast reconstruction; or, 2) Control (CONT) - received the information booklet alone. At 2-months participants completed a follow-up questionnaire re-assessing satisfaction with information, knowledge, and decisional conflict regarding the choice to have risk reducing mastectomy. INT participants also completed user acceptability ratings for BRECONDA.
Results: Linear mixed model analyses demonstrated significant time x condition effects so that by 2-months INT participants reported greater increases in satisfaction with information (F=9.98, $p < .005$) and knowledge (F=12.23, p=.001) than controls. By 2-months there was a significant effect for time, and condition, but not time x condition, with both INT and CONT experiencing similar reductions in decisional conflict. However, by 2-months mean scores of decisional conflict for INT participants (M=17.68) indicated that they had implemented their decision, whereas the mean score of CONT participants (M=27.39) indicated that they were still indecisive. The majority (73%) of INT participants reported high to very high satisfaction with the intervention.
Conclusions: These findings indicate that participants receiving BRECONDA benefitted through having greater satisfaction with information and knowledge about breast reconstruction

options, and reduced decisional conflict. Along with high user acceptability, these findings support the feasibility of implementing BRECONDA into hereditary breast cancer clinics.

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A021 6:00 PM-7:00 PM

“I DON’T WANT TO LIVE WITH THE REGRET”: UNDERSTANDING SURGICAL DECISIONS MADE BY YOUNG WOMEN WITH BREAST CANCER

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Background: Due to an increasing number of young women with unilateral breast cancer (BC) choosing contralateral prophylactic mastectomy (CPM), there is a need to better understand this choice of a procedure which is of limited medical benefit for most women. Using a series of focus groups (FG), we sought to explore surgical decision-making in young BC survivors.

Methods: Women diagnosed with stage 0-3 BC in the past 1-3 yrs at age ≤40 who had undergone BC surgery were recruited. Four FG were conducted: 2 with women after bilateral mastectomy, 2 with women who kept their contralateral breast (lumpectomy or unilateral mastectomy). FG were recorded and transcribed with identifiers removed. Emergent themes were identified by thematic content analysis using NVivo 11. Participants also completed a demographic/clinical survey.

Results: Of 20 participants (4-6 per FG) median age at diagnosis was 37; 10% (2/20) identified as Hispanic; 70% had Stage 1 (4/20) or 2 (10/20) disease. Few were carriers of a BC pre-disposing mutation, with a higher proportion of carriers in the CPM (3/11) vs other surgical group (1/9). Concern about contralateral BC and recurrence were common among women who chose CPM. Women stated they “sleep better at night” due to their decision, did not “want to take chances,” and that if BC recurred, they “had tried at least everything.” Other contributors to choice of CPM included cosmetic symmetry and anxiety about surveillance. For women who kept their contralateral breast, identified themes associated with their choice included a desire to breastfeed in the future and “to look normal and look my age.”

Conclusions: Young women who choose CPM often are concerned about future BC events, despite the fact that risk of future breast events is low and CPM does not improve survival, suggesting some have difficulty accepting even a small level of risk and gain peace of mind as a result of choosing more extensive surgery. There is a need to develop novel, targeted interventions to help women to manage their concerns in the short and long-term, ensuring decisions are patient-centered and evidence-based.

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A022 6:00 PM-7:00 PM

“THE EYE OF THE HURRICANE”: AN INTEGRATED MIND-BODY MEDICINE PROGRAM FOR INDIVIDUALS TREATED IN A UNIVERSITY CANCER CLINIC (UCC)

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Considerable evidence has emerged supporting the benefits of mind-body medicine techniques adjuvant to traditional medical interventions. Many studies have examined various aspects of this practice including meditation, relaxation, and psychoeducation. However, few programs utilize a truly integrated approach that interweaves psychoeducation, experiential practice, and group process elements simultaneously – leaving participants to synthesize separate components on their own. Extant studies are conducted in structured research settings which lack the veridicality of a multidisciplinary UCC. We examined the effectiveness of an integrated mind-body medicine program in cancer survivors treated at a UCC. Methods: Utilizing a quasi-experimental pre-post design, this study examined the effect of a 10-week mind-body medicine program combining aspects of the traditional skill-building model, with psychoeducation and group process elements. Changes in psychological symptomatology and well-being were measured in 45 individuals at various stages of cancer treatment. Results: Paired-sample T-tests comparing patients pre- and post-intervention yielded consistent program effects for decreased generalized anxiety (GAD-7), $t(44) = 5.24$, $pt(43) = 3.87$, $p < .001$, and increased well-being (WHO-5) $t(44) = -4.27$, $p < .001$. Average change on these measures are all considered to be clinically meaningful changes based on extant normative data. Discussion: This study supports the effectiveness of a comprehensive mind-body medicine group that simultaneously incorporates skill-building, psychoeducational, and group process components towards significant positive shifts in patient well-being. Results reflect statistically reliable and clinically meaningful improvements in anxiety, perceived stress symptomatology and quality of life, adding to the literature supporting mind-body medicine practices. Methods for implementing such a group in a multidisciplinary community environment will be discussed.

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A023 6:00 PM-7:00 PM

ACUTE EXERCISE EFFECTS ON ANXIETY IN BREAST CANCER SURVIVORS

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Many women report increased levels of anxiety and depression after a breast cancer diagnosis. While past research suggests that acute bouts (i.e., single sessions) of exercise may be beneficial in reducing such emotional distress, much of this work is grounded in high intensity exercises. However, negative side effects of the disease such as fatigue and reduced physical function make it difficult for many survivors to engage in such activities. The purpose of the present study was to examine the effects of moderate-intensity walking on anxiety and depression in breast cancer survivors. Breast cancer survivors (N=25; M age=49.81) engaged in 30 minutes of supervised, moderate-intensity aerobic exercise that consisted of walking on a treadmill at 40-60% of their maximal heart rate, as determined by a graded maximal exercise test. Immediately before and after the exercise session, participants completed the Hospital Anxiety and Depression Scale (HADS). Repeated measures analyses of variance revealed a significant time effect for the anxiety subscale [$F(1,23)=8.78$, $p=.007$, $\eta^2=0.28$], such that the women demonstrated significantly reduced anxiety post-exercise. There were no significant changes in the depression subscale ($p=.21$). Additional between-subjects analyses revealed a significant time by age interaction [$F(1,23)=3.36$, $p=.039$, $\eta^2=0.17$], suggesting that women over the age of 50 demonstrated greater reductions in anxiety compared to women aged 50 and younger. The present findings are encouraging in light of the host of negative psychosocial consequences that accompany a cancer diagnosis. This study suggests that breast cancer survivors who suffer from increased anxiety levels may engage in a moderate intensity walk for 30 minutes for positive mood changes. Additionally, survivors over the age of 50 may benefit more from such an exercise bout. Future studies should determine how long these effects may last for prolonged anxiety relief.

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A024 6:00 PM-7:00 PM

AN EXAMINATION OF MEDIATORS IN THE RELATIONSHIPS BETWEEN PERCEIVED CANCER RISK, HEALTHY EATING, AND PHYSICAL ACTIVITY

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Background: Cancer continues to be a major health problem in the U.S. There were an estimated 1.69 million new cases of cancer in 2016. Approximately one-third of the most common cancers could be prevented through maintaining a healthy weight and engaging in health promoting behaviors (e.g., healthy eating, physical activity). There is some evidence that perceived cancer risk influences engagement in health promoting behaviors; however, the mechanisms behind this relationship need further examination. The purpose of this study was to (a) examine the associations between perceived cancer risk (PCR), fruit and vegetable (F&V) consumption, and physical activity (PA), and (b) separately test the indirect effects of PCR on F&V consumption and PA as mediated by cancer worry (CW) and the belief that health promoting behaviors (HPBs) matter in cancer prevention. Methods: The study sample included 3,677 participants (Mean Age=51.95, *SD*=21.17) from the fourth cycle of the 2014 Health Information National Trends Survey. More than half of the sample self-identified as non-Hispanic White (53.3%) and had a household income of < $75,000 per year (62.4%). Path analysis was used to test the direct and indirect effects of PCR on F&V consumption and PA while controlling for race/ethnicity, age, and income. Results: PCR was inversely associated with F&V consumption (r=-0.24, $p < .001$) and PA (r=-0.23, $p < .001$). The indirect effects of PCR on F&V consumption and PA through CW were both statistically significant as well as the indirect effects of PCR on F&V consumption and PA through the belief that HPBs matter in cancer prevention. Conclusions: The results have implications for health messages and intervention strategies to increase health promoting behaviors and prevent cancer. Cancer prevention researchers and practitioners should not only educate people about the threat of cancer but also consider strategies that build affect with regard to cancer (e.g., cancer worry emotions) and promote the belief that health promoting behaviors have an influence on preventing cancer.

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A025 6:00 PM-7:00 PM

AN INTERVENTION TO IMPROVE SYMPTOMS OF DISTRESS IN CAREGIVERS OF PATIENTS WITH STEM CELL TRANSPLANT: FINAL RESULTS

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Purpose: Caregivers of patients with Autologous Hematopoietic Stem Cell Transplant (auto-HSCT) experience significant burden and distress including anxiety and depression. This qualitative study explored valuable feedback of caregivers regarding a psychoeducation and skills-based (Pep-Pal) program. We aimed to identify caregiver perspectives in terms of the look and feel, acceptability, usability, and feasibility of Pep-Pal as a web-based intervention for reducing caregiver distress.

Methods: We conducted individual qualitative interviews with 9 caregivers of patients with auto-HSCT. Each caregiver participated in a semi-structured interview that consisted of watching an introduction video and three full-sessions. The interview guide encompassed five primary domains 1) look and feel 2) content 3) usability 4) acceptability and 5) feasibility of the program. Applied thematic analysis was conducted on each interview to draw out themes. The authors (NAP and TJ) independently reviewed the transcripts and discussed themes emerging from the data. They applied open coding to the transcripts and developed an initial codebook. After discussing the codebook and agreeing upon the codes, author TJ coded all transcripts independently and identified broad themes within each domain. These themes used further developed the Pep-Pal program.

Results: Many themes emerged from the interviews. In terms of look and feel, an overwhelming response felt the animation was off-putting or “*cheapened*” the message the video had to provide. Many caregivers felt different aspects of several videos took away from the messages being communicated, for example, the background music being too loud during a body can exercise or intimacy video. In terms of content, several caregivers reported feeling validated by the intervention because they felt it accurately reflected their experiences and the challenges associated with their role. Many caregivers requested more specific examples about the caregiver experience related to cancer and that the program be used in addition to

one on one support. All caregivers felt they could navigate the sessions on their own with little to no difficulty and some even went further and said it was convenient and easy to use. Themes emerged regarding improvements for the program and included adding pauses or instructions on how and when to complete exercises. Participants felt using the Pep-Pal mobilized program would be an acceptable way to get support. Caregivers noted the brevity of the sessions, especially the mini-peps, and the semi structured nature of the sessions with flexibility to move around from topic to topic make it more acceptable to use.

Conclusion: The qualitative results from the caregiver individual interviews were integrated into the final development of Pep-Pal with the goal of enhancing dissemination, engagement, acceptability, and usability.

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A026 6:00 PM-7:00 PM

ANALYSIS OF NATURAL LANGUAGE: A NOVEL APPROACH TO UNDERSTANDING THE THEMES OF BREAST CANCER SURVIVORSHIP

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When individuals are diagnosed with breast cancer, they receive an onslaught of information about medical treatments, potential changes to their body image, future side effects, and shifts in their familial and occupational roles. Post-diagnosis, some may turn to social media for resource information and peer support. Social media offers unique advantages for health professionals seeking to answer complex research questions. Namely, the quantity of natural language data that can be gleaned from social media is enormous, and the anonymity of the Internet may help facilitate the discussion of difficult subjects. The purpose of this study was to assess themes that emerge when individuals talk about breast cancer in a “real-world” setting—that is, outside of the laboratory—in order to inform practitioners who are providing treatment to this population. Natural language (*n* = 1051 posts) was extracted from a breast-cancer related subsection of a popular social media website and analyzed via the meaning extraction method (MEM), an advanced computerized text analysis technique that identifies words that relate to specific implicit themes across texts. The procedure extracted seven unique themes germane to breast cancer: diagnosis, social support, risk, existentialism, treatment process, information seeking, and surgery. Each of these themes was comprised of frequently used words across posts. This approach validated other themes that have been noted in previous qualitative studies and uncovered specific nuances of the breast cancer experience that have not yet been explored in laboratory-based research. These results also offer health care providers with insight on relevant topics to address with this population during treatment or therapy.

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A028 6:00 PM-7:00 PM

BELIEFS ABOUT CANCER DIAGNOSIS AND THEIR IMPACT ON COMORBID DIABETES MANAGEMENT

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Background

With improved survival and prognosis for many cancers, it is increasingly important to understand how a cancer diagnosis may impact patients' long-term health and how beliefs about cancer impact management of comorbidities. We undertook this study to assess the effect of beliefs about cancer on comorbid diabetes management.

Methods

We recruited patients with type II diabetes who were newly diagnosed with early-stage breast, prostate, lung or colorectal cancer and enrolled age-, gender- and hemoglobin A1c-matched diabetes patients. All patients completed the Beliefs and Illness Perceptions Questionnaire (BIPQ) for diabetes, and cancer patients also answered the BIPQ for cancer. Diabetes management behavior was based on the Summary of Diabetes Self-Care Activities (SDSCA) questionnaire ("On how many of the last seven days did you test your blood sugar?" and "On how many of the last seven days did you test your blood sugar the number of times recommended by your health care provider?"). Non-parametric analyses were used to assess the relationship between beliefs about cancer (or diabetes) and diabetes self-management behaviors.

Results

To date, we have recruited 141 patients, of which 55 were newly diagnosed with cancer. The average age was 62.3 years and 57% were male. Of the cancer patients, 53% had prostate cancer, 34% had breast cancer, 3% lung cancer and 9% colon cancer. Compared to non-cancer patients, cancer patients tested their blood glucose levels (2.9 vs. 4.1, p=0.018) or followed recommended glucose monitoring (3.6 days vs. 4.9 days, p=0.017) on fewer days in the past week. However, there was no significant difference between cancer and non-cancer patients' diabetes beliefs, including perceived control and effectiveness of treatment. Beliefs about diabetes were also not associated with blood glucose monitoring frequency or adherence. Among cancer patients, perceived control over cancer was associated with blood glucose monitoring adherence. Those with low perceived control over their cancer reported blood glucose testing 1.6 days per week (SD=2.29) compared to 3.9 days among patients with high perceived control (p=0.003). Patients with low perceived control over cancer also monitored as recommended fewer days per week (2.3 vs. 4.8, p=0.007).

Conclusion

Our results indicate that patients with newly diagnosed cancer and comorbid diabetes had poorer adherence to glucose monitoring recommendations than patients with no cancer history. While cancer and non-cancer patients did not differ significantly in their beliefs about diabetes, cancer patients who felt they had less control over their cancer were less adherent to glucose monitoring. This finding suggests that beliefs about cancer, rather than beliefs about diabetes, may have a stronger impact on cancer survivors' management of their comorbid diabetes.

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A029 6:00 PM-7:00 PM

BEYOND DISTRESS ASSESSMENT: LEVERAGING TECHNOLOGY FOR PSYCHOSOCIAL SCREENING AND DYNAMIC REFERRAL

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Based on the American College of Surgeons Commission on Cancer (CoC) standards, all accredited cancer centers were required to implement procedures for distress screening by the year 2015. As distress is often unrecognized and greatly impacts quality of life and cancer outcomes, effective screening for and management of distress can improve overall health functioning. Nationally, accredited cancer centers have implemented distress screening procedures in a variety of ways based on resources and efficiency of work flow, including paper-and-pencil questionnaires or face-to-face report with medical providers, for example. Given the opportunity to achieve regular distress screening procedures, MD Anderson Cancer Center at Cooper University Hospital established a more comprehensive psychosocial screener system by leveraging technology for patient report and dynamic referral to appropriate providers. The purpose of this study is to determine the utility of a computerized psychosocial screener that employs iPads, interfaces with the electronic medical record, and assesses distress as well as other important issues. Using the Polestar™ platform, 379 subjects were screened with mean age 61.3 (range: 21-90); with top 3 disease sites: 35% breast cancer, 13% lung cancer, and 13% unknown. Seventy-seven % were Caucasian, 19% African American; and 55% married. 59% reported moderate to severe distress, 23% screened positive for both anxiety and depression (PHQ2 & GAD2); 53% reported at least a little functional disability due to physical issues and 31% due to emotional issues. The majority of subjects reported good social support (82% always get help, 78% someone listens) and few problems with personal relationships (86% no problems). Regarding substance use, 21% acknowledged risky drinking, 21% reported smoking and 11% of those are interested in quitting smoking. Finally, other problems reported include financial (27%) and transportation (7%). Based on specific criteria, referrals were triggered to appropriate services, including: Behavioral Medicine (62%), Social Work (50%), Dietician (31%), and Spiritual Counseling (6%). Implementation of this screening system significantly increased the number of referrals sent to various supportive care services (Behavioral Medicine increased by 41-623% monthly in a

two-year period), thus demonstrating the ability to identify patients in need and to do so efficiently via dynamic electronic referral and report placed in EMR for ease of use for providers.

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A030 6:00 PM-7:00 PM

BODY IMAGE CHANGES IN BREAST CANCER SURVIVORS DURING A WEIGHT MAINTENANCE INTERVENTION

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Breast cancer treatments can have significant effects on a woman's body image due to the treatment itself (e.g., surgery) or due to treatment-related side effects (e.g., weight gain). While previous work suggests improvements across dimensions of body image during a weight loss intervention, little is known about subsequent changes in body image during weight maintenance or weight regain. This study evaluated changes in body image dimensions in breast cancer survivors during a weight maintenance intervention and predictors of those changes, including demographic characteristics, breast cancer treatment history, baseline depressive symptoms, percent weight regain, and physical activity change. The Body Image and Relationships Scale (BIRS) assessed 6 dimensions of body image relevant for breast cancer survivors: changes in social activities due to treatment-related symptoms, energy and strength, discomfort/embarrassment due to treatment-related appearance changes, body integrity (feeling natural and whole), sense of control over health, and sexual attractiveness. While enrolled in a weight control trial, participants lost an average of 13.6±5.7% of baseline weight during the 6-month group phone-based weight loss intervention. All 6 body image dimensions and total score improved upon completion of the weight loss intervention (effect sizes ranged from d=0.5 to 1.4), although percent weight loss and physical activity were not significant predictors. Participants (n=75, age=58.6±8.1 years, time since treatment=3.6±2.4 years, baseline BMI=34.4±4.1 kg/m^2) regained an average of 36.4±44.8% of lost weight during a 12-month randomized phone- and newsletter-based weight maintenance intervention. Five body image dimensions with the exception of changes in social activities worsened upon completion of the weight maintenance intervention (effect sizes ranged from partial η^2=0.06 to 0.18). Multiple linear regressions revealed that married women experienced less worsening of discomfort due to appearance (t=2.0, p < .05) and sense of control (t=2.1, p < .05) than their single counterparts. Higher baseline depressive symptoms predicted greater loss of control (t=-2.1, p < .05). Notably, women who regained more weight experienced greater worsening of energy and strength (t=-2.5, p < .05), discomfort due to appearance (t=-4.0, p < .001), and body integrity (t=-2.0, p < .05). Treatment history and changes in physical activity were not significant predictors. In contrast to the impact of weight loss, weight regain may directly impact dimensions of body image in breast cancer survivors. However, the magnitude of

change was less profound during the weight maintenance intervention, suggesting that survivors may still benefit from improved body image when compared to their body image prior to engaging in the weight loss intervention.

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A031 6:00 PM-7:00 PM

BREAST AND OVARIAN CANCER RISK MANAGEMENT FOLLOWING TELEPHONE VS. IN-PERSON GENETIC COUNSELING AND TESTING

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Genetic counseling and testing is central to the clinical care of women at risk for hereditary breast and ovarian cancer (HBOC). Women at high risk following testing can reduce their risk through surgery or increased screening. In a multi-site randomized noninferiority trial, we compared telephone genetic counseling/testing (TC) to standard in-person counseling/testing (SC) for HBOC. TC was noninferior to SC on all genetic counseling/psychosocial outcomes. Here, we compare TC to SC on cancer risk management outcomes 12-months post-randomization.

Women 21-85, referred for genetic counseling at one of the study sites, without a new or metastatic cancer diagnosis were randomized to TC vs. SC. Of 669 women randomized, 514 completed the 12-month follow up. We found no differences in attrition between TC and SC.

Although not powered to test noninferiority on risk management outcomes, we compared TC vs. SC on use of risk reducing mastectomy (RRM) and oophorectomy (RRO), and breast and ovarian cancer screening (mammography; MRI; CA125; ultrasound). In bivariate analyses, TC and SC did not differ on any risk management outcome ($p>.10$). In separate multivariate logistic models, we included significant bivariate predictors of the outcome along with test result and group assignment. RRM was predicted by: positive test result (OR=2.5, 95% CI = 1.04, 6.2) and cancer distress (IES; OR=1.3, 95% CI = 1.04, 1.5); mammogram was predicted by: positive test result (OR=4.1, 95% CI = 1.8, 9.4), being married (OR=2.7, 95% CI = 1.4, 5.4), being above age 50 (OR=5.2, 95% CI = 2.2, 12.5), and having a lower a priori mutation risk (OR=.74, 95% CI = .58, .94); MRI was predicted by: positive test result (OR=7.4, 95% CI = 3.8, 14.9) and being affected with BrCa (OR=3.7, 95% CI = 2.1, 6.7); RRO was predicted by: positive test result (OR=16.7, 95% CI = 7.2, 38.5) and being married (OR=6.2, 95% CI = 2.2, 17); ultrasound was predicted by: positive test result (OR=2.6, 95% CI = 1.3, 5.4), being affected with BrCa (OR=2.4, 95% CI = 1.4, 4.2) and higher cancer distress (OR=1.2, 95% CI – 1.1., 1.4); CA125 was predicted by positive test result (OR=2.8, 95% CI = 1.5, 5.5). We also evaluated the

group by test result interaction effect in each model. This effect was significant for CA125. SC participants with a positive BRCA test result were more likely to obtain a CA125 than TC participants who tested positive.

Despite being underpowered for noninferiority analyses on risk management outcomes, these traditional analyses are consistent with our prior findings indicating that TC is a safe and cost effective approach to increase access to genetic testing. The finding that mutation carriers in the TC arm were less likely than those in the SC arm to undergo ovarian cancer screening should be interpreted in light of the fact that ovarian cancer screening is <u>not recommended</u> for BRCA mutation carriers given evidence that it does not reduce ovarian cancer mortality.

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A032 6:00 PM-7:00 PM

BREAST DENSITY KNOWLEDGE AND INTENTIONS FOR BREAST CANCER SCREENING IN A DIVERSE SAMPLE OF WOMEN AGE ELIGIBLE FOR MAMMOGRAPHY

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While there is considerable evidence showing the association between breast density and breast cancer risk and detection, little is known about women’s awareness and knowledge of their own breast density, and its effect on the likelihood of completing breast cancer screening. The objective of this study was to assess breast density knowledge, breast density awareness, and intention to complete screening for breast cancer in a diverse sample of women age eligible for mammography. We quantitatively assessed breast density awareness and knowledge in black, Latina, and white women recruited online (N=164) and in the community (N=100). The majority of the participants reported having heard about breast density (69.2%), but less than one third reported awareness regarding the New York State Breast Density Notification Law (30.9%) and less than one third knew their own breast density status (30.4%). Language preference for data collection (English), site of data collection (online), breast density awareness, knowledge of own breast density, and responding yes to “Would knowing your breast density make you feel informed to make decisions regarding your breast health?” predicted higher likelihood of intending mammogram completion in the future. An important implication of these findings is that many women may not have access to important health information that may influence their decision making regarding their breast health care.

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A033 6:00 PM-7:00 PM

CANCER DISTRESS SCREENING AT AN URBAN SAFETY NET HOSPITAL: PATIENT CONSIDERATIONS AND ITS IMPACT ON SUPPORT SERVICES

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Background:

Distress screening and providing support services to cancer patients were points of emphasis made by the US Institute of Medicine. This study explored the relationship between Distress Thermometer (DT) screening, support service usage, and other patient characteristics at an urban safety-net hospital.

Methods:

From January 2009 to December 2013, medical records of 3485 patients with complete data, a cancer diagnosis and pursued care with radiation and/or medical oncology at an urban safety-net hospital were retrospectively reviewed; the DT was implemented in 2011. x^2 tests were used to evaluate differences in DT usage, patient characteristics (race/ethnicity, gender, language, marital status, education, insurance and number of chronic illness) and support service utilization (patient navigation, social work, and behavioral health) between patients starting care before and after the implementation of the DT. In post-DT implementation patients, multiple regression analyses were conducted to evaluate whether DT screening and other patient characteristics predicted the use of support services and an ANOVA with post-hoc Tukey's tests were used to find differences in support service and DT usage on based on insurance type. Opinions on the experience using the DT were evaluated 27 oncology staff from June to August 2014.

Results:

DT usage significantly increased in patients who started care after DT implementation, but only one-third of patients were successfully screened for distress in a span of 3 years since the implementation. Patients screened for distress had greater odds of utilizing patient navigation

(OR=2.3; 95% CI=1.7-3.0) and social work (OR=1.6; 95% CI=1.2-2.0) after controlling for patient characteristics. More patients on Medicare and Medicaid utilized patient navigation and social work than those with private insurance. No difference in the DT screening based on insurance type was found. The majority of staff reported the DT to be helpful in deciding referral to support services; however, patient interviews were thought to be more effective than using the DT. Patient language and literacy were reported to be the largest barriers to screening.

Conclusion:

The impact on DT usage on support service usage is unclear given a potential selection bias in the study and additional support service staff is needed to address cancer distress. Future research to efficiently operationalize distress screening when caring for vulnerable populations is warranted.

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A034 6:00 PM-7:00 PM

CANCER PATIENT PERSPECTIVES REGARDING PREPAREDNESS FOR END-OF-LIFE CARE: A QUALITATIVE STUDY

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The extent to which patients feel prepared for end-of-life care may be associated with important clinical outcomes, such as decisions about aggressive treatment, receipt of care consistent with preferences, healthcare costs, and quality-of-life. Despite growing interest in the concept of "preparedness," however, there is insufficient information about what cancer patients actually need to feel prepared. This qualitative study examined patient perspectives re: preparedness for end-of-life care, in a cohort with terminal disease.

In-depth interviews were conducted with cancer patients who had advanced-stage disease and limited life-expectancies. Enrollment continued until data saturation. Mean age of participants was 63.7 years, 39.8% were non-white, and the sample was diverse with respect to type of malignancy and socioeconomic status. Interviews were audiotaped and transcribed. Thematic analysis was undertaken by 3 investigators, each of whom coded all transcripts. Derivation of codes and themes was facilitated by use of NVivo 11 software.

Six overarching themes emerged. These included concerns about: (1)) end-of-life decisions (e.g., aggressive treatment vs. comfort care, location of care); (2) interactions with the medical team (e.g., pursuit vs. avoidance of prognostic information, symptom control, availability of resources); (3) interactions with family/friends (e.g., burdening the family, support vs. conflict, communication); (4) emotional well-being (e.g., distress, life completion, existential suffering); (5) spiritual well-being (e.g., comfort vs. alienation); and (6) financial well-being (e.g., estate planning, medical expenses).

Findings highlight areas that patients themselves regard as necessary for a sense of preparedness. The ability to manage these challenges was seen as critical at this phase of care. Results offer an important foundation for further research regarding instrument development, prediction of clinical outcomes (e.g., care concordant with preferences, ICU admissions, quality-of-life), and development of targeted interventions.

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A035 6:00 PM-7:00 PM

CHILDHOOD ADVERSITY PREDICTS TRAJECTORIES OF INFLAMMATION, FATIGUE, AND DEPRESSION DURING BREAST CANCER SURVIVORSHIP

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Breast cancer survivors commonly experience symptoms such as depression, fatigue, and inflammation during and after treatment. For many women, symptoms improve in the months following treatment, but a subset of survivors experience persistent symptoms years after treatment ends. Prior research indicates that childhood adversity predicts elevated symptoms before, during and in the year following cancer treatment; however, studies have not assessed whether adversity produces differential trajectories of symptoms over longer periods of time. The current study assessed childhood maltreatment as a risk factor for poorer short-term and long-term psychological and physical recovery during survivorship. In a parent study, breast cancer survivors stages 0-IV (N = 112) provided data prior to primary cancer treatment (i.e., surgery, radiation, or chemotherapy) and 6 and 18 months post-treatment. The current study utilized scores from the Childhood Trauma Questionnaire, Center for Epidemiological Studies-Depression (CES-D) scale, and Multidimensional Fatigue Symptom Inventory (MFSI-SF), as well as inflammatory marker plasma C-reactive protein (CRP). Women who reported more physical abuse ($b = 0.04$, $SE = 0.02$, $p = .047$), emotional abuse ($b = 0.04$, $SE = 0.02$, $p = .014$), and emotional neglect ($b = 0.04$, $SE = 0.02$, $p = .023$) evidenced greater increases in CRP from baseline to 6 months post-treatment compared to women who reported fewer adversities. Women who reported more childhood physical abuse also had greater increases in fatigue ($b = 0.29$, $SE = 0.12$, $p = .014$) and marginally persistent depressive symptoms ($b = 0.37$, $SE = 0.22$, $p = .091$) from baseline to 18 months post-treatment compared to those who reported less abuse. Sexual abuse and physical neglect did not predict symptom recovery. Given these results, it appears that childhood adversity, particularly physical abuse, has lasting effects on depression, inflammation, and fatigue following breast cancer treatment. For women with a history of adversity, these symptoms may persist up to 18 months after treatment, long after the physical and psychological repercussions of cancer treatment are expected to dissipate. Identifying childhood adversity as a risk factor for persistent inflammation, fatigue, and depression has important implications for survivorship, as these symptoms have been associated with increased risk for metastasis, recurrence, and morbidity among cancer survivors.

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A036 6:00 PM-7:00 PM

CLINICAL AND PSYCHOSOCIAL RISK FACTORS FOR RESIDUAL PAIN IN ADULTS ON A LONG-ACTING OPIOID FOR CANCER-RELATED PAIN

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Two thirds of U.S. adults with advanced cancer experience cancer-related pain, despite the clinical use of opioids in this population. Given multiple opioid formulations and recent widespread media coverage of opioids, patients' medication taking behaviors and their perceptions of medications may be related to pain outcomes. This study examined clinical and psychosocial risk factors for residual pain among patients on a long-acting (LA) opioid for cancer-related pain.

We analyzed cross-sectional data from ambulatory adult patients (n=100) with locally advanced or metastatic cancer who had a LA opioid prescription for nociceptive cancer pain and were responsible for administering their medications. Participants reported demographic information, perceptions of pain medications (e.g., concerns about efficacy, addiction, side effects), LA opioid adherence in the past week (0-100%), and pain severity (Brief Pain Inventory). Cancer type and LA opioid regimen were obtained from health records. Clinical and psychosocial risk factors for pain were explored using multiple linear regression at $p < .05$.

Participants (53% female, 89.7% non-Hispanic white, M age=57.5 years [SD=12.3]) were diagnosed with diverse cancers (thoracic 27%, genitourinary 22%, sarcoma 20%, breast 17%, gastrointestinal 13%, gynecologic 1%). LA opioid regimens included oral medication (8, 12 or 24 hrs; 74%) or duragesic patch (48 or 72 hrs; 26%), with morphine equivalent dose M=109.3 mg (SD=127.8). 46.4% of participants reported at least moderate pain (≥4/10). In a linear regression model that controlled for patient age, gender, and racial/ethnic minority status, more negative perceptions (B=.32[SE=.12], p=.009) and use of an oral LA opioid (vs. duragesic patch; B=1.18[SE=.53], p=.027) were associated with higher pain. Opioid dose (B=.001[SE=.002], p=.49) and self-reported LA opioid adherence (B=.24[SE=.82], p=.77) were not associated with pain.

Almost half of patients reported at least moderate pain. Patients who had more concerns about pain medications and who were on daily oral doses reported greater pain, regardless of opioid dose or self-reported adherence. These findings support that patients' attitudes and medication taking patterns may be related to pain outcomes. Longitudinal studies are needed to examine pain medication taking behaviors and identify modifiable targets for improving pain management in patients with chronic cancer pain.

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A037 6:00 PM-7:00 PM

CLINICAL EVALUATION OF EMOTIONAL RESPONSES IN PATIENTS WITH CANCER: DIAGNOSTIC ACCURACY COMPARED TO TWO REFERENCE STANDARDS

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Objective. Previous research has suggested that the clinical evaluation by doctors and nurses of emotional responses in patients with cancer is not always adequate. However, we hypothesize that doctors and nurses may be differentiating between emotional responses that do or do not necessitate professional care. The aim of this study was to explore the diagnostic accuracy (sensitivity and specificity) of clinical evaluation of emotional responses compared to two reference standards: (i) emotional distress as reference standard, and (ii) care needs related to emotional problems as reference standard.

Methods. This study was designed as a retrospective cohort study. The clinical evaluation of emotional responses was derived from the medical and nursing file. The Distress Thermometer and Problem List were used to assess emotional distress and care needs related emotional problems. Sensitivity, specificity and the diagnostic odds ratio (DOR) of clinical evaluation were calculated, compared to two reference standards, i.e. (i) emotional distress and (ii) care needs related to emotional problems.

Results. The sample included 120 patients: in 35.7%, the doctor or nurse made notes describing fear, anxiety, stress, low mood or depression, or referred the patient to a mental health professional. According to the Distress Thermometer, 36.8% of the patients experienced emotional distress; and 11.3% expressed a need for care related to emotional problems. The sensitivity of clinical evaluation was 51%, specificity 65% and DOR 1.94 with emotional distress as reference standard. With care needs as reference standard, the sensitivity of clinical evaluation was 77%, specificity 63% and DOR 5.77.

Conclusions. As expected, we found indications that when using care needs as reference, sensitivity of clinical evaluation of emotional responses is higher compared to emotional distress as reference. This provides preliminary support for our hypothesis that doctors and nurses distinguish between emotional responses that do or do not necessitate professional care.

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A038 6:00 PM-7:00 PM

MERITORIOUS AWARD WINNER

COMMUNITY IMPLEMENTATION OF THE BIOBEHAVIORAL INTERVENTION FOR CANCER PATIENTS: A COLLABORATIVE STUDY OF PATIENT OUTCOMES

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Objective: Evidence-based treatments (EBTs) for cancer patients are available, but have not been disseminated for wide use among community mental health practitioners. In a dissemination effort, mental health professionals were trained to deliver the Biobehavioral Intervention (BBI) at their home institutions. A collaborative group reports the effects of BBI on patient outcomes.

Methods: Therapists from 11 sites (82% community settings; hospitals [n = 5, 46%], Cancer Support Community facilities [n = 3, 27%], oncology practice [n = 1, 9%]) delivered the BBI as part of standard care. To maximize external validity, therapists in each setting determined the BBI format (i.e., individual therapy, open group, or closed group), duration, and components of treatment delivered. Therapists reported treatment integrity data at each session. Cancer patients (N=110) completed self-report measures (including the Profile of Mood States [POMS]) pre- and post-BBI. Intervention effectiveness was tested using hierarchical linear multiple regression analyses. Exploratory analyses examined the relationship between significant patient outcomes and treatment integrity variables.

Results: As in BBI efficacy studies, patients' POMS scores significantly decreased from pre-to-post (R^2=0.1, β=-0.3, *p*r=-0.3, *p* < .01). Using the Reliable Change Index, 26% of patients demonstrated clinically significant improvement on the POMS. POMS scores correlated with BBI group type (*r*=-0.3, *p* < .05). M = -22 v. -8). Open group participants evidenced larger decreases than closed group participants (*M*=-22 v. -8). POMS scores also correlated with receipt of BBI in individual format (*r*=0.2, *p* < .05). Participants in individual treatment evidenced smaller decreases than participants in group treatment (*M*=-2 v. -17).

Conclusions: This is the first study to report patient-level data in the context of multi-site therapist implementation of an EBT for cancer patients. Data from this collaborative group provides evidence of the feasibility and effectiveness of the BBI on patient outcomes when delivered by newly trained mental health providers in the community.

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A039 6:00 PM-7:00 PM

COMPARISON OF CANCER BELIEFS BETWEEN APPALACHIANS AND NON-APPALACHIANS AND RELATED SOCIODEMOGRAPHIC CHARATERISTICS

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Background: Residents of the 13-state Appalachian region experience poorer health outcomes compared to other geographic populations, including higher rates of cancer incidence and mortality. Studies suggest that cultural beliefs and practices may influence these health disparities. Previous research shows that Appalachians have higher cancer risk perceptions and negative beliefs about cancer but few studies have examined the associations between Appalachian residence, socio-demographics, and cancer belief variables.

Objective: This study examines cancer-related beliefs between Appalachians and non-Appalachians, as well as correlates (i.e., Appalachian residence, socio-demographics, and health status) of those beliefs.

Methods: Data from four administrations (2011-2014) of the National Cancer Institute's Health Information National Trends Survey were combined and analyzed (n=14,451). Descriptive analyses were conducted to examine four items related to cancer beliefs between Appalachians and non-Appalachians. Regression analysis with the entire sample was conducted to examine the correlates of a composite variable representing cancer beliefs.

Results: About 8% (n=1,015) of the survey respondents were from Appalachia. A higher percentage of Appalachians vs. non-Appalachians agreed with statements such as everything causes cancer (69.8% vs. 64.4%) and there were too many recommendations about cancer prevention (79.4% vs. 72.7%). A higher percentage also believed that they were likely to get cancer in their lifetime in general (44.0% vs. 41.6%) as well as compared with people their age (23.1% vs. 18.7%). Regression analyses with the entire sample showed that Appalachians had higher overall negative cancer beliefs than non-Appalachians ($\beta=0.37$, $p < 0.05$). Older vs. younger respondents had lower negative cancer beliefs ($\beta=-0.03$, $p < 0.05$). Additionally, all

other racial/ethnic groups had lower negative cancer beliefs compared with non-Hispanic Whites ($p < 0.05$). Those with a lower education (e.g., high school: $\beta=0.25$, $p < 0.001$) and health status (e.g., poor health: $\beta=1.32$, $p < 0.001$) had higher negative cancer beliefs compared with those with a bachelor's degree and excellent health, respectively.

Conclusions: Appalachians held more negative beliefs about cancer than non-Appalachians, and residing in Appalachia was significantly associated with greater negative cancer beliefs. Tailored communication strategies and interventions for certain socio-demographic groups are needed to provide individuals with accurate information about cancer risk, and to dispel negative cancer beliefs that may be associated with and contribute to Appalachian cancer disparities.

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A040 6:00 PM-7:00 PM

CONFIRMING RESEARCH RESULTS AND OBTAINING CANCER SCREENING 6 MONTHS AFTER LEARNING CDKN2A VARIANT MUTATION STATUS

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This study examined whether participants who agreed to learn genetic research results would pursue confirmatory testing in a clinical laboratory of a germline *CDKN2A* mutation (as recommended), which predisposes to pancreatic cancer and melanoma. Post-disclosure behavioral intent to pursue pancreas and skin exams was assessed via self-report immediately after disclosure and at 6 months. Participants were enrollees in a Mayo Clinic Pancreas Research registry and who gave a blood sample. Samples were tested in a research laboratory for the *CDKN2A* mutation*.* 133 at-risk individuals without pancreatic cancer were invited by mail into the disclosure study and to complete a baseline survey, followed by a telephone call in which they would learn their result. Eighty individuals (60%) returned a baseline survey, and 73 (91.3%) learned their mutation status and participated in semi-structured interviews immediately post-disclosure; 72 completed the interview, and one withdrew prior to completion. Six months following disclosure, a survey was mailed which asked about confirmatory genetic testing and uptake of cancer screening (response rate of 87.3% (n=62)). Of 62 participants with complete (interview and survey) data, 14 (22.5%) were mutation carriers and 48 (77.5%) were non-carriers. In the post-disclosure interviews, 29 (46.8%) participants (71.4% (n=10) carriers and 39.6% (n=19) non-carriers) indicated intent to pursue confirmatory testing. At the 6-month follow-up, 21.4% (n=3) of carriers and 2.1% (n=1) of non-carriers reported obtaining confirmatory testing. With regard to cancer screening, 84.6% (11/13) of carriers stated they were “definitely planning” on getting a pancreas check in the next 6 months, as compared to 12.5% (n=6) of non-carriers (p < 0.0001). All carriers indicated that they “definitely planned” to get a skin exam in the next 6 months, compared to 59.6% (28/47) of non-carriers (p=0.003). Six-month follow-up data revealed that 29.4% (n=5; all were carriers) of those with a strong intention to get a pancreas check did, while 56.1% (n=23; 9 carriers and 14 non-carriers) of those with a strong intention to get a skin exam did. Eleven (78.6%) carriers stated that they were “definitely planning” to get a pancreas check in the next year, compared to 4.2% (n=2) of non-carriers (p < 0.0001), and 84.6% of carriers compared to 31.9% of non-carriers intended to get a skin exam in the next six months (p=0.001). Recipients of genetic research results relating to cancer predisposition may not follow-through with their intentions to pursue recommended confirmatory testing, yet carriers at potentially increased risk of pancreatic cancer and melanoma appear to use the genetic information to motivate participation in cancer detection/screening behaviors.

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A041 6:00 PM-7:00 PM

COPING AND ENDOCRINE THERAPY ADHERENCE AMONG WOMEN WITH BREAST CANCER

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Rates of non-adherence to endocrine therapies (i.e., tamoxifen, aromatase inhibitors) among women with breast cancer remain high despite their demonstrated effects on survival. In this longitudinal study, we examined contributors to adherence among survivors of breast cancer (N = 130). Participants with breast cancer receiving their initial endocrine therapy prescription were recruited from a large community oncology breast clinic. Participants took part in three interview and questionnaire sessions at the clinic at prescription initiation, one month and four months later. Participants completed a final interview and questionnaire session by phone 12 months later. Questionnaires addressed coping processes used to manage the cancer experience. At the initial appointment, participants were provided a Medication Event Monitoring System (MEMS) cap to assess adherence; the MEMS cap was collected at the four-month follow-up appointment. The MEMS cap measurement, the percent of days a dose was taken, was regressed on hypothesized predictors of adherence. The final regression model accounted for 22.1% of the variance in adherence. Changes in coping accounted for 18.5% of the variance ($p < .05$), and relevant medical/demographic factors accounted for 3.6% of the variance ($p > .05$). An increase in coping through emotional support seeking from study entry to one month was significantly associated with lower adherence at 4 months ($r = -0.26$, $p < .05$), while an increase in coping through positive reinterpretation and growth from study entry to one month was significantly associated with higher adherence at 4 months ($r = .19$, $p < .05$). Increases in coping through seeking emotional support may reflect a deficit in emotional support provided. Taken collectively, these findings addressing women's cognitive appraisals and support needs regarding the cancer experience might promote endocrine therapy adherence.

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A042 6:00 PM-7:00 PM

DESCRIPTION OF PHYSICAL ACTIVITY LEVELS AMONG MYELOPROLIFERATIVE NEOPLASM PATIENTS ENGAGING IN AN ONLINE YOGA INTERVENTION

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Introduction: Cancer patients report lower physical activity (PA) levels than those that are not diagnosed with cancer, particularly during treatment and often times persisting into cancer survivorship. Myeloproliferative neoplasm (MPN) cancer patients are unique in the sense that these individuals often spend the rest of their life undergoing treatment to manage disease progression and symptom burden. MPN patients report a high symptom burden (i.e., fatigue, depression, anxiety, sleep disturbance, etc.) with inactivity reported as a symptom in upwards of 60% of patients. It has been demonstrated that PA can improve a variety of physical and psychosocial side effects of cancer and its treatment. To date there is no information regarding PA levels in MPN patients. Therefore, the purpose of this abstract is to summarize the objective PA levels of MPN patients participating in a 12-week online-streamed yoga intervention.

Methods: Participants were MPN patients (n=38) enrolled in a 12 week online-streamed yoga intervention. Participants were instructed to wear a Fitbit Flex on their non-dominant wrist throughout the study. The Fitbit Flex provides an estimate of daily step counts as well as time spent in sedentary, light, moderate, and vigorous activity. Trajectories of objectively-measured PA were tested using linear mixed models with fixed and random effects for time included in the model.

Results: At baseline, MPN patients averaged 871.8±41.5 min/week of sedentary time, 204.8±13.9 min/week of light activity, 19.3±3.5 min/week of moderate-vigorous physical activity (MVPA), and 6466.9±652.3 steps/day. Throughout the course of the 12-week study, there were no changes in sedentary time, light activity, or steps. However, there was a significant downward trend in daily MVPA (-0.05±0.02; p=.034) over the 12 weeks.

Conclusion: MPN patients engaged in only 19.3±3.5 min/week of MVPA at baseline (as measured by a Fitbit) of the 12-week yoga intervention, and the time spent in MVPA decreased significantly over the course of the study. However, time spent in sedentary and light activities did not change over the course of the study, nor did daily step counts. Future

research is warranted to objectively measure PA in a larger sample of MPN patients, examine unique methods to improve PA behavior, and to identify if increased PA is efficacious for improving symptom burden in MPN patients.

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A043 6:00 PM-7:00 PM

DETERMINANTS OF MULTIPLE HEALTH BEHAVIOR CHANGE IN CANCER SURVIVORS WHO SMOKE

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Objective: This project investigated associations between determinants of health behavior change for smoking cessation and physical activity (PA) in cancer survivors. Improving our understanding of the relationships between common psychological determinants for different health behaviors may help improve intervention efficiency and effectiveness through multiple health behavior change. Methods: Participants included cancer survivors who were current smokers and had an initial assessment at the Tobacco Treatment Program at MD Anderson Cancer Center. Patients who had been abstinent for over six months (i.e., in “maintenance”) were excluded. Measures of self-efficacy and stage of change were administered for smoking cessation and PA. Results: Participants (n = 76) identified mostly as white (79%) and male (58%) with a variety of cancer diagnoses. For smoking cessation stage of change participants were mostly in contemplation (20%) or preparation (70%); none were in precontemplation and few were in action. For PA, participants showed a wide range of stage of change: precontemplation (9%), contemplation (21%), preparation (38%), action (15%) and maintenance (16%). A significant correlation was demonstrated between self-efficacy for smoking cessation and self-efficacy for PA ($r = .445$, $p = .002$). Stages of change for smoking cessation and PA were not related. The relationship between self-efficacy and stage of change for PA was significant [F(4,55) = 4.058, p =.006], but not for smoking cessation [F(2,52) = 1.399, p=.256]. Relationships for stage of change and self-efficacy across behaviors were non-significant. Conclusion: A significant relationship was found between self-efficacy for these two behaviors but not for stage of change. Furthermore, a relationship between these two determinants was evidenced for PA but not across behaviors. Survivors approaching smoking cessation may have generalized efficacy for health behavior change, but low motivation for changing more than one behavior at a time. Motivational interventions to capitalize on high levels of self-efficacy for both behaviors and influence stage of change might be applicable.

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A044 6:00 PM-7:00 PM

EXAMINING POSTTRAUMATIC GROWTH AS A PREDICTOR OF HEALTH-RELATED OUTCOMES IN PROSTATE CANCER SURVIVORS

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Background: Due to high incidence and survival rates of prostate cancer, survivors’ outcomes are important public health issues. Some men with prostate cancer experience positive psychological changes known as posttraumatic growth (PTG), which is posited to operate through psychophysiologic and behavioral pathways to ameliorate survivors’ health and well-being. However, scant research has tested outcomes of PTG, particularly those related to physical health. This study therefore examined PTG as a predictor of health and health behaviors in a sample of 168 prostate cancer survivors. Methods: On average, participants completed baseline measures at 6 months post-diagnosis and follow-up surveys at 5 years post-diagnosis. Demographic and medical covariates were obtained from self-report and medical records. Using the PTG Inventory-Short Form, participants indicated the extent of positive changes in 5 domains (relationships, spirituality, new possibilities, personal strength, appreciation for life) as a result of their prostate cancer. Physical activity was measured with 6 items that assess aerobic activity and strength training, allowing for calculation of weekly MET minutes. Fruit and vegetable consumption was measured with the NCI Food Frequency Questionnaire. Participants rated their general health from poor to excellent. Results: The sample included 58% White and 42% Black men; 99% were diagnosed with locally or regionally confined prostate cancer. Average levels of PTG were moderate (M=2.75). Health behaviors tended to decline over time, such that less than half the sample at 5 years post-diagnosis met activity and dietary guidelines for cancer survivors. In multiple regression analysis controlling for socioeconomic status and medical/health indicators (e.g., education, income, baseline health, Charlson comorbidity index), PTG (b=.12, p=.005) independently predicted prostate cancer survivors’ self-rated health at approximately 5 years post-diagnosis (total R^2=.41, change in R^2=.03, p=.005). PTG was not significantly related to physical activity or to fruit and vegetable consumption, nor did those health behaviors mediate the relationship between PTG and health. Conclusions: Among 5-year survivors of prostate cancer, PTG positively predicted self-rated health, above and beyond socioeconomic and medical indicators. Future studies should continue to examine outcomes related to PTG in diverse samples of cancer survivors, using objective measures when possible. In addition, interventions are needed to improve and sustain health behaviors among prostate cancer survivors, many of whom failed to meet recommended levels of physical activity and fruit and vegetable consumption.

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A045 6:00 PM-7:00 PM

A FORMATIVE EVALUATION STUDY OF AGENCY LEADERS WHO SERVE VULNERABLE POPULATIONS AS PART OF THE CALIFORNIA FIRST FIVE INITIATIVE

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Background: This pilot study aims to address health disparities research on chronic disease prevention in low-income Hispanic/Latino families with children under the age of five. Agency leaders were randomly selected from a larger list of health care agency directors and providers who are charged with delivering evidence-based prevention programs as part of the California First Five Initiative in counties that include a focus on vulnerable populations in urban and rural communities in Southern and Central California, respectively. The main objective was to learn about their ideas and experiences in an effort to determine how to best engage and keep such families enrolled in health programs. **Methods:** Two members of the research team conducted phone interviews from July–September 2016. One member facilitated the phone interviews, while another recorded the responses in separate, de-identified Word documents for qualitative analysis in ATLAS.ti. Interview questions sought to assess the perceived usefulness of 12 different health programs that are either already part of the California First Five Initiative or are being considered on a pilot basis. The response rate was 100% for all organizations interviewed. Both team members then analyzed key words and phrases in all interviews for each of the nine questions. In order to assess inter-rater reliability, kappa coefficients were computed across all participants (N=24) for each interview question. A score of 0.8 was used as a cutoff to demonstrate high agreement. The kappa coefficients for questions 1-9 ranged from 0.8042-1.0 with a total kappa coefficient of 0.9356. **Results:** 13/24 (54.2%) agency leaders were from rural communities, while 11/24 (45.8%) were associated with urban environments. **Conclusions:** Of the 12 health programs, these 5 garnered the most support: 14/24 (58.3%) endorsed working together in groups to improve access to health programs; 12/24 (50%) endorsed discussing family health needs at home with a promotora (i.e., a trained person from the community); 11/24 (45.8%) endorsed taking 10 minutes a day to do easy physical activity at home; 12/24 (50%) endorsed learning about ways to relax and reduce stress for mothers; and 13/24 (54.2%) endorsed assisting mothers with family weight management and infant eating. Increased implementation of such

health programs is likely to reduce health risk behaviors (e.g., sedentary behavior, low physical activity, and poor nutrition).

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A046 6:00 PM-7:00 PM

THE IMPACT OF CUMULATIVE RISK ON ASTHMA OUTCOMES IN CHILDREN AND ADOLESCENTS LIVING IN AN URBAN ENVIRONMENT

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Objective: Children and adolescents with asthma from low-income, urban families are more likely to experience high levels of stress, which can further compound their risk for poor asthma outcomes. A cumulative risk model may be a more accurate depiction of how risk factors impact health outcomes in that risk exposures do not occur in isolation. This ongoing study investigated the association between a cumulative risk model (comprised of poverty, caregiver stress, family functioning, child discrimination, neighborhood stress) and child asthma outcomes (quality of life [QOL], asthma control, functional severity, quick-relief medication use). This study also assessed whether the cumulative risk model was a stronger predictor of asthma outcomes than a single risk exposure.

Methods: Participants included 94 children/adolescents (64% male) with asthma 7-17 years of age (*M*=11.85 years, *SD*=2.86) and their primary caregivers (92% African American). Children and caregivers completed questionnaires at an initial research session.

Results: The cumulative risk model significantly predicted child QOL (R^2=.17, $F(1,93)$=18.54, $p < .001$),), asthma control (R^2=.09, $F(1,93)$=9.35, p=.003), functional severity (R^2=.06, $F(1,93)$=6.09, p=.015), and quick-relief medication use (R^2=.08, $F(1,93)$=7.95, p=.006). Higher cumulative risk indices were associated with worse asthma outcomes. Additionally, the cumulative risk model predicted QOL above and beyond any single risk factor. However, the cumulative risk index was not a stronger predictor than neighborhood stress when assessing functional severity, quick-relief medication, and asthma control. In addition, it was not a stronger predictor than poverty when assessing functional severity and quick-relief medication use.

Conclusions: Findings suggest that an accumulation of stress related to urban living may be associated with poorer QOL, worse asthma control, worse functional severity, and more quick-relief medication use in children and adolescents with asthma. Healthcare providers and clinicians may need to focus on family-based strategies that reduce the accumulation of stress

to improve child asthma outcomes. Future research is also needed to further examine the independent impact of neighborhood stress and poverty on asthma outcomes, as these factors were found to be most robust in associations with several asthma outcomes (e.g., functional severity, quick-relief medication use).

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A047 6:00 PM-7:00 PM

TRAJECTORIES OF WEIGHT FOR LENGTH GROWTH FOR INFANTS DURING THE FIRST YEAR OF LIFE

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Background: Childhood obesity is a major public health problem. Studies of patterns of child growth contributing to the development of obesity are scarce, particularly in infancy. Group-based trajectory analyses among infants are a novel procedure that may help characterize subgroups of infants with similar longitudinal growth profiles.

Objective: To identify trajectories of weight for length growth during the first year of life.

Methods: Subjects were singleton infants and their mothers (N=90 mother-infant pairs) who participated in the Pregnancy and Postpartum Observational Dietary Study. Women completed assessments throughout their infant's first year of life and included socio-demographic characteristics and feeding behaviors. Infant weight for length measures from birth to 12 months were abstracted from pediatric office records. Weight for length percentiles were calculated according to the World Health Organization guidelines for infants. Group-based trajectory analysis was done to identify subgroups of infants with similar growth profiles.

Results: Infants were from mother’s with average of 28 years (SD=5.2), 70.0% White, 60.0% high-school educated and 63.2% had two or more children. Over half of mothers introduced solid foods to their infants by 6 months of age (63.2%) and about one third self-reported breast feeding at 12 months post-partum (31.9%). Three growth trajectories were identified: a low and stable growth group (38.3%), a rapid growth group (35.0%) and a moderate growth group (26.7%). Maternal and feeding variables were all similar across the three infant growth trajectory groups (p>0.05).

Conclusion: Trajectory models suggested three patterns of infant growth. If replicated, future studies can help identify and subsequently target modifiable risk factors associated with rapid infant growth trajectories.

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A048 6:00 PM-7:00 PM

A QUANTITATIVE STUDY OF THE INTEGRATION OF YOGA IN NATURE

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A Quantitative Study of the Integration of Yoga in Nature

Objective: Current trends of ubiquitous technology use and significant immersion in artificial urban environments may be significantly impacting the health of individuals through a disconnection from both nature and the human body. As alternatives, this quantitative study examined the practice of yoga and immersion in nature settings as a means to facilitate greater physical, psychological, spiritual health, and embodiment.

Method: A pre and posttest design was conducted in a sample of adults recruited from the Silicon Valley, CA. The following measures were collected: Body Awareness Questionnaire (BAQ), Spiritual Well-Being Scale (SWBS), Quality of Life Questionnaire (QLQ), Exercise Induced Feeling Inventory (EFI), and blood pressure and salivary cortisol (both obtained once pre- and post-test). Participants were assigned to one of three groups that engaged in weekly 90 minute activities for six sessions over an 8-10 week period. The experimental group practiced yoga in a nature setting; the primary control group hiked in a designated nature area; and the secondary control group practiced yoga in an indoor facility. Repeated measures ANOVA and t-tests were used for analyses.

Results: A well-educated, racially diverse sample (2.3% African American; 27.3% Asian; 45.5% Caucasian; 11.4% Hispanic; 4.5% Middle Eastern; 2.2% Native American; 6.8% Other) of 44 participants (15 men; 29 women) enrolled. Within subject effects for EFI 1 scores for the sample as a whole emerged significant. EFI 6 emerged as significant within groups with higher mean scores for the Outdoor and Studio yoga group. Repeated measures analysis of variance (ANOVA; $p < .05$) of all self-report measures did not find significant effects for BAQ, SWBS, QLQ, cortisol, and blood pressure assessments. A paired t-test found only significant decreases in diastolic blood pressure effects for the full sample.

Conclusions: This study is the first to quantitatively explore potential differences between indoor and outdoor yoga and the embodied effects of yoga in an outdoor environment. Results support findings in previous research on overall physiological health benefits of exercise and exercise differentiation literature that shows the benefits of yoga over other exercise modalities.

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A049 6:00 PM-7:00 PM

AN EXPLORATION OF SHAME, SPIRITUAL PRACTICES, AND COMPASSION IN A COMMUNITY-BASED GROUP

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Psychological research has explored the maladaptive role of shame in contributing to poor self-image, impaired relationships, and psychopathology. Compassion-focused individual and group therapy has demonstrated effectiveness in repairing shame through increasing self-acceptance and empathy. Culturally-tailored group interventions, which may include spiritual practices, may help to mitigate the effects of maladaptive responses to shame, particularly within communities that have experienced societal fragmentation. The present study explored how engaging in spiritual practices within a community-based group may be related to transformation and the alleviation of shame. Semi-structured interviews were conducted with 16 members of "The Family: People Helping People," a Bahamas-based group resocialization program. Thematic analysis of data was conducted using Interpretive Phenomenological Analysis and themes were coded with NVivo 11 software. A total of 54 themes were identified and cluster analyses were conducted to assess relationships between themes based on word similarity. Participants noted that prayer enhanced their group experience and helped to foster group cohesion and an environment of increased compassion for others. In addition, group-related factors (particularly interpersonal elements such as connectedness to group and learning from or teaching other members) were prominent in participants' description of transformation and decreased shame. Compassion for others was significantly more prevalent than self-compassion; this finding may reflect the unique characteristics of the cultural context. Research findings indicate that culturally congruent spiritual practices, including prayer and musical expression, may contribute to restoring healthy intrapersonal and interpersonal functioning. This research offers support for a holistic approach to addressing shame that incorporates psychological, social, and spiritual dimensions.

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A050 6:00 PM-7:00 PM

ASSESSING THE KENTUCKY INVENTORY MINDFULNESS SCALE: A COST EFFECTIVE TOOL FOR HOSPITALS?

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According to the Centers for Disease Control and Prevention (2012), 117 million people suffer from chronic health conditions and one of four individuals has two or more conditions. These conditions are common and most importantly preventable; they include heart disease, diabetes, obesity, stroke, and arthritis. Several treatments are available for theses illness but such treatments can be a financial burden for the patients. In 2010, approximately 90% of health care spending was allocated to individuals with more than one chronic illness.

Mindfulness may be defined as a psychological state of awareness of experience without judgement. Research has demonstrated several benefits to mindfulness, such as reducing rumination (Chambers et al., 2008), reducing stress (Hoffman et al., 2010), improving working memory (Jha et al., 2010), and reducing emotional reactivity (Orthner et al., 2007). The literature has established several benefits; however, limited research has been conducted on patients in a hospital setting. According to Johansson et al. (2012), a mindfulness base stress reduction treatment significantly improved self-report for mental fatigue on neuropsychological tests in patients who suffer from mental fatigue after a stroke or traumatic brain injury. Furthermore, Tsafou et al. (2016) reported satisfaction as a mediator on the effect of mindfulness on physical activity.

The present study investigated the psychometric properties of the Kentucky Inventory Mindfulness Skills (KIMS) scale by Baer, Smith, & Allen, 2004 from an online sample (N=601). A Principal Component factor analysis was conducted and indicated multidimensionality with 7 factors. Cronbach's Alpha coefficient was .789 and Spearman-Brown coefficient of .794, indicating good reliability. A chi-square test of goodness-of-fit was performed to determine whether there is a difference between the distributions χ^2 (458, N=601)=785.091, p=.000. The average age of participants was 38.64 (*SD*= 15.329).

Given the lack of research of mindfulness in clinical settings, one crucial future direction is to assess the psychometric properties of the scale for hospital setting patients. The KIMS may serve as a potential cost effective tool for health care providers as a measure of mindfulness strategies in patients; more specifically, such identification may facilitate the development of specific mindfulness techniques to reduce negative patient health outcomes.

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A051 6:00 PM-7:00 PM

BODY-MIND-SPIRIT GROUP THERAPY FOR CHINESE MEDICINE STAGNATION SYNDROME - RCT WITH SELF-REPORT AND PHYSIOLOGICAL MEASURES

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Chinese medicine diagnosis stagnation syndrome is characterized by mind-body obstruction-like symptoms such as repressed emotions, feeling stomach clogged, something obstructing throat and heavy head. Its emphasis on somatic symptoms makes it a socially legitimate health condition for adults in distress to seek help. Stagnation syndrome is common, with a point-prevalence at 6.2% revealed in our epidemiological study. Our previous studies have also operationalized stagnation as a construct useful to all mental health practitioners, and piloted a 6-session group therapy for stagnation syndrome grounded on a body-mind-spirit intervention model. The current randomized controlled trial aims to further rigorously evaluate the efficacy of the manualized intervention. Totally 126 participants were recruited and randomly assigned to either treatment or control group. Outcomes were measured at pre, post and 2 months after intervention, and evaluated by self-report scales and salivary cortisol level. Repeated measures ANOVA revealed significant superiority of treatment over control groups in self-report measures and mean cortisol level, mostly at moderate effect size. Regarding diurnal slope of cortisol level, changes were nonsignificant. The findings provide evidence supporting the efficacy of the body-mind-spirit group therapy, which actualizes the holistic tradition of Chinese medicine in modern health practice. Evaluating the stagnation concept and group intervention in other cultures is worth pursuing.

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A052 6:00 PM-7:00 PM

DIVERSE WOMEN'S PERSPECTIVES ON MIND-BODY PRACTICES THROUGHOUT PREGNANCY AND BEYOND

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Background: Unmanaged perinatal stress poses public health concerns for maternal, child, and family health. Pregnant and postpartum women who experience high levels of psychosocial stress are at risk of substance use, poor spousal relationships, suicidality, poor maternal-fetal/child attachment, and poor maternal self-efficacy. The prevalence and long-term negative effects of stress on the well-being of the mother, fetus, and child during the perinatal continuum underscores its importance as a public health problem. Because maternal stress and the associated negative symptoms of depression and anxiety are potentially modifiable, addressing maternal stress during this critical time may signify one of the most feasible strategies for improving the health and well-being of women, infants, and children. Mind-body interventions are often used for managing stress and depressive symptoms in pregnant women.

Purpose/Methods: The purpose of this presentation is to report recent research about diverse women's interest and participation in mind-body interventions for stress and depression in the perinatal period. Focus groups and interviews with pregnant and postpartum women were conducted to evaluate the feasibility and acceptability of mind-body practices, such as guided imagery (GI) and yoga, for stress and depressive symptom management during pregnancy and in the postpartum period.

Results: Black, White, and Hispanic women who participated in the interviews and focus groups (n=25) reported that stress and depressive symptoms are pervasive in their lives and in their community and consistently expressed a strong interest in mind-body practices. Women who participated in GI (n=15) reported less stress and anxiety with increased feelings of calmness, peace, and sense of coping. Women who participated in yoga (n=12) as an aspect of group prenatal care expressed great satisfaction with the ease of access and the community-support involved in the prenatal yoga sessions.

Conclusions: This study suggests that diverse women experience significant levels of stress, anxiety, and depressive symptoms during their pregnancies and that a mind-body intervention may be helpful for coping with stress and minimizing its negative effects. These

findings are relevant to healthcare providers and researchers who should continue to focus on the unique needs of pregnant women, particularly when designing prevention and intervention strategies regarding stress and depressive symptoms.

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A053 6:00 PM-7:00 PM

EXPLORING THE RELATIONSHIP BETWEEN SELF-ESTEEM AND SPIRITUALITY IN PATIENTS WITH EATING DISORDERS

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Studies have shown that there is a relationship between spirituality and positive health outcomes for people with eating disorders (EDs). Low self-esteem is one of several risk factors for EDs. For ED patients, the relationship between self-esteem and spirituality is not well understood. The present study sought to examine the relationships among self-esteem, spirituality, and disordered eating. Drawing from a parent study of 390 participants, qualitative responses from a subsample of 150 adult and adolescent patients who were treated for an ED at various treatment centers in either residential, partial, or intensive outpatient programs were examined. Patients responded to two open-ended qualitative questions about identity and future orientation. Interpretive phenomenological analysis (IPA) was utilized to identify themes from both questions taken at admission and discharge. NVivo11, a qualitative analysis software, was used to conduct cluster analyses. A dendrogram is a type of cluster analysis where themes that are similar based on word usage are clustered together on the same branch and those that are different are further apart. Self-esteem themes included low self-worth and a strong sense of self. Spirituality themes included religious comfort and religious strain. Eating disorder themes included recovery/health and symptom/problem focused. Themes associated with religious strain were related to low self-worth and symptom/problem focused while themes associated with religious comfort were related to recovery/health. These findings suggest that patients who described their relationship with God in a negative way seemed to focus more on their eating disorder diagnosis and had a negative view of themselves. Those who described their relationship with God or a higher being in a positive way tended to have a more positive outlook on life. An unexpected finding was the shared similarity between strong sense of self and low self-worth. Responses that were coded as indicating a strong sense of self captured the more positive aspects of self-esteem as well as a strong sense of identity. It is possible that the themes were similar since they both pertain to how patients see themselves (e.g., positive, negative, or neutral). These findings shed light on how one’s relationship with a higher being may be associated with self-esteem and disordered eating.

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A054 6:00 PM-7:00 PM

GENDER REPRESENTATION OF MINDFULNESS BASED CLINICAL TRIALS

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Mindfulness-based treatments for psychological disorders and health issues have become mainstream. Studies have confirmed the efficacy of treatments for a wide array of disorders; however, it’s unclear if these treatments work as well in males as they do in females. According to the Evidence Based Practice in Psychology model, it’s important to have support for the use of a treatment in the population you plan to treat. In order to understand how well males have been represented in the mindfulness based literature, we conducted a systematic review of the published randomized clinical trials testing either Mindfulness-Based Stress Reduction (MBSR) or Mindfulness-Based Cognitive Therapy (MBCT). We reviewed 120 articles (*M* number of participants per article = 87.72, *S.D.* = 75.08). MBCT was used in 68 (56.6%), MBSR was utilized in 51 of the articles (42.5%), and one article utilized both types of interventions (0.9%). Of the 10,526 total participants, males accounted for less than a third and only 35% of the articles made it clear that they included ethnic minority participants. These findings suggest that studies which focus on mindfulness based interventions among males is needed to ascertain the efficacy of these interventions in this group.

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A055 6:00 PM-7:00 PM

HIGH FAITH VS. NO FAITH: MORE EVIDENCE OF A CURVILINEAR RELATIONSHIP BETWEEN RELIGIOSITY AND HEALTH

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Although positive linear associations between religiosity and physical health have frequently been found in previous research, our recent work with younger adults suggests that these two variables may be better characterized as being related in a curvilinear fashion. To assess whether curvilinearity is present in older adults, a sample of residents (mean age=85, *sd*=5.4, *n*=113) from a retirement community in a large Midwestern city were recruited to take part in a cross-sectional survey study. Health was assessed through self-report measures used in prior work, including: 1) a current symptom count, 2) a comorbidity count, 3) a single, Likert type item assessing general health, 4) a single item assessing pain, and 5) a single item assessing fatigue. Religiosity was assessed using a modified version of Hoge's (1972) religious commitment scale, a validated measure of intrinsic religiosity. As predicted, curvilinear relationships were found across most of the individual measures of health. When individual measures were combined into a global measure of health (Cronbach's alpha = .81), a significant curvilinear relationship was again found ($p = .005$, $R^2=.09$), such that the most religious and the most secular reported the highest levels of health. To investigate this relationship further, participants were categorized into five groups by level of religiosity. A repeated measures ANOVA, with health measure as the repeated factor, indicated marginally significant differences across the groups ($p < .08$): highly religiously committed individuals tended to show the best health (i.e., fewer symptoms, better self-rated health, etc.), and health declined as commitment decreased. However, this downward trend was broken by individuals who were not at all committed (i.e., secularly oriented individuals), who reported relatively high levels of physical health that most closely approximated those of the moderately religiously committed. This curvilinear relation between health and religiosity may have been missed in the past because analyses assuming linearity have generally been employed in this context. However, across all groups, the most highly religious still appear to enjoy the highest levels of physical health.

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A056 6:00 PM-7:00 PM

IMPLEMENTATION OF AN INTEGRATIVE CARE CENTER IN AN NCI DESIGNATED ACADEMIC CANCER CENTER

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Purpose: Oncology patients and survivors report increased use and interest in integrative practices, including meditation, diet, yoga, and more. Research supports the use of integrative practices as complementary to conventional medicine for the improvement of physical and psychological symptoms for patients with cancer. However, the implementation of an Integrative Health Program in an academic and NCI designated Cancer Center within a safety net hospital is not without challenges. Therefore, we will document the processes implemented and challenges encountered over the past two years, and discuss future directions as we work to develop an integrative health program in our NCI designated Cancer Center.

Methods: An Integrative Health committee was created within the NCI designated Cancer Center comprised of an interdisciplinary team of healthcare providers, administrators, and professional practitioners trained in integrative practices. Over the past two years, the steps to meet the aims for program initiation included development of a conceptual framework, research initiatives, resource management, and the conduction of a SWOT (strengths, weaknesses, opportunities, threats) analysis and a needs assessment of both patients/survivors and health care providers.

Results: Results from monthly meetings and subgroup initiatives of the Integrative Health committee are discussed including the four pillars identified in the mission statement (Cancer Rehabilitation, Mind/Body, Psychosocial, Nutrition), program development, creation of a business plan to address challenges specific to our cancer center, and future directions based on the results of our needs assessments.

Conclusion: Discussion of the early development of an Integrative Health Program will include resource discovery, creation of a mission statement and conceptual framework, interpretation

of the SWOT analysis and needs assessments, and marketing development. Important lessons for future directions include the need for interdisciplinary and interdepartmental collaboration, patient-centered care, informed providers, and a well-developed business plan. Successes, challenges, and specific plans for the future are discussed within the context of an NCI designated Cancer Center in a safety net hospital.

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A057 6:00 PM-7:00 PM

RELIGION, PHYSICAL ACTIVITY, AND FAT INTAKE

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A substantial body of literature has documented religion's association with health, and health behaviors have been hypothesized as a sizeable mediator in the religion-health relationship. Few studies have examined the potential role of physical activity and nutrition in religion's association with health over time. Also, a limited number of studies have examined religion's relationship with health behaviors in underserved populations.

Secondary data analyses using a preexisting data set were conducted to explore associations between religion, physical activity, and fat-intake among African American adults. The data set (n=26) was from a single-group pre-posttest study that examined the feasibility of an evidence-based, 16-week behavioral weight loss intervention. Total physical activity (Paffenbarger), recreational physical activity (Paffenbarger), fat-intake (NCI Quick Food Scan), religious attendance, private religiosity, daily spiritual experiences, religious social support, religious coping, perceived sacredness of the body, religious locus of control, and demographics were assessed at baseline and 16-week follow-up. Linear regression analyses were used to explore the relationships between religion, physical activity and fat intake after controlling for demographic variables (gender, age, employment, marital status, education, and income) and BMI.

At baseline, there was a statistical trend between anticipated religious support and higher total physical activity (adjusted β =7.7, SE=3.5; $p < .10$), negative religious coping and higher fat intake (adjusted β=2.6, SE=1.3; $p < .10$), and private religious activity and lower fat intake (adjusted β=-7.7, SE=4.0; $p < .10$). Positive religious coping at baseline (adjusted β=7.2, SE=1.7; $p < .05$), God locus of control at baseline (adjusted β=2.0, SE=0.50; $p < .05$), and church attendance at baseline (adjusted β=26.4, SE=1.8; $p < .05$) were each significantly associated with greater total physical activity from baseline to 16-week follow-up. Positive religious coping at baseline (adjusted β=4.4, SE=6.6; $p < .05$), religious social support given at baseline (adjusted β=5.2, SE=0.82; $p < .05$), and church attendance at baseline (adjusted β=13.3, SE=3.1; $p < .05$) were each significantly associated with greater recreational physical activity from baseline to 16-week follow-up.

Religion may be involved in shaping physical activity among African Americans attempting to lose weight.

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A058 6:00 PM-7:00 PM

THE EFFECTS OF YOGA ON ADULTS WITH TYPE II DIABETES: A SYSTEMATIC REVIEW

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Objective: The purpose of this systematic review was to examine the effects of yoga for glycemic control among adults with type II diabetes.

Methods: Comprehensive electronic databases searches located 2,556 unique studies with relevant key terms; of these, 21 studies met inclusion criteria. Studies were included if they a) evaluated a yoga intervention to promote type II diabetes management, b) used an objective measure to assess glycemic control at post-intervention, and c) were available through December 2015. Studies were excluded if yoga was not the primary intervention focus (e.g., if yoga was part of a mindfulness-based intervention). Independent raters coded participant, design and methodological characteristics and intervention content. Within- and between-group changes in glycemic control were assessed.

Results: Studies were published between 1992 and 2015; samples included 2,402 participants (*M* age = 54 years; 43% women). Most studies (17) were conducted in India; 2 were conducted in England, 1 in Cuba, and 1 in Iran. Treatment as usual was the most common (15) control condition; 3 studies used a diabetes education and 3 used an exercise comparison condition. Interventions were typically conducted over a median of 50 sessions; mean duration of intervention was 11 weeks. Only five studies reported the style of yoga used in the intervention (3, Hatha Yoga; 2, Iyengar). Within-group glycemic control improved at post-intervention among participants exposed to the yoga intervention but between-group findings compared to comparison group were mixed. Overall, studies satisfied an average of 42% of the methodological quality criteria indicating poor to moderate quality.

Conclusion: Yoga improved glycemic control in adults with type II diabetes from pre- to post-intervention but the findings were mixed when yoga was compared to a control condition.

Future studies using more rigorous designs with detailed reporting of methodology are needed to determine the potential benefit of yoga for adults with type II diabetes.

Learning Objectives:
1) Describe the efficacy of yoga interventions for improving glycemic control for type II diabetes.
2) Identify the gaps in research on the use of yoga for adults living with type II diabetes.

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A059 6:00 PM-7:00 PM

USE OF TRADITIONAL MEDICINES TO COPE WITH CLIMATE-SENSITIVE DISEASES IN A RESOURCE POOR SETTING IN BANGLADESH

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Background
This study aims to explore the use of traditional medicines to cope with climate sensitive diseases in areas vulnerable to climate change. We assessed the extent to which traditional or alternative medicines were used for the treatment of the climate sensitive diseases by villagers as part of their health-coping strategies.

Methods
The study deployed a mixed-method research design to know the health-coping strategies of the people in a resource-poor setting.

A cross sectional study was conducted from September 2010 to March 2011 among 450 households selected randomly in the districts of Rajshahi and Khulna, Bangladesh. The elder males or females of each household were interviewed. For qualitative methods, twelve focus group discussions (six with females and six with males) and fifteen key informant interviews were conducted by the research team, using interview guidelines on the use of traditional medicine.

Results
Univariate analysis showed that the use of traditional medicines has increased among community members of all socio-economic and demographic backgrounds. Due to the increased incidence of disease and sickness respondents had to increase the use of their cultural means to cope with adverse health situations.

Conclusions
A systematic collection of knowledge on the use of traditional medicines to cope with climate-sensitive diseases can help the adaptation of communities vulnerable to climate change. In addition it can be instrumental in creating a directory of traditional medicine components used for specific diseases and highlight the effectiveness and relevance of traditional medicines as health-coping strategies. This may be useful for policymakers, researchers, and development partners to adapt existing health care policy in resource-limited contexts. It may also encourage WHO, national and international institutions, such as pharmaceutical

companies, to carry out research investigating the effectiveness of these traditional medicines and integrate them with modern medicine. Overall, it could increase the health coping capacity of people in a resource-poor setting and contribute to their adaptation capabilities.

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A060 6:00 PM-7:00 PM

ASSESSING COMMUNITY MEMBERS' PREFERENCES OF A FAMILY-BASED DIABETES PREVENTION PROGRAM IN RURAL ALABAMA

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INTRODUCTION: Developing strategies to engage all family members in a lifestyle management program may be a promising strategy to improve the health of families living in rural underserved communities in Alabama.

OBJECTIVES: The aim of this study was to better understand barriers and facilitators in engaging the entire family in a family-centered diabetes prevention program.

METHODS: Five focus groups were held in 2016 in a rural, southern Alabama community with community members who had diabetes or cared for a family member with diabetes. Of the 58 focus group participants, 50 were women, 41 were over the age of 50, 53 had graduated from college or high school, and 16 worked full or part time. Participants were asked to discuss their current beliefs about diabetes and obesity and ideas on how to involve all family members in lifestyle changes. Focus group findings were analyzed by two coders using open coding.

RESULTS: Several themes emerged indicating family centered programs would be feasible and acceptable including: high levels of family cohesion, health information shared among family units and neighbors, and the desire for acquiring health knowledge and skills necessary for healthy lifestyles as a family unit. Potential barriers included the limited availability of community level resources, busy schedules, and multiple competing demands. Individual level barriers included stress and chronic pain in some family members.

CONCLUSIONS: With multiple generations living close by and a strong sense of family, a family based intervention would be relevant and feasible in this community. However, several barriers will need to be considered in order to achieve a culturally relevant lifestyle intervention applicable to the whole family.

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A061 6:00 PM-7:00 PM

LINKS OF COMMUNAL COPING TO MOOD AND SELF-CARE BEHAVIOR IN TYPE 2 DIABETES: A DAILY DIARY STUDY

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Communal coping in the context of couples coping with chronic illness reflects the extent to which the illness is perceived as a shared problem and couples collaborate to manage the illness. We sought to determine how communal coping is related to adjustment to chronic illness in terms of daily mood and daily self-care behaviors. We conducted a daily diary study of 125 couples in which one person was recently diagnosed with type 2 diabetes (< 3 years). Patients were 59% white, 55% male, with a mean age of 54 years. Patients and partners completed questionnaires separately at the end of each day for 14 days, with an average completion rate of 10 days. Days were nested within individuals, and within-person communal coping and between-person communal coping values were created so that the between subject variance could be statistically controlled in all analyses. Therefore, within-person communal coping on any given day reflects the amount that an individual deviates from his or her average level of communal coping. Patient daily communal coping was related to higher levels of happiness ($\beta = .12$), lower levels of anger ($\beta = -.16$), higher levels of dietary adherence ($\beta = .27$), and higher levels of medication adherence ($\beta = .41$; all p's $< .05$) for patients. Partner communal coping was also related to patient outcomes, specifically higher patient happiness ($\beta = .10$), dietary adherence ($\beta = .10$), and medication adherence ($\beta = .38$; all p's $< .05$). When patient and partner communal coping were entered into the same equation to predict patient outcomes, patient communal coping emerged as the stronger and more robust predictor. Partner communal coping was related to their own mood – higher happiness ($\beta = .21$), lower anger ($\beta = -.15$), and lower depressed mood ($\beta = -.13$; all p's $< .05$). These results suggest that communal coping on a daily basis is linked to enhanced mood among both patients and partners as well as better patient self-care behaviors.

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A062 6:00 PM-7:00 PM

A COMPREHENSIVE PATIENT NAVIGATOR PROGRAM FOR DIABETES PATIENTS LIVING IN RURAL APPALACHIA

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In the Appalachian region of rural southeastern Ohio, diabetes rates are 30%-40% higher than the national averages. Thus, strategies that complement standard medical interventions are critically important to mitigate the risk of complications and reduce the economic burden of the disease. The Comprehensive Patient Navigation Program for Rural Appalachia is designed to improve health outcomes (e.g., glycemic and blood pressure control; reduced depression, distress) and lower health care expenditures (e.g., reduced admissions, readmissions, and emergency department utilization) for individuals with type 2 diabetes through the development and coordinated implementation of a Diabetes Patient Navigator and Medical Legal Partnership (MLP). To date, 35 patients (mean age=60±13 years, A1C=8.9±2.4%, 61% female, 100% white) have received navigation and/or MLP services. Qualitative interviews and baseline surveys revealed the following diabetes management barriers: mental health issues, food insecurity, lack of insurance coverage, unemployment and/or disability, limited or no transportation, housing issues, limited finances, and other legal issues (e.g., custody rights, divorce). Navigation and MLP services have resulted in increases in insurance coverage (n=13), Social Security Extra Help (n=9), food stamps (n=7), reduced hospital bills (n=6), permanent or temporary housing (n=5), diabetes supplies at no cost (n=5), and utility repairs (n=5). Only two patients were hospitalized at follow-up and no patients utilized the emergency department. Eleven patients demonstrated improvements in diabetes self-care at 6-month follow-up; A1C values are currently being collected. Preliminary findings suggest that diabetes patients living in rural southeastern Ohio benefit from a combination of patient navigation and legal services.

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A063 6:00 PM-7:00 PM

¿LISTOS CON LISTAS? EVALUATING WHETHER SPANISH-SPEAKING PATIENTS WHO BRING A LIST A QUESTIONS FOR THE DOCTOR GET THEM ANSWERED.

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Type 2 diabetes negatively impacts the underserved low-income Hispanic community, giving rise to inadequate guidance for the proper plan of care due to ineffective communication. The disconnect between patients and their physicians may lead to medication non-adherence and poor health outcomes. A proposed solution to improve physician-patient communication is to prepare patients with a set of questions to ask during their visit. Bringing a list of questions to medical visits could facilitate communication between the physician and patient. For this study, community health workers (CHW) assisted patients in determining three questions to bring for their medical visit. The patients then wrote a list of important questions they wanted to discuss with their physician. The medical visit was audio recorded from the entrance of the physician until the encounter was completed. The recordings were then transcribed and coded by selected audio-coders. Data from the audio recordings were analyzed and compared to determine if the patients asked their questions and if the physician answered them. The data indicated that in 49.1% of visits physicians made reference to or read questions from the patient's question list. Overall, 57 recordings were audio coded with an average of 2.7+0.6 questions written down, out of those, an average of 2.3+0.8 questions were asked by patients and an average of 2.2+0.9 questions answered by the physician. A total of 64.9% (37 of 57) of patients asked all of the questions from their list, and all questions asked by the patient were answered by the physician in 82.5% of (47 of 57) visits. The results from this study suggest that preparing lists of questions prior to a doctor visit may be helpful to promote discussion of important health topics, but that many questions from the lists are never discussed with the doctor. Further research must be conducted to identify strategies to improve communication about these issues.

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A064 6:00 PM-7:00 PM

ASSOCIATION BETWEEN WEIGHT LOSS OUTCOMES AND PERCEIVED RISK OF TYPE 2 DIABETES AMONG PERSONS WITH PREDIABETES

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Theories such as the Health Behavior Model posit that perceived risk and perceived severity of health conditions are related to actual health behaviors. Previous studies have shown mixed results regarding perceived risk and health behaviors. Among chronic conditions, a previous study indicated diabetes is perceived to be less severe than conditions such as heart disease, breast cancer, and stroke. Another study found that those with higher perceived risk of diabetes were not more likely to intend to make healthy lifestyle changes. This study examines whether perceived diabetes risk is associated with weight loss after participating in a lifestyle management program.

Eligible Veterans with prediabetes were randomly selected into one of three arms of a pragmatic trial: in-person diabetes prevention program (DPP), online DPP, and a usual care weight management program (MOVE!). All three arms encouraged patients to lose weight, since this can reduce diabetes risk. The analytic sample included consented patients who completed baseline questionnaires and had 12-month weight outcomes available (either through clinical data sources or wireless scales). Participants rated perceived risk (chances of developing type 2 diabetes in their lifetime) and perceived severity (how much diabetes would affect their life if they were diagnosed) on Likert scales. Multiple linear regression analyses assessed the association between 12-month weight change and perceived risk and perceived severity, separately, controlling for sex, age, study arm, race/ethnicity, and baseline body mass index.

Survey respondents (n=376) had been diagnosed with prediabetes; the perceived risk of developing type 2 diabetes was fairly evenly distributed from low to high although perceived severity skewed towards high. There was no association between perceived risk or perceived severity and 12-month weight change, after controlling for covariates. This lack of association suggests that perceived risk and perceived severity of diabetes may not be sufficient to motivate weight loss to prevent diabetes.

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A065 6:00 PM-7:00 PM

CHALLENGES OF RECRUITING PARTICIPANTS WITH A HEALED DIABETIC FOOT ULCER: THE STEP UP TO AVERT AMPUTATION IN DIABETES TRIAL

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Objectives: Lower extremity amputation (LEA) is a devastating complication of diabetes with a mortality rate exceeding that of most cancers. LEA is preceded by foot ulcers in >80% of cases. We examined the challenges to enrolling participants in the context of a clinical trial to avert ulcer recurrence.

Methods: We identified patients with diabetes and a healed diabetic foot ulcer (DFU) through an electronic medical record search for patients with ICD-9 codes for diabetes and DFU. The previously healed DFU was confirmed through medical record review. Interested patients provided informed consent and underwent a formal screening. Descriptive statistics (numbers and proportions) illustrate our success in enrolling patients and provide reasons why patients were ineligible or not enrolled.

Results: From August 2015 to September 2016, we identified 334 patients from an electronic search and medical record review. Of these patients, 133 (41%) met ineligibility criteria such as: a current or recent DFU (n=42), an inability to ambulate without assistance (n=21), not currently taking medication for diabetes mellitus (n=10), lower extremity amputation (n=4), recent hospitalization or surgery (n=12), and other comorbidities such as cancer (n=6) and end-stage renal disease (n=2). Among the 201 eligible patients, 55 (27%) were enrolled. Common reasons for non-enrollment among the remaining patients (n=146)

include: temporarily not having the time to be screened (n=18, 12%), ineligibility after providing consent (n=17, 12%), hesitancy in committing to a long-term study (n=14, 10%), commitment to managing serious coexisting health conditions (n=14, 10%), not being interested in education (n=7, 5%), denial of DFU history (n=3, 2%), hesitancy due to unfavorable experiences with the hospital in the past (n=2, 1%), and travel concerns (n=2, 1%).

Conclusions: There are several challenges to recruiting patients with a previous foot ulcer. Most significantly, the electronic search identifies only a small number of patients and a large fraction of these patients have either a non-healed DFU or other serious coexisting conditions that lead to ineligibility. To improve recruitment and generalizability, recruitment strategies should consider developing a better electronic search, dedicating staff to reaching patients, enrolling participants with limited mobility, incorporating patients who are not taking medications, and motivating patients to participate in clinical trials.

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A066 6:00 PM-7:00 PM

COGNITIVE AND BEHAVIORAL PREDICTORS OF SOCIAL RESILIENCE AMONG ADOLESCENTS WITH TYPE 1 DIABETES (T1D)

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Social resilience, including a sense of relatedness and the ability to use relationships to buffer against stress, is associated with T1D management behaviors and health outcomes. However, little is known about the core components of social resilience in adolescents with T1D and what may be modifiable cognitive and behavioral intervention targets. Addressing this gap will inform intervention strategies to improve health outcomes given nearly 75% of adolescents with T1D do not meet treatment targets for glycemic control. Guided by cognitive theory, the current study examined these associations longitudinally and tested a hypothesized mediator. It was hypothesized that cognitive and behavioral skills (i.e., greater positive problem-solving (PS) and lower negative PS skills) would predict fewer maladaptive cognitions, which in turn would predict greater social resilience. Adolescents with T1D (n=264, mean age=15.7, 59.8% female, 65.5% non-Hispanic white, 70.1% on insulin pump, mean T1D duration=6.9 years) participating in a clinical trial were assessed 4 times across 1 year. Participants completed questionnaires to assess positive and negative PS skills, maladaptive cognitions, social resilience, diabetes self-care, and glycemic control. Mediation effects were tested using 2 time-lagged autoregressive path models, one for each PS skill controlling for intervention assignment, age, diabetes duration, gender, race, and family income. For negative PS, model fit was adequate (RMSEA=0.07; CFI=0.92) and the hypothesized mediation effect was found (CI did not contain 0): over time, greater negative PS skills predicted more maladaptive cognitions, which in turn led to reduced social resilience. Social resilience in this sample was significantly correlated with diabetes self-care and glycemic control ($ps < 0.05$). Effects did not differ between intervention groups. In contrast, the positive PS model showed poor fit and no mediation effect. Findings suggest that factors targeted in cognitive-behavioral treatments, especially negative PS and maladaptive cognitions, impact social resilience and may be important to consider in interventions that ultimately impact diabetes self-care and glycemic control.

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A067 6:00 PM-7:00 PM

CULTURAL ADAPTATION OF DIABETES SELF-MANAGEMENT EDUCATION FOR U.S. RESIDING MARSHALLESE

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Type 2 diabetes is a significant public health problem, with U.S. Pacific Islander communities bearing a disproportionate burden. In one Pacific Islander community—the Marshallese—the stark disparities in type 2 diabetes outcomes are due in part to the US Nuclear Testing Program that tested a payload equivalent to 7200 Hiroshima-sized bombs in the Republic of Marshall Islands (RMI), which displaced over 12,000 RMI residents to Arkansas, the home of the largest population of Marshallese in the U.S. Among Arkansas residing Marshallese, rates of diabetes are ~32% compared to 8% of the general US population.

Despite the appalling health inequities between Marshallese and the general U.S. population, research with Marshallese has been limited because of data aggregation of Marshallese and other Pacific Islander groups with Asian Americans, resulting in Marshallese and other Pacific Islanders groups an “invisible” population within an already understudied minority.

Given the weak body of evidence to guide service planning in managing type 2 diabetes among Marshallese, we used a community-based participatory research approach to adapt an evidence-based diabetes self- management education (DSME) intervention for Marshallese. We began the DSME curriculum adaptation by reviewing the results of previously conducted focus groups (n=41) and pilot studies regarding Marshallese’s diabetes beliefs and behaviors. We combined this previously collected formative data with a literature review to create a curriculum, which was reviewed using an iterative process with community and academic experts.

Specific cultural components were recommended for adapting the seven key components of the DSME curriculum. Cultural considerations included the dichotomous vs.

gradient conceptualization of ideas, the importance of engaging the entire family, the use of nature analogies, the role of spirituality, the value of ‘pacific natural’ medicine, and a collectivistic orientation. These identified key cultural considerations can help inform others’ work in type 2 diabetes with Marshallese communities.

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A068 6:00 PM-7:00 PM

DECONSTRUCTING ANXIETY AND POSTTRAUMATIC STRESS AMONG ADULTS WITH TYPE1 DIABETES

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Posttraumatic stress symptoms (PTS) have been reported among adults with type1 diabetes (T1D), both related to experiences with hypoglycemia and with hyperglycemia, but studies have not simultaneously assessed these two phenomena within the same populations. This study investigated PTS related to 1) hypoglycemia, 2) hyperglycemia, and 3) T1D diagnosis among 241 adults with T1D (Age 18-79, Mean=36.9, SD=12.5; 79% women; 84% Caucasian). Exploratory Factor Analyses identified a 2-factor structure on the posttraumatic diagnostic scale (PDS) for hyperglycemia experiences (Triggered T1D-specific Anxiety/Active Avoidance [T-sAAA], Numbing/General Reactivity), and a 3-factor structure for hypoglycemia experiences (T-sAAA, Numbing/General Reactivity, hypervigilance). Using only the scores for the T-sAAA for hypoglycemia and hyperglycemia, and for general T1D, a cluster analysis identified a three-cluster solution (High PTS scores on all 3 [HiAll], Low PTS scores on all 3 [LoAll], High Pts regarding hypoglycemia, but low for hyperglycemia and T1D [PTShypo], and high PTS for hyperglycemia and T1D, low for hypoglycemia [PTShyper]). MANOVA were run to test for differences between these cluster groups on self-management and T1D outcomes, finding significant differences for HbA1c ($F(3)=9.57, p < .001$), total T1D complications ($F(3)=3.63$, $p < .014$), Severity of hypoglycemic episodes during previous month ($F(3)=11.51$, $p < .001$), and Self Care Inventory scores ($F(3)=3.28$, $p < .022$). The LoAll cluster showed best scores on these variables, with the HiAll group showing worst glycemic control and poorest outcomes. While the PTShypo cluster showed significantly lower HbA1c, total T1D Complications, less severe hypoglycemia, and better self-management behavior than the HiAll cluster, the PTShyper cluster was not significantly lower than the HiAll cluster for total complications or higher on SCI score. The PTShypo cluster did not differ significantly from the LoAll cluster. A Cluster Analysis to examine sub-samples of cases with different patterns of HbA1c, #hypoglycemia, Severity of hypoglycemia, and T1D Complications identified 3 clusters with different patterns of these outcomes, and PTShyper versus PTShypo clusters showed a significant chi-squared for their representation in these outcome clusters (Chi-Square=7.83, $p < .02$). Clinical implications of identifying cases with these distinct patterns of diabetes-specific anxiety are interpreted from the patterns in their diabetes self-management and glycemic control.

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A069 6:00 PM-7:00 PM

ILLNESS BELIEFS OF SPECIALTY CLINIC PATIENTS WITH TYPE 2 DIABETES PRESCRIBED INSULIN

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Background: Exogenous insulin use in the management of Type 2 (T2) Diabetes Mellitus (DM) has grown in recent years. Patient beliefs related to treatments in this population will help to inform clinical work and research related to both insulin treatment adherence and decision-making efforts.

Aim: 1) Illness beliefs (IPQ-r) related to T2DM, such as beliefs about DM chronicity, symptoms and severity, and insulin treatment effectiveness are examined and (2) associations between these beliefs and time since DM diagnosis, insulin prescription duration and medical outcomes (HbA1c%) are explored.

Method: Percent of participants endorsing “agree or strongly agree” beliefs for items and subscales related to personal and treatment management of DM are reported. Linear Regression and ANOVA used for continuous and group associations.

Result: Participants were 167 adults with T2DM (49% male) prescribed exogenous insulin at a specialty diabetes clinic. Self-report missing data was high (30%). Participants were moderately controlled [HbA1c%M=8.13 (1.4)]. The majority experienced recent changes in insulin dose or frequency (59.1%) per chart review. Self-reported adherence to insulin was high (SDSCA, 76.7% daily). Insulin duration [M=66.4 (49.1), range 9-257 months] and DM diagnosis duration [M=190.0 (100.1), range 9 – 558 months] varied, though there was significant (43.4% and 17.9%) missing chart data.

Participants attributed several symptoms, including pain (58.3%), fatigue (69.5%) and sleeplessness (49.0%) to their T2DM. Most participants reported beliefs that T2DM is permanent (85.4%) and serious (94.3%). Beliefs about personal (90.3%-96.0%) and treatment management of DM (68.6%, 81.0%) were generally positive with some reporting cure potential with T2DM treatment (31.7%). Tested relationships between DM beliefs, HbA1c% and DM diagnosis duration were not significant. Longer insulin duration was associated with negative beliefs about treatment, but not personal, management (ß=.28, p=.02).

Conclusions/Implications: High compliance with insulin treatment was reported in clinical participants with T2DM prescribed exogenous insulin. Self-reported insulin treatment beliefs suggest that most view treatment and personal management of T2DM as achievable and likely to improve outcomes. Results indicate that longer insulin treatment duration was related to more negative beliefs regarding insulin treatment. Missing responses may reflect uncertainty about these beliefs. Reported beliefs were not associated with HbA1c%. Longer insulin treatment in this population may lead to less positive beliefs in treatment effectiveness and potentially reduced compliance. Understanding beliefs about DM and insulin treatment in this growing population will help inform treatment adherence and decision-making efforts both clinically and in future research.

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A070 6:00 PM-7:00 PM

MHEALTH-BASED MULTICOMPONENT LIFESTYLE INTERVENTION IN OBESE PATIENTS WITH DIABETES AND CHRONIC KIDNEY DISEASE

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Purpose

In-person lifestyle interventions are effective for chronic disease management; however, several fundamental barriers (e.g., transportation, schedule conflicts) limit real-world implementation and scalability. In this pilot study, we evaluated the use of mobile technology to deliver a multi-component lifestyle intervention for engaging patients with type 2 diabetes (T2D) and concurrent stage 2-4 chronic kidney disease (CKD) in multiple behavior changes (restriction of dietary energy, sodium and phosphate additives, and increased physical activity). In this report, we describe feasibility, acceptability, and participant satisfaction.

Methods

Participants were randomized to either a usual care (UC) or a multicomponent, behavioral intervention group. The intervention components included: (1) Social Cognitive Theory (SCT)-based group counseling, and (2) technology-based self-monitoring of diet, weight and physical activity. All intervention sessions were delivered remotely using videoconferencing weekly for 4 weeks and then biweekly for the next 20 weeks. Participant's satisfaction was assessed by an investigator-developed, 5-point, Likert-scaled survey (1=strongly agree, 5=strongly disagree) at 24 weeks.

Results

A total of 14 participants were randomized to the UC (n=7) or SCT-based intervention (n=7). The study sample was predominantly white (71.4%), male (71.4%), and currently or living as married (57.1%) with a mean age of 65.9 (9.7_{SD}) years, and BMI of 34.4 (7.0_{SD}) kg/m^2. The median time devoted to technology training for this aging sample was 45 minutes (IQR=30-45 minutes). Of the 1,134 person-days of possible self-monitoring, the median proportion of days in which at least 3 meals was logged was 95.8% (IQR=72.0-99.4%), and the median number of meals entered was 3.7 meals/day (IQR=2.8-3.8). Attendance for the 14 online group sessions averaged 94% ($.07_{SD}$). Participants reported: ease in using the touchscreen to operate (Mean±SD: 1.2±.4) and access group sessions on the iPad (2.0±1.0); a desire to use the iPad to manage their health once the study was over (1.4±.5); technology-based self-monitoring helped them understand how to change their diet (1.6±.9), keep track of nutrition (1.8±1.3), stay motivated (1.6±.5), and limit sodium (1.6±.9) and calorie intake (1.4±.5).

Conclusions

This pilot study demonstrated that a multicomponent intervention involving remotely delivered group counseling and technology-based self-monitoring is feasible and acceptable to an aging population with T2D and concurrent CKD. Additional research is needed to evaluate the incremental contribution of the individual intervention components and their interaction effects for engaging this patient population in multiple lifestyle behavior changes.

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A071 6:00 PM-7:00 PM

MINDFULNESS AMONG ADULTS WITH DIABETES: RELATIONSHIPS WITH SELF-CARE AND GLYCEMIC CONTROL

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Several recent diabetes interventions target mindfulness to improve adherence to self-care and outcomes. However, few have examined mindfulness as a determinant of diabetes self-care behaviors or glycemic control (A1c).

We recruited English-speaking adults with type 2 diabetes (T2D) from Vanderbilt University Medical Center to participate in a randomized control trial of the Diabetes MAP web-based medication adherence intervention. We collected self-reported demographics (age, gender, race, ethnicity, education, income), responses to the Mindfulness Attention Awareness Scale (MAAS), Adherence to Refills and Medications Scale for Diabetes (ARMS-D; dichotomized as perfect vs. suboptimal adherence) and Summary of Diabetes Self-Care Activities (SDSCA) general diet, specific diet, exercise and self-monitoring of blood glucose (SMBG) at baseline. Participants also completed a baseline lab A1c test. Spearman’s rho and Mann-Whitney U tests examined bivariate associations between demographics and mindfulness. Linear or logistic regression models examined relationships between mindfulness and adherence to each self-care behavior and A1c at baseline. All models were adjusted for demographics.

Participants (N=151) were 55.3±10.9 years old, 60% female, and 24% non-White, with 15.2±1.8 years of education, and 25% annual incomes < $40K. A1c was 8.0±1.5%. MAAS scores were 4.9±0.8 (possible range 1-6), with higher scores indicating greater mindfulness. Demographics were not associated with mindfulness. Greater mindfulness was marginally associated with a higher odds of perfect adherence (AOR=1.77, p=.11) and significantly associated with better adherence to general diet (β=.30, $p < .01$) and specific diet (β=.31, $p < .001$).

Among adults with T2D, greater mindfulness was independently associated with better adherence to general diet and specific diet, and marginally associated with greater odds of having perfect medication adherence. Greater mindfulness was not associated with adherence to exercise or SMBG. Mindfulness skills may be an effective target for interventions to improve adherence to diet and medications, but may be less effective for improving exercise or SMBG. Although mindfulness was not associated with A1c, increasing mindfulness may affect A1c through improvements in adherence to diet and medications.

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A072 6:00 PM-7:00 PM

OUTCOMES OF A DIGITAL HEALTH PROGRAM WITH HUMAN COACHING FOR DIABETES RISK REDUCTION IN A MEDICARE POPULATION

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Older adults have increasing risk for obesity and related chronic diseases, particularly Type 2 diabetes and cardiovascular disease (CVD). Current clinical guidelines recommend offering behavioral counseling programs for lifestyle management for disease risk reduction. Digital programs that combine health technology with live human coaching have recently emerged as scalable alternatives to the more traditional in-person and face-to-face formats of lifestyle management programs. Little research has examined the outcomes of these newer, technology-driven programs specifically with older adults. The goal of this observational study was to examine the outcomes of a Medicare population who participated in a digital health program with human coaching for diabetes risk reduction. Health plan members ages 65 and older who were at risk for diabetes enrolled in the program. They received weekly online curriculum, remote access to a peer support group of other participants, regular communication with a trained lifestyle coach, a wireless scale, wearable activity monitor, and food and activity tracking tools. Program participation and health outcomes were examined at 4, 6 and 12 months. A total of 501 participants enrolled in the program from 37 states. 92% completed at least 9 of 16 core lessons. Participants averaged 20 of 31 possible opportunities for weekly engagement with the program. At 12 months, participants lost 7.4% (SD=7.8%) of initial body weight, and among participants with clinical data, glucose control improved (HbA1c change = -0.14%, p=0.001) and total cholesterol decreased (-7.08, p =.008). Self-reported well-being, depression and self-care also improved ($p < 0.0001$). This Medicare population demonstrated sustained program engagement and improvements in weight, disease risk factors and well-being. The findings support use of digital programs leveraging human coaching for reducing chronic disease risk among older adults.

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A073 6:00 PM-7:00 PM

THE IMPORTANCE OF HAVING FUN: SHARED PLAY IN COUPLES COPING WITH TYPE 1 DIABETES

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Chronic illness research has traditionally focused on stressful contexts associated with the illness and their impact on health and well-being, while overlooking the role of positive events on health and well-being. We examined “shared play” as a positive relationship context that is likely to affect well-being and self-care among couples coping with type 1 diabetes: Shared play is defined as activities that are pursued for fun/amusement, that are carried out with an enthusiastic and in-the-moment approach, and that are highly interactive. Shared play is likely to be an enjoyable experience that provides a momentary break from strains and responsibilities, and serves a bonding function between partners. When partners are in better moods, less stressed, and feel closer to one another, they are likely to engage in better problem-solving together in diabetes contexts, discuss diabetes more, and have greater communal coping (i.e., appraise diabetes problems as shared and collaborate in resolving problems), and engage in better self-care. We examined links between average daily shared play to positive affect, general stress, diabetes stress, diabetes disclosure, communal coping, and self-care behavior in a study of 143 patients with type 1 diabetes and their spouses (95% white, 61% female, average age= 46, range= 25-75). Couples completed online questionnaires for 14 days assessing shared play and proposed outcomes. Aggregates of shared play and outcomes across the 14 days were used in analyses. Results indicated that greater shared play across the 14 days was linked with greater positive affect, less general stress, more diabetes disclosure, more communal coping, and more exercise (all *p*’s < .05), but was unrelated to diabetes stress or self-care behavior. These results suggest that shared play is associated with a more intimate, positive relationship atmosphere, which is more conducive to diabetes communication and a shared approach to diabetes self-care.

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A074 6:00 PM-7:00 PM

DO AS I SAY NOT AS I DO: THE RELATIONSHIP BETWEEN PARENTS’ DIETS AND THEIR ATTITUDES TOWARD THEIR ADOLESCENTS’ DIETS

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Background: The parent-child diet relationship has been widely investigated with parent modeling and availability of foods in the home being implicated. Further, studies have found that parenting practices around diet determine the quantity and types of foods children consume. Few studies have focused on adolescents and little is known about how attitudes toward their adolescents’ diet are related to parents’ diet. Thus, this study aimed to determine whether parents practice what they preach by exploring the relationship between parents’ diet and their attitudes towards their adolescents’ fruits and vegetables (FV), and sugary foods and drinks intake. Given the role of diet in obesity and the likely internal conflict for obese parents trying to regulate their adolescents’ diet, the second aim of this study explored if parents’ obesity status affected the relationship between their diet and attitudes toward their adolescents’ diet.

Methods: Parent data were obtained from the National Cancer Institute’s Family Life, Activity, Sun, Health, and Eating Study. Parents (n=1859, 72% female, 69% White, 62% overweight/obese) completed measures of their FV, and sugary foods and drinks intake, supportive and controlling attitudes for adolescents’ diet, and availability of foods at home. Regressions were computed to address the aims of the study.

Results: For fruits, availability of (B=.32, p < .001) and supportive attitudes (B=.17, p < .001) for FV were related to intake. Availability of FV (B=.31, p < .001) and supportive (B=.21, p < .001) and controlling attitudes for FV (B=.15, p < .001) were also related to vegetable intake. FV regressions did not differ by obesity status. For sugary foods, availability of (B=.33, p < .001) and supportive attitudes (B=-.07, p=.001) for a non-sugary foods diet were related to sugary foods consumption. Additionally, regressions coefficients for controlling attitudes differed by obesity status (F=4.52, p=.03). Availability of sugary drinks (B=.34, p < .001) was related to sugary drinks intake and regression coefficients for controlling attitudes differed by obesity status (F=4.40, p=.03).

Discussion: This study confirms that parents adopt a “do as I say not as I do” approach regarding healthy eating and this is especially true for sugary foods and drinks intake. Implications for future research include exploring the cognitive processes behind parents' misaligned attitudes and behaviors and investigating how these inconsistencies are related to adolescents’ behaviors to better develop parent-adolescent diet interventions.

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A075 6:00 PM-7:00 PM

FACTORS ASSOCIATED WITH LOW-INCOME PRESCHOOLERS HAVING A TV ON AND CHILD WATCHING TV DURING DINNER

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Background: Turning the TV off during meals is a common obesity prevention strategy promoted by interventions. However few directly observed data are available of the prevalence of having the TV on during meals or the amount of time a child spends watching TV during meals to inform who would most benefit from these messages. The aim of this study was to assess factors associated with a) having a TV on during dinner and b) duration of child watching during meals, among low-income ethnic minority families with preschool aged children.

Methods: Analysis of a cross-sectional home dinner observation study of Hispanic and black families whose 3-5 year old child attended Head Start. Three home dinners were video recorded among 144 families. Parents self-reported demographics and Caregiver's Feeding Style Questionnaire. Videos were coded for whether TV was on and number of people eating together. Of those with TV on, two coders assessed and reached consensus if they could determine whether and when child was watching TV (depending on position of TV and video-recording equipment). Those videos were coded for the duration of the meal the child watched TV. 20% of videos were double coded to assess intercoder reliability. Multilevel models with video observation nested within family assessed factors associated with having TV on and duration (as % of meal time) child watched TV.

Results: The sample consisted of 59.7% Hispanic and 40.3% black families. The average number of people eating dinner, including the child, was 2.1 (SD 1.3) and 43.8% of parents were married. Of the 428 videos, 39.3% had TV off, 59.8% had TV on (44.2% were codable, 15.7% TV-on, but whether child was watching was uncertain/not codable), and in 0.9% of videos we could not tell if TV was on (removed from analysis). The inter-coder ICCs were 0.85-0.99 for the duration codes. For codable videos with TV on, children spent 17.1% (SD 19.1) of the meal watching TV. Only ethnicity was significantly associated with having the TV on during dinner in the full model, with odds ratio of 0.18 (95% CI 0.08, 0.41) of Hispanic having TV on as compared to black families. Having unmarried parent (p=0.05) and fewer number of people eating together at dinner (p

Conclusion: A majority (60%) of the observed dinner meals had a TV on, but having the TV on during dinner was more common among black than Hispanic families. Targeting black families and families with unmarried parents may be particularly important. Future studies will need to see if increasing the number of people eating with the child at dinner decreases their tendency to watching TV during the meal.

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A076 6:00 PM-7:00 PM

USING THE INTEGRATIVE MODEL OF BEHAVIORAL PREDICTION TO PREDICT SUGARY DRINK CONSUMPTION OF OVERWEIGHT AND OBESE ADULTS

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Researchers and practitioners draw upon a number of theoretical paradigms within social and behavioral health. In an attempt to integrate these paradigms, the Integrative Model of Behavioral Prediction (IMB) was developed. The development of the IMB began at a workshop sponsored by the National Institute of Mental Health, and was attended by a group of behavioral theorists who worked together to identify similarities and differences among prominent theories of behavior change and prediction. The IMB posits that individual behavior is predicated upon having sufficient intentions to behave in certain ways, barring any deficiency in skills and abilities to perform the behavior, and environmental constraints. Behavioral intentions are further influenced by three factors: attitudes towards a behavior, perceived norms (PN), and perceived behavioral control (PBC). Since its creation, few researchers have fully operationalized its constructs for investigation. Therefore, the purpose of this study was to explore the utility of the IMB with obese and overweight adults' attempting to lose weight, for predicting the behavior "To stop drinking regular soda and other sugary drinks for the next 6 months". This study was conducted over the course of 2 phases. During the first phase, an elicitation of beliefs from the target population was accomplished, to elicit salient beliefs for survey development. Next, weight loss patients (n=410) completed a valid and reliable survey, evaluating the essential constructs of the IMB. For this phase, a hypothesized path model was tested (AMOS 17.0) for which attitudes, PN and PBC predicted behavioral intentions, and intentions, PBC, skills, and environmental constructs predicted sugary drink consumption. Overall, fit indices of the model were good (CFI=.970, TLI=.921, RMSEA=.062), and a significant amount of the variance of intentions (R2=.407) and sugary drink consumption (R2=.162) were predicted. Results suggest that the IM is an advantageous and practical theory for explaining health behaviors related to obesity prevention and treatment. Further work is needed to better operationalize constructs of the IM that have not been fully explored.

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A077 6:00 PM-7:00 PM

VEGANS: JUST LIKE US, ONLY HEALTHIER

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Introduction. It has been posited that vegans (i.e. individuals who refrain from consuming all animal products) engage in chronic unhealthy behaviors, especially in regard to diet and weight. Unfortunately, the large majority of studies interested in the behaviors of meat-refrainers are unable to obtain a large enough sample of vegans to make meaningful comparisons. This study examines indicators of health in one of the largest samples of vegans recruited from the general population, in comparison to omnivores (i.e. individuals who do not refrain from any animal products). **Methods.** Respondents were categorized based on self-reported vegetarian status. For the purposes of the present study vegans (*N* = 287; female = 84.0%; mean age = 31.7 ± 12.5) were compared to omnivores (*N* = 165; female = 76.4% mean age = 30.9 ± 13.7). Relevant measures include reports on demographics, height, actual and ideal weight, smoking behaviors, the Alcohol Use Disorders Identification Test, Food Frequency Questionnaire, Orthorexia Scale, Binge Eating Scale, Drive for Thinness Scale, Drive for Muscularity Scale, and Yale Food Addiction Scale. Groups were compared in a series of chi-square, independent samples t-tests, and univariate and multivariate analyses of variance (for measures containing multiple subscales). Gender was included as a covariate when significant. **Results.** Vegans were more likely than omnivores to be female ($p = .05$). Vegans more frequently ate fruits, vegetables, nuts, beans, and grains, but less frequently consumed caffeinated soft drinks (all $p < .001$). Vegans were more likely to prepare food at home and more likely to consider themselves "healthy" (both $p = < .001$), but scored lower on the Orthorexia Scale ($p < .001$), were less likely to exhibit "moderate" binge eating ($p = .01$), and endorsed a lower drive for thinness ($p = .01$). There were no differences between groups in age, BMI, proportion of respondents categorized as underweight, normal weight, overweight, or obese, reported discrepancy between current and ideal weight, frequency and length of exercise, alcohol use, smoking behaviors, drive for muscularity, or scores on the Yale Food Addiction Scale. **Discussion.** This study begins to paint a more accurate picture of health behaviors in vegans. It seems as though vegans exhibit markers of healthier behaviors (e.g., increased fruit and vegetable consumption, increased home-cooking, self-reported healthfulness) but simultaneously do not exhibit the negative effects often thought to result from continuous self-monitoring of the diet (e.g., increased drive for thinness, low BMI, increased orthorexia score). Ultimately, vegans do not appear to differ from omnivores to a large degree, and when they do, it seems to be in meaningful healthful ways.

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A078 6:00 PM-7:00 PM

YEEGO GARDENING!: A COMMUNITY GARDEN INTERVENTION TO PROMOTE HEALTH ON THE NAVAJO NATION

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Background: American Indians and Alaskan Natives (AI/AN) are at increased risk for obesity and diabetes in part due to their diet, including low consumption of fruits and vegetables. Several factors contribute to the low consumption of fruits and vegetables among Navajo, including lack of access to, barriers to growing, and high cost of fruits and vegetables. The goal of our study was to develop a theory-based and culturally relevant community garden intervention to increase gardening practice and fruit and vegetable consumption in two Navajo communities. In this presentation, we describe our process of designing the intervention by both drawing on behavioral theory and solicited input from Navajo community members. **Methods:** Using Social Cognitive theory, focus group findings and input from our community partners, we developed an intervention consisting of three integrated components: 1) a community/demonstration garden plot, 2) technical assistance workshops to increase gardening and healthy eating and 3) community outreach. These three intervention components aimed to increase gardening and healthy eating by increased access to fresh produce grown in the community gardens, as well as by increasing participants' self-efficacy, self-monitoring and behavioral capability to garden, prepare and consume fruits and vegetables. Gardens were constructed and maintained in collaboration with community-based organizations in 2 Navajo communities. Monthly workshops were held throughout the growing season, which incorporated aspects of Navajo culture and opportunities to build confidence and skills in gardening and healthy eating behaviors. In addition, program staff attended community events to promote gardening and healthy eating. **Conclusions:** Community input was essential throughout the planning and implementation of the intervention. If effective, community garden interventions may improve the food environment in areas with limited access to healthy foods. Increasing access and knowledge about healthy eating behaviors may ultimately reduce risk for obesity and diabetes in Navajo communities.

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A079 6:00 PM-7:00 PM

EXPLORING THE RELATIONSHIPS BETWEEN SOCIAL MEDIA TECHNOLOGY, COMPETITION, AND FITNESS MOTIVATION AND ENJOYMENT

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Fewer than half of American adults meet the recommended guidelines for aerobic physical activity (CDC, 2016), which may contribute to the high rate of obesity in the US (NIH, 2012). This trend may be due to a lack of motivation, and/or lack of social support, to exercise. Mobile fitness applications, like Fitbit and Strava, have been introduced to help increase physical activity through the use of technology (Bauer & Kriglstein, 2015). The current study explores how fitness technology and friendly competition may interact with self-efficacy, motivation, effort, and enjoyment in fitness. Forty healthy adults (30 F, age 18-61, M=22.6, SD=7.4) were assigned to 1 of 2 experimental groups, Fitbit (n=12) or Strava (n=13), or to the social context-free pedometer control group (n=15). The Fitbit group tracked their steps, while the Strava group timed their run through a specified 0.2-mile course (the pedometer participants either tracked steps or ran the course without social context). Each experimental group competed in counterbalanced 1 week of app-based competition and 1 week of non-competition tracking. The social settings of competition differed in each experimental group; Fitbit participants competed against friends, while Strava participants competed against strangers. During the non-competition and competition phases, each of the groups showed significant positive correlations between competitiveness, enjoyment, effort, self-efficacy, and motivational styles ($p < 0.05$). Interestingly, the Fitbit group had a significant relationship between enjoyment and intrinsic motivation during the non-competition phase, $r(12)=0.630$, $p < 0.05$, but lost it during competition, where a significant relationship was found between enjoyment and extrinsic motivation, $r(12)=0.578$, $p < 0.05$. Similarly, during the competition phase, the relationship between extrinsic motivation and competitiveness also became significant for the Fitbit group, $r(12)=0.631$. For the Strava group, during competition there was a significant negative relationship between effort and intrinsic motivation, $r(13)=-0.580$, $p < 0.05$. It appears that the type of tech-based social context that an individual engages in has an influence on motivational styles and enjoyment in fitness activities. Competing against friends appeared to increase extrinsic motivation and enjoyment, while competing against strangers resulted in a negative relationship between effort and intrinsic motivation. Having a more nuanced understanding of the complex relationships between motivational style, mobile fitness applications, and social context may not only have implications for altering personal fitness behaviors, but also may impact adherence to fitness-based treatment regimens.

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A080 6:00 PM-7:00 PM

HEALTH PRIVACY: PERCEPTIONS AND PREFERENCES AMONG ADULTS AND TEENS

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This paper reports on a qualitative study of individual preferences and preferences around the privacy of personal health information. We conducted 7 focus groups with 51 people to understand the expectations that individuals have for the privacy of their health information and how privacy preferences for health information may be different from preferences for other kinds of personal information. Focus groups were conducted with a variety of cohorts, including: middle school students (2 groups); members of a breast cancer research cohort (2 groups); and members of community-serving organizations (3 groups). Focus groups included between 3 and 12 participants (median = 6). Three of the focus groups (both middle-school and one community group) were conducted with teenagers (age 14-19 years, n=24). Focus groups were conducted using a semi-structured protocol that covered issues relating to general privacy definitions and preferences, electronic health records, genomic data, tissue donation, and personal health and lifestyle data (e.g. wearable health devices). Focus groups were transcribed and analyzed using a grounded theory approach to understand emergent themes in the discussions. After the focus groups, participants filled out surveys that included demographic information as well as information about their interactions with health providers and attitudes toward privacy.

The results of this study suggest that both adults and teenagers are concerned with privacy, but that their specific concerns differ. For example, teenagers were more likely to see privacy through a commodity lens in which personal information had inherent value. Teens were more willing to exchange their personal data for the use of a service, and more often cited a belief that they should receive some form of compensation (monetary or otherwise) from those who wanted to mine their data. Teenager concern for the privacy of health data was also lower than for adults. Post-focus-group surveys showed that while adults were more likely to distrust corporations and legal protections for privacy, teenagers were more likely to be “privacy pragmatists” who weighed the benefits of services against the potential privacy intrusions. Participants of all ages wanted to own their personal data but were unsure of who actually did own it. This paper discusses these findings and their potential impact on acceptance and adoption of new health technologies.

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A081 6:00 PM-7:00 PM

HOW TO STAY HEALTHY WHILE STUDYING ABROAD: AN ELECTRONIC MAGAZINE FOR COLLEGE STUDENTS

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Title: How to Stay Healthy While Studying Abroad: An Electronic Magazine for College Students

Objectives: List the top three areas which students utilized from the electronic [*e*] magazine. List the three lifestyle behaviors students attributed to their physical wellness whilst on their travel study.

Introduction: Increasing numbers of U.S. students participate in international and domestic travel study programs. While most institutions include material on health-related topics such as immunization, psychological distress, personal assault, and water quality, comprehensive coverage of strategies to ensure optimal physical wellness during travel study has been overlooked. To fill that void “How to Stay Healthy While Studying Abroad”, a comprehensive wellness guide, was designed as an *e* magazine for undergraduate students.

Research Objectives: The primary objective was to evaluate the usefulness of the e magazine. The secondary objective was to enhance the content of the guide based on an assessment of students' attitudes, perceptions, and behaviors related to wellness pre- and post-participation in travel study programs.

Methods: Of the 1,137 students enrolled in travel study programs in the winter 2016 term, 344 students completed the pre-travel questionnaire and 172 the post-travel questionnaire. Students were recruited via email invite. Study protocol was approved by the University of Delaware’s Institutional Review Board. Questionnaires were pilot tested and focused on evaluating aspects of the *e* magazine, as well as attitudes, perceptions, behaviors, and barriers to optimizing physical wellness.

Results: Hydration (66%), health during travel (57%), and getting enough sleep (54%) were topics most utilized. Self-motivation, social support, and tips within *How to Stay Healthy While Studying Abroad* were the top three factors contributing to students' achievement of physical wellness on their program. The majority of respondents (87%), indicated they would recommend *How to Stay Healthy While Studying Abroad* to others going on a travel study

program.

Conclusions: These findings support the need for inclusion of physical wellness guides in pre-departure materials to help students maintain their health while navigating new environments during travel study programs.

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A082 6:00 PM-7:00 PM

LESSONS LEARNED FROM A PROCESS EVALUATION OF AN ONLINE ORGAN DONATION EDUCATIONAL INTERVENTION

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Lessons Learned from a Process Evaluation of an Online Organ Donation Educational Intervention

The number one problem in transplantation today is the lack of available organs. Internet use is at an all-time high[1], creating an opportunity to increase public commitment to organ donation through the broad reach of web-based, behavioral interventions. Implementing Internet interventions, however, presents some challenges, including preventing fraudulent respondents and ensuring intervention uptake. While web-based organ donation interventions have increased in recent years, process evaluation models fit for web-based interventions are lacking. This study outlines a refined process evaluation model adapted for online settings and used to assess the implementation of a web-based intervention aimed to increase organ donation among African Americans (AA).

We used a randomized, pretest-posttest control design to assess the effectiveness of the intervention website, which addressed barriers to organ donation through corresponding videos. Eligible participants were AA adult residents of Georgia (GA) who were not registered on the state donor registry. Drawing from previously developed process constructs[2], we adapted reach (proportion of eligible participants), recruitment (online mechanism used to recruit participants), dose received (intervention uptake) and context (factors in the cyber world affecting implementation) for use in Internet-settings.

Reach: A total of 1,415 individuals completed the eligibility screener; 948 (67%) were determined eligible, of which 97% (n=918) completed the study. *Recruitment:* A total of 67%

of participants were recruited from an online recruiter. *Context:* Approximately 75% of responders resided outside of GA (n=577) and 22% of resided outside of the U.S. (n=172); 27% of all participants were repeat visitors (n=206). After eliminating these data, only 17 participant surveys remained. *Dose received*: No videos were watched in their entirety and the average website session duration was just 17 seconds over the minimum. Our adapted process evaluation model confirmed fraud and minimal uptake to be serious threats to Internet studies, and underscore the need for using a process evaluation model fit for web settings to identify such threats.

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A083 6:00 PM-7:00 PM

OLDER ADULTS' INTERNET USAGE PATTERNS AND RELATIONSHIP WITH SOCIAL ENGAGEMENT

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Objectives: Literature has offered little guidance on whether diverse types of Internet use among older adults exist and whether they have significant reciprocal associations with older adults' social engagement in their daily lives.

Methods: This study randomly selected older adults aged 50 and older representative of silver surfer in Taiwan from two urban and two rural areas and interviewed the participants through telephone interviews (n=248). We employed cluster analysis to identify their Internet use patterns, the multinomial logistic regression analyses to ascertain characteristics associated with the Internet usage patterns, and the multiple regression to examine if the Internet usage pattern associated with social engagement in real life.

Results: Four user types were identified: Leisure (32%), Sporadic (26%), Instrumental (21%), and Eager (21%). Education level, Internet use history, perspectives, and social engagement in daily life were the authentic predictors of Internet user types. Eager and Leisure Users had significantly higher scores on social engagement in their daily lives compared with Sporadic Users after controlling for significant sociodemographic and behavioral covariates.

Conclusions: Findings from this study underline the importance of the older population segment regarding their different characteristics and needs. It also suggests the possibility of Internet use for increasing social engagement in old age.

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A084 6:00 PM-7:00 PM

QUALITATIVE STUDY OF TEXT MESSAGING FOR SMOKING CESSATION

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Mobile health technologies offer unique opportunities for cost-effective dissemination of health promotion interventions. A growing body of research supports text messaging programs for smoking cessation. However, qualitative research could be critical for informing the development of more engaging, acceptable, and effective text-messaging interventions. This is particularly important among underserved populations (e.g., low-income and racial/ethnic minority smokers) at risk for tobacco-related health disparities. This qualitative study assessed views of text messaging for promoting smoking cessation and suggestions for improving these programs among low-income, primarily African American smokers. Four focus groups were conducted with a total of 15 adult smokers interested in quitting. Most participants were women (80%), African American (86.7%), and reported annual income < $18,000 (60%). The facilitator asked participants about their level of interest in text messaging to help them quit smoking; preferences for structure and timing of messages; and suggestions for content of messages (including reactions to sample text messages), as well as other suggestions for making the program more helpful and user-friendly. Groups were audio-recorded, transcribed, and coded using QSR NVivo 10. Overall, participants were open to text messaging for smoking cessation, and most were enthusiastic. Some were skeptical that texts would help them quit in the absence of other support, but believed that text messages in addition to in-person treatment and nicotine patches would be helpful. Primary themes regarding suggestions for improving text-based interventions included: incorporating as much personalization as possible (e.g., sending reminders of personal reasons for quitting); making text messages as short as possible; sending visual messages (e.g., motivating pictures); providing specific strategies for coping with cravings; and, in the context of smoking lapses, encouraging people to forgive themselves for the “slip” and get back on track. Results provide suggestions that could be useful for improving engagement with and effectiveness of text messaging smoking cessation programs among low-income African American smokers.

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A085 6:00 PM-7:00 PM

READABILITY OF PRIVACY POLICIES FOR APPS TARGETED TO YOUTH

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Privacy policies are pervasive in the digital age. In practice, users, including youth, must read and “agree” to the contents of these policies in order to access and use nearly all computer and mobile device apps. The extent to which youth, in particular, are able to comprehend these contracts, however, remains questionable. We assessed reading grade level, reading ease, and word count of privacy policies for apps that are either available or targeted to youth. Privacy policies for 64 popular apps were collected and analyzed. Readability metrics were compared to the average US adult reading level, as well as to the Patient Privacy Rights’ (PPR TF) Trust Framework. Policies were further compared as a function of app category (free vs. paid; entertainment vs. social networking vs. utility). We found that the average reading grade level for the privacy policies we analyzed was higher (12.78) than the average reading grade level of adults in the United States (8.0) and higher than the PPR TF recommended level (12.0). In general, app policies did not differ in their readability as a function of category. Although users must agree to app privacy policies in order to access digital tools and products, readability analyses suggest these agreements are not comprehensible by the average adult, let alone youth.

Because companies often collect, use and sell users’ personal information, it is concerning that agreements describing and governing these activities are not accessible to most users. Given that youth are considered a vulnerable population, we propose that pediatricians and healthcare professionals could play a role in educating youth and their guardians about the use of online services and potential privacy risks, including the unintentional sharing of personal data.

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A086 6:00 PM-7:00 PM

UPTAKE OF AN INCENTIVE-BASED MHEALTH APPLICATION FOR CHRONIC DISEASE PREVENTION: PROCESS EVALUATION OF THE CARROT REWARDS APP

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Background: Behavioral economics has stimulated renewed interest in financial health incentives worldwide. The Carrot Rewards app was developed as part of a novel public-private partnership to reward Canadians with loyalty points (e.g., movies, groceries) for downloading the app, referring friends and completing one to two health quizzes per week ("micro-learning").

Objective: The main objective is to evaluate app uptake during the exclusive 3-month launch period in British Columbia (BC), Canada. The secondary aims are to describe the health and demographic characteristics of users, as well as engagement levels (i.e. proportion of quizzes completed).

Methods: The app was promoted via loyalty program email campaigns (1.64 million emails). Number of downloads and valid registrations (users enter age, gender and valid BC postal code to register) were collected. Additional demographics were inferred by linking postal codes with census data at the Local Health Area (LHA) level. A health risk assessment was also deployed. Engagement level was collected over three months and descriptive data are presented.

Results: In three months, 67,464 individuals downloaded the app – in its first week, the Carrot Rewards app was the most downloaded health app in Canada. Among 'active users' (*n*=57,885; at least one quiz completed), the majority were female (63%) and aged 18-35yrs (54%). More than half of users (52%) resided in LHAs where the median income is below the provincial average ($28, 765 Cnd). Sixty-four percent of users lived in metropolitan LHAs, compared to 56% of the general BC population. The most prevalent risk factors were *not* meeting physical activity guidelines (73%) and *not* getting the flu shot last year (68%). Regarding engagement, 21%, 7%, 13%, and 59% of users were classified as low (74%) engagers, respectively.

Conclusion: Early results suggest that loyalty points may promote mHealth app uptake and engagement. The impact of loyalty points on behavioral *outcomes* (e.g., steps/day, flu shot) are worth exploring.

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A087 6:00 PM-7:00 PM

BEHAVIORAL MEDICINE RESIDENT EDUCATION AND A FORMAT FOR CURRICULUM MODIFICATION

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Psychosocial problems are common in healthcare settings, with greater than 70% of patients seen in primary care visits presenting with a psychosocial comorbidity. Non-comorbid mental health and substance use disorders are anticipated to surpass physical disease as a cause of worldwide disability by 2020. Also, patient-provider interactions are important because they dictate relevant patient outcomes, affecting, for example, patient engagement in healthcare decisions and medication adherence.

Because of the prevalence of patient psychosocial difficulties and the importance of patient-provider interactions, we developed a behavioral medicine curriculum to assist residents in enhancing behavioral medicine-related knowledge and clinical skills. The two mainstays of the education program are monthly hour-long noon conference presentations and behavioral medicine seminars. Noon conferences consist of didactics, audience participation, and small group discussion. Topics are related to patient care in primary care and hospital settings. Examples include motivational interviewing techniques, approaches to working with difficult-to-treat patients, and brief systemically-focused interventions for depression and anxiety. During behavioral medicine seminar, a behavioral medicine faculty member meets with two to three residents to view recordings of patient-provider interactions for each resident in attendance. The faculty member facilitates discussion surrounding the presented patient cases, including strategies for agenda setting, building rapport, displaying empathy, and asking open-ended questions. The goal of the behavioral medicine seminar is to provide residents with feedback that can assist them with enhancing strategies for providing patient-centered care.

Following each behavioral medicine seminar and noon conference, residents completed a survey that contained questions on which behavioral medicine topics they plan to implement in their practice, which they would like to learn, and how useful the training was overall. Residents reported behavioral medicine education as being very useful. Findings from a

qualitative thematic analysis of open-ended survey questions highlighted Motivational Interviewing skills and agenda setting as topics which were particularly beneficial for their practice. Results also highlighted residents' desire to learn more about pain management strategies and engaging families in care in the future.

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A088 6:00 PM-7:00 PM

DELIVERY OF MOTIVATIONAL INTERVIEWING WORKSHOPS TO CLINICS SERVING VULNERABLE POPULATIONS

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Background: With grant support, a large urban medical center has formed a collaborative partnership with a group of 13 Federally Qualified Health Centers to develop and implement a motivational interviewing curriculum for its health care providers, care coordinators and community health workers.

Purpose: Development, implementation and evaluation of a 4 hour tailored workshop with follow-up concordant testing to teach principles of motivational interviewing, coaching and relapse prevention techniques. Data was collected, pre-workshop, immediately post-workshop and 8 weeks post-workshop.

Results: Workshops were delivered to 13 sites (N=114 health care providers). The majority of participants were care coordinators (36.6% n = 37). Pre-workshop data showed that 94.3% were familiar with MI, but only 68.6% thought they could use the technique to encourage a commitment to change. Post -workshop data showed that compared to pre-workshop, participants felt better prepared to: 1) build collaborative partnerships (84.7% vs 98.2%; change increase 13.5%); and, 2) encourage patient commitment to change (68.6% vs 93.5%; change increase = 29.4%). Post-workshop barriers included: 1) uncomfortable with content (13.3%); 2) change is too time-consuming (33.7%); 3) patients are resistant to change (54.1%). At 8 weeks, participants (n = 28) reported they were all (100%) building collaborative relationships, and 93% were able to encourage patient commitment to change.

Conclusion: Each clinic valued the workshop as evidenced by high attendance, engagement and participation in long-term follow-up measures. Learner responses indicated that within this sample, the workshop was effective in moving participants to actual change in practice

and in effectively promoting patient change. Additional strategies include reinforcement of key learning objectives through-mail testlets and other on-going programing.

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A089 6:00 PM-7:00 PM

HPV VACCINATION TRAINING EXPERIENCE AND PREFERENCES AMONG FAMILY MEDICINE RESIDENTS AND FACULTY: A MIXED-METHODS STUDY

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Background: Physicians in the U.S. do not consistently recommend human papillomavirus (HPV) vaccination for adolescents. Residency training is a pivotal time to establish skills for career-long practices, particularly for challenging skills such as HPV vaccine recommendation. We examined Family Medicine (FM) residents' and faculty's training experience and preferences related to delivering HPV vaccine recommendations.

Methods: Residents (n=28) and faculty (n=19) were identified through a national FM residency directory and recruited from training programs in Florida. Participants completed a phone interview assessing key aspects of HPV vaccine recommendation training. Interviews were audio recorded, transcribed verbatim, and analyzed using content analysis. A brief follow-up survey was emailed after the interview. Survey data were analyzed using descriptive statistics and faculty and resident responses were compared using Fisher's exact tests.

Results: *Qualitative*. Residents' training experience with HPV vaccination recommendation varied from none to extensive, and was often self-directed. Variation in training was seen between and within programs. Faculty often noted HPV vaccination training was not standardized and residents lacked instruction about effective communication. *Quantitative*. Most residents preferred to receive training focused on providing recommendations for HPV vaccine through formal lectures (86%). All faculty participants (100%) indicated this format was useful (p=0.14). Only 46% of residents indicated communication training was provided via formal lectures in their program, but 90% of faculty reported such training was available (p=0.005). Additionally, 79% of faculty thought videotaping residents recommending the vaccine would be a useful approach for training, whereas only 14% of residents preferred this method of instruction (p

Conclusions: Our study identified a lack of consistent and standardized training for delivering

HPV vaccine recommendations. A training curriculum that uses multiple modalities and reflects resident and faculty preferences is needed.

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A090 6:00 PM-7:00 PM

INCREASING BEHAVIORAL HEALTH & INTEGRATED CARE IN K-12 SCHOOLS

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Background: In Georgia, there is a critical lack of behavioral health professionals and services that results in children not receiving vital care. An urgent need exists to increase children's access to behavioral health services in Georgia's school systems via innovative school counseling training programs that move beyond generalist training. Guided by a biopsychosocial and multicultural framework, school counseling master's students are receiving training in behavioral health to place larger numbers of professionals in schools to mitigate the gaps to such services. **Objectives:** To evaluate this innovative training approach, the current study examines school counseling master's students' perceived self-efficacy and competency in the delivery of behavioral heath and integrated primary care services in school-based settings. **Research Design:** Funded by HRSA, this study reports on preliminary cross-sectional data collected from school counseling master's students (n=54) receiving training in a large southeastern public university. In addition to completing the School Counselor Self-Efficacy Scale and the Revised Multicultural Counseling Competence and Training Survey, students' completed the Readiness for Interprofessional Learning Scale and the Interprofessional Education Collaborative Competency Survey. **Results:** Analyses of baseline data suggests that master's level school counseling students maintained moderate levels of self-efficacy (Mean=3.03, Possible Range=1-5), valued providing multidisciplinary services in schools (Mean=4.30, Possible Range=1-5), were highly amenable to working with interdisciplinary professionals (Mean=3.47, Possible Range=1-5), and held a more positive view of interprofessional teamwork and collaboration (Mean=4.68, Possible Range=1-5). **Conclusions:** School counselors in training appear to be open to and value innovative training in the delivery of interprofessional and multicultural behavioral health services in K-12 schools. Future research will evaluate the long-term effectiveness and sustainability of this innovative training approach to increase access to behavioral health and integrated primary care services in K-12 schools.

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A091 6:00 PM-7:00 PM

INTEGRATING SIMULATION INTO TEAMSTEPPS TRAINING TO IMPROVE INTERPROFESSIONAL COLLABORATIVE PRACTICE

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Background

Poor communication between health professionals has been identified as a major cause of care delay and poor team performance. Simulation-based activities have demonstrated the ability to facilitate collaboration and improve communication among interprofessional teams. TeamSTEPPS training has demonstrated the ability to improve interprofessional communication, and teamwork skills improving quality of care and patient safety. Therefore, the purpose of this project was to investigate how TeamSTEPPS training, which included clinic specific simulations, improved the communication and team behaviors of the clinic's interprofessional personnel.

Methods

An interprofessional group of identified leaders were designated as champions of the project and trained in TeamSTEPPS. Focus groups with the champions and clinic administration, along with findings from observations by the researchers identified challenges affecting patient care delivery. These challenges were integrated into the case scenarios for the simulation based activities. The health professionals in our nurse managed community health center were asked to complete this two-day training. A pre-post survey of the participants and observation by the researchers in both simulation and at the clinic setting were used to obtain data. Tools included: TeamSTEPPS Teamwork Attitudes Questionnaire, TeamSTEPPS Teamwork Perceptions Questionnaire, and the Collaborative Practice Assessment Tool (CPAT).

Results

The training improved teamwork attitudes significantly on overall scores and subscales for team structure, leadership, situation monitoring and communication. The training also improved teamwork perception on communication significantly. The CPAT subscale scores were found highly correlated to TeamSTEPPS Teamwork Attitudes Questionnaire subscale scores.

Discussion

The changes in patient care delivery has resulted in unsolicited positive comments by patients, and actual chronic disease management.

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A092 6:00 PM-7:00 PM

THE INTEGRATIVE HEALTH & LIFESTYLE PROGRAM (IHELP): IMPACT OF AN ONLINE INTERPROFESSIONAL CURRICULUM

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Integrative health (IH) takes account of the whole person, including all aspects of lifestyle. It emphasizes the therapeutic relationship between practitioner and patient, is informed by evidence, and makes use of all appropriate therapies. The Integrative Health & Lifestyle Program (IHeLp) was developed to meet a training gap in IH approaches for allied health care professionals. IHeLp is 6-month, 250-hour interprofessional, online training program that aims to educate health and wellness professionals in an IH approach to patient/client care focused on addressing 7 core areas of health: Sleep, Movement, Nutrition, Relationships, Resiliency, Environment, and Spirituality. IHeLp targets licensed, registered, or certified allied health professionals with the goal of supporting interprofessional collaboration and well-trained IH care teams. Participants learn to utilize lifestyle modifications that improve health and wellbeing (nutrition, mindfulness, physical activity, complementary therapies, etc.) and techniques to motivate change and reduce stress with an emphasis on Self-Care as applied learning. IHeLp utilizes an online curriculum, weekly faculty mentor meetings, self-care teams, ongoing assignments, faculty-moderated dialogues, and 4-day experiential retreat. Knowledge-based exams assess attainment of learning objections. The program has 140 graduates. Mean score on the final exam was 91% (66-100% range). A final program evaluation survey assess overall experience. Items are rated on a 5-point scale (5 is most favorable) and the top 2 categories summed. The program evaluation was very positive with 97% finding the experience transformative, personally (100%) and professionally enriching (98%), and 97% felt able to apply learning to real-world situations. Pre- and post-course changes in burnout (Maslach Burnout Inventory), lifestyle behaviors (Arizona Lifestyle Inventory), emotional intelligence (Interpersonal Reactivity Index), and attitudes toward interprofessional collaboration (Attitudes toward Health Care Teams; ATHC) are examined. Statistically significant improvements ($p < 0.05$) were found for burnout, specific lifestyle behaviors in the areas of diet, mind-body practices, leisure, and sleep), and quality of care (ATHC). No differences were found for emotional intelligence, time constraints (ATHC) and some lifestyle behaviors. IHeLp is a unique, accessible option for allied health professionals to address interprofessional and IH training needs.

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A093 6:00 PM-7:00 PM

THE NATIONAL CENTER FOR INTEGRATIVE PRIMARY HEALTHCARE - ENHANCING INTERPROFESSIONAL INTEGRATIVE HEALTH EDUCATION

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Evidence is accruing for the clinical and cost-effectiveness of integrative healthcare (IH); however, there is a knowledge gap for primary care professionals, which has hindered widespread adoption of IH into the healthcare system. The University of Arizona Center for Integrative Medicine received a HRSA grant to establish the National Center for Integrative Primary Healthcare (NCIPH) to address this need. Based on a coordinated set of IH competencies across primary care professions and needs assessment, a 45-hour online interprofesssional IH course, Foundations in Integrative Health (FIH), was developed and pilot-tested in primary care training programs, e.g., family medicine, internal medicine residencies, nursing, pharmacy, behavioral health, oriental medicine, chiropractic. Units include: Introduction to IH in Primary Care; Prevention and Lifestyle Behavior Change; Healthcare Professional Wellbeing; Addressing Patients through an Integrative Lens in Primary Care; Integrative Interventions; Community Settings and Systems at Large. There were 2,200 course participants in the pilot, of which 696 (32%) completed the course. An evaluation survey administered at the end of each unit assesses whether objectives were met, educational depth, clinical utility, helpfulness of resources and reflections and ease of technology. Items are rated on a 5-point scale with 5 the most favorable. Met objectives (4.5), usefulness to patient care (4.2) and ease of technology (4.2) received the highest ratings. Helpfulness of sharing reflections received the lowest rating (3.2). When asked whether the unit should be incorporated into mandatory material, a majority (61-74%) rated the units as mandatory. A final course evaluation survey assesses interest in applying IH principles in practice, desire to seek additional IH education, whether course enhanced educational experience, recommend course to others, incorporation of self-care practices learned in the course, and site leader support for completing and relating course content to training. The FIH course experience received very high ratings with most interested in applying what they learned (4.5), continuing to seek IH education and training (4.3), and rated the course as enhancing their educational experience (4.3). Two-thirds (67%) reported incorporating new self-care practices into their lives based on what they learned in the course. The goal of NCIPH is to transform primary care health professional education to include an emphasis on providing an integrative approach to patient care utilizing an interprofessional collaborative team. The FIH course can serve as a foundation in this effort. An online course addresses the

challenges of time, cost, and curriculum consistency and can be widely disseminated to the entire spectrum of primary care training programs.

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A094 6:00 PM-7:00 PM

AWARENESS AND TRUST OF U.S. PUBLIC HEALTH AGENCIES: RESULTS FROM A NATIONALLY REPRESENTATIVE SAMPLE OF ADULTS AND ADOLESCENTS

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Trust in government agencies plays a key role in advancing these organizations' agendas, changing health behaviors, and effectively implementing health policies. However, few studies have examined how individuals trust the leading U.S. agencies devoted to protecting the public’s health. Using two national samples of adults (*N*=1125) and adolescents (*N*=5014), we examined demographic factors, with a focus on vulnerable groups, that predicted awareness and trust of the Centers for Disease Control and Prevention (CDC), Food and Drug Administration (FDA), and the federal government. From nine different weighted logistic regression models, we found high levels of awareness of the FDA and CDC (ranging from 55.7% for adolescents’ awareness of the CDC to 94.3% for adults’ awareness of the FDA) and moderate levels of trust (ranging from a low of 41.8% for adults’ trust in the federal government and a high of 78.8% for adolescents’ trust of the FDA). With respect to awareness, across both adolescents and adults, being African American, of younger age, having lower education, and having low numeracy were all associated with lower awareness. With respect to trust in these agencies and the federal government as a whole, fewer demographic differences were found. This research provides key novel insights into the drivers of awareness and trust in the US federal government and its public health agencies. Our findings suggest groups that these agencies may want to target to enhance trust and thus facilitate their communication and regulatory agendas.

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A095 6:00 PM-7:00 PM

BLACK-WHITE RACIAL DIFFERENCES IN PATIENT-PHYSICIAN COMMUNICATION: A SYSTEMATIC REVIEW

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Background: Ample evidence exists for the presence of racial disparities in health care, but it is less clear what contributes to these disparities. Recent data suggests disparities in patient-provider communication may contribute to these racial disparities in health care. The goal of the present study was to systematically review studies examining the effect of race on patient-physician communication.

Methods: A comprehensive search was conducted across six online databases between 1995 and 2016. Studies were included when the sample consisted of patients in health care contexts and the communication outcome was observational or patient-reported. The search resulted in 4,672 records for review and 40 articles for final inclusion in the review. Studies were divided into eight main domains of patient-physician communication: (1) quality, (2) satisfaction, (3) information-giving, (4) partnership building, (5) patient participation and participatory decision-making, (6) positive and negative affect/talk, (7) length of visit/time and talk-time ratio, and (8) “other.”

Results: Studies were heterogeneous in health contexts and communication measures, but most results seemingly pointed to black patients having worse communication outcomes than white patients, although some results were mixed. These results were most consistent for quality, information-giving, and patient participation and participatory decision-making. Results were mixed for satisfaction, partnership building, length of visit, and talk-time ratio. Mixed results seemed to depend on the specificity of the communication measure as well as its consistency across studies.

Conclusions: Overall, results of this study indicate that black patients may both receive and perceive poorer communication than white patients. However, results also highlight the lack of consistent, valid measured used in the research literature and the need for more consistency across studies to illuminate these results. Nevertheless, results highlight the potential need to train physicians on how to engage in higher quality communication with black patients by focusing on improving their patient-centeredness, information-giving, partnership building, and engagement of black patients in communication processes.

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A096 6:00 PM-7:00 PM

COMMUNITY HEALTH IMPROVEMENT RESEARCH IN SOUTHWEST KANSAS: A QUALITY IMPROVEMENT PROJECT

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Background: In the United States, quality improvement (QI) initiatives mainly focus on the health of urban populations and usually target one specific disease or health concern such as mental health, cardiovascular disease, childhood obesity, the healthcare system, or a sub-population. There are no studies that have assessed the health needs of an entire community by economic sector. The purpose of this study was to assess community members' perceptions, knowledge, attitudes, and desires related to health and wellness resources in an extremely frontier rural region (referred to as "county") of a Midwestern state.

Methods: Households in the two largest cities of this county, with 235 and 781 households respectively, were targeted to complete the assessment. The county had a total of 1,341 households. The research team trained 45 volunteers who went door-to-door to collect one survey per household. The survey instrument was available in English and Spanish. Survey questions focused on availability of health and wellness (h/w) services in the county and h/w services offered at the worksite, daycare/preschool, public school, church, county extension office, and at the community-level. Incentives were provided. Data were collected in July/August, 2016. Descriptive analyses were conducted.

Results: With 865 surveys completed, the cities' response rate - 85.1%; total county response rate - 64.5%. The majority of respondents were female (72.9%), age 25-44 (39.3%), earned \$10,000-\$50,000/year (32.3%), and non-Hispanic white (64.7%) followed by Hispanic (27.3%). The majority of participants (41.1%) defined health and wellness as an "active, lifelong process of becoming aware of choices and making decisions toward a more balanced and fulfilling life," and 60.9% reported that "health/wellness is influenced by the environments where I live, learn, work, play and pray." About 44.7% reported that they partially agreed with the statement "the healthcare system is responsible for my health/wellness" followed by 32.8% who disagreed with this statement. Participants identified after-hours non-emergency

care, weight management coaching, and mental health services as the top three most important community priorities.

Conclusion: This community health assessment is a first step toward enhancing the quality of h/w resources provided to rural residents. Follow-up studies are needed to identify feasible interventions thereby improving health and wellness for this population.

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A097 6:00 PM-7:00 PM

DEVELOPMENT AND VALIDATION OF AN ENVIRONMENTAL HEALTH LITERACY ASSESSMENT TOOL

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Introduction: Private well users in the US have access to well water testing assistance through their county health departments. Though many citizens take advantage of this oppurtunity, few follow through with treatment if they receive negative test results. A potential barrier to treatment could be a lack of environmental health literacy. Environmental health literacy integrates concepts from both environmental literacy and health literacy to develop skills and competencies needed to seek out, comprehend, evaluate, and use information to make informed choices, reduce health risks, improve quality of life and protect the environment. However, measures of environmental health literacy have not been developed.

Methods: The purpose of this presentation is to describe the development of an environmental health literacy (EHL) assessment tool and to assess the relationship of the EHL against a validated health literacy scale administered in clinic settings, the Newest Vital Sign (NVS). We used crowd sourcing techniques to administer the survey online to a sample of US adults ages 18 and older. The two different measurement tools were compared on 1) absolute values, 2) ranking ability in tertiles, and 3) Bland-Atlman plots with limits of agreement.

Results: A total of 911 adults started the survey, 95% completed it for a final sample of 865. Participants were 57% female, 86% college-graduates, 53% home owners and reported a mean age of 37.8 (SD=11.5). Both surveys averaged between 2 – 2.5 minutes to complete. Scores ranged from 0-6 for both tools. Mean score was 5.0 (SD=1.2) for the standardized NVS and 5.0 (SD=1.0) our EHL measure. Cronbach alpha for our EHL measure was alpha=0.51. Correlation between both measures was r=0.468, p < 001. The number of participants in the top tertile (score of 5 or 6) was 78% for both NVS and EHL with a percent agreement of 74.5% across all tertiles. Histograms and Bland-Altman plots will be included in poster presentation.

Conclusions: The EHL was quick to administer and easy to complete. The EHL measure had similar distributional properties and ranking abilities to the standardized NVS health literacy measure. This tool should be tested in populations with lower access to internet or lower educational attainnment. An assessment tool for environmental health literacy could identify participants at low environmental literacy and aid with intervention development to improve home environmental hazards.

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A098 6:00 PM-7:00 PM

GOOGLE ANALYTICS USAGE IN THE STUDY OF AN ONLINE PROGRAM DESIGNED FOR PROSTATE CANCER SURVIVORSHIP

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Introduction: Google Analytics (GA) is a powerful tool to analyze web-based software usage. While GA is widely used as a business tool, it has only sparsely been used in behavioral research. GA was used as part of a larger trial to test the efficacy of PROGRESS, an online multimedia program for prostate cancer survivorship. PROGRESS was designed to boost coping and adjustment in prostate cancer survivors post treatment. **Methods:** GA enabled tracking of individual user behavior within the PROGRESS website, recording accessed pages, videos and downloaded documents. Usage was then related to common demographic variables. **Results:** Users were mostly white (77%), married (83%), and well-educated (76%). Of the 162 patients who received access to the website, 78 (48%) participants logged on and viewed multiple pages. There was no association between users and non-users along race, marital status, and education variables. The most popular feature on the website was the Health Tracking Tool, which allows users to track their sleep, moods, and recovery of erectile functioning. Other popular features were informational pdfs to construct a personalized survivorship care plan (e.g. treatment information, follow-up care, and post-treatment health changes), accessing external information of prostate cancer-relevant exercises (yoga & Kegels), and a collection of physician and patient videos. **Discussion:** We succeeded in our goal to create a web based support tool that was attractive to users across demographic groups. Patients preferred interactive components, such as the health tracking tool, and informational content that allowed them to record personalized information relevant for future follow-up care (i.e., survivorship care plan). Measuring website usage in real time through an online tool, such as GA, provides important information about patient needs and

behaviors. The use of real-time access data reveals patient needs that are far more accurate than retrospective reporting of usage.

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A099 6:00 PM-7:00 PM

IMPACT OF AMERICAN SIGN LANGUAGE EDUCATION VIDEOS ON NUTRITION AND EXERCISE KNOWLEDGE AMONGST THE DEAF COMMUNITY

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Reducing obesity and cardiovascular disease are public health goals. Studies support improving nutrition and exercise knowledge to promote weight loss and physical activity. The Deaf community faces communication barriers that hinder education efforts, such as limited English proficiency and limited health terminology available in American Sign Language (ASL). Intervening with culturally competent education about nutrition and exercise in ASL is needed to overcome these communication barriers. In this study, Deaf-relevant education videos in ASL were created to improve nutrition and exercise knowledge amongst the Deaf community. The aim of this study was to test whether positive changes in nutrition and exercise knowledge resulted from exposure to the education videos. We enrolled 215 Deaf men and women. Enrollees were randomly assigned to one of two intervention groups: nutrition or exercise video. Each group served as controls for the other group. Participants completed a demographic survey, a nutrition knowledge test, and an exercise knowledge test. Knowledge tests were completed at pre- and post-intervention and two months afterwards. Descriptive statistics were presented as means and standard deviations. Repeated measures models within linear mixed-effects models compared changes in knowledge test scores between groups. The sample that completed the study consisted of nearly equal numbers of Deaf men and women, between 18 and 87 years of age ($N = 190$; $M \pm SD$: 42 ± 16 years). They were mostly non-Hispanic White and had completed education beyond high school. Nutrition knowledge test scores can range from 0 to 17; exercise knowledge test scores, from 0 to 12. Higher scores indicate higher knowledge. The nutrition group gained nutrition knowledge after viewing the education video, and retained knowledge after two months ($M \pm SD$: pre, 8.9 ± 2.7; post, 11.0 ± 2.3; two months, 10.5 ± 2.8). The exercise group also gained and retained exercise knowledge ($M \pm SD$: pre, 5.7 ± 1.9; post, 8.0 ± 1.8; two months, 6.8 ± 1.9). Adjusting for age and education level, nutrition knowledge test scores increased by 0.8 ($F(1, 379) = 67.2$, $p < 0.0001$) and exercise knowledge test scores increased by 0.5 ($F(1, 379) = 33.9$, $p < 0.0001$) from pre-intervention. However, the nutrition group did not score differently on the nutrition

knowledge test than the controls. Exercise knowledge scores amongst the exercise group were generally higher by 1.05 than that of the controls ($F(1, 184) = 22.2$, $p < 0001$). ASL education videos are a promising tool to communicate nutrition and exercise information to the Deaf community. Exposure to the ASL exercise education video resulted in modest improvements in exercise knowledge. Further study is needed to explore the impact of the ASL education videos on promoting healthy dietary and exercise behavioral changes.

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A100 6:00 PM-7:00 PM

PERCEPTIONS OF ADDICTIVENESS OF WATERPIPE TOBACCO AMONG YOUNG ADULT WATERPIPE TOBACCO USERS

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Waterpipe tobacco is a commonly used tobacco product among U.S. young adults, linked to symptoms of nicotine dependence and acute and long-term negative health effects. Very little research exists as to how to design and deliver public health messages to prevent and reduce waterpipe tobacco use among young adults. To this end, this study investigated young adult waterpipe tobacco users' perceptions of the addictiveness of waterpipe tobacco and preferences for waterpipe tobacco messaging. Young adults (n = 44, M age 25.3 years, 52% female, 80% white) who had used waterpipe tobacco in the past month completed a brief, cross-sectional online survey. Closed-ended measures assessed demographics, waterpipe and other tobacco use, and perceived addictiveness of waterpipe tobacco. Open-ended items measured additional perceptions of addictiveness of waterpipe tobacco and preferences for waterpipe tobacco messages. Quantitative data were analyzed descriptively, and open-ended data were coded using an iterative, constant comparison method to identify emerging themes. Most participants used waterpipe tobacco monthly (59%); 86% also used one or more other tobacco product. Participants averaged 4.0 (*SD* 2.0, range 0-13) on a waterpipe tobacco dependence measure, but reported low perceived addictiveness (*M* 2.0, *SD* 0.9, range 1-4), low perceived chances of becoming addicted (*M* 3.0, *SD* 1.6, range 1-7), and low desire to quit (*M* 3.0, *SD* 1.8, range 1-7). Open-ended data indicated participants believe intermittent social use does not lead to addiction and that they can easily quit. However, some participants expressed concerns that waterpipe tobacco addiction may lead to health harms, social stigma, and financial costs. Participants indicated messages emphasizing negative health effects, using attention-grabbing imagery, and conveying that waterpipe users are at risk of long-term tobacco use would motivate cessation. Despite reporting moderate levels of waterpipe tobacco dependence, study participants largely viewed that waterpipe tobacco is not addictive. Messaging vividly conveying the health harms and risk of long-term addiction may be optimal to reduce waterpipe tobacco use.

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A101 6:00 PM-7:00 PM

PROMOTING HEATH AMONG MILITARY FAMILIES: 5210 HEALTHY MILITARY CHILDREN

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Background: Disseminating evidence-informed health promotion strategies to parents has the potential to improve health and decrease the prevalence of obesity among children. The *5210 Healthy Military Children campaign* (HMC) is designed to spread a consistent health message throughout Military communities. The campaign emphasizes “5” + fruits and vegetables, “2” hours or less of recreational screen time, “1” + hours of vigorous physical activity, and “0” sweetened drinks.

Methods: An effectiveness-implementation Hybrid Type III design (Curran et al., 2012) study was conducted among six military installations, where 15 venues (e.g., child development centers and commissaries) at each site were targeted by the *5210 HMC* campaign using venue-specific toolkits, posters, social media messaging, and flyers. The Point of Contact at each installation was trained on content and campaign implementation strategies via a 7-module online training. Opt-in text based surveys were used to evaluate the impact of the campaign on awareness, knowledge, and health behaviors at 0, 4, 8, and 12 months.

Results: Survey participants were 115 adults, with the majority 25-40 years (61%), female (71%), and with children (60%). Most people opted in to participate at a medical center (29%) or via social media (23%). At baseline, 78% of participants were not aware of the 5210 message. Most participants indicated that they **sometimes** ate 5+ fruits/vegetables daily (61%), **sometimes** spent more than 2 hours a day watching television, playing video games, or surfing the web (42%), **always** spent 1 + hours engaging in daily physical activity (39%), and **rarely** drank sweetened beverages daily (40%). Parental reports of their children’s behaviors mirrored those of their own behaviors. Although attrition in the study declined over the 12-month period, for those remaining, awareness and knowledge of the 5210 message increased, with no change in behavior.

Discussion: Dissemination and implementation research seeks to translate knowledge into practice. Improving the quality and consistency of health promotion messaging may improve family and child health outcomes. This pilot study produced a wide array of lessons learned

and next steps in implementing and evaluating an evidence-informed health promotion campaign in a military context.

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A102 6:00 PM-7:00 PM

PUBLIC UNDERSTANDING OF THE PURPOSE AND LIMITATIONS OF CANCER SCREENING: DATA FROM HEALTH INFORMATION NATIONAL TRENDS SURVEY 4

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In recent years, questions about the appropriate use of cancer screening—including whether and when screening's risks may outweigh its benefits—have risen to the fore. One such risk is overdiagnosis, which refers to a diagnosis of cancer that would otherwise never have caused symptoms or death in a person's lifetime. Although debates about the value of cancer screening find their way into media coverage, we know little about public understanding of these issues or whether there are significant communication inequalities in social groups' ability to access, understand, and act on this information. Using weighted data from the National Cancer Institute's Health Information National Trends Survey (HINTS 4, Cycle 4; N=3,677), we find that public understanding of the purpose and limitations of screening varies. Most respondents (91.2%) agreed that "when a [screening] test finds something abnormal, more tests are needed to know if it is cancer." However, only one-quarter (28.2%) correctly identified as false the statement that "These tests can definitively tell that a person has cancer." Even fewer (20.0%) recognized that "the harms of these tests and exams sometimes outweigh the benefits," despite evidence that this is true for certain screening modalities, such as prostate-specific antigen testing. Importantly, screening perceptions were socially patterned: Respondents with more education and income were more likely to agree that screening tests cannot definitively tell that a person has cancer ($p < .001$), and while "don't know" responses were frequent overall, this was particularly true among respondents of lower socioeconomic position (SEP). Given ongoing debates about the value of screening and concerns about overdiagnosis, it is important for providers to help patients understand screening's risks and benefits so they can make informed decisions. This is particularly critical for lower SEP and other underserved populations, given persistent communication inequalities. Additional implications of study findings for behavioral interventions will be discussed.

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A103 6:00 PM-7:00 PM

RATIONALE, PROCEDURES, AND RESPONSE RATES FOR THE 2015 ADMINISTRATION OF NCI'S HEALTH INFORMATION NATIONAL TRENDS SURVEY

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Background: The National Cancer Institute (NCI) developed the Health Information National Trends Survey (HINTS) to monitor population trends in cancer communication practices, information preferences, health risk behaviors, attitudes, and cancer knowledge. The US Food and Drug Administration (FDA) recognized HINTS as a unique data resource for informing its health communication endeavors, and partnered with NCI to field HINTS-FDA 2015. **Methods:** HINTS-FDA 2015 was a self-administered paper instrument sent by mail May 29-September 8, 2015 using a random probability-based sample of US postal addresses, stratified by county-level smoking rates, with an oversample of high and medium-high smoking strata to increase the yield of current smokers responding to the survey. **Results:** The response rate for HINTS-FDA 2015 was 33%, N=3738. The yield of current smokers (N=495) was lower than expected, but the sampling strategy achieved the goal of obtaining more former smokers (N=1132). **Conclusion:** The public-use HINTS-FDA 2015 data and supporting documentation are available for download and secondary data analyses as of June 2016 at http://hints.cancer.gov. NCI and FDA encourage the use of HINTS-FDA for health communication research and practice related to tobacco-related communications, public knowledge, and behaviors, as well as beliefs and actions related to medical products and dietary supplements.

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A104 6:00 PM-7:00 PM

RESOURCES FOR RESEARCHERS: A NEW PORTAL TO ASSIST PREVENTION INVESTIGATORS

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Background

The Office of Disease Prevention (ODP) is the lead office at the National Institutes of Health (NIH) responsible for assessing, facilitating, and stimulating research in disease prevention and health promotion, and disseminating the results of this research to improve public health. Increasing the scope, quality, dissemination, and impact of prevention research supported by the NIH is central to the ODP's mission.

Methods

To assist the extramural research community to develop quality research projects that address a wide range of research needs, gaps, and priorities, the ODP has created a new online information portal: Resources for Researchers. This dissemination effort, which incorporates domains and strategies from the Framework for Knowledge Translation, aims to increase investigator capacity and lead to research that informs improved clinical practice, health policy, and community health programs. The ODP collected information from NIH's Office of Extramural Research, Center for Scientific Review, and other Institutes and Centers to develop this portal. The ODP also collaborated with the Agency for Healthcare Research and Quality and the Centers for Disease Control and Prevention to provide information on research gaps identified through rigorous systematic reviews by the U.S. Preventive Services Task Force and the Community Preventive Services Task Force.

Results

Resources for Researchers provides investigators with a variety of tools and resources including (1) instructions for finding NIH-funded research projects; (2) directions for applying for NIH funding; (3) a list of prevention-related funding opportunity announcements; (4) a list of methods-related funding opportunity announcements; (5) a directory of prevention-related NIH programs and offices; (6) a list of prevention-related study sections at the NIH; (7) an innovative database that is manually curated by experts, keyword-searchable, and categorized by research topics; (8) a comprehensive list of resources to assist dissemination and implementation researchers; and (9) information on high-priority evidence gaps identified by the U.S Preventive Services Task Force and the Community Preventive Services Task Force. The information about evidence gaps provides investigators seeking new topics of inquiry with a selection of understudied areas in prevention science.

Conclusions

Resources for Researchers combines prevention-related information across various NIH websites with newly created tools and materials in one online repository specifically tailored to the needs of the prevention research community. This dissemination effort is intended to build investigator capacity and has shown to be a useful resource for prevention researchers, particularly new investigators.

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A105 6:00 PM-7:00 PM

SOCIAL AND COMMUNICATION NETWORKS, CANCER INFORMATION, AND SELF-COLLECTED HPV TESTING AMONG WOMEN IN APPALACHIAN KENTUCKY

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In Appalachian communities, social networks are powerful community ties. However, there are few studies that examine how these network ties might be used to communicate information and norms about cancer screening and prevention behaviors. This study explores peer word-of-mouth communication networks in rural Appalachian women who have used self-collected vaginal swab (SCVS) for HPV testing, an innovative screening methodology in this population. The goal is to investigate how best to activate networks to disseminate cancer prevention and screening information, specifically innovative screening methodologies, in rural Appalachia. Network interviews were conducted with 50 women in Appalachian Kentucky who have not had a Pap test in three or more years, and 34 members of their networks (alters). Community health workers conducted interviews in the field using tablet-based softwarefor guided network data collection. They obtained information about participant's social and communication networks, study referral activity, source of health information and health care services, and characteristics of participant's network members (alters) and their relationships. Participants seek health information from health care providers (HCP; 51%), the internet (25%), and family and friends (16%), but get cancer information primarily from the internet (30%), followed by HCP (21%), and friends and family (11%). Of the 80% of participants that use the internet, most (67%) access it from a smartphone. Preliminary network descriptives show a mean network size of 12.6 alters (median 9, range 2-27) and a mean network density of 0.67 (median 0.63, range 0.13 – 1.00). However, 43% of participants have networks with a density of 1.00, meaning everyone in their network knows one another. This type of dense network structure can limit access to new information and resources, such as innovative cancer screening methodologies. Additional results will include communication network characteristics, what type of network characteristics distinguish women who refer others to SCVS testing, and whom they refer. Determining how network structure and content influences access to cancer information and cancer prevention norms can allow public health practitioners to tailor dissemination interventions in peer networks in low-income, marginalized populations such as rural Appalachian women.

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A106 6:00 PM-7:00 PM

TAILORED HEALTH COMMUNICATION FOR PRECLINICAL ALZHEIMER'S DISEASE

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Educating patients about symptoms, prognosis, and treatment of disease is a cornerstone of competent patient care. Tailored Health Communication (THC) accounts for an individual's preferences, characteristics, and needs in the education process. The present study examines the influence of individual differences on the effectiveness of an educational protocol about preclinical Alzheimer's disease (pAD), a novel at-risk diagnostic category. A total of 581 adults between the ages of 18 and 65 were recruited on Amazon Mechanical Turk (50.8% female; 64.9% Caucasian; mean age=37.32 years). Participants were randomly assigned to one of three education conditions: education-as-usual (EAU; basic disease information); learning-to-criterion-basic (LTCbasic; basic disease information plus criterion learning); and learning-to-criterion-extended (LTCextended; basic disease information plus in-depth risks, benefits, and limitations plus criterion learning). Participants responded to two knowledge questions, and LTCextended participants responded to two additional in-depth knowledge questions. Participants also reported on their level of education, health literacy, experience with AD, and knowledge about AD. N=283 participants (51.3%) responded correctly to the knowledge questions. On the two basic knowledge questions, performance in the LTCextended condition was significantly better than in the other conditions. On the two basic knowledge questions, performance in the LTCextended condition was significantly better than in the other conditions ($\chi^2(2, N=581)=40.80$, $p < .001$). Participants in the LTCextended intervention reported lower levels of interest in obtaining predictive testing for AD compared to participants in the other interventions ($F(2,581)=11.31$, $p < .001$, partial η2=.038). Individual differences affected performance on the knowledge questions ($\chi^2(11)=94.75$, $p < .001$), with health literacy (lower confidence in filling out medical forms and few problems learning about medical conditions) and higher objective AD knowledge predicting better performance. More experience with AD predicted higher interest in obtaining testing for AD ($F(1,570)=8.09$, $p=.005$, partial η2=.014) with education condition in the model. Overall, participants' knowledge of this complex diagnostic category depended on individual difference variables and type of education. This study provides preliminary evidence for the effectiveness of THC in education for pAD.

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A107 6:00 PM-7:00 PM

WHAT (PREGNANT) WOMEN WANT: RESULTS FROM A WEB-BASED NEEDS ASSESSMENT OF WEIGHT-RELATED MOBILE APP MOTIVATIONS AND EXPERIENCES

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BACKGROUND: Technology has revolutionized the way people communicate. Mobile applications (apps) and websites hold potential as a convenient, readily available, and personalized resource for women during pregnancy. Electronic health (e-health) interventions could be used as a parallel or supplemental tool to deliver pregnancy weight-related information.

METHODS: Using Facebook and Twitter social media sites, pregnant women living in the United States who owned a smartphone were recruited to complete a brief one-time online survey regarding the needs and interests of pregnant women to guide the development of an e-health intervention. The survey included questions regarding pregnancy history, weight-related knowledge and behaviors, topics discussed with health care practitioners, information sought by pregnant women, and interests in electronically delivered health information. Descriptive statistics were used to summarize the data.

RESULTS: A total of 330 pregnant women completed the survey, and 327 participants self-reported pre-pregnancy height and weight (mean BMI =26.1+6.5). Half of the participants (50.6%) reported that they did not receive recommendations for healthy gestational weight gain (GWG) from their physicians during pregnancy. Ninety-one percent reported that they did not receive counseling on weight-specific information but 37.3% indicated interest in receiving such information during their pregnancy from a doctor, nurse, or other health care worker. Participants reported receiving their nutrition and physical activity information from websites (59.9%), a doctor (49.5%), friends/family (40.7%), cell phone apps (23.9%), a nurse/health care worker (23.5%), blog posts (21.1%), social media (18.3%), or books/magazines (16.8%). When asked about interest in receiving health information via electronic resources, 73% of participants were interested in podcasts, online group-based nutrition challenges (75.5%), group-based exercise challenges (76.9%), and mobile apps (81.5%). Moreover, 83.9% were interested in a mobile app for tracking GWG, and 87.3% reported use of pregnancy apps.

CONCLUSIONS: Participants from social media sites reported high use of electronic resources during pregnancy for health-related information. Focusing e-health interventions around weight management information and GWG tracking may fill a need in prenatal care. Future development of e-health interventions using websites or mobile apps would be beneficial for pregnant women.

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A108 6:00 PM-7:00 PM

FEAR OF DEPORTATION AND ITS EFFECTS ON HEALTH SERVICE USE AMONG LATINO IMMIGRANT MEN WHO HAVE SEX WITH MEN

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Introduction. In the past fifteen years, there has been a 600% increase in the number of deportations, yet few studies have explored fear of deportation and how it affects health disparities. Fear of deportation may be conceptually related to 'vigilance', the everyday anticipation of discrimination by African-Americans. Research is needed to understand how fear of deportation impacts health care use among young Latino men who have sex with men (MSM), the Latino population at highest risk for HIV, for whom health care avoidance could result in swifter progression to AIDS and increased HIV transmission.

Methods. We conducted in-depth interviews with 18 non-US citizen immigrant Latino MSM aged 18-34 who live in the Washington, DC metro area. We asked about places and circumstances where they feel unsafe, experiences with immigration authorities, and use of health services. Interviews were conducted in Spanish for up to 90 minutes. Verbal consent was obtained. Data were protected through a federal Certificate of Confidentiality.

Results. Nearly all participants were from Central America (El Salvador, Honduras, and Mexico). Their average age was 25. The average length of time the participants were in the US was 6.4 years (range 0.2 year – 18 years). Eleven participants were undocumented (without legal papers to live/work in the U.S.) and were undergoing a legal process to adjust their immigration status, six were undocumented with no legal process, and one was a permanent resident. Five participants were HIV positive. Most participants described being worried about deportation because of violence, threats of death, and discrimination in their countries of origin. Some reported anxiety due to recent raids on undocumented immigrants. Participants' fears resulted in avoiding certain activities, including driving, going out late at night, and traveling to other states. As one participant explained: "I don't leave the apartment. I only go out for important things. This [fear of deportation] is something that you always have on your mind. It is very different for someone who has papers. They can go out to the places they want." Thirteen participants had health insurance, mostly through DC Health Care Alliance, one of the few state-sponsored programs that provides health insurance for the

undocumented. One undocumented participant became unemployed after lacking medical care for an injury. A few participants were afraid to access health care for fear they would encounter law enforcement and be deported, including one participant who was HIV positive.

Conclusion. The persistent threat of deportation generated everyday stress for our participants and contributed in some cases to their avoidance of health services. We will discuss how these qualitative themes have been translated into survey items for further measurement and testing among immigrant Latino MSM.

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A109 6:00 PM-7:00 PM

GENERATIONAL DIFFERENCES IN SEXUAL BEHAVIORS AND PERCEPTIONS AMONG GAY, BISEXUAL, AND QUEER MEN IN RURAL AREAS OF THE USA

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Background: Gay, bisexual, queer and other men who have sex with men (GBQ men) have been put into one monolithic group, MSM (men who have sex with men), when considering sexual risk. However, there are many factors that create differences of risk among GBQ men, including age. For example, older GBQ men may perceive HIV transmission as more likely and deadly than younger gay man due to growing up during the 1980/90s AIDS crisis.

Methods: This qualitative study explored the health, relationships, and technology use of GBQ men in rural areas of the United States. Eligibility criteria included identifying as a man who experiences attraction to other men, residing in a rural area, and being at least 18 years old. In total, 20 semi-structured interviews were conducted from July 2015 to June 2016. Interviews were transcribed verbatim and analyzed in NVivo 11 by a diverse coding team using grounded theory approach.

Results: Themes of generational differences were common throughout the interviews. Most men who were 35 years of age or older, described feeling as if younger men, usually under 18 years of age, did not perceive sexual risk as severe and did not fear HIV/AIDS. They described younger men as more willing to engage in unsafe sex, and even ask their partners to forego protection, either for pleasure or to actually help transmission of the disease. Additionally, older men perceived younger GBQ men to engage in more casual sex and to be less focused on pursuing long-term relationships than older GBQ men. Young GBQ men felt pressure to commit and be in relationships, and often rejected those pressures. Lastly, almost all older GBQ men shared stories of being asked to be younger men’s “silver daddies,” where the partners would have unprotected, casual sex. These propositions were universally met with disdain.

Conclusion: Understanding how young GBQ men perceive HIV/AIDS and transmission are important in creating effective interventions to reduce transmission of HIV. Interventions can no longer just focus on reducing barriers and increasing knowledge; instead we have to additionally focus change perceptions of risk and safety. Interventions should also be tailored

toward different generations of GBQ men, adolescents, young adults, and older adults, as all groups view sexual and relationships risk differently.

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A110 6:00 PM-7:00 PM

MERITORIOUS AWARD WINNER

HIV TESTING AVOIDANCE: PSYCHOSOCIAL FACTORS AFFECTING HIV TESTING IN GAY AND BISEXUAL MEN

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The CDC recommends men who have sex with men (MSM) get tested for HIV every three months after having unprotected anal sex (CDC, 2015). HIV testing is treated as the first step towards HIV prevention. However, there are significant social and psychological barriers to testing uptake. Even with improved HIV testing technology that can deliver accurate results in a matter of minutes, 1 in 8 people living with HIV are still unaware of their positive status (CDC, 2015). With the HIV testing gap still such a pressing issue, we sought to pin point which psychosocial factors might affect testing. This study examined a three psychosocial factor model of HIV testing decisions among men who have sex with men (MSM). Two of the psychosocial factors, HIV stigma and fatalistic beliefs regarding an HIV positive diagnosis, have been well documented in the literature on HIV testing and psychosocial barriers. However, the third psychosocial factor, the defensive process of avoiding relevant health information, has received less attention in relation to HIV testing. The present study investigated how these factors impact both past and contemporaneous HIV testing behaviors in MSM.

Surveys were collected from 400 gay and bisexual men at the 2015 Atlanta Pride Festival. Men answered questions about their HIV beliefs and attitudes, HIV testing history, sex behavior, and whether or not they would like to receive an at-home HIV test. A multivariate multinomial logistic regressions predicting testing history (never tested, tested but not recently, recently tested) revealed the only significant psychosocial predictor of group membership was HIV status related information avoidance. Those who reported greater HIV status related avoidance tendencies were more likely to have never been tested than those who were tested recently (in 2015), OR 0.62, 95% CI [0.50-0.76], or those who had been tested but not recently (not in the year 2015) OR 0.72, 95% CI [0.57-0.91]. A logistic regression analyses was conducted in order to assess predictors of contemporaneous HIV testing uptake. After controlling for covariates, HIV status related information avoidance was significantly related to testing uptake above and beyond the other psychosocial factors, OR 0.85, 95% CI [0.73-0.98]. Those who were higher in HIV status related information avoidance were less likely to accept the at-home HIV test.

Overall, our results indicate that an important potential mechanism has been missing from the study of psychosocial barriers to HIV-testing in the literature. HIV status related information avoidance predicts HIV-testing behavior above and beyond the psychosocial factors that have previously been considered the primary motivators for avoidance. Further examination of information avoidance and how it functions in relation to HIV testing decisions is warranted for furthering the understanding of why at-risk populations choose not to test for HIV.

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A111 6:00 PM-7:00 PM

SEX TRADE, VIOLENCE, HIV: MULTIPLE TRAUMAS IMPACTING UTILIZATION OF CARE

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As part of Kaiser Permanente's Community-Based HIV Test & Treat Initiative, this study hypothesizes that sex trade involvement and experiencing recent physical or sexual violence are associated with lower levels of engagement in HIV care, HIV case management, and in other health services (substance use treatment, mental health services). **Methods:** Baseline survey data collected from October 2013-June 2016 as part of the multi-site Community-Based Linkage to and Retention in HIV Care study were used in the current analyses. Community recruitment of HIV-positive participants (N=581) was conducted by seven agency sites across six US cities. Multivariate multilevel logistic regression models were used to assess associations of sex trade and recent history of victimization from violence (physical and sexual violence) with outcomes of HIV care utilization in the past 6 months (defined as a medical appointment in which they received their CD4 count), HIV case management, mental health services, and substance abuse treatment. Models adjusted for age, race, gender, recent incarceration and substance use, being insured, running out of cash, and individuals nested within study sites. **Results:** Participants (N=582, median age 45 (IQR: 33-52) were majority heterosexual (53.6%), Gay/Lesbian (28.2%), and Bisexual (15.1%), although 14 (2.4%) did not specify their sexual orientation. Most identified as male (65.8%); 40.9% were cisgender females, and 10.7% were transgender females. Most participants were Black/African American (74.7%); 15.1% were Latino. 11.4% were involved in sex trade (past 90 days); 3.6% were physically abused (past year), and 2.8% were sexually abused (past year). 36.4% did not receive an HIV care appointment in the past 6 months, 63.9% missed a medical appointment in the past 3 months; 30.8% did not receive an HIV case management appointment in the past 3 months. 35.2% received mental health services in the past 12 months, and 18.4% participated in substance abuse treatment in this same timeframe. Adjusted analyses indicated no associations between recent sex trade involvement and receipt of HIV medical care, case management, or mental health services, though sex trade was associated with likelihood of having missed a healthcare appointment in the past 3 months (OR=2.58, CI:1.37-

4.88). Incarceration (OR=1.78, CI=1.16-2.83), being uninsured (OR=1.88, CI=1.08-2.35), and not having enough money was associated (OR=0.86, CI:0.74-0.99) with missing healthcare appointments. No associations were seen between recent physical or sexual violence and our outcomes of interest. However, being insured (OR=2.44, CI:1.51-3.95) was associated with HIV case management and mental health care (OR=1.71, CI: 1.01-2.87). **Conclusion**: HIV-positive participants involved in sex trade were more likely to have missed healthcare appointments and to utilize substance abuse treatment.

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A112 6:00 PM-7:00 PM

USING NEW MEASURES TO EXPLORE FACTORS ASSOCIATED WITH PREP INTENTIONS AND USE

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Background. Pre-exposure prophylaxis (PrEP) shows great promise to significantly impact the HIV epidemic; however, use among those most at risk, including men who have sex with men (MSM) and transgender (TG) individuals, remains relatively rare. Research is needed to determine appropriate targets for interventions to increase PrEP uptake. One basis for HIV prevention interventions is the Information-Motivation-Behavioral Skills (IMB) model. However, we do not yet know whether this model applies to PrEP intentions and use.

Methods. Participants completed a survey at a community event in a mid-sized city in the midwestern U.S. in 2016 (N=357, 64% White, 22% Black, 14% Latino, M_{age}=35). Only HIV- men (93%) and TG men and women (6%) who engaged in sex with men were included in this analysis. Items to assess PrEP knowledge, attitudes, stigma, descriptive and subjective norms, and intentions were developed and reviewed by experts in HIV prevention and HIV providers. Participants responded to the new measures and reported their current PrEP use. Structural equation modeling was used to test the IMB model, with separate models for intentions (for those not on PrEP) and use (for all participants). Models included demographic controls.

Results. All new measures performed well based on evaluations of items and correlations, confirmatory factor analysis, and tests for differential item functioning; all scales were reliable (αs=.83-.94). Only 12% of participants were taking PrEP, although 69% had heard of PrEP and 37% said they would probably/definitely start taking PrEP in the next 3 months.

A model with acceptable fit (χ^2(267)=417.37, RMSEA=.04, CFI=.95) explained 35% of the variance in PrEP use intentions. Stigma and descriptive norms predicted self-efficacy, B = -0.18, $p < .05$, and B = 0.26, $p < .05$, respectively. Attitudes, descriptive norms, and self-efficacy predicted intentions, B = 0.28, $p < .05$, B = 0.32, $p < .01$, and B = 0.17, $p < .05$, respectively. However, neither knowledge nor subjective norms was associated with intentions, and there was no mediation.

A second model with good fit (X^2(90)=308.57, RMSEA=.03, CFI=.96) explained 57% of the variance in use. Attitudes, stigma, and descriptive norms predicted self-efficacy, B = 0.28, $p < .05$, B = -0.20, $p = .001$, and B = 0.22, $p < .01$, respectively. Knowledge, stigma, and self-efficacy predicted use, B = 0.28, $p < .01$, B = -0.18, $p < .05$, and B = 0.29, $p = .001$, respectively. Attitudes, stigma, and descriptive norms had indirect effects on use via self-efficacy, in line with the IMB model. However, subjective norms were not associated directly or indirectly with use.

Conclusions. New PrEP-related measures were successfully piloted with a diverse sample of MSM. Results suggested that the IMB model may be useful when developing PrEP interventions, with knowledge, attitudes, stigma, descriptive norms, and self-efficacy all playing roles.

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A113 6:00 PM-7:00 PM

FACTORS CONTRIBUTING TO PRIMARY CARE VISITS AMONG HEMODIALYSIS PATIENTS IN A PATIENT-CENTERED MEDICAL HOME INTERVENTION

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Background: Utilization of thepatient centered medical home (PCMH) model reduces hospitalizations, emergency room visits, and healthcare costs for some complex chronic diseases. Yet PCMH has not been examined for chronic kidney disease.

Purpose: In a non-randomized quasi-experimental 18-month intervention study, we implemented an adaptation of the patient centered medical home for kidney disease (PCMH-KD) at two urban dialysis centers. PCMH-KD integrated a primary care physician (PCP), nurse coordinator, pharmacist and community health worker (CHW) to the health care delivery team. In this analysis, we examined factors associated with PCP visits by adult chronic hemodialysis (CHD) patients.

Methods: We used logistic and Poisson regression analysis to examine factors contributing to having at least one visit with one of the study PCPs and the number of PCP visits. Patients were grouped based on their response to having a PCP or regular doctor and for how long during the baseline survey.

Results: Among 173 patients included in the analysis, 91 (53%) patients had at least one (≥1) visit with the PCMH-KD study PCP. Thirty-two of these patients 32 (35%) reported having a PCP at baseline which they have seen for six or more months (established PCP) while 59 (65%) reported no PCP or have a PCP for less than 6 months (no established PCP). Having more visits with the CHW was a significant predictor for having ≥1 visit(s) with one of the study PCPs in both the established PCP and no established PCP groups. CHD patients with no established PCP and had greater PCMH-KD PCP visits were females, self-reported Diabetes, used a medically arranged transportation to dialysis, had a stressful life events in the prior 6 months, and had a family member of friend involved with their dialysis care.

Conclusions: Both social and clinical factors influenced the use of the PCMH-KD PCP by CHD patients. This study is the first to examine factors affecting use of primary care by CHD patients. Understanding these relationships is important in care redesign aimed at improving outcomes for complex chronic diseases.

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A114 6:00 PM-7:00 PM

UTILIZATION OF PRIMARY CARE-MENTAL HEALTH INTEGRATION: A PERSPECTIVE FROM PRIMARY CARE PROVIDERS IN THE VA

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Co-located, collaborative care is one component of the Department of Veterans Affairs model of integrated care. Primary Care-Mental Health Integration (PC-MHI) is a multi-disciplinary program designed to address the mental health needs of Veterans in the primary care setting. The study aimed to assess primary care providers' perspective on two critical elements of integration: 1) Level of PC-MHI utilization and 2) potential referral barriers. Qualitative survey data was collected from Primary Care Clinicians (PCC) (N=22) from two VA medical centers to evaluate utilization rates and obtain information regarding current strengths and challenges of providing integrated primary care.

Results indicated the following utilization rates: 27.3% 2-3x/mo., 45.5% 1-2x/wk, 27.3% 3+/wk. PCC's indicated roughly similar preferences for face-to-face, same day referral (68.2%,)vs. requesting a future PC-MHI appointment (63.6%). PCC's most frequently request PC-MHI assistance to co-manage anxiety (100%), depression (95.5%), stress management (95.5%), and cognitive assessment (86.4%).

Regarding prescribing psychotropic medication to co-treat psychiatric conditions, it is notable that 4.5% were 'not comfortable' prescribing for depression/anxiety, while 22.7% were 'not comfortable' prescribing specifically for PTSD. PCC's noted minimal barriers to PC-MHI referral, with the most prevalent being patient refusal ('often a barrier' 36.4%). PCC's overall impressions of PC-MHI were favorable, reporting significant benefit to both themselves (M=9.36, SD= .90) and their Veterans (M=9.27, SD=1.07).

Preliminary findings provide insight into perspectives toward integrated care and suggest opportunities to further enhance care. Data indicates lower referral rates for behavioral health conditions such as chronic pain (45.5%), coping with medical illness (22.7%), and smoking cessation and weight management (4.5%), and suggests a target for increased PCC education. Findings also indicate an opportunity to decrease stigma associated with PTSD and increase PCC's comfort in initiating/managing psychiatric medications with PC-MHI support. Only 50% of PCC's reported awareness of availability of the depression medication monitoring protocol. Additionally, efforts must be made to decrease requests for future appointments, as same-day access is a central goal of the PC-MHI program. Focus on these areas is essential for ongoing improvement of the co-located, collaborative model of care.

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A115 6:00 PM-7:00 PM

CHANGES IN RESILIENCE PREDICT FUNCTION IN ADULTS WITH PHYSICAL DISABILITIES: A LONGITUDINAL STUDY

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Resilience has been identified as an important factor that may contribute to improved functioning and overall quality of life. Resilience, defined as the ability to restore or maintain psychological and physical health in the face of life stressors, may be especially important for those with physical disabilities, who often experience a multitude of stressors. Little is known about how resilience may relate to overall physical and psychological health of this population. Even further, if resilience is shown to positively relate to functioning, there is limited research examining whether resilience may be a viable target for treatment among this population. The current study sought to first examine the impact of resilience on four important measures of functioning (physical functioning, fatigue, sleep quality and depression) over the period of one year among those with physical disabilities. Second, the study compared how much resilience varied over one year in relation to other well-established and supported targets of treatment, such as fatigue, sleep quality, and depression. The study was comprised of 893 adults that had one of four physical disabilities - Muscular Dystrophy (18%), Multiple Sclerosis (40%), Spinal Cord Injury (18%), or Post-Polio Syndrome (24%). The participants were mostly White/Caucasian (90%), female (64%), and highly educated (81% receiving at least some college). The participants were assessed at two time points one year apart by mail-in survey. Four separate linear regressions examined if changes in resilience would predict one of four criterion variables (physical functioning, fatigue, sleep quality, and depression), while controlling for the baseline score of the criterion variable, age, sex, and diagnosis. Four Pearson *R* correlations were also done to examine the stability of resilience in comparison to depression, fatigue, and sleep quality. Our findings showed that changes in resilience were significantly associated with changes in physical functioning, fatigue, sleep quality, and depression over one year, with no differences among age, sex, or diagnosis group. Our findings also indicated that resilience did show similar test-retest stability over one year as depression, fatigue, and sleep quality. Our findings support that resilience is important in maintaining physical and psychological health among those with physical disabilities. Second, our findings provide support that resilience may be a viable target for treatment, such as depression, fatigue, and sleep quality are.

Learning Objective 1: Define resilience, and its relation to physical functioning, fatigue, sleep quality, and depression among those with physical disabilities.

Learning Objective 2: Discuss the variability and/or stability of resilience over time, as well as its viability as a target for treatment.

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CORRELATES OF THE OCI-R SUB-SCALES AND MISOPHONIA

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Correlates of the OCI-R sub-scales and misophonia

Misophonia is characterized by an aversion to specific sounds, usually made by other people. It has been proposed as potentially falling within the category of obsessive-compulsive spectrum disorders (OCSD). Evidence for a relation between misophonia and the OC spectrum is present in case reports of patients with misophonia endorsing co-morbid OCSDs, including obsessive-compulsive disorder. Data suggest that misophonia is associated with both obsessive rumination about the sound and compulsive behavior designed to stop the sound or mitigate its effects. Additional research is needed to better characterize this association and begin to explore potential mechanisms underlying misophonia. This study examines the association of misophonia with six subscales of the Obsessive Compulsive Inventory-Revised (OCI-R) and a brief misophonia screening question, "*Compared to other people, are you sensitive to certain sounds made by other people?* " in a cross-sectional survey of college students and community adults.

The current study (n=826, M_{age}=27.5, 63.6% female) investigates misophonia and its OCI-R sub-scale correlates. 16.2% of the total sample indicated they regularly experience misophonia, while 44.7% endorsed misophonia some of the time. Misophonia was significantly correlated with the full OCI-R (r = .22) as well as the obsessing subscale (r = .231) and the compulsive checking (r = .157), hoarding (r = .15), neutralizing (r = .15), ordering (r = .17), and washing (r = .20) subscales (all p Further analyses were conducted to explore the hypothesis that misophonia would be more strongly correlated with the obsessive vs. compulsive symptoms. The correlation between misophonia and the obsessing subscale was stronger than with the checking (z = 2.2, p = 0.03), hoarding (z = 2.3, p = 0.02), neutralizing (z = 2.4, p = 0.02), ordering (z = 1.8, p = 0.07), and washing (z = 1.5, p = 0.13) subscales. These results expand upon the literature regarding the OCD and misophonia relationship, suggesting that misophonia is more closely associated with obsessive rumination than compulsive behavior designed to reduce anxiety. Future research should extend these findings by further examining obsessive rumination as a potential mechanism of misophonia.

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CRIME PREVENTION THROUGH SCHOOL RISK BEHAVIOR SURVEILLANCE OF ADOLESCENTS IN A HIGH CRIME RATE COMMUNITY

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The public health model is suitable for preventing risky behavior in adolescents living in high crime communities. Children and adolescent wellbeing and mental health can be compromised by high crime environments. Regular or recurrent participation in risky and antisocial behavior is an indication of lower self-control associated with criminal behavior in adolescent and youth. Assessment and early detection of individuals participating in risky and antisocial behaviors can lead to improve crime prevention efforts in communities with high crime rates. The Youth Risky Behavior Surveillance System (YRBSS), form the USA CCD, is an effective scholar system to monitor troubled behavior in adolescents. Risk behaviors are grouped in six categories of priority behaviors contributing to unintentional injury and violence, undesired pregnancy, sexually transmitted diseases including HIV-AIDS, tobacco, alcohol and illicit drug consumption, as well as inappropriate eating and sedentary life style. Mexican schools located in high crime communities may benefit from a monitoring system assessing high risk behaviors among middle school students. **Objetive.** To assess the psychometric properties of a Spanish version of the YRBSS in a sample of 581 middle school adolescents 11-14 years old, attending one of four middle schools located in high crime neighbors at the city of Chihuahua, Mexico. **Methods**: The 34 item transadapted Spanish version of the YRBSS questionnaire was completed anonymously in a 50 minute classroom session. Male and female students were recruited voluntarily to participate in the study after previously obtaining their parents authorization. School teachers collaborated with questionnaire delivery. **Results:** Overall Cronbach alpha was .746, with 81.1% of complete cases. In a principal component Exploratory Factor Analysis with a Varimax rotation and Kaiser normalization analysis two general factors were identified: a) Addiction and Sex, b) Violence and Leisure Time. Male students showed significantly higher frequencies of Risk Behaviors than females. Males endorsed significantly more alcohol consumption, sexual activity and violence items, than females. More females reported involvement in risky behavior related to affective reactions and monitoring their weight through exercise, diet and other means, than males. Despite some non-significant differences, gender trend described hold both with and without significant differences. **Conclusion:** YRBSS can be useful to monitor risky behaviors in

adolescent Mexican students differentiating males from females. Grouping of items into two sub-scales may reflect a link among behaviors, those relationships deserve further exploration as it may reflect a common dependence on psychosocial factors present in the studied sample.

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A118 6:00 PM-7:00 PM

EXAMINING THE POTENTIAL IMPORTANCE OF FREE WILL BELIEF FOR ANXIETY AND DEPRESSION

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Previous findings from social cognitive research indicate that belief in free will is a factor of important *inter*personal consequence. However, a dearth of research exists regarding the *intra*personal effects of free will belief. The goal of this study was two-fold: 1) to increase the knowledge base concerning the *intra*personal effects of believing in free will; and 2) to investigate the potential importance of this psychological construct for mental health. By employing lay free will theory to the context of mental health, we hypothesized two very different routes by which the belief in free will would impact mental health—one route predicting a negative impact, and the other predicting a positive impact. As for the negative impact on mental health, we predicted free will belief would be positively associated with perceived stress and anxiety. Regarding the positive impact on mental health, we predicted that free will belief would be positively associated with coping self-efficacy and negatively associated with depression. A cross-sectional survey method was implemented to test the predicted associations. A sample consisting of 1048 undergraduate college students completed a survey containing several measures aimed at assessing individuals' self-reported mental health and belief in free will. Bivariate correlations partially supported our predictions. Per our predictions, free will belief was positively associated with perceived stress and coping self-efficacy ($r = .119$, $p = .01$; $r = .222$, $p = .01$, respectively). Contrary to our predictions, no associations for free will belief were found for anxiety or depression ($r = -.017$, $p > .05$; $r = -.043$, $p > .05$, respectively). However, a series of mediation analyses using a bootstrapping technique provided more nuanced support for our predictions. While free will belief was found to negatively impact (i.e., increase) both anxiety and depression by way of perceived stress, it was also found to positively impact (i.e., decrease) anxiety and depression by way of coping self-efficacy. These results provide preliminary evidence that suggests free will beliefs have important *intra*personal implications for mental health/psychological wellbeing. While basic research is needed to more accurately understand these associations, future applied work should identify ways that free will beliefs could be targeted so as to increase self-efficacy with healthy coping strategies, as well as reframe the free will—perceived stress linkage.

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A119 6:00 PM-7:00 PM

FINANCIAL WELL-BEING AND DEPRESSIVE SYMPTOMS AMONG OLDER ADULTS

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Financial well-being (FWB) has recently been conceptualized in cancer survivorship research across three domains: material, psychosocial, and behavioral. The material domain refers to the lack of financial resources (e.g. material hardship), the psychosocial domain refers to how one feels about the lack of resources (e.g. financial worry), and the behavioral domain captures what one does with their financial resources (e.g. saving/consumption behaviors). Research has consistently shown an association between FWB concepts such as financial hardship and health across a range of specific population groups such as low-income housing residents, cancer survivors, and smokers. However, the association between multiple domains of FWB and depressive symptoms among older adults has yet to be explored. Thus, it remains unclear whether the various domains of FWB are differentially associated with mental health among older adults. The purpose of this study was to determine the association between the material, psychosocial, and behavioral domains of financial well-being and depressive symptoms. Cross sectional analysis was conducted using data from the 2010 Health and Retirement Study Leave Behind Questionnaire (N=7,407). Multiple items within each FWB domain were summed to create material, psychosocial, and behavioral FWB scores, with increasing scores indicating worse FWB. Depressive symptoms were operationalized using the Center for Epidemiologic Studies Depression (CESD) scale (range 0-8), with a cut-off CESD score greater than four indicating depression. Multivariable logistic regression was used to obtain the odds of depression (reporting more than four depressive symptoms). Our results showed that increasing scores on each of the FWB domains (worse FWB) was positively associated depression, even after controlling for demographic (age, race, ethnicity, marital status) and socioeconomic (education, household income) characteristics: material (Odd ratio(OR)=1.41; 95% Confidence Interval (CI): 1.35, 1.47), psychosocial (OR=1.17, 95% CI: 1.15, 1.20), and behavioral (OR = 2.09; 95% CI: 1.80, 2.41). Though these results show a similar pattern of worse FWB positively associated with depression for each domain, their differential association is important for the further explication of the pathway between socioeconomic circumstances and mental health among older adults, over and above traditional measures of socioeconomic status such as education and income. In addition, such explication provides greater specificity for potential intervention targets where programs can be designed for improving the material, psychosocial, and/or behavioral

domains of FWB to reduce depressive symptoms and overall mental health among older adults..

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FREQUENCY AND PREDICTORS OF DISTRESS IN A DIVERSE CANCER SAMPLE

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Title: Frequency and Predictors of Distress in a Diverse Cancer Sample

Objective: Determining the prevalence of distress and its predictors among patients with cancer is important in developing and implementing tailored interventions to help reduce these symptoms. Recent studies addressing these issues have reported results from samples that are majority female and white. The purpose of this study was to examine the frequency and demographic and health predictors of distress in an ethnically diverse sample of patients with multiple cancer diagnoses.

Method: A sample of 1,616 individuals with a cancer diagnosis who visited a cancer center in 2015 responded to items on distress, demographics, and health history. Distress was evaluated using the Distress Thermometer. Logistic regression (odds ratios) was used to determine the demographic and health variables associated with clinically significant distress (Distress Thermometer score ≥ 4).

Results: Participants were relatively equally distributed across gender (female = 47%; male = 53%), and the majority of participants were either White (49%) or African American (47%). They had a range of cancer diagnoses, with the most frequent being prostate cancer (27%), hematological cancer (25%), and breast cancer (24%). Clinically significant distress was present in 19.5% of the sample. The variables associated with increased risk for distress included female gender (OR = 1.56, p = .027), younger age (< 65 years old; OR = 2.38, p < .001), having lung/bronchus cancer (OR = 1.94, p = .049) or head/neck cancer (OR = 2.36, p = .023), presence of metastases (OR = 1.81, p = .003), and presence of symptom burden (OR = 1.75, p < .001).

Conclusion: The prevalence of distress in this sample was 19.5%. Significant predictors of distress included certain demographic (gender and age) , diagnostic (lung/bronchus and head/neck cancer), and health (metastases and symptom burden) variables. This study helps to generalize findings on the prevalence and predictors of distress in cancer to a more diverse population of patients with cancer.

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INTERPERSONAL VIOLENCE HISTORY AND CHILDBIRTH-SPECIFIC POSTTRAUMATIC STRESS SYMPTOMS

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__Introduction__: Childbirth can be a traumatic event for some women due to risks of death or serious injury to the baby and/or mother during birth. Prior research has supported that a history of childhood sexual abuse (CSA; sexual contact by a relative or authority figure before age 14) is associated with elevated risk of childbirth-related PTSD symptoms. CSA survivors may be at greater risk to experience trauma symptoms due in part to deficits in emotion regulation and adaptive coping, as well as pre-existing elevations in psychological distress, potentially including PTSD. However, prior work has not examined the extent to which childbirth-specific PTSD relates to other experiences of interpersonal violence including adult sexual assault (ASA), childhood physical abuse (CPA), and adult physical intimate partner violence (IPV). The current study evaluated CSA, CPA, ASA, and IPV as predictors of childbirth-specific PTSD symptomology in the postpartum period.

__Method:__ Participants were 159 women who gave birth to a living child in the past four months recruited via social media for an online survey of pregnancy and childbirth experiences (M=29 years; majority White, married, college-educated, primaparous). A total of 30.8% reported prior sexual or physical abuse or assault.

__Results:__ CPA survivors reported higher PTSD arousal symptoms ($n = 15$; $M = 10.6$) than both IPV survivors ($n = 35$; $M = 5.55$) and women with no PA history ($n = 39$; $M = 5.3$), $F\,(3,91) = 3.14$, $p = .03$, $\eta^2 = .10$. SA survivors exhibited no differences in PTSD symptomology according to timing of abuse or compared with women with no SA history.

__Conclusions__: Results highlight potential differences in postpartum trauma symptomology with timing and type of interpersonal trauma. Unexpectedly, CSA survivors did not report greater severity of PTSD, and CPA survivors reported greater symptoms of arousal only. The high SES of the sample may have affected results, as women of low SES may be more likely to experience elevated distress, more life stressors prior to birth, as well as more traumatic events during birth. Future research should examine effects of trauma duration and severity, as well as the cumulative effects of multiple traumas on risk for childbirth-related PTSD in larger samples of mothers. Finally, as trajectories of PTSD symptomology differ, future study should examine differences in PTSD symptoms over time.

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A122 6:00 PM-7:00 PM

SEDENTARY BEHAVIOR AND POST-TRAUMATIC STRESS DISORDER SYMPTOMS IN ACUTE CORONARY SYNDROME SURVIVORS

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Introduction: Many survivors of acute coronary syndrome (ACS) develop post-traumatic stress disorder (PTSD). Patients with ACS-induced PTSD have twice the risk of recurrent cardiac events; however the contributing mechanisms have not been elucidated. The purpose of this study was to examine the patterns of sedentary behavior (an emerging and potent cardiovascular risk factor) among ACS survivors with and without PTSD symptoms in the one month following hospital discharge.

Methods: Hospitalized patients with confirmed ACS (n=50, 24% female, mean age: 62 ± 10 years) were invited to wear an Actical accelerometer on their non-dominant wrist for 30-days post discharge, after which they completed the PTSD CheckList (PCL) tailored to those who incurred a cardiac-related event. Patients were classified as those reporting (54%) and not reporting (46%) any PTSD symptoms. Total sedentary time was quantified as the number of min/day spent sedentary for each week (e.g. weeks 1-4) post-hospitalization.

Results: In multivariable adjusted analyses, there was a significant main effect of PTSD symptoms on levels of sedentary time in weeks 1-4 post-hospitalization (F=4.2, p=0.046). Total sedentary time was significantly higher among patients reporting PTSD symptoms compared to those without PTSD symptoms in week 1 post-hospitalization (PTSD symptoms: 824 ± 37 vs. No PTSD symptoms: 700 ± 40 min/day; p=0.028). A trend for higher sedentary time in patients with PTSD symptoms was also observed in week 2 (PTSD symptoms: 787 ± 42 vs. No PTSD symptoms: 675 ± 45 min/day; p=0.078), week 3 (PTSD symptoms: 766 ± 42 vs. No PTSD symptoms: 657 ± 45 min/day; p=0.088) and week 4 (PTSD symptoms: 741 ± 42 vs. No PTSD symptoms: 630 ± 45 min/day; p=0.082) post-hospitalization.

Conclusion: ACS survivors reporting cardiac-related PTSD symptoms had greater sedentary time in the four weeks following hospitalization than those not reporting any PTSD symptoms.

Future research should consider examining the role of sedentary behavior as a risk factor for recurrent cardiac events in ACS survivors who develop PTSD symptoms.

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THE DEVELOPMENT AND INITIAL EVALUATION OF A CALL CENTER FOR CONCERNED FAMILY MEMBERS OF MILITARY VETERANS

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The Development and Initial Evaluation of a Call Center for Concerned Family Members of Military Veterans

Military Veterans with mental health issues can often struggle in recognizing that they need care or are silenced by the stigma associated with reaching out for help. Family and friends are the first to identify that care is needed but feel powerless in convincing the Veteran to seek mental health care. *Coaching Into Care* is a program developed by the Department of Veterans Affairs to educate and provide support to people surrounding the Veteran to promote help-seeking behavior. Since the program's inception in 2011, call volume has risen to over 3000 incoming yearly calls. The most frequent caller was a female spouse or parent of a Veteran calling about a male Veteran, and about 50% of those Veterans had deployed to Iraq or Afghanistan. The majority of problems identified in our 9 month examination cohort (79.9%) concerned a psychosocial issue, such as psychiatric/behavioral problem, medical problems, and questions about VA services. Fifty-eight percent of calls were referred by first-line call responders to a professional coach for targeted intervention. Those receiving the extended telephone-based coaching service were provided approximately 17 calls over 6 months. Among those callers in our examination cohort receiving coaching (N = 165), about 31% of Veteran were engaged in some type of mental health care; 6 months of coaching calls was associated with an almost 50% increase in Veterans' receiving mental health treatment (up to 48%), which was statistically significant. Overall, 76.2% of the callers reported obtaining the service they "hoped for," 76.9% were "more hopeful," and 85.2% felt "more prepared to the help the Veteran." *Coaching Into Care* provides a unique clinical service to families and friends of Veterans who: 1) have not yet engaged in care; 2) who need additional mental health services; or 3) are minimally, or sporadically, engaged in mental health treatment.

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TRAUMA CORRELATES OF DECREASED SOUND TOLERANCE CONDITIONS

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Decreased sound tolerance (DST) conditions are emerging clinical conditions in behavioral medicine. Misophonia is an extreme negative emotional response to specific sounds (e.g., people chewing, swallowing). Hyperacusis involves high sensitivity to sounds below normal sound sensitivity thresholds. Both often co-occur with tinnitus (the perception of ringing or buzzing in the ears). Although research on DSTs has found that they are related to anxiety sensitivity and obsessive-compulsive traits, little is known about their associations with traumatic life events and posttraumatic stress symptoms (PTSS). This study examines the association of DSTs with past year traumatic events in a longitudinal health and genetics survey study of undergraduates. The present work (n=975, Mage=20.9, 68.6% female) examines DST conditions and their trauma correlates. 21.6% of students endorsed tinnitus, 31.4% endorsed misophonia, and 6.9% endorsed hyperacusis. Rates of endorsement for trauma experiences were as follows: 6.4%, natural disaster; 13.4%, transportation accident; 6.4%, physical assault; 3.0%, sexual assault; 13.5%, another unwanted/uncomfortable sexual experience. Chi-square analyses demonstrated that tinnitus was associated with physical assault [$\chi2(1)=7.0$, $p < .01$], natural disaster [$\chi2(1)=4.9$, $p < .05$], transportation accident [$\chi2(1)=4.5$, $p < .05$], and other unwanted/uncomfortable sexual experience [$\chi2(1)=5.9$, $p < .05$]. Hyperacusis was related to other unwanted or uncomfortable sexual experience [$\chi2(1)=9.6$, $p < .01$], while misophonia was not related to any traumatic events. Of those who experienced a traumatic event in the past year, 41.0% (n=114) reported experiencing posttrauma-related symptoms. Chi-square analyses revealed a significant relationship between PTSS and hyperacusis [$\chi2(1)=5.0$, $p < .05$], but not with tinnitus or misophonia. In this large, normative university student sample, DSTs and traumatic life events were prevalent. Tinnitus and hyperacusis were associated with past traumatic experiences, whereas misophonia was not. Trauma-related symptoms were prevalent and associated with

hyperacusis. Future research should extend these findings on trauma and DST conditions by studying PTSS symptoms more comprehensively and examining the mechanisms by which PTSS correlates with hyperacusis.

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A125 6:00 PM-7:00 PM

ASSESSING FOR REACTIVITY TO AN ECOLOGICAL MOMENTARY ASSESSMENT PROTOCOL USING DATA FROM INDIVIDUALS RECOVERING FROM ADDICTION

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Ecological momentary assessment (EMA) methodology permits inference about within-person processes in real life setting. Compared with cross-sectional designs, EMA enables more objective measurement of temporal associations between variables without relying on participants to introspect or recall this information. Nevertheless, repeated assessment may introduce a new challenge: participant reactivity.

EMA designs may draw a participant's attention to a nonconscious process, resulting in behavior change. Alternatively, participants might fall in to a habitual pattern of responding after several assessments. Using an example of negative affect and substance use, *introspective behavior change* might result in lower rates of substance use or a weaker association between negative affect and substance use over time. *Habitual responding* might result in reduced within-person variation over time, which would thereby reduce the magnitude of predictor-outcome associations.

Previous research on participant reactivity to EMA methods has explored whether mean levels of the outcome changed during the study; most of this research has found little evidence of reactivity (Collins et al, 1998; Farchaus et al, 2003; Hoffman, 2007; Hufford et al, 2002; Nishina, 2012; Stone et al, 2002). No previous study considered changes in predictor prevalence, changes in variation of responding, or bivariate changes in predictor-outcome associations. Failure to recognize and account for participant reactivity may result in biased inference. On the other hand, identifying protocols that lead to participant reactivity has the potential provide valuable information about mechanisms for behavior change.

I outline how to assess for different types of participant reactivity and I discuss options for modeling data in the presence of reactivity through a combination of data visualization, semi-parametric modeling (Time-Varying Effect Model, Li et al, 2015), and parametric modeling. N = 126 individuals receiving treatment for addiction received four EMA surveys per day for 7 days in two bursts spaced 6 weeks apart. Surveys assessed participant negative affect (NA) and substance use (SU). By using a measurement burst design, I can parse true change over time from artefactual change resulting from the EMA design. Variation in NA decreases over the 7 days in a burst and the bivariate association peaks mid-week. Looking at stable change across

bursts, SU increases but the bivariate association between NA and SU does not change.

In addition to presenting methods for assessment, I suggest methods for limiting reactivity in EMA protocol design.

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DO INJUNCTIVE AND DESCRIPTIVE NORMATIVE BELIEFS NEED AN OUTCOME EVALUATION IN VALUE EXPECTANCY MODELS?

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Value-expectancy models are common place in health behavior research and practice, and posit that behaviors are determined by antecedents (ex. attitudes), which are formed by an individual's belief that a behavior is likely to lead to certain outcomes (expectancy), and the value one places each outcome (value). A popular value-expectancy model in social and behavioral health is the Theory of Planned Behavior. One construct of this model, perceived norms, consists of two types of normative pressure: injunctive norms (the perception that significant referents want you to behave in a certain way) and descriptive norms (the perception that a behavior is normal for others like yourself). Each construct follows the value-expectancy approach for measurement. Injunctive norms are formed by a combination of injunctive normative beliefs and motivation to comply, and descriptive norms are formed by a combination of descriptive normative beliefs and identification with each referent. Some evidence has shown that measuring the value construct (motivation to comply) in conjunction with injunctive normative beliefs does little for improving the utility of the TPB, and some have called for its removal. Concurrently, no study has investigated whether measuring the value construct (identification with referents) in conjunction with descriptive normative beliefs improves the utility of the TPB. Therefore, the purpose of this study was to evaluate the value-added of measuring injunctive and descriptive norms using a value-expectancy model, compared to an expectancy only based model. Overweight and obese adults (n=410) at a weight-loss clinic in a southwestern city completed an TPB survey related to consuming no sugary beverages in the following 6-months. Direct and indirect measures of injunctive and descriptive norms were evaluated. Each expectancy-value pair (model 1) and expectancy-only measure (model 2) was correlated with the composite direct measures of either construct. Results showed little difference between methods. In model 1, all expectancy-value pairs were significant ($p < 0.001$) for injunctive norms [spouse ($r=0.50$), friends ($r=0.45$), children ($r=0.45$), and parents ($r=0.49$)], but only spouse ($r=0.17$; $p < 0.01$), was significantly associated with descriptive norms. In model 2, the associations were slightly improved, but mostly unchanged. For injunctive norms all correlations were significant ($p < 0.001$) [spouse ($r=0.50$), friends ($r=0.48$), children ($r=0.50$), and parents ($r=0.53$)], and for descriptive norms only spouse ($r=0.21$; $p < 0.001$), was significantly associated. Results suggest that there was little to no value added to having the 'value' based measure in this value-expectancy model.

Future researchers should consider dropping these measures to reduce respondent burden, or find alternative ways of measuring these constructs.

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A127 6:00 PM-7:00 PM

IMPROVING DATA QUALITY OF HEALTH SURVEYS THROUGH WEB-BASED EXPERIMENTS

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Health surveys are vital for surveillance of health behaviors. Importantly, the quality of data obtained from these surveys is crucial for drawing accurate conclusions about population health and informing interventions. Survey experiments and repeated measures designs allow researchers to assess validity and reliability. However, health surveys are seldom tested comprehensively because it is costly and time-consuming. Given that large cohort studies and surveillance efforts often rely on survey data, more efficient approaches to testing are needed. The present investigation examined the utility and efficiency of using an online, crowd-sourcing platform as a means for conducting validity and reliability testing of health surveys. We used Amazon.com's Mechanical Turk, an online labor market, as our testing platform. The study incorporated both a between-subjects manipulation of question order to assess order effects, and a within-subjects repeated measure of the survey to assess test-retest reliability. At Time 1, respondents were randomly assigned to one of two experimental conditions in which the order of questions on walking behavior, and perceptions of the walking environment, was varied. Note these questions were used in the 2015 National Health Interview Survey. At Time 2, four weeks later, respondents were invited to complete the survey again in the same order to assess test-retest reliability. The 1,446 respondents at Time 1 represented a wide range of demographic characteristics that roughly matched those of the U.S. adult population: 56.2% male, 84% Non-White Hispanic, 50% with a Bachelor's degree minimum, M_{age} = 31.8, SD_{age} = 10.6. The 960 respondents who participated again at Time 2 allowed us to assess item test-retest reliability for the newly developed questions pertaining to perceptions of the walking environment. These questions demonstrated moderate to high test-retest reliability overall (Kappa = .48-.84). Further, consistent with previous findings on question ordering and walking behaviors, we obtained a significant order effect such that respondents first answering questions on perceptions of the walking environment had lower odds of transportation walking than did respondents first asked about walking behavior: OR = 0.61 (95% CI 0.46-0.75), p = .02. Given that physical activity questions, like walking, are often embedded among a larger set of health behavior questions, an efficient and cost-effective platform for conducting survey experiments can help increase the confidence in findings obtained from health surveys. Success of this rapid (~5 week), low-cost experiment ($800), and feasiability of conducting repeated measures, supports further use of

online platforms as vehicles for the conduct of survey experiments and reliability testing to improve the quality of data obtained from health surveys.

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A128 6:00 PM-7:00 PM

PSYCHOMETRIC EVALUATION OF THE RELAPSE SITUATION EFFICACY QUESTIONNAIRE AMONG ADULTS SEEKING WEIGHT LOSS TREATMENT

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Background: Abstinence self-efficacy (ASE) has been identified as a key construct in relapse prevention of addictive behaviors; however, no scale existed for relapse following intentional weight loss. We adapted an existing scale measuring ASE among smokers and used the Relapse Situation Efficacy Questionnaire (RSEQ) to measure individuals' confidence in staying on their weight maintenance plan. **Objective:** The psychometric properties of the RSEQ were assessed, including internal consistency reliability, convergent validity, predictive validity and construct validity. **Methods:** In a 12-mo weight loss maintenance study, the RSEQ was administered at 0, 6 and 12 mos. Convergent validity was assessed at baseline by using Spearman's correlation between RSEQ and Weight Efficacy Lifestyle questionnaire; predictive validity was examined by the Spearman's correlation between 6-mo RSEQ and 12-mo measures of adherence to physical activity goal, adherence to calorie/fat goal and body weight; construct validity was assessed via using principal component analysis (PCA) with Promax rotation. **Results:** The sample (n=148) was mostly female (90.5%) and white (81.1%) with a mean body mass index of 34.1 + 4.6 kg/m^2. The RSEQ showed good internal consistency (Cronbach's α = .81 to .95) and convergent validity (r=.71). The 6-mo RSEQ was positively associated with 12-mo adherence to calorie goal (r=.23) and 12-mo adherence to fat goal (r=.22); 6-mo RSEQ was negatively associated with 12-mo body weight (r= -.25). PCA suggested that the 31 items can be factored into 6 components: *negative emotion* (8 items), *positive emotion* (6 items), *social-food occasions* (5 items), *distracting situations* (5 items), *work-leisure activities* (5 items) and *physical negative situation* (2 items), accounting for 67.5% of the total item variance. All items had loaded primarily on one factors, with factor loadings >.40, and all factors were moderately to highly positively correlated (r= .25 to .58). **Conclusion:** This study provides preliminary support for the reliability and validity of the RSEQ. Future work needs to add more items to the factor *physical negative situation* and to examine RSEQ in other studies with larger and more diverse samples.

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RRR-DERIVED INDEX OF DIETARY BEHAVIORS IS STRONGER CORRELATE OF REPEATED MEASURES OF OBESITY

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Background: Identification of reliable dietary measures of obesity-risk is needed to facilitate evaluation of prevention efforts. Given that key research supporting specific dietary recommendations has recently come into question, continued use of data-driven analytic techniques in nutritional epidemiology is warranted. Traditional derivation of dietary indices has involved factor analysis of nutrients to maximize exposure variance. Yet, dietary behaviors like intake of fast food, fruits and vegetables, and soft-drinks have each been associated with obesity and may be more easily and reliably measured than nutrient intake in larger studies. Using statistical methods that maximize the variance in obesity as a response may also produce a more salient dietary factor. The purpose of our study was to identify a dietary behavior index most related to obesity.

Methods: The Promoting Activity and Changes in Eating (PACE) study is a group-randomized weight gain prevention trial among 34 worksites in the Seattle Metro Area. Behavioral data and body mass index (BMI) were collected among all participating employees at baseline (2005-2007) and follow-up (2007-2009) while measured waist circumference (WC) was collected on a random subsample (n=622 at baseline). Factor, partial least squares, and reduced rank regression (RRR) analyses were conducted among a random test half of these individuals without missing data at baseline. Confirmatory analyses were performed within the validation half at baseline and among all those with follow-up data. Multilevel linear models included adjustment for covariates and clustering within worksites.

Results: Fast food, fried potato, and soft-drink intake were the most obesogenic behaviors using RRR analyses with BMI and WC as response variables. Each quartile increase in dietary index score was associated with a 5% higher geometric mean BMI (Ratio= 1.053; 95% CI: 1.031, 1.075) and approximate 4% higher geometric mean WC (1.036; 95% CI: 1.019, 1.054) at baseline adjusted for covariates. Results were similar at follow-up and remained statistically significant for WC after baseline adjustment.

Conclusions: Our findings, although small in magnitude, may still have significant public health implications given associations were demonstrated among all men and women in the study for relatively low frequencies of reported dietary behaviors. These findings may have

application for identifying those at risk of central obesity in clinical and community settings and may inform intervention strategies.

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STRUCTURAL VALIDITY AND MEASUREMENT INVARIANCE OF A SPANISH LANGUAGE TRANSLATION OF THE PEARLIN MASTERY SCALE

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The Pearlin Mastery Scale is a seven-item scale frequently used in psychological research to assess individuals' personal mastery, or the extent to which they believe they are in control of their own life and fate. Since its development in the 1970s, the Mastery Scale has been utilized in diverse samples, including caregivers, psychiatric populations, and individuals with chronic illnesses. It has also been adapted from English into multiple languages, including Spanish. However, to date, no published studies have examined the psychometric properties of Spanish translations of the Mastery Scale. This analysis evaluated the structural validity and measurement invariance of a Spanish translation of the Mastery Scale in two samples of Spanish-speaking individuals receiving healthcare at community clinics in Florida. Sample 1 (N = 63) was comprised of adults enrolled in a study investigating the relationships among stress, depression, and glycemic control in low-income patients with type 2 diabetes. Participants in Sample 2 (N = 82) were recruited as part of the Patient Navigation Research Program and had received an abnormal screening test for breast or colorectal cancer. Confirmatory factor analysis (CFA) and multiple group CFA were conducted both on the full seven-item scale as well as a five-item version commonly utilized in the literature. CFA indicated that the seven-item and five-item scales yielded two-factor and one-factor solutions, respectively, for the combined sample of Spanish-speaking patients. However, although the specified factor solutions fit each individual sample separately, multiple group CFA revealed that the Mastery Scale items did not load equivalently on the specified factors across samples. This suggests that the Spanish version of the Mastery Scale may not measure mastery consistently across groups and that researchers should use this version with caution, especially with Spanish-speaking participants from diverse cultural backgrounds.

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THE CROSSOVER EFFECT OF PREDICTING INTENTIONS WITH THEORETICAL ANTECEDENTS OF VEGETABLE SUBGROUP CONSUMPTION

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Oftentimes health behaviors are in fact ‘behavioral categories’ that comprise of a number of interrelated behaviors that meet a common recommendation. For example, while the USDA has a daily recommendation for vegetable consumption (2.5-3.0 cups), this recommendation can be met by consuming a variety of vegetables, which in turn, can be viewed as independent behaviors. Another set of recommendations the USDA published is that individuals should vary their intake of vegetables by consuming from five subgroups each week (beans and peas, starchy, orange and red, green, and other). An advantage to studying sub-behaviors of a behavioral category, it that the results can provide targeted information, that can help shape future theory-based interventions. When sub-behaviors are studied together, a cross-over effect can also be evaluated, through which one sub-behavior (ex. starchy vegetables) can be examined by theory-based antecedents of the other interrelated behaviors (i.e. attitudes towards eating beans and peas). The purpose of this study was to examine the crossover effect for predicting each vegetable subgroup, with theoretical antecedents from all vegetable subgroup categories. The Integrative Model of Behavioral Prediction provided the theoretical underpinnings of this study. Undergraduate students (n=386) completed an online survey evaluating each vegetable subgroup, and its theoretical antecedents (attitudes, perceived norms, and perceived behavioral control (PBC)). Two stepwise multiple linear regression models were run for each vegetable subgroup. The first (base) model used its own behavioral antecedents to predict intentions. The second (omnibus) model included behavioral antecedents from all vegetable subgroups to predict intentions. Results from the first set of models indicated that attitudes, perceived norms and PBC predicted a significant amount of variance of intentions (40.5% to 54.6%) for each vegetable subgroup. Results from the second set of models showed that adding antecedents from the interrelated behaviors improved the amount of variance explained for intentions (41.7% to 56.1%) for each vegetable subgroup, but the improvements were minimal (added 5.8% to 1.2% to each model). Overall, the IM was found to be a useful framework for predicting the intentions of vegetable subgroup consumption. When testing the crossover effect of behavioral antecedents, while all models improved to some extent, improvements were minimal, and may not carry much statistical relevance.

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A GENDER- AND CULTURALLY-SENSITIVE WEIGHT LOSS INTERVENTION FOR HISPANIC MALES

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Background: Hispanic males have the highest rates of overweight and obesity when compared to males of other racial/ethnic groups. While weight loss can significantly reduce obesity related health risks, Hispanic males are significantly underrepresented in weight loss research. Our work addresses a critical gap by informing how tailored intervention strategies improve weight management in this health disparate population. **Purpose:** This study compares a 12 week gender- and culturally-sensitive weight loss intervention (GCSWL) to a waist-list control (WLC) in sedentary, overweight/obese Hispanic males. **Methods:** Fifty Hispanic males (age: 42.1 ± 12.7 years; BMI: 34.1 ± 5.3 kg/m^2; 48% Spanish speaking only) were randomized to one of two groups: GCSWL (n=25) or WLC (n=25). GCSWL participants attended weekly in-person individual sessions guided by a trained bilingual Hispanic male lifestyle coach, were prescribed a daily reduced calorie goal with a specific focus on reducing/modifying the types of food and liquids consumed (e.g., alcohol/sugar sweetened beverages), and 225 minutes of moderate-intensity physical activity (PA) per week. Additional GCSWL features included a free gym membership and optional spouse/significant other attendance at intervention sessions. The WLC were asked to maintain their usual dietary intake and PA habits during the 12 weeks. Results below represent preliminary data for participants who have reached their 6-week assessment time point to date (n=31). **Results:** At week 6, attendance at individual GCSWL sessions is approximately 80%. The overall attrition rate is 9.7%, with 28 of 31 participants completing 6-week assessments (GCSWL: n=1, 6.3% vs. WLC: n=2, 13.3%). The observed pre-post mean weight loss for the completers analysis in the GCSWL is (n=15; -2.6 ± 2.1 kg) compared to the WLC (n=13; 0.6 ± 1.3 kg) (difference = -3.2, 95% CI -4.6, -1.8, $p < 0.001$) and intention-to-treat (GCSWL: -2.4 ± 2.2 kg; WLC: 0.5 ± 1.2 kg) (difference = -3.2, 95% CI -4.2, -1.6, $p < 0.001$). It is anticipated 12-week data collection for all 50 men will be completed December 2016. **Conclusion:** GCSWL participants are engaged in intervention sessions, attrition is low, and short-term weight loss

has been achieved. The intervention appears to be a feasible strategy to engage Hispanic males in weight loss/management. However, confirmation of these findings is needed upon study completion.

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ASSOCIATIONS BETWEEN PARENTING FACTORS AND WEIGHT-STATUS IN OVERWEIGHT AFRICAN AMERICAN ADOLESCENTS

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Close to 40% of African American adolescents are overweight nationally. However, there is limited research examining the relationship between authoritative parenting style (high nurturance and monitoring) and body mass index (BMI) in overweight, African American adolescents. The current study expands on previous literature by examining associations between parenting style, parenting behaviors specific to diet and physical activity (PA) including social support, autonomy support, home environmental supports, and modeling on predicting youth BMI. Analyses utilized baseline data from African American adolescents (N = 148; M_{age} = 13.5 years; 66% female; $M_{BMI\%}$ = 96.5) and their caregivers (M_{age} = 43.4 years; 94% female; M_{BMI} = 37.3) enrolled in the Families Improving Together (FIT) for Weight Loss randomized controlled trial. Parenting factors were measured using self-report surveys and daily minutes of PA were measured using 7-day accelerometry estimates. Child zBMI was calculated from objective height and weight measurements and standardized using CDC growth reference curves. Regression analyses indicated that the overall model was significant ($F(15, 132) = 2.38$, $p < 0.05$; $R^2 = 0.22$) with parenting variables accounting for significant variance in predicting BMI beyond covariates (child age, sex, diet, PA, and family income; ΔR^2=0.17, pB= -0.09, *SE*= 0.05) and parent BMI (weight-modeling) was positively associated with higher adolescent zBMI (*B*= 0.02, *SE*= 0.01). No other parenting effects specific to health behaviors were significant. Overall, these results suggest that general authoritative parenting and healthy weight modeling may be more closely associated with weight status compared to parenting behaviors specific to diet or PA in overweight, African American youth. This study is cross-sectional and future research is needed to more specifically test longitudinal and causal relationships.

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COMMUNICATION BETWEEN TREATMENT-SEEKING ADULTS WITH OBESITY AND THEIR HEALTHCARE PROVIDERS

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Introduction: Little is known on how obese treatment seeking adults interact with their primary care providers (PCPs) around weight control. These interactions could be a catalyst to lifestyle modification, but we do not know if, or how, positive weight control interactions are occurring in primary care. This study surveyed obese treatment seeking adults recently enrolled in a lifestyle modification program to gather information on these interactions, in hopes of identifying future targets for improved treatment engagement. **Methods:** Eighty-five adults enrolled in a large scale research obesity treatment trial were administered a survey upon enrollment to assess provider-participant interactions. The survey included Likert scale questions, where 1=strongly disagree and 7=strongly agree. **Results:** Two-thirds (64.7%) of participants spoke about weight loss to their PCPs prior to enrolling in this study; the other third (35.3%) never spoke about weight control with their PCPs. Of the participants who did speak to their PCPs about weight loss, 53.7% spoke about weight loss at 2-5 previous appointments, and 27.8% only spoke about weight loss at 1 previous appointment. Advice given by PCPs was: “lose weight” (n=19), attend structured weight loss program (n=15), monitor food intake (n=14), calorie counting/set a weight loss goal (n=11), exercise (n=11), and other options (see nutritionist, bariatric surgery, no white food) (n=10). On average, participants indicated they agreed to strongly agreed (6.55, SD=0.79) with the statement: “I feel comfortable talking to my provider about my weight.” Participants on average indicated they somewhat agreed (5.13, SD=1.47) with the statement: “I feel like my healthcare provider understands my barriers to weight control.” **Conclusions**: Overall the results suggest that there is variability in communication between treatment-seeking adults with obesity and their PCPs. While approximately one-third of participants had multiple conversations about weight control with their PCPs, one-third never spoke about weight control with their PCP. Understanding barriers and facilitators of communication will be important for future research. The results also suggest that providers may need additional support and resources in order to make evidence-based recommendations when discussing weight with their patients.

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INCREASING EFFECT OF EXECUTIVE FUNCTIONING ON WEIGHT OUTCOMES THROUGHOUT BEHAVIORAL WEIGHT LOSS AND FOLLOW-UP

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Group behavioral weight loss (BWL) is the current gold standard weight loss treatment; however, weight regain is normative and long-term outcomes are poor. Due to the decline in clinician contact and support as BWL treatment concludes, executive functioning (cognitive control processes that allow one to carry out goal directed behavior) may play an increasingly important role in maintaining adherence to dietary and physical activity recommendations. The current study tested the hypothesis that inhibitory control (i.e. one's ability to regulate automatic behavioral responses) and planning (i.e., generating mental representations of steps to achieve an intention) would positively predict weight loss in BWL treatment and follow-up. Additionally, we examined whether executive functions were increasingly predictive of outcome across BWL treatment phases and follow-up. It was hypothesized that poor executive functioning would increasingly predict poorer weight outcomes as group contact lessened and at follow-up.

Overweight and obese participants (n=190) received 25 group BWL treatment sessions over a 12-month period. At baseline, participants completed behavioral measures of planning (D-KEFS Tower Test) and inhibitory control (D-KEFS Color-Word interference Test). Assessment weights were collected at months 0 (baseline), 6 (mid-treatment), 12 (end-of-treatment), and 24 (follow-up).

Two multilevel models were run examining the effects of 1) inhibitory control and 2) planning on weight change. Both models revealed a negative, main effect of time on weight, *p*s < .001, as well as a quadratic effect of time, *p*s < .001. Participants had an initial decrease in weight, but this effect eventually tapered and reversed. Inhibitory control and planning interacted the quadratic effect of time on weight (inhibitory control: $B = -1.38$, $t(444.88) = 3.34$, $p < .001$; planning: $B = .30$, $t(444.20) = 3.03$, $p < .01$) such that those with poor inhibitory control and poor planning had similar weight loss months 0-6, lost more weight between months 6 and 12, and had slower regain months 12-24, compared to participants with better inhibitory control and planning ability.

Contrary to the hypothesis, results suggest that poor inhibitory control and planning are predictors of better outcomes in BWL. These findings could indicate that BWL may be most efficacious in the long term for those whose weight control challenges include poor planning and self-control, where as BWL may not address factors (e.g. unmeasured variables or even metabolic/biological factors) contributing to weight regain in those with better executive functioning. The somewhat counterintuitive results of this study highlight the need for treatment customization based on individual characteristics (e.g. executive functioning) as BWL does not consistently produce the enduring behavioral changes needed for weight loss maintenance.

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INDIVIDUALS WITH OBESITY DID NOT ENGAGE IN GREATER EMOTIONAL EATING THAN THEIR LEAN COUNTERPARTS IN A LABORATORY SETTING

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Background: The literature on the relationship between emotional eating and body mass index (BMI) is mixed, where some studies support an association between emotional eating and BMI and some do not. Many studies have examined emotional eating via self-report questionnaires, but less have examined emotional eating in a laboratory setting. The present study compared individuals with obese and lean BMI on difference in caloric intake during negative and neutral mood induction conditions. Greater caloric intake in negative mood condition versus neutral mood condition was considered "emotional eating."

Methods: Participants (n=61; 74% female, 39% obese) underwent neutral, anxiety, and anger mood inductions in counterbalanced order and received 2400 kcal of a variety of palatable foods immediately following. They were left alone for 20 minutes and calories consumed was measured via weighing leftovers. Participants with BMI of 18.5 to 25 were considered lean and 30 and above were considered obese. Emotional eating was measured as the difference in caloric intake between the negative and neutral mood conditions.

Results: Both mood inductions were found to significantly impact mood (anxiety $p < .001$ and anger $p < .001$) while the neutral mood induction had no impact on negative mood ($p>.05$). The condition by BMI interactions on food intake were not significant for the anxiety, $F(1, 177)=0.032$, $p=.857$, or anger conditions, $F(1, 177)=0.326$, $p=.569$.

Discussion: Lean and obese individuals did not differ in emotional eating, as defined by greater calories consumed following anxiety or anger induction relative to a neutral condition. Results are consistent with other studies reporting no relationship between emotional eating and BMI. Vulnerability to emotional eating is likely due to factors other than BMI.

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PARENTS MISPERCEIVE THE WEIGHT STATUS OF GIRLS WHO ARE OVERWEIGHT OR OBESE

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Introduction:

Research suggests that parental misperception of child’s weight status is a predictor of childhood obesity. Parents’ underestimation of their child’s weight status can inhibit regulation of health behaviors and lead to less favorable health outcomes for children. The purpose of this study was to investigate whether parental perception of daughters’ weight status differed from actual weight status.

Methods:

The participants were a diverse sample of 267 middle school aged girls (M = 11.8 years). Approximately 88% of the participants were ethnic minorities and 56% came from communities with a poverty rate of 20% or higher, where the median family income was less than 80% of the median family income for the state. The participants' BMI was calculated after measuring height and weight. Approximately 3% of the girls were slightly or very underweight, 56% were average weight, 21% were overweight, and 20% were obese. Parental perception of weight status was determined by their response to the question “Describe your child’s weight.” Response options were “very underweight,” “slightly underweight,” “about the right weight,” “slightly overweight,” or “obese.” Because of the small number of girls rated as underweight, the underweight categories were combined in the analyses. Approximately 9% of the parents reported their child as slightly or very underweight, 66% reported average weight, 21% reported slightly overweight, and 4% reported obese.

Results:

Chi-square tests of independence were performed to determine whether parent perception of child’s weight status differed from the child’s actual weight status. The results indicated that there were differences in parent perception and the child’s actual weight status, c^2 (9, N = 267) = 206.58, $p < .001$. In fact, of the 57 girls in the “overweight” weight status, 64.3% were underestimated as “average” by their parents. Of the 55 girls in the “obese” weight status, 60.4% were underestimated as “overweight.”

Conclusion:

Understanding weight perception and identifying strategies to correct parents’ misperception may inform interventions targeting weight management efforts for overweight and obese children. As weight misperception is often influenced by cultural norms, early identification and interpretation of actual weight status may improve health outcomes for ethnically diverse young girls. Further research on the predictors of parental weight misperception is warranted to better serve these at-risk populations. Moreover, interventionists and clinicians should promote discussion of appropriate weight status between parents and children in efforts to adjust their perceptions and motivate weight-related behavior change.

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PREFERRED WEIGHT TERMS AND WEIGHT DISSATISFACTION: A STUDY OF BLACK WOMEN IN THE SHAPE TRIAL

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Background: Obesity is not sufficiently treated in primary care. Only 20% of obese patients receive weight loss counseling, and uncertainty about patients' preferred terms for obesity may thwart treatment. No studies have investigated preferences of black women, a population that experiences disproportionately high rates of obesity.

Objective: To examine desirability of commonly used weight terms in a previously unexplored population of low-income Black women, and to identify the impact of weight satisfaction.

Method: Participants were 176 low-income Black women, involved in a weight gain prevention study (M_{age} = 35.5 ± 5.5 yr, M_{BMI} = 30.2 ± 2.5 kg/m^2). At baseline, commonly used weight terms were ranked for desirability on a 5-point Likert scale (1 = very desirable, 5 = very undesirable). Weight satisfaction was assessed on a 4-point Likert scale (1 = very satisfied, 4 = very unsatisfied). Participants were grouped by baseline weight satisfaction and group differences were analyzed using t-tests.

Results: More euphemistic terms (e.g., "weight") were rated as neutral (M=2.8±1.2); "weight" was rated as very undesirable by 9.7% of participants. Conversely, more blunt terms (e.g., "fatness") were rated as very undesirable (M=3.8±1.2) by 32.8% of women. On average, no weight-related term was rated as desirable.

Most participants (72.3%) reported weight dissatisfaction. Harsher terms were rated significantly less favorably by women who were unsatisfied with their weight (M=3.9±1.2), relative to women who were more weight satisfied (M=3.4±1.1, $p < .005$). Additionally, women with BMI > 34 kg/m^2 rated the harsher terms as more palatable than their peers in lower weight classes (ps < .05).

Conclusion: Euphemisms are preferred by patients, but differences by weight satisfaction and weight class warrant consideration. Women with weight dissatisfaction gave poorer ratings to the harsher weight-related terms. Conversely, women in the highest BMI class rated these terms more favorably, suggesting that women most in need of weight loss intervention are most able to tolerate terms that are currently seen as stigmatizing. Future research should

examine clinical effectiveness of the full range of weight-related terms to maximize impact for behavior change among a population most in need of treatment.

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RECRUITING LOW INCOME POST-PARTUM WOMEN INTO A WEIGHT LOSS TRIAL: IN-PERSON VERSUS FACEBOOK DELIVERY

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Several studies, such as the Diabetes Prevention Program (DPP), have provided foundational evidence for the effect of lifestyle modification interventions on diabetes prevention and weight loss. However, translating these programs to the real-world has proven difficult. There remains a need to increase the feasibility and reach of translational weight loss interventions, particularly among socioeconomically disadvantaged populations. **PURPOSE:** To compare the recruitment rate of overweight low income postpartum women into a DPP-adapted behavioral weight loss program delivered in-person versus delivered via Facebook. We hypothesized that the Facebook-based trial may be easier to recruit for as the delivery mode may reduce participant burden (i.e. transportation, child care) compared to the in-person trial. **METHODS:** We compared two 8-week pilot behavioral weight loss trials; one delivered via weekly in-person group sessions and the other delivered entirely via Facebook. Both trials used the same recruitment methods: participants were overweight low income postpartum women within five Women Infants and Children (WIC) clinics in the Worcester, Massachusetts area recruited by nutritionists during routine WIC visits. Inclusion criteria included, childbirth in the previous 6 weeks to 6 months, age 18 or older, a body mass index (BMI) of ≥ 27 kg/m^2, and obstetric provider approval for participation in the diet and physical activity components of the intervention. Additional eligibility criteria for the Facebook intervention included: 1) ability to use the Internet daily; 2) having a Facebook account; 3) currently using Facebook at least once per week. **RESULTS:** 27 and 29 women participated in the in-person and Facebook pilot trials, respectively. Among eligible women, 62.1% gave permission to be contacted for the in-person trial, and 23.3% enrolled. 58.7% of women eligible for the Facebook pilot agreed to be contacted, and 24% enrolled. **CONCLUSIONS:** Recruitment rates for a Facebook-based weight loss intervention were similar to that of an in-person intervention, thus both programs may have the same reach. Future efforts are needed to increase reach of weight loss interventions among overweight and obese low income diverse women.

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REST ETHIC: THE INFLUENCE OF BELIEFS ABOUT REST IN OVERWEIGHT BLACK WOMEN

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Background Few Americans meet national physical activity guidelines. However, an expanding body of research suggests that sedentary time may confer additional health risks even among those who meet or exceed MVPA guidelines. We investigate the hypothesis that people who have positive attitudes about the health-promoting value of rest might prioritize rest over exercise for good health. Relatively little is known about how such attitudes toward rest affect patterns of physical activity and sedentarism. **Objective** This study investigates associations between “rest ethic” — beliefs about the health-promoting value of sedentary behaviors — and weight and physical activity. We also examined possible interactions with sociodemographic characteristics. **Methods** Data were collected during an 18-month weight gain prevention intervention (the Shape Program) conducted in North Carolina community health centers. Participants were 194 premenopausal black women diagnosed as overweight or obese. Rest ethic was measured by survey questions about the importance and benefits of resting, administered at baseline and 12 months. Weight was collected at baseline, 6, 12 and 18 months. Participants wore accelerometers for 14 days at baseline and 12 months. **Results** At baseline, participants had a mean BMI of 30.2. 68.5% of the sample reported that rest was somewhat/very likely to relieve stress. 88% reported that regular rest was somewhat/very important. There was no significant difference in beliefs about rest between treatment arms, and beliefs were overall stable from baseline to 12 months for both intervention and usual care arms. Belief about the importance of rest predicted weight change at 6, 12 and 18 months, with greater mean weight loss for participants who thought rest was not very important ($\bar{x}$=-2.23, -2.55, -4.19 lbs respectively) than for those who said rest was somewhat/very important ($\bar{x}$=-0.01, .18, .59 lbs respectively), $p < .05$. Demographic characteristics and accelerometer-measured physical activity were not significantly associated with rest beliefs. **Conclusions** Participants with high rest ethic — particularly those who believed rest was important for health — were more likely to to gain weight during the study, while those with low rest ethic tended to lose weight. Thus, rest ethic may be an important consideration in both weight loss and weight gain prevention.

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RISK OF OBESITY-ASSOCIATED DISEASES BY BMI AND WAIST CIRCUMFERENCE AMONG CHILDBEARING RURAL WOMEN

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Objective: Compared to their urban counterparts, rural women in the United States continue to experience significant disparities in rates of preventable chronic diseases and associated morbidity and mortality. Moreover, weight gain associated with childbearing has been identified as an independent risk factor for obesity-associated diseases, including type 2 diabetes, hypertension, and cardiovascular disease. The purpose of this study was to examine obesity-associated disease risk among childbearing rural women, including demographic and health correlates.

Data and Methods: We analyzed data from Rural Families Speak about Health, a multi-state, epidemiologic study of rural women and their families living in 11 states (N=444). Eligible women had at least one child aged 13 years or younger. Data were collected via computer-assisted, interviewer-administered questionnaires. Participants were classified according to the National Heart, Lung, and Blood Institute's risk classifications for type 2 diabetes, hypertension, and cardiovascular disease, which uses combined body mass index (BMI) and waist circumference as indicators of normal, increased, high, very high, and extremely high risk. Associations between disease risk status and demographic and health correlates were explored.

Results: The majority of participants were overweight (31.1%) or obese (45.3%); 19.8% were class I obese, 14% were class II obese, and 11.5% were class III obese, all exceeding national obesity rates for women. Despite a mean age of just 32.0 years, the sample had significant risk for obesity-associated diseases. Based on combined BMI and central adiposity indicators, 27.1% had high, 33.1% had very high, and 11.5% had extremely high risk. Factors associated with elevated disease risk included less than a high school education, part-time work, unemployment, and depression. There were no differences in risk status based on having a regular provider or receiving preventive care in the last year.

Conclusions: Risk for obesity-related diseases is high among childbearing rural women and

occurs well before the midlife years. Intervening in early adulthood and outside traditional clinical venues will be critical to reducing rural health disparities. Given that childbearing is frequently cited as a cause of weight gain for adult women, interventions during pregnancy as well as the postpartum and internatal periods, may provide the greatest benefit to improve the health status of rural female Americans.

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SECONDARY BENEFITS OF FAMILIES IMPROVING TOGETHER WEIGHT LOSS TRIAL ON MENTAL AND SOCIAL WELLBEING IN AFRICAN AMERICAN YOUTH

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The Families Improving Together (FIT) for weight loss trial is a randomized controlled trial to test a positive parenting and motivational intervention on promoting weight loss in overweight African American adolescents. While the intervention focuses on decreasing weight there may be cascading effects on other secondary benefits for adolescents and their families. These secondary benefits could improve both mental and social wellbeing beyond the health benefits of losing weight. The purpose of this study was to examine the potential improvements beyond weight loss to increase understanding of the program's impact on participants overall wellbeing. This was accomplished through the development of an evaluation tool using qualitative methods. Data was obtained from African American adolescents (N = 148; M_{age} = 13.5 years; 66% female; $M_{BMI\%}$ = 96.5) and their caregivers (M_{age} = 43.4 years; 94% female; M_{BMI} = 37.3) who took part in the FIT trial. An evaluation tool was created to quantitatively evaluate family's qualitative responses during the final week of the program in which they provided testimonials of their successes and challenges. A top-down approach was used to identify themes based on Social Cognitive Theory in a total of 9 different intervention groups of Project FIT that have been completed to date. Transcriptions from each intervention session were developed and coded for themes related to health, social, and cognitive benefits including but not limited to family support, positive communication, autonomy, self-efficacy, self-regulation, and monitoring strategies for weight, physical activity, and diet behaviors. The inter-rater reliability was 0.80. The majority of themes addressed cognitive benefits related to improving self-regulation and skills for relapse prevention. Families also reported increases in social support and positive communications between youth and their parents. This evaluation tool may be used in future research to understand how weight loss programs lead to secondary benefits for individuals and their families and provides preliminary support for the ripple effects of weight loss programs on improving both cognitive and social wellbeing in underserved African American youth.

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TITLE: AN APPETITE AWARENESS INTERVENTION FOR AT RISK YOUNG WOMEN: A RANDOMIZED CONTROLLED TRIAL

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Weight gain among college freshmen women is a common concern, and research suggests that this is a time of risk for the development of unhealthy eating patterns and weight change. The current randomized clinical study evaluates the efficacy of a brief intervention aimed at increasing an individual’s ability to eat intuitively based on bodily hunger and satiety cues, thereby potentially preventing weight gain and disordered eating. A pilot study was conducted with 34 college freshman women in Fall of 2015 and was replicated with a larger sample in Fall 2016. In total, 129 women were randomly assigned to one of three conditions: Appetite Awareness Training (AAT; *n*=45), Nutrition Education (NE; *n*=42), or a no-treatment control (NTC; *n*=42). Treatment groups received four group sessions over 6 weeks. Outcomes assessed at baseline, post-intervention, and 4-month follow up included: weight, BMI, % body fat, waist circumference, measures of self-efficacy to manage weight and to resist eating in a variety of contexts, intuitive and restrictive eating patterns, and overeating frequency. Repeated measures ANOVAs, with follow up contrast tests, were conducted to explore group differences over time. Data from the pilot study indicated that both the AAT and NE groups lost weight, whereas the control group gained weight [p=.05, η^2=.17 (large effect)]. Both treatment groups also reported a greater increase in weight maintenance self-efficacy than the NTC [p=.04, η^2=.18 (large effect)]. There was a smaller effect for ability to resist eating across a variety of contexts, though the AAT group showed the greatest increase in control in situations where food was highly available. Preliminary evidence suggests that brief group interventions were effective compared to no intervention. It is anticipated that the AAT group may be more likely to sustain weight gain prevention in the long term. Post-treatment and 4-month follow up data from the larger replication study will be presented, along with 1-year follow up data from subjects in the pilot study. Implications and evaluation of interventions will also be discussed.

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NATURALLY-OCCURRING PAIN CONVERSATIONS WITHIN THREE CLINICAL SAMPLES AS AN ALTERNATIVE MEASURE TO SELF-REPORTED PAIN

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Pain is a complex, subjective experience which is difficult to fully measure with a simple self-report. Because pain is not confined to a medical visit and unfolds through patients' daily experiences, it is paramount to access the pain experience with methods beyond traditional measures. To explore how patients naturally discuss pain, three clinical groups, rheumatoid arthritis (RA; n=13), breast cancer (BC; n=52), and major depressive disorder (MDD; n=29), wore the Electronically Activated Recorder (EAR) over a weekend. The EAR captured snippets of ambient sound, totaling in roughly 10% of the patients' waking day. The patients' audio recordings were transcribed. A pain-specific Linguistic Inquiry and Word Count dictionary was developed and validated, and then used to identify patients' pain-related conversations. Self-reported pain measures were completed just prior to the recording weekend. As predicted, the proportion of pain conversations to total conversations was highest in the RA group (11%; 95% CI [-5.8, 28.64]), then BC (9%; 95% CI %, [1.41, 17.19]), and MDD (5%; 95% CI [-0.02, 10.48]) groups. Correlational analysis showed a trend between the proportion of pain conversations in the RA group and their reported pain in the past week (r = .53, p=.09) and a marginal relationship to pain in the past month (r = .43, p=.14). The other two groups showed small, nonsignificant positive relationships to self-reported pain (r's < .20), suggesting little overlap between self-reported pain and mentions of pain in daily conversation. Interestingly, in an analysis of the types of words used, patients used more cognitive processing words (e.g. cause, know, ought), in pain versus non-pain conversations, $t(81) = 3.60$, $p < 0.01$, $d = .398$. The linguistic differences in the types of language used in pain and non-pain conversations may indicate an active form of coping such as reappraisal. Notably, this study was one of the first to show patients naturally discuss pain in their everyday lives. Ultimately, this study adds insights into how patients discuss pain without being prompted by a researcher or clinician. The insights gained from this research illuminate important paths to improving the pain experience.

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PAIN CATASTROPHIZING AND COGNITIVE FUSION IN RELATION TO PAIN AND UPPER EXTREMITY FUNCTION AMONG HAND SURGERY PATIENTS

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Objective: Patients who present to hand surgery practices are at increased risk of psychological distress, pain, and disability. Catastrophic thinking about pain is associated with greater pain intensity, and initial evidences suggest that, together, catastrophizing and cognitive fusion (i.e., the tendency to interpret thoughts as true or representative of reality) are associated with poorer pain outcomes. We tested whether cognitive fusion and catastrophizing interact in relation to pain and upper extremity limitations among patients seeking care from a hand surgeon.

Methods: Patients (N = 110; Mage = 47.51; 59% women) presenting to an outpatient hand surgery practice completed computerized measures of sociodemographics, pain intensity, cognitive fusion, pain catastrophizing, and upper extremity limitations.

Results: ANCOVA revealed an interaction between cognitive fusion and catastrophic thinking with respect to pain intensity ($p < .01$). Participants who scored high on both cognitive fusion and catastrophic thinking reported the greatest levels of pain relative to those who scored high on a single measure. The interaction between cognitive fusion and catastrophizing was also associated with upper extremity limitations ($p < .01$) with the greatest levels of upper extremity limitations among those who scored high on both catastrophic thinking and cognitive fusion. A similar pattern of results was observed when we tested each catastrophizing subscale individually.

Conclusion: Pain intensity and upper extremity limitations were poorest among hand surgery patients who reported high levels of both catastrophic thinking and cognitive fusion. Maladaptive cognitions about pain (i.e., catastrophic thinking) may be particularly problematic when interpreted as representative of reality (i.e., cognitive fusion). Psychosocial interventions that address catastrophic thinking and cognitive fusion concurrently merit investigation for alleviation of pain and limitations among people with arm illness.

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SEX AND GENDER DIFFERENCES IN CHRONIC PAIN-RELATED DISABILITY

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Sex and gender differences in chronic pain are nuanced and contextual. However, the extent of these differences and the degree to which they impact assessment remains unclear. In 2007, the International Association for the Study of Pain put forth recommendations suggesting that while the same general measures should be used to assess chronic pain in men and women, additional research was needed to determine whether these assessments need to be further tailored by sex or gender. To date, however, it remains unclear whether current measures of functioning perform adequately for both men and women. The present study: 1) evaluated a newly abbreviated measure of functioning developed for chronic pain patients, the SIP-CP in a sample of 808 men and women seeking treatment for their chronic pain and 2) examined sex differences in chronic pain disability, pain-related acceptance, and pain-related anxiety. Items of the SIP-CP were entered as dependent variables into a confirmatory factor analysis (CFA) to verify the proposed two factor structure (Physical and Psychosocial disability). Measurement invariance of the SIP-CP was then tested at configural, metric, and scalar levels for men and women using WLSMV estimation with a probit link and THETA parameterization to estimate all models, with model fit statistics describing the fit of the polychoric correlation matrix among items for each group. Sex differences on disability subscales, pain-related acceptance, and pain-related anxiety were examined using one-way ANOVAs.The CFA supported the two factor structure of the SIP-CP with adequate fit across indices (RMSEA= 0.35, 90% CI [0.32, 0.38], CFI=0.92, and TLI=0.92). Individual items accounted for 26%-68% of the variance in physical disability and 16%-64% of the variance in psychosocial disability. Measurement invariance was supported at the configural and metric levels, suggesting that the physical and psychosocial disability scores of the SIP-CP adequately assess the same construct in both men and women. Sex differences were found for the Physical disability domain score and the social interaction subscale score (both $p < .001$) of the SIP-CP, with men reporting greater disability. While there is evidence that sex and gender influence chronic pain, additional research is needed to clarify the extent and overall impact of these differences on assessment and treatment. At present, the SIP-CP appears to be a valid measure assessing the same construct of chronic pain for both men and women.

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THE EFFECTS OF DURATION OF SYMPTOMS ON HEALTH STATUS DEPENDS ON SELF-EFFICACY LEVELS

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Fibromyalgia Syndrome (FMS) is a chronic musculoskeletal pain disorder characterized by symptoms of fatigue, stiffness, depression, and diminished physical functioning. Age and duration of symptoms predict the health status of FMS patients. However, researchers have not examined whether the effects of duration of symptoms on health status depends on the patients'self-efficacy levels. The purpose of the present study was to examine these relationships. Participants were 573 women diagnosed with FMS, recruited from a health maintenance organization who were part of a larger intervention study. Data were analyzed using the baseline measures. Age and symptom length were collected using a demographic questionnaire. Self-efficacy (SE) and health status were measured via the Arthritis Self-efficacy Scale, modified for FMS, and the Fibromyalgia Impact Questionnaire (FIQ). A linear regression was performed to assess the effects of age, symptom length, and SE on FIQ scores. All predictors were centered. An interaction term was included to test whether the effect of symptom length on FIQ depended on SE levels. The overall model was statistically significant, $F(4, 566) = 89.33$, $p < .001$, and accounted for 38.7% of the variance in FIQ scores. The main effects of age, $B = -.2895$, $p < .001$, and SE, $B = -.5319$, $p < .001$, were significant, as was the interaction of symptom length with SE, $B = -.0046$, $p = .04$. The main effect of symptom length was not significant when the interaction was included in the model, because its moderation by SE was qualitative (i.e., the direction of the effect of symptom length changed across SE levels). The main effects of age and SE demonstrated that, as individuals aged and had higher SE scores, they had lower FIQ scores (i.e., less FMS impact).The interaction of symptom length by SE showed that longer duration of symptoms predicted greater FMS impact for those who have low self-efficacy, but for those who have high self-efficacy, longer symptoms predicted less FMS impact. These findings indicate that interventions designed to increase self-efficacy may reduce the effect of FMS as patients age.

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THE MEDIATING ROLE OF SOCIAL SUPPORT IN THE RELATIONSHIP BETWEEN MINDFULNESS AND CHRONIC PAIN : A LONGITUDINAL EVIDENCE

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More than 100 million Americans suffer from Chronic Pain (CP). This is four times more than people with Diabetes and 10 times more than Cancer patients (Institute of Medicine Report, 2010). As CP is a widespread and stressful condition, it also has a significant impact on patients' intrapersonal (e.g., depression, anxiety) and interpersonal (e.g., social isolation, relational satisfaction) functioning (Breivik et al. 2006).

In understanding CP from a biopsychosocial framework, prior research has identified benefits of both dispositional mindfulness (Turner et al., 2016) and the role of social support (e.g., Evers, et al., 2003) across younger, middle age, and, to a lesser extent, older adults with CP. Curiously, few studies have examined the postulated links between CP and mindfulness or between the role of social support and adjusting to a CP condition, and no study to date has directly tested the possible mediating effect of social support in the relationship between one's engagement in mindful living and CP conditions among older adults; therefore, the extent and nature of these theorized relations is unclear. One purpose of this study was to extend the current understanding of the relation between mindfulness living and CP conditions among older adults by examining antecedent-consequent relations of mindfulness, social support, and CP.

The present study utilized two waves of data collected 9 to 10 years apart from 3294 participants of the Midlife Development in the United States Survey (MIDUS) (M age = 56.27 years, SD=12.4; 55.4% female; 88.7% White). We applied (multigroup) change score to two waves of data. Dispositional mindfulness was measured by the MIDUS-II Mindfulness scale, which is based on Langer and Moldoveanu's (2000) conception of mindfulness. Social support was assessed with 24 items, 8 of which asked about the social support and social strain associated with each of three sources, spouses/partner, family, and friends. CP conditions were assessed with participants' self-report of whether pain disorder was diagnosed by physician, pain medication use frequency, duration of CP, and degree to which pain interfered with activity and mood.

Analyses revealed evidence for direct and independent multidirectional accounts. Greater mindfulness predicted lower CP scores and greater social support. In turn, increases in mindfulness were predicted by greater social support and lower CP scores. Additionally, using 50,000 bootstrapped samples, mindfulness was found to have a significant indirect effect on CP conditions as mediated by social support. This is the first study to demonstrate a possible psychosocial mediator of mindfulness in a national sample of midlife and older adults. Implications are discussed in terms of possible intervention studies that target enhancement of social support in mindfulness-based CP management.

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A149 6:00 PM-7:00 PM

A SOCIAL MEDIA APPROACH TO INFLUENCE LIFESTYLE PHYSICAL ACTIVITY IN NAVY RESERVISTS: THE ACTIVE RESERVES (ACRE) TRIAL

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In an effort to create a culture of year-round fitness, the US Navy is seeking innovative programs to assist in the promotion of health-related behaviors, such as physical activity (PA). A recent examination of Physical Readiness Test scores of Reservists (N=189) from the Naval Operational Support Center in Louisville, KY, further highlights this need, as 13.2% failed this assessment due to poor fitness, and an additional 19.6% barely met the minimum criteria for passing. The purpose of the AcRe Trial was to examine the feasibility and efficacy of delivering an 8-week lifestyle PA intervention to a sample of low-active Navy Reservists (N=15; Mage=33.80 years) entirely over Facebook. Primary outcomes included changes in health-enhancing PA (assessed at baseline and 8-week follow-up), as well as post-intervention evaluations regarding program delivery and usefulness. Participants were randomized to either a social cognitive-based condition (i.e., Behavioral group) or an attentional control (i.e., Informational group). Both conditions received access to a study-specific Facebook Group, where they received and engaged with PA-related information and resources specifically aimed at military personnel, as well as adult civilians. Participants in the Behavioral group also received weekly video-based behavioral modules designed to promote PA. Effect sizes (Cohen's d) were calculated within groups to determine differential treatment effects on PA. Results revealed that involvement in the Behavioral group produced greater effects on PA compared to the Informational group. Specifically, the Behavioral group experienced large and positive changes in moderate-vigorous PA (d=1.40), whereas the Informational group experienced small to moderate declines (d=-0.44). Post-intervention evaluations revealed that participants found the AcRe Trial to be very useful and that they would consider participating in a similar social media-delivered program again (agree=60%, strongly agree=40%, respectively). These results suggest that a theoretically-based intervention delivered via social media has the potential to positively influence PA levels in low-active Reservists. This practical and well-received approach to promoting PA could be easily modeled and adapted to meet the dynamic needs and health-related goals of the reserve component of the US Navy – a critically understudied population, which plays a paramount role in the continuity of national defense and security.

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A150 6:00 PM-7:00 PM

"IT'S HARD TO MANAGE CONFLICTING LEISURE GOALS": DO CONCURRENT GOAL-RELATED COGNITIONS PREDICT EXERCISE VOLUME?

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According to social cognitive theory (SCT), concurrent management of exercise and other highly valued leisure goals may compete and challenge successful exercise self-regulation. Concurrent goal-related cognitions may be self-regulatory mechanisms important for planned exercise engagement. Concurrent self-regulatory efficacy (SRE), or confidence to concurrently manage multiple goals including exercise, has been predictive of adults' exercise. Intergoal conflict, or the extent that concurrent goals conflict, is suggested to predict exercise. However, studies have not supported the prediction. The lack of support may be because a truly challenging conflict between concurrent goals was never examined. Specifically, participants' exercise and non-exercise goals were not highly valued and thus did not conflict with each other. Our purpose was to examine whether adults' perceived intergoal conflict enhanced exercise prediction beyond concurrent SRE when concurrent goals were conflicting and highly valued. Healthy adult exercisers (N = 112; M_{age} = 30.9 ± 10.5 years) reported a highly valued (≥ 6 on a 1 to 9 value response scale) exercise and concurrent non-exercise leisure goal. Concurrent SRE, intergoal conflict, and moderate-vigorous exercise volume over the prior month were also assessed. Hierarchical multiple regression was used to examine the relationship between goal-related cognitions and exercise. Step 1 included concurrent SRE and step 2 included intergoal conflict. The overall model was significant, $F(2, 109) = 8.95$, $p = .001$, $R^2_{\text{adjusted}} = .13$, with concurrent SRE as the sole significant predictor, $\beta = .32$, $p = .001$. The concurrent SRE finding supports SCT contentions that SRE beliefs are predictive of goal-directed behavior when goals compete. But this is specific to exercisers who have mastery experiences. In contrast, exercise initiates may be more likely to have goal conflicts that they need to learn how to master. Future research should prospectively examine intergoal conflict and concurrent SRE among adults who initiate exercise and follow the predictors of their adherence trajectory over time. Such a study might offer insight on when intergoal conflict does and does not matter.

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A151 6:00 PM-7:00 PM

ADAPTIVE GOAL SETTING AND FINANCIAL INCENTIVES: A 2 X 2 FACTORIAL RANDOMIZED TRIAL TO INCREASE PHYSICAL ACTIVITY AMONG ADULTS

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Purpose: Recent perspectives in health behavior theory propose that behavior, such as physical activity, has temporal dynamics that are unique to each individual. Emerging interventions that rely on and harness such variability and adapt intensively to individuals over time may outperform static interventions that prescribe static goals (e.g., 10,000 steps/day). The purpose of this study was to compare adaptive goal setting and immediate financial rewards to static goal setting and delayed, non-contingent rewards for promoting free-living physical activity (PA).

Methods: A 4-month 2x2 factorial randomized trial tested main effects for goal setting (adaptive vs. static goals) and reward (immediate vs. delayed) and interactions between factors to increase physical activity as measured by a Fitbit Zip. This analysis reports the secondary outcome of changes to minutes of moderate-to-vigorous PA (MVPA) using previously validated minute-level cadence thresholds. Static goals (10,000 steps/day) did not change while adaptive goals adjusted up or down daily over the course of the 4 months using a percentile-rank algorithm based on sliding window of a participant’s performance. Immediate financial incentives were made available for goal attainment while delayed, non-contingent incentives were provided monthly for participation.

Results: Participants (N=96) were mainly female (77%), aged 41 ±9.5 years, and all were overweight/obese (mean BMI = 34.1 ±6.2). Participants across all groups increased by 12.2 min/day from baseline to intervention phase on average ($p < .001$). Participants receiving static goals increased by 2.5 min/day more on average compared to adaptive goals regardless of reward group ($p = .11$). Participants receiving immediate rewards increased by 4.7 min/day more on average compared to the delayed rewards regardless of goal-setting group ($p = .006$). Average rate of change during the intervention phase differed statistically between groups, and showed that MVPA for participants receiving adaptive goals decreased at a slower rate

(2.5 seconds less per day, *p* = .005) on average, compared to participants receiving static goals, such that by the end of the 4-month intervention phase, participants receiving adaptive goals differed by 4.6 min/day compared with static goals, on average. Rate of change did not differ between reward groups during the intervention phase. Significant interactions between goal setting and reward factors were observed.

Conclusions: This study evaluated independent and joint contributions of daily goal setting and financial incentives for increasing MVPA min/day. The factorial design further allowed for exploring the optimized version of these interventions. These results contribute to advancement of the science of optimizing behavioral interventions for promoting physical activity among adults.

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A152 6:00 PM-7:00 PM

ARE CARDIAC PATIENTS MEETING PHYSICAL ACTIVITY GUIDELINES?

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Title: Are Cardiac Patients Meeting Physical Activity Guidelines?

Purpose: Physical inactivity is an important independent risk factor for coronary heart disease. In primary and secondary prevention of coronary heart disease, it is recommended that individuals achieve > 150 minutes/week of > moderate intensity physical activity (PA) accumulated in at least 10 minute bouts. Although this amount is recommended, few studies have examined how many community-dwelling cardiovascular patients achieve this recommendation. The purpose of this study was to describe subjective and objective physical activity (PA) levels of two groups of cardiovascular patients who were either post-coronary artery bypass graft (CABG) surgery or diagnosed with heart failure (HF).

Methods: A descriptive comparative design was used for this secondary analysis of data from two prior studies. A convenience sample of 62 outpatients was used to examine PA objectively (Actiheart accelerometer) and subjectively (PA interview). HF and CABG patients were compared using were examined using Mann-Whitney U statistics.

Results: Based on accelerometer data, HF patients engaged in < 1 minute of moderate-to-vigorous physical activity (MVPA) per day. They engaged in more light activities (1.6 – 2.9 METs) than moderate-vigorous activities (18.2 min/d). Thirty eight percent of HF patients met the national guidelines of > 150 min/wk by self-report; however, none met the guidelines based on accelerometer data. CABG patients engaged in 18.5 minutes of MVPA per day (129.5 min/wk) based on accelerometer data. They also engaged in more light than MVPA (146.8 min/d). Fifty-six percent of CABG patients met the national guidelines of > 150 min/wk based on self-report; however, only 33% met the guidelines based on accelerometer data. CABG patients were significantly more active than HF patients as evidenced by significantly greater minutes spent in light and moderate-to-vigorous activity.

Conclusions: Few cardiac patients in the current study met PA recommendations. Innovative intervention strategies are needed (e.g., use of activity trackers, making PA a vital sign) to

assist patients in gaining the knowledge and skills to be more active and adhere to PA recommendations.

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A153 6:00 PM-7:00 PM

ASSOCIATION BETWEEN CHANGES IN PHYSICAL ACTIVITY & DEPRESSIVE SYMPTOMS & PERCEIVED STRESS IN ADULTS WITH DIABETES & CHRONIC PAIN

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Background: Individuals with diabetes often experience higher than average symptoms of stress and depression. Barriers to addressing stress and depression include negative attitudes and beliefs regarding mental health care, distrust of the mental health care system, and stigma related to mental illness. A promising approach to alleviating such symptoms may be through the use of physical activity (PA) and exercise. We examined the effects of the change in PA levels on depressive symptoms and perceived stress levels in a sample of primarily African American adults in rural Alabama.

Methods: The study included adults with diabetes and chronic pain enrolled in the intervention arm of a community-based, cluster- randomized controlled trial testing a 12-week program that included cognitive reframing to increase physical activity. Depressive symptoms were assessed using the Iowa short form of the Centers for Epidemiological Data Scale. Perceived stress levels were measured using the 10-item Perceived Stress Scale. PA levels were assessed using questions that measured intensity and frequency of PA, perception of one’s own PA compared to others of the same age, and usual daily PA levels. Linear regression with generalized estimating equations were used to account for the clustering and longitudinal nature of the data.

Results: The 93 participants in the study had a mean age of 59.9 (± 9.8 SD) years, 98% were African Americans, 84% were female, 73% reported annual income of less than $20,000, and 65% had a high school education or lower. Change in usual daily activity levels were associated with changes in perceived stress levels (β=-2.7 [-5.02, -0.35] $p < 0.05$), but not with changes in depressive symptoms.

Discussion: Increases in reports of usual daily PA levels were associated with decreased levels of perceived stress but not depressive symptoms in this cohort. Future studies are needed in order to better understand the relationship between depression, stress, and physical activity in other communities, to assess the directionality of the relationships, and to understand the mechanisms through which PA may affect depression and stress

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A154 6:00 PM-7:00 PM

ASSOCIATION BETWEEN PA AND SELF-EFFICACY FOR PAIN MANAGEMENT AND DIABETES MANAGEMENT IN ADULTS WITH DIABETES AND CHRONIC PAIN

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Introduction: In addition to preventing chronic disease and premature death, physical activity (PA) may have immediate and positive effects on self-efficacy and confidence. Emphasizing these quickly noticeable effects of PA may be a more effective method to promote PA compared to focusing on long-term benefits (e.g., prevention or control of disease). We examined the relationship between PA with diabetes management self-efficacy and pain management self-efficacy in a sample of minority adults with diabetes and chronic pain.

Methods: Our sample was the intervention arm of a community-based, cluster-randomized controlled trial testing the effectiveness of a 12-week community health worker delivered program that emphasized cognitive reframing on diabetes outcomes in individuals with chronic pain and diabetes. Diabetes management self-efficacy was assessed using the Perceived Diabetes Self-Management Scale. Pain management self-efficacy was assessed using the pain management self-efficacy subscale of the Arthritis Self-Efficacy Scale. PA was measured using questions assessing intensity and frequency of PA, perception of PA compared to others, and usual daily PA levels.

Results: Of the 93 study participants, 98% were African American, 84% were women, 73% reported an annual income of less than $20,000, and 63% had a high school education or lower. The mean age of participants was 60±9.9 SD years. There were positive and significant associations between the change in perception of PA compared to others and change in pain management self-efficacy levels ($\beta=3.89$ [0.53, 7.26], $p < 0.05$). There were no significant associations between measures of PA and diabetes management self-efficacy.

Conclusion: Increases in the perception of one’s own PA levels compared to others were associated with improvements in pain management self-efficacy. Reframing the benefits of PA

to include affective benefits such as improvements in self-efficacy may be a potential strategy to promote PA.

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A155 6:00 PM-7:00 PM

DECREASES IN PHYSICAL ACTIVITY AND PUBERTAL MATURATION: TESTING EVOLUTIONARY HYPOTHESES AMONG THE TSIMANE' OF LOWLAND BOLIVIA

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Understanding factors that affect physical activity can have tremendous public health implications. Epidemiological studies have consistently demonstrated decreases in physical activity during adolescence in modern, Western contexts. This trend is typically interpreted as adolescents' adopting unhealthy behaviors in response to the psychosocial stress of puberty, similar to smoking, drinking, or risky sexual behaviors. Much less is known about physical activity patterns across adolescence in pre-Industrial settings. In the current study, we utilized an evolutionary, life history framework to examine physical activity across adolescence among a cross-section of young Tsimane' individuals (N=110; age 8-22). The Tsimane' are forager horticulturalists that live in small villages in the Amazon region of lowland Bolivia. They have a subsistence based economy that requires much higher levels of obligatory physical activity to produce food, water, and shelter. We tested the hypothesis that the Tsimane' would exhibit similar decreases in physical activity and increases in sedentary behavior across adolescence, despite having higher levels of obligatory physical activity. We specifically tested the hypotheses that physical activity trades-off against energy devoted to reproductive maturation, and is sensitive to individual energetic condition. Physical activity was measured objectively using Actigraph tri-axial accelerometers; investment in pubertal maturation was measured with Tanner stage, urinary DHEA and testosterone; and energetic condition was measured with urinary C-peptide and serum HbA1c. Minutes of the day spent being sedentary significantly increased with Tanner stage ($\beta = -28.66$, $t = 3.47$, $p < 0.001$) controlling for age and sex. Minutes of the day spent in moderate to vigorous physical activity significantly decreased with Tanner stage ($\beta = -9.00$, $t = -2.00$, $p < 0.05$), controlling for the age and sex. Further, the relationship between DHEA and physical activity was moderated by C-peptide, such that those who were in poorer energetic condition, exhibited steeper decreases in activity with increasing levels of DHEA. Results will be interpreted from a life history framework and considered in light of implications for public health and health disparities in modern contexts.

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A156 6:00 PM-7:00 PM

EASING THE TRANSITION TO COLLEGE: COMPARING PHYSICAL ACTIVITY AND MINDFULNESS INTERVENTIONS AMONG FIRST-YEAR STUDENTS

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Background: Engaging in physical activity (PA) is associated with an array of physical benefits (e.g., increased longevity, enhanced cardiovascular functioning, and a reduced risk for chronic diseases). In addition, PA offers numerous benefits for psychological health (e.g., decreased risk for depression and anxiety, reduced stress, and enhanced mood). Many of the psychological benefits of PA are also associated with mindfulness training, which – like PA – has demonstrated efficacy in improving attention, increasing self-control, and reducing stress. As PA and mindfulness offer similar psychological benefits, the present study sought to compare the two among first-year college students, a group of individuals experiencing significant stress as they transition to the university setting.

Method: First-year college students (N = 52) voluntarily elected to participate in a 4-week PA or mindfulness workshop (with weekly 75-minute sessions led by a certified instructor) during which students learned methods of and benefits of practicing PA or mindfulness. Additionally, participants practiced newly learned techniques in the workshop sessions (i.e., students engaged in different types of PA or mindfulness). The PA and mindfulness workshops were built to parallel each other in terms of relative content and structure, and both workshops emphasized college adjustment outcomes (e.g., stress reduction). Outcome variables were measured prior to the start of the workshop (T1) and at the final workshop (T2).

Results: Preliminary analyses indicate greater efficacy for the PA intervention compared to the mindfulness program. Students in the PA group reported lower perceived stress, higher positive affect, lower homesickness, and higher self-efficacy at T2 compared to T1. Additionally, participants in the PA group reported higher global health and an increase in perceived benefits of PA at T2 compared to T1. Participants in the mindfulness group did not report changes from T1 to T2 in any of the measured outcome variables related to college adjustment.

Conclusions: First-year college students completing a 4-week PA intervention reported acquiring useful knowledge and gained competency in multiple PA modalities. Furthermore, participants in the PA group reported an increase in college adjustment outcomes after

participating in the 4-week PA workshop, suggesting a benefit of utilizing PA as a method of easing the transition to college.

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A157 6:00 PM-7:00 PM

ENHANCING ACCESSIBILITY OF PHYSICAL ACTIVITY DURING PREGNANCY

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Background: Although the CDC recommends that pregnant women participate in physical activity at least five times each week for 30 minutes, not even 16% of pregnant women are engaging at that level. Pregnant women have expressed interest in yoga as a form of low-intensity physical activity and desire a convenient method for accessing yoga. Yoga is safe for pregnancy and is associated with improvements in quality of life, stress and related symptoms (e.g., depression, anxiety), and may be a strategy for increasing physical activity in pregnancy.

Purpose: The purpose of this study is to evaluate the feasibility and acceptability of integrating prenatal yoga into a group prenatal care setting, as informed by patients and providers who participated in combined group prenatal care and prenatal yoga classes (CenteringPregnancy plus Yoga, or “CPC+Y” classes).

Methods: This community-based qualitative study utilized focus groups with pregnant women (*n*=16) who participated in CPC+Y and with healthcare providers who were involved in CPC+Y (*n* = 5). Open-ended questions were used to elicit thoughts, beliefs, attitudes, and concerns regarding the integration of low-intensity physical activity, in the form of prenatal yoga, with group prenatal care. Qualitative data was analyzed through content analysis based on descriptive qualitative methodology with phenomenological overtones in an iterative process.

Results: The following key themes arose from the data: (1) the integration of yoga into group prenatal care provided a convenient way for participants to engage in gentle physical activity; (2) participants experienced decreased stress and enhanced confidence with low-intensity physical activity; and (3) time, space, and partner issues were key barriers to full engagement with the yoga aspect of the group prenatal care meetings.

Conclusions/Implications: Given the imperative by the Institute of Medicine to encourage pregnant women to engage in physical activity and control weight gain, this study is timely and relevant for evaluating whether the incorporation of gentle physical activity, in the form of yoga, into group prenatal care could enhance women’s engagement in physical activity. Standard prenatal care does not currently fully address pregnant women’s low engagement in physical activity, hence the findings from this study may have the potential to impact the way

prenatal care is delivered. The findings from this study are encouraging and will be used to inform the development of future large-scale randomized controlled trials.

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A158 6:00 PM-7:00 PM

EXERCISING FOR TWO: ASSOCIATIONS OF MATERNAL EXERCISE, FETAL GROWTH, & INFANT BIRTH WEIGHT IN WOMEN WITH GESTATIONAL DIABETES

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Exercise (EX) may help women with gestational diabetes mellitus (GDM) to control blood glucose and possibly prevent or delay the onset of insulin. However, little is known about the association between maternal EX and infant growth (i.e., fetal abdominal circumference [AC]; birth weight) despite that EX has the potential to positively impact fetal growth and subsequently lower the risk for macrosomia (i.e., baby weighing more than 4,000 g at birth). **Purpose:** Examine associations between maternal 2nd trimester EX and insulin use, fetal growth (AC [mm] and percentile [%tile]), and infant birth weight among GDM women in a randomized EX intervention. **Methods:** GDM women (*N* = 65) were randomized to either the face-to-face (F2F) EX intervention, home EX intervention, or control group at 20-weeks gestation through delivery. Average steps/day and minutes spent in moderate-vigorous EX/day were measured at 20-weeks gestation with an NL1000 pedometer. AC mm and %tile were measured by ultrasound at 32- and 36-weeks gestation. Insulin use and infant birth weight were obtained from medical records. Of the 65 women, 24 had sufficient data on all of these measures to conduct the analyses. **Results:** Although group differences were not significant, theF2F group was less likely to need insulin compared to the home and control groups. The F2F group initiated insulin use later in gestation (32.83 weeks) compared to the home group (27.75 weeks; $p < .10$); however, there was no difference compared to the control group (32.67 weeks; $p > .10$). Pearson's correlations showed that higher NL1000 steps/day was associated with lower AC %tile at 32- and 36- weeks gestation and AC mm at 36-weeks gestation among the entire sample. Also, higher NL1000 min moderate-vigorous EX was associated with lower AC %tile and mm at 32-weeks gestation and lower infant birth weight. There were no significant individual group correlations. Lastly, while a small proportion (14%) of the overall sample gave birth to infants with macrosomia, twice as many were in the home group compared to the F2F and control groups. **Conclusion:** These preliminary findings suggest that higher maternal EX is associated with lower AC (%tile and mm) and infant birth weight. However, further research is needed to replicate these findings given the small sample size. A F2F EX intervention may help to regulate fetal growth among GDM women and delay the onset of insulin without adverse effects to fetal growth or infant birth weight.

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A159 6:00 PM-7:00 PM

INCREASING PHYSICAL ACTIVITY IN MOTHERS USING MOBILE APPS AND VIDEOCONFERENCE: MOVE TRIAL RESULTS

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Intro: Mothers have lower levels of activity compared to their own levels before children and compared to fathers and women of the same age with no children. They experience unique barriers towards activity including a lack of leisure time, fatigue, childcare needs, and a sense of isolation.

Methods: MOVE (Mothers Online Video Exercise) is an online program designed for mothers with at least one child under the age of 13. Videoconferencing tools (Google Hangouts) were used to create virtual spaces where mothers exercised together using popular mobile apps that guided short intensive workouts.

We enrolled 64 women, 30 of whom were randomized to an 8-week online exercise program that started upon enrollment (intervention) and 34 were randomized to start a group after 8-weeks (waitlist control). Our primary outcome was minutes of moderate and vigorous physical activity (MVPA) measured using the Godin physical activity instrument. Secondary outcomes included weight loss (self-report), physical activity self-efficacy and social support. We compared changes from baseline to 8 weeks between the intervention and control arm using t-tests. Feasibility and acceptability were assessed for intervention participants.

Results: In the intervention arm (n=27 with completed data), women had a baseline MVPA of 65 minutes, which increased by 30 minutes at 8 weeks. In the waitlist arm (n=27 with completed data), women had a baseline MVPA of 68 minutes, which decreased by 4 minutes at 8 weeks. The difference of 39 MVPA (95% CI [-20-99]) in the change in minutes between arms was not significant. Women reported an average baseline weight of 147 pounds in the intervention arm, and 145 in the control arm. After 8 weeks, women in the intervention reported a loss of 2 pounds (95% CI [-4.1-0.27]) compared to a loss of 0.19 pounds in the control arm, a difference that was almost statistically significant (p=0.08).

All participants reported that they would recommend this program to a friend. Women in the intervention arm reported feeling good or great after exercise group sessions, and all reported feeling an increase in their fitness levels. Half the women chose to continue with their group at the conclusion of their 8-week participation. On average, women participated in 3 sessions per week with routines that lasted 15 minutes. The most popular workout apps included Nike+, Sworkit and Johnson & Johnson 7 Minute App.

Discussion: An online exercise intervention proved feasible, and acceptable to mothers. A larger trial with continuous measures of physical activity and fitness measures is warranted to understand if the intervention if effective at increasing activity levels and fitness and whether weight loss can be reproduced and sustained in a new sample.

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MERITORIOUS AWARD WINNER

PHYSICAL ACTIVITY AND EXECUTIVE FUNCTION TRAJECTORIES FROM 4TH THROUGH 6TH GRADE: DIFFERENCES BY PHYSICAL ACTIVITY TYPE

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Background: Multiple studies in the pediatric literature have linked physical activity (PA) to enhanced executive function (EF), which in turn has been linked to improved health, and well-being across the lifespan. While evidence suggests that various forms of PA may differentially impact EF, such work has been limited to acute studies and others limited in their ability to evaluate longitudinal relationships between multiple PA types and EF trajectories across early adolescence. Moreover, extant work has largely studied aerobic exercise paradigms which are not cognitively demanding (e.g. treadmill running, stationary bicycling) and thus may not tap or promote executive functioning to the same degree as other, more cognitively taxing forms of physical activity (e.g. certain sports, martial arts).

Methods: A school-based sample of 709 youth were administered 4 subdomains of the Behavioral Rating Inventory for Executive Function-Self Report scale (inhibitory control, emotional control, working memory, organization of materials), and an abridged Self-Administered Physical Activity Checklist (SAPAC) at four time points from 4th through 6th grade. Growth curve models (GCMs) were fit examining relationships between EF trajectories and each of 12 PA types assessed by the SAPAC adjusting for participant SES, gender, ethnicity, group assignment, school, and total physical activity. Multiple group conditional GCMs were fit to test whether baseline EF or EF slope growth factors differed significantly between students who reported participating in each activity at 4th, 5th, and 6th grade assessments, vs. students who did not. All models demonstrated excellent fit (CFI >.95; RMSEA < .05).

Results: Regular participation in martial arts (N=35) and skating (including ice, roller, and skateboarding) (N=148) were each independently associated with significantly increased EF growth from 4th through 6th grade [B (martial arts participants) =.58; B (non-participants) =.09; chi-squared difference test p < .05] [B (skating participants) =.36 ; B (non-participants)

=.05; chi-squared difference test $p < .05$]. No significant group differences in EF were observed at 4th grade (baseline) between participants and non-participants in either activity. No significant differences in baseline EF or EF trajectories across time were found for the other activities assessed by the SAPAC (i.e. ball playing, bicycling, swimming, gymnastics, exercises like pushups/sit-ups/jumping jacks, team sports, dancing, racket sports, active outdoor games, and active chores.

Conclusions: This study found that only martial arts and skating were associated with EF growth trajectories, whereas other types of PA were not. While previous work has linked martial arts to EF promotion, future research should confirm and further investigate mechanisms through which skating may lead to improved EF from 4th through 6th grade.

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POSITIVE PARENTS' PERCEPTIONS OF IMPLEMENTING A PHYSICAL ACTIVITY PROGRAM AT HOME IN YOUNG CHILDREN WITH PRADER-WILLI SYNDROME

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Prader-Willi Syndrome (PWS) is a rare (1 in 15,000) genetic neurodevelopmental disorder leading to hyperphagia, hypotonia, high adiposity and developmental delay. PWS affects motor skills, communication and behavior. Thus, characteristics of the syndrome pose challenges for children and adults with PWS to being physically active. This study used a multiple case study design to explore parent perceptions of their experience with leading a physical activity intervention with their child at home. Home-based Active Play for Parents and Youth (HAPPY) Early Discoveries is a 12-week active play program facilitated by parents that focuses on improving motor skills in children ages 4 to 7 years old. This multiple-case study included four different parents of children with PWS who completed the HAPPY Early Discoveries program. Each parent participated in an exiting semi-structured interview exploring their experiences with the program and the changes they perceived in their child. The transcriptions of these interviews were analyzed using a hierarchical content analysis to extract common themes. The themes were separated into implementation and outcomes of the program. When implementing the program, major themes described by all parents were the challenges of the program execution and finding the right strategies to motivate their child's participation. The challenges included balancing the program implementation with a busy life and scheduling the program in. The main motivation to do the program, for both parents and children, was the use and appeal of the equipment and activities provided by the program. With regards to the outcomes, major aspects observed by parents were improvements in their child's motor skills (i.e. coordination and muscular strength) and the motivation for physical activity. Parents mentioned their child was motivated by having choices in the program and would initiate some activities on their own incorporating their imagination. Another outcome of the program was the enjoyment experienced by the parents and children as the parents enjoyed the family togetherness and children viewed physical activity as fun. Despite challenges with implementing the program, parents of young children with PWS gave positive feedback about implementing a game-based physical activity program at home.

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PREDICTORS OF DAILY PATTERNS OF PHYSICAL ACTIVITY AMONG LATINA PARTICIPANTS IN A PHYSICAL ACTIVITY INTERVENTION

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Physical activity (PA) interventions based on the Transtheoretical model frequently target behavioral, cognitive, and other psychological factors to move people through a series of stages associated with adoption and maintenance of PA. This study examined long-term daily patterns of PA among adult Latinas enrolled in a 12-month PA intervention.Objective daily PA data was collected using pedometers over 12 months among 122 Spanish speaking Latinas (age *M* = 41.1 years, *SD* = 10.0; baseline BMI *M* = 29.5, *SD* = 4.3; 50.0% married; 45.1% unemployed). We fit a linear mixed effects regression model, regressing PA (i.e. total daily steps) onto demographic variables (partner and employment status), number of young children, day of week, season, baseline depression, days with pedometer, and time-varying predictors including BMI, self-efficacy, stage of change, behavioral and cognitive processes, and social support. Participants averaged 6,603 steps/day. PA was highest during weekdays and summer. PA was significantly negatively associated with days with pedometer, number of young children, and baseline depression; and positively associated with enjoyment, behavioral processes, and stage of change. Neither self-efficacy nor social support significantly predicted PA. We further examined the interaction between self-efficacy and stage of change and results suggest individuals in early stages of change demonstrated a significant negative relationship between self-efficacy and PA relative to the non-significant effects observed among those in more advanced stages of change.Progression through stages of change in this intervention was associated with increased daily PA. The significant interaction between self-efficacy and stage of change indicated that individuals in early stages of change may be more confident in their ability to increase their daily PA relative to those who have begun implementing such changes. Seasonality, weekday, and number of young children all impeded daily PA, the latter being consistent with subjects' self-reports of barriers to engaging in PA. Results suggest that the addition of a daily activity monitors to interventions can provide some insight into how and when specific intervention approaches impact physical activity.

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SOCIAL CUES’ INFLUENCE ON THE RELATIONSHIP BETWEEN GOAL-SETTING AND EXERCISE PERFORMANCE

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In two previous studies, we identified social factors that influence goal-setting and performance in an exercise context. In study 1, participants were more likely to achieve exercise goals when their goals were affirmed by a researcher than when their goals were kept private or were presented to, but unacknowledged by, a researcher, suggesting that social affirmation can increase task motivation and persistence. In study 2, participants were more likely to set more challenging exercise goals when provided social comparison information; participants in study 2 were randomly assigned to view normative exercise performance data that was accurate, overestimated, or underestimated, and in all three conditions, participants set more challenging exercise performance goals than when no social comparison data were provided. Additionally, being provided with overestimated normative data led participants to set even more challenging goals, leading to improved exercise performance vs. receiving accurate or underestimated normative data. In these studies, social influences exerted prior to beginning a task impacted goal-setting, task motivation, and performance. In the present study, we sought to determine whether the content of these influential communications had the same positive impacts if presented electronically, rather than directly from another person. College students (n = 171) participated in a controlled experiment. A researcher demonstrated four exercises (pushups, planks, jumping jacks, and single-leg balancing), after which participants set personal goals regarding their own imminent performance of these exercises. Participants were randomly assigned to one of two conditions: 1) Goals affirmed: after entering their goals into a computer program, participants received a message of “These goals look great!” or 2) Goals acknowledged: after entering their goals into a computer program, participants received a message of “These goals have been received.” Performance averages on the four exercises were as follows for the Affirmation group: 24.6 consecutive pushups, 78.5 second plank, 70.4 jumping jacks in one minute, and 20.8 second balance. None of these values differed significantly (p-values .21-.70) from the performances by the Acknowledgment group (24.9, 76.1, 68.8, 23.0, respectively). In contrast to the positive social benefits seen in studies 1 and 2, affirmation from a computer had no effect on exercise performance in study 3, suggesting that the social aspect of human affirmation is critical. Implications of these results include the importance of incorporating positive social cues as useful components in promoting motivation and engagement in health

behavior change interventions, and highlight a potential shortcoming in eHealth and mHealth behavioral interventions that are built around online and mobile messaging.

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THE ASSOCIATION OF MUNICIPAL OFFICIALS' PARTICIPATION IN PHYSICAL ACTIVITY POLICY AND CITY-LEVEL PHYSICAL ACTIVITY

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Municipal officials' support of physical activity promotion policies is critical to the development of communities that encourage physical activity. We examined whether municipal officials' reported participation in policies to increase physical activity was associated with city-level physical activity. We also examined whether officials' endorsement of greater consideration of physical activity in their work, and their perception of resident support for addressing physical activity in their position, were associated with physical activity. Municipal officials from municipalities with > 50,000 residents in 8 states completed a 2012 survey where they indicated their participation (yes/no) in the development, adoption or implementation of 1) municipal land use policy to increase mixed use, density, street connectivity, or pedestrian or bicycle access; 2) municipal public works or transportation policy to increase pedestrian or bicycle safety; and 3) municipal parks and recreation policy to increase access. They rated their consideration of physical activity in their position and their perception of resident support for physical activity on 5-pt scales. City-level physical activity (% engaging in any leisure-time physical activity) from the 2012 *Behavioral Risk Factor Surveillance System* (BRFSS) was matched to the officials' city. Analyses controlled for officials' job (e.g., mayor, public health official), race/ethnicity, education, city residence, state, use of active transportation, and degree of social and fiscal conservatism/liberalism. Of 453 officials with survey data, 161 (68% male) had BRFSS data. Participation in land use policy was the only policy associated with physical activity [F(1, 144)=5.05, p=.03, η^2=.03]. Officials' perceptions of residents' support for addressing physical activity was associated with physical activity (t=3.65,p2Δ= .05); officials' reported importance of physical activity to their position was not. Officials perceptions of residents' support for addressing physical activity was associated with their participation in land use design policy (r=.17, p=.04). Municipal officials' focus on land use policies that encourage physical activity may be key to increasing physical activity rates. Though counties with greater physical activity participation may appear to be more supportive of physical activity, encouraging residents to voice their support of environmental

changes that increase physical activity potential, might persuade officials to consider physical activity more, and thereby improve public health.

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THE ROLE OF ENJOYMENT MODERATES REASONS FOR EXERCISE AND PHYSICAL ACTIVITY

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Various factors have been found to encourage physical activity (PA) in adults, including exercise enjoyment (EE) and health reasons. Identifying reasons to exercise (RTE) is crucial since only 20.8% of adults in the United States engage in the CDC recommended PA guidelines. Research examining enjoyment as a motivation to exercise have provided mixed results. Individuals underestimate enjoyment before PA and report higher rates of EE after participating in PA. Additionally, previous research has found gender differences in RTE: females are more likely to exercise for physical appearance and males are more likely to exercise for competition and social recognition. Both genders, however, have endorsed health management as an important RTE. Based on the established relationship between RTE and PA, our aim was to determine whether enjoyment moderated this relationship above and beyond gender differences.

Undergraduates (N= 289, 78% female, 61% non-hispanic white, age = 19.7) were surveyed about weekly exercise engagement, personally motivating reasons for exercise and how much they enjoy the reported PA. Regression analyses were conducted for the 14 constructs representing RTE in the Exercise Motivation Inventory. Gender was controlled for based on existing RTE research. Exercise enjoyment was regressed on amount of PA (days per week) and RTE revealing a significant moderation for health related RTE: weight management R2 = .100 (F(2, 286) = .105, $p < .05$), health pressure R2 = ..233 (F(2, 286) = .10, $p < .05$), and avoidance of negative health outcomes R2 = .531 (F(2, 286) = .114, $p < .05$). The results of this study suggest that undergraduates who are motivated to exercise for health related reasons are more likely to exercise when participating in PA that are perceived to be more enjoyable. Since enjoyment moderates PA for health-motivated individuals, future studies should identify types of activities that individuals with health conditions find both feasible and enjoyable to increase exercise compliance.

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BARRIERS TO HEALTHCARE ACCESS AND UTILIZATION AMONG US BORN AND IMMIGRANT AFRICAN AMERICANS, AND LATINAS

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Background: Health disparities exist and persist for preventive health care and screening including cancer. African American (AA) women and Latinas have higher later stage cancer diagnosis and mortality than white women. There is a lack of studies comparing US born and immigrant African Americans and Latinas on this population healthcare access and utilization. This study examines healthcare access and utilization barriers among US and foreign born AA and Latinas.

Methods: We were guided by a community engaged approach. The participants were 395 AA and Latinas from 18-65 years. Participants were recruited passively via fliers and actively at health-fairs and through elementary school mailers. Demographic factors including country of birth, and barriers to Healthcare Access and utilization were assessed

Results: 395 female participants: US born AA (n = 129), foreign born AA (n = 58), US born Latinas (n = 57), and foreign born (n = 151). Less than half (47.1%) reported that they were born in the US. Ages ranged from 18-65 years, and the mean age was 42.8 years (SD = 12.93). Most participants were married or partnered (65%), did not have a college degree (78.2%), and had an annual income below $25K (50%). AA were significantly less likely to be partnered and born outside the US, and more likely to have higher educational attainment than Latinas. AA despite having higher education did not have significantly greater household income.

In general, all groups endorsed moderate to severe barriers to health care access and utilization.Significant group differences in barriers to healthcare access and utilization were observed among the four groups. There were significant group differences in barriers to access to care with respect to “no regular place to go to for care” (medical home) ($p < .001$) and “health insurance coverage” ($p < .001$) with 90.1% and 27.2% of immigrant Latinas reporting no private insurance coverage and no medical home, respectively. Also, there were significant group differences among the four groups in terms of barriers to health care utilization: (1) “wait too long” ($p < .05$); (2) “do not know where to go for medical care” ($p < .01$); (3) “cost” ($p < .05$); (4) “language” ($p < .01$); (5) “navigator” ($p < .05$); and (6) “stress using healthcare” ($p < .01$). Immigrant Latinas reported the greatest barriers, followed by immigrant AA, US born Latinas and US born AA.

Conclusion: Results suggest that barriers to healthcare access and utilization especially among the Latina immigrant population exist as they reported the highest percentage of people who experienced each barrier. Multilevel factors like ethnicity and immigrant status among a group of lower income US born and immigrant population seem to be associated with healthcare access and utilization barriers among the groups studied.

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EXAMINING BIOPSYCHOSOCIAL PREDICTORS OF WEIGHT GAIN IN TREATMENT-SEEKING AFRICAN AMERICAN SMOKERS

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Research has shown that African Americans gain excessive weight after smoking cessation. Yet, African Americans have been underrepresented in post-cessation weight gain research. Few studies have examined 1) the pattern of weight gain and 2) factors associated with weight gain among African American smokers. The current study aimed to examine biopsychosocial predictors of weight gain in a sample of treatment-seekers.

Data were drawn from a randomized controlled trial testing the efficacy of a culturally specific cognitive behavioral therapy (CBT) smoking cessation intervention among African Americans. Participants (N=342) completed assessments at baseline, the end of counseling, 3-, 6-, and 12-month follow ups. Baseline measures were salivary cortisol, depressive symptoms, and weight concern. Weight and self-reported smoking status were measured at all assessments. Random effects multilevel modeling was used to examine the pattern and predictors of weight gain over twelve months post CBT. Smoking status was included as a time-varying variable on level 1, and effects of the biopsychosocial variables were examined on level 2. Cross-level interactions of the biopsychosocial variables and smoking status on weight were explored.

Results revealed that weight significantly increased among those who remained abstinent over twelve months post CBT. Controlling for intervention condition and baseline obesity, smoking status positively predicted weight gain in the full sample; abstinence was associated with increased weight. In a multivariate analysis, male sex and weight concern were positively associated with baseline weight. Furthermore, exploratory analysis revealed that depressive symptoms moderated the association between smoking status and weight.

In this sample of African American smokers, weight gain was comparable to previous post-cessation weight gain research. We also found that psychosocial factors emerged as important in predicting weight gain. Future research examining predictors of weight gain will

inform smoking cessation interventions and help elucidate factors that contribute to tobacco- and obesity-related health disparities.

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EXPLORING MUSLIM WOMEN'S USE OF CONTRACEPTIONS: PRELIMINARY FINDINGS OF A SAMPLE SURVEY CONDUCTED IN THE UNITED STATES

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Introduction: Studies on American, Muslim women are limited, and little is known about their reproductive health. However, studies on contraception utilization in the general public have found that socioeconomic and cultural barriers are associated with limited contraceptive utilization, and the method of contraception used varies significantly when considering demographics, ethnicity, and marital status. Specifically, 62-75% of American women aged 15-44 used some form of contraception with oral contraceptive pills being the most popular. Racial and ethnic minorities areless likely to use contraception and tend to use lower-efficacy methods more frequently than non-minority, American women. Consequently, racial and ethnic minorities are twice as likely to experience an unintended pregnancy compared to non-minority women in the United States. Considering this knowledge gap, the aim of this study was to explore American, Muslim women's utilization of contraception in general, oral contraceptive pills, and condoms.

Methods: Self-reported data were collected through an online portal in late 2015 and were analyzed in 2016. Women who identified as Muslim, were at least eighteen years old, were sexually active, and were current residents of the United States (N=274) met the inclusion criteria. Chi-square tests and t-tests were used to assess associations between demographic characteristics, socioeconomic status, religious characteristics, use of contraception, and type of contraception.

Results: American, Muslim women utilized contraception at a similar rate found in American women, in general. Respondents identifying as Sunni Muslims had lower utilization. Ethnicity was associated with contraception utilization; Middle Eastern or North African Muslims had lower utilization of oral contraceptive pills and condoms.

Discussion: Findings suggest American, Muslim women's contraception utilization patterns are complex. Although general contraceptive utilization was high, Muslim sub-groups' utilization of oral contraceptive pills and condoms varied. These disparities may reflect cultural preferences, knowledge of contraceptive options, or even differences in health care access. These preliminary findings serve as a foundation for health disparities researchers and public health practitioners seeking to better understand health behaviors of American, Muslim

women. Additionally, although online data collection tools are viewed with some trepidation, this tool did enable us to reach this particularly stigmatized and hard-to-reach population.

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RACIAL DISPARITIES IN HEALTHCARE-PROVIDER ADVICE TO QUIT SMOKING

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African-Americans (AAs) have a higher prevalence of smoking-related diseases than Whites even though they smoke fewer cigarettes. This is in part because AAs are significantly less likely than Whites to quit smoking. Being advised to quit by a healthcare provider (HCP) is a robust predictor of smoking cessation, but AAs are significantly less likely than Whites to receive such advice. Health insurance, regular doctor, age, gender and education are the five major predictors of HCP cessation advice (HCP-CA) but do not explain racial disparities in it. We examined other variables that also may contribute to racial disparities in HCP-CA. Specifically, we included the major correlates of race and examined their effect on the contribution of race to HCP-CA. Our random, southern sample of 1670 AA and White adults included 512 smokers, and no racial difference in smoking prevalence (Whites = 32.7%, AAs = 31.7%; $X^2 = 0.130$, $p = .718$). A significantly larger percentage of White (74%) than AA (55%) smokers had ever-received HCP-CA ($X^2 = 13.869$, $p = .0005$). The first hierarchical logistic regression included the 5 major predictors (above) and race entered on the last step. Health insurance and education were not significant, but age (older), regular doctor (yes), and gender (woman) increased the odds of HCP-CA. After controlling for those 5 variables, Whites remained (Odds Ratio [OR]) 2.6 times more likely than AAs to receive HCP-CA. An additional logistic regression included co-morbidities (hypertension, diabetes, obesity) and religiosity (both strong correlates of being AA), with race again entered on the last step. Adding these variables improved model fit (Cox & Snell R^2) but *increased (rather than decreased) racial disparities* in HCP-CA: After controlling for all of these variables, Whites were (OR) 9.3 times more likely than AAs to receive HCP-CA. These data suggest that AAs who have comorbidities receive HCP-CA less often than Whites but do indeed receive it, whereas AAs who lack comorbidities are extremely unlikely to ever receive HCP-CA. Chi-square analyses of the AA smokers supported this interpretation, and thereby highlight the need to improve HCP compliance with federal policies requiring them to assess and treat tobacco use.

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SHOP-BASED HEALTH PROGRAM PLANNING: PERCEPTIONS AMONG RURAL OWNERS USING A FORMATIVE RESEARCH APPROACH

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African American barbershops and beauty salons are settings that have been identified as a significant and culturally relevant venue to reach minority populations for health promotion activities. By being located in almost every town in the United States, this setting is a viable means to promote healthy lifestyles among African Americans. The purpose of this formative research project was to assess African American barbershop and beauty salon owners' perceptions of providing health promotion programming in their shops, as well as to obtain information on health topics of interest and strategies for implementation. Interviewees were recruited using snowballing among clientele and owner referrals, between November 2014 and August 2015. A total of 20 barbershop and salon owners, across 11 counties in eastern North Carolina, completed face-to-face interviews. Responses were stratified by barbershops and beauty salons. Across both groups, all owners stated it would be a good idea to have health programs/interventions within the shop setting. Most noted topics of interest included diet and nutrition, hypertension and (wo)men's reproductive health. When asked further about these desired topics, both benefits and relevance to customers and the African American community were the reasons for their selections. In addition, across barbershops and salons, 90% of owners stated interest in having a program implemented in their shop. This information will be used to guide the development of shop-based interventions, with the aid of a community advisory board composed of shop owners, individual barbers and stylists; and customers.

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STRIKING NATIONAL-LEVEL DISPARITIES IN LGB TOBACCO USE

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Purpose: Despite recent increases in attention to lesbian, gay, bisexual and transgender (LGBT) issues, tobacco use among racial/ethnic LGBT populations remains understudied, particularly in large nationally representative samples. This study seeks to address this issue by exploring and identifying patterns in tobacco use across diverse LGB populations.

Methods: We utilized public use data from the Population Assessment of Tobacco Health (PATH), a nationally representative US sample of adults ages 18+ (N=31,081), exploring for differences in tobacco use across self-reported sexual orientation, including 29,369 heterosexual/straight and 1,712 lesbian, gay or bisexual (LGB) respondents. We explore past 30 day use of cigarettes and e-cigarettes. Race/ethnicity was dichotomized to Non-Hispanic white (NHW) and racial/ethnic minorities (People of Color – POC) due to sample size limitations. We report basic descriptive data and adjusted logistic regression.

Results: Past 30-day use of both cigarettes and e-cigarettes was higher among LGB participants (15.8% and 52.9%, respectively) compared to non-LGB participants (11.8% and 34.8%, respectively). Racial/ethnic differences were observed in past 30-day use of cigarettes and e-cigarettes among LGB and heterosexual/straight populations in both the unadjusted and adjusted analysis. White LGB (OR=1.2, 95%CI:1.0-1.5), Heterosexual POC (OR=1.8, 95%CI:1.7-2.0), and LGB POC (OR=2.5, 95%CI:2.1-3.0) reported higher odds of past 30-day cigarette use, compared to NHW heterosexual participants. Similarly NHW (OR=2.0, 95%CI:1.7-2.2) and POC (OR=1.2, 95%CI:1.0-1.4). LGB had higher odds of past 30-day e-cigarette use, when compared to NHW heterosexuals; while heterosexual POC had lower odds (OR=0.7, 95%CI:0.6-0.7).

Conclusions: These striking differences in tobacco use across race/ethnicity and sexual orientation groups suggest there may be within population disparities in the risk for tobacco among diverse LGB populations. This preliminary evidence supports the idea that being a member of a multiple minority group (e.g. both a racial/ethnic minority and sexual minority) may play an important role in tobacco use among diverse LGB. Further research on the role of multiple minority stress is needed to examine this relationship with diverse LGB tobacco use.

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THE LIVED EXPERIENCE OF INFORMAL AFRICAN AMERICAN CAREGIVERS OF FAMILY MEMBERS WITH ALZHEIMER’S DISEASE AND RELATED DEMENTIA

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The aim of this study was to explore the lived experience of informal African American (AA) caregivers of family members with Alzheimer’s Disease and Related Dementias (ADRD). A descriptive phenomenological study was used to conduct semi-structured interviews with 16 AA informal caregivers in Southeastern United States. Data was collected during the months of September 2014 to November 2014. The descriptive phenomenology ofHusserl and the methodological interpretations of Colaizzi’s method of analysis underpin this study. Four themes were identified in this analysis: (a) sense of obligation, (b) arduous journey, (c) sentinel events, and (d) faith in God. Results of this study suggest that informal caregivers lack support, knowledge, and guidance.

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A173 6:00 PM-7:00 PM

CONDOM CARNIVAL EVALUATION: COMPARISON OF A NOVEL SEXUAL RISK REDUCTION INTERVENTION TO "BUSINESS AS USUAL" AND A GOLD STANDARD

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College students frequently report not using condoms, placing them at risk for unplanned pregnancy and sexually transmitted infections, including HIV. This study aimed to investigate the preliminary efficacy, acceptability, and feasibility of The Condom Carnival, a novel, brief, interactive, culturally-tailored, and peer-led sexual risk reduction group intervention for college students. A longitudinal, randomized controlled trial was utilized to compare the efficacy of the Condom Carnival to an education-only control condition (HIV/STI 101) and a treatment control condition (VOICES/VOCES, a CDC effective behavioral intervention). To encourage college students to increase their condom use and lower their sexual risk, the Condom Carnival has three specific aims: 1) address knowledge deficits in sexual health information, 2) improve condom-related self-efficacy, and 3) increase awareness of risky sexual behaviors. Due to the interactive, skills-based, and peer-led nature of the Condom Carnival, we hypothesized that participants would report greater efficacy and acceptability of the Condom Carnival compared to the other interventions. Undergraduate and graduate students were trained as Condom Carnival peer-facilitators.119 undergraduates, aged 18-57 years (*M*=21.8), were recruited for this study. Students were 77% Female, 52% Black, 42% White, 6% Latino, and 1% Asian. All questionnaires (pre-, post-, and follow-up) were administered online. Two-way Mixed ANOVAs, McNemar’s tests, and a One-way ANOVA were used to examine the interventions’ comparative efficacy and acceptability; frequencies were examined to determine the feasibility of Condom Carnival activities. The Condom Carnival had equivalent acceptability and efficacy as VOICES/VOCES in teaching sexual health information (HIV and lubricant safety knowledge), improving facets of condom-related self-efficacy (condom negotiation strategies and correct condom use skills), and increasing awareness of risky sexual behaviors (lowering number of sexual partners, decreasing general sexual risk, and increasing safe sex behaviors). All Condom Carnival participants engaged in every activity, thus displaying excellent feasibility. The Condom Carnival, with its scalability, has utility for teaching college students sexual risk reduction and condom use promotion. This study is promising for intervention researchers, community preventionists, and campus service providers.

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A174 6:00 PM-7:00 PM

HIGH PREVALENCE OF OVER THE COUNTER SLEEP AID USE AMONG INDIVIDUALS WHO HAVE EXPERIENCED INVOLUNTARY JOB LOSS

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Sleep is a barometer of mental and physical health, highly influenced by environmental demands. Stressful life events, such as job loss, are thought to precipitate insomnia. Few studies have directly examined sleep or treatment patterns for disrupted sleep after stressful events. As part of recruitment for an ongoing, large-scale, prospective study examining sleep and involuntary job loss, we sent flyers and conducted phone screens with individuals applying for unemployment insurance through the Arizona Department of Economic Security. A total of 399 individuals reporting involuntary job loss called the study line and participated in the initial phone screen (M age = 41.69 years, SD = 11.68 years). On average, callers lost their job approximately 39.60 days previously (SD = 53.86 days). A significant number of callers (29%, n = 116) reported having recently taken drugs or medications to help them sleep or relax. Of these callers, the majority reported using only one drug/medication for sleep (90%, n = 104). The most frequently used drug or medication class was over the counter (OTC) sleep or anti-inflammatory medications (8%), followed by marijuana (6%), and melatonin (3%). Twelve percent of the sample (n = 48) reported taking prescription medications for sleep (3% tricyclic antidepressants, 3% pain medications, 3% benzodiazepines, 2% hypnotics, 1% antipsychotics/other). Only one individual reported recently engaging in Cognitive Behavioral Therapy for Insomnia, the gold standard behavioral treatment for insomnia. Overall, these findings suggest that a significant portion of individuals experiencing job loss independently seek treatment for sleep symptoms and often via OTC sleep medication and marijuana use. Future studies are recommended to investigate barriers to accessing evidence based sleep care and potential side effects of OTC sleep aids among people who have lost their jobs.

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THE SCENT OF A GOOD NIGHT’S SLEEP: OLFACTORY CUES OF A ROMANTIC PARTNER INCREASE SLEEP EFFICIENCY

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Sleep deficits are widespread and lead to a variety of negative health outcomes. We present novel evidence for the effectiveness of a practical and easy-to-implement strategy for increasing sleep efficiency. Forty women slept with a shirt which had been previously worn by their romantic partner for two nights, and an unworn shirt for two nights. Participants’ sleep efficiency was measured each night using an actigraphy watch, and their perceived sleep quality was measured each morning via self-report. Exposure to a romantic partner’s scent increased women’s sleep efficiency by an average of 6.9%, equating to over 24 minutes per night, or almost 3 hours a week. This effect size is larger than the effect size reported for melatonin, and similar to the effect size reported for benzodiazepines. The effect did not appear in perceptions of sleep quality, and emerged among people who were not aware they were sleeping with their partner’s scent, indicating that this phenomenon occurs outside of conscious awareness. These findings suggest that human scent may be an under-examined but powerful means through which cues to a loved one can exert positive effects even during periods of physical separation.

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A QUALITATIVE ASSESSMENT OF BARRIERS TO ADEQUATE HEALTHCARE AMONG MEN WHO HAVE SEX WITH MEN RESIDING IN RURAL AREAS

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Background: Men who have sex with men (MSM) are most affected by the HIV epidemic in the United States, accounting for 63% of all new infections. Although research has historically demonstrated that rural areas have significantly more barriers to HIV testing and treatment, little is known about the impact of rural residence on MSM's sexual health and access to care. The current qualitative study aimed to explore barriers to adequate healthcare among MSM in rural areas of the United States.

Methods: A total of 20 semi-structured qualitative interviews were conducted from July 2015 to June 2016 with respondents ranging in age from 18 to 60 years. Eligibility criteria included identifying as a man who dates or has sex with other men, residing in a non-metropolitan area of the United States, and being at least 18 years of age. The interviews were transcribed verbatim and coded by a diverse coding team for emerging themes based on Grounded Theory using NVivo 11.

Results: Respondents repeatedly discussed limited resources, distance, provider knowledge, and stigma as barriers to healthcare in the rural areas where they reside. For many respondents, barriers to healthcare impeded access to needed sexual education, testing, and PrEP. Often, they turned to the Internet, peers, or sexual partners for health information, which were not always accurate sources of information. Not only did respondents speak to the inadequate number of clinics and providers within driving distance, but they also described how their insurance failed to cover all the local providers in-network. Respondents living in small towns with only one provider, who they described as closely connected with residents in the area, feared seeking care or openly communicating with this provider due to stigma and a perceived lack of confidentiality. For respondents who were able to access care and disclose their sexual orientation, many recounted negative experiences in which providers said they were not able to answer their questions, that LGBTQ individuals was not their "specialty," or as one respondent described, "it got weird so [they] referred me to someone else."

Conclusions: The findings from this study can aid in creating tailored programming to increase the accessibility of care, improve provider knowledge, and decrease discrimination. Respondents provided recommendations for creating more inclusive clinical environments and ways to improve provider communication to increase the quality of healthcare.

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“A GOOD RESULT”: COLORECTAL CANCER SCREENING AND NARRATIVES OF RISK IN A PHOTOGRAPHIC RESEARCH PROJECT

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Cancer screening rates have been increasing, with positive impacts on mortality for several types of cancer. While screening is generally thought of as a healthy behavior, there has been some study of the overall effects of breast cancer screening on women’s lives and understandings of their identities. In comparison to breast cancer, there are fewer analyses of how people make meaning from their colon cancer screening experiences. There are also few studies of how people who face resource shortages and healthcare disparities experience and interpret cancer screening when cancer is not found. Of particular interest is consideration of how people who have had a colonoscopy and who do not have colon cancer conceptualize risk and how that influences their health beliefs.

For this study, 18 participants across three groups were recruited for a Photovoice study that involved a combination of photo-elicitation, individual interviews, and group sessions. Eligible participants had completed CRC screening and had not been diagnosed with colon cancer. The sessions followed a format in which people presented a photo of their choosing, frequently offering a personal story that they related to the photo. All group and individual sessions were audio-recorded and professionally transcribed and uploaded into NVivo 10. Transcripts from the group sessions were analyzed using narrative analysis techniques (Reissman 1993, 2008).

Most of the participants described colon cancer screening as a life-saving intervention, and they were eager to learn more about colon cancer and its prevention both for themselves and to share with their communities. This optimistic picture was complicated though by many of the narratives that they shared. One participant was reluctant to become reliant on medicine due to concerns about financial stability. The colonoscopy could come back with a cancer diagnosis that she may not be able to afford in the future. Others recounted ambiguity over the findings of the screening despite not receiving a cancer diagnosis. Several participants shared narratives in which their concern about their cancer risk was clearly evident, a concern that extended to their friends and family as well.

While the participants where all ‘healthy’ in the sense that their screening colonoscopy did not show colorectal cancer, this analysis demonstrates that colonoscopy took on meaning and had consequences outside the clinic and within other health experiences. These consequences varied among individuals, but the participants highlighted the multitude of ways that even an effective, life-saving intervention can be experienced by a patient. Ultimately, this study speaks to the need to understand the contextual factors and experiences that shape people’s decisions to receive cancer screening and the meaning that such screening has in their lives, even when cancer is not found.

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A178 6:00 PM-7:00 PM

DEVELOPING NEED INDICES TO UNDERSTAND AND ADDRESS SOCIAL DETERMINANTS OF HEALTH

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Background: Social determinants of health—including such factors as poverty, education, and neighborhood quality—have the greatest impact on the health and well-being of individuals. Evidence suggests that investing in strategies that improve equity in social conditions is essential to reducing community health disparities and supporting individual health behaviors. For example, there is evidence that financial assets like child development accounts is associated with better development for children and lower levels of depressive symptoms for mothers. Similarly, protecting fair housing policy ensures equitable access to safe neighborhoods, thus promoting healthy lifestyles.

For the Sake of All, a report and multi-disciplinary project on the health and well-being of African Americans in St. Louis, highlights how various social and economic factors impact regional disparities and supports cross-sector strategies to address disparities.

Methods: Eight cross-sector work groups convened to address the six areas of recommendation highlighted in the report. Over 100 stakeholders and community members identified a need for using community-level data to better understand and prioritize where policy and programmatic efforts should focus. Four of eight individual work groups pursued the development of recommendation-specific need indices.

Results: Following national methodological examples, three different need indices have been developed and used to answer prioritization questions in the following areas related to social determinants of health: 1) A ranking based on birth rates, child poverty rates, and college completion by zip code was developed for child development accounts; 2) a ranking based on area socioeconomic status, health, and social support indicators was developed to determine need for school-based clinics; 3) and an analysis of zoning and land use among St. Louis metro municipalities revealed areas of opportunity for improving access to inclusive, affordable housing. These are being used by work groups to prioritize programmatic and advocacy efforts to improve community health.

Discussion/Conclusion: The use of work group expertise to guide the development and application of community-level need indices offers a framework by which other communities may work collaboratively to prioritize regional efforts to reduce disparities. This framework is particularly useful within the resource-limited and politically-complex environment of public health research.

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ETHNIC AND GENDER DIFFERENCES IN PERCEIVED SOCIAL SUPPORT DURING EMERGENCY ROOM EVALUATION FOR ACUTE CORONARY SYNDROME

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Background: Emergency department (ED) evaluation for acute coronary syndrome (ACS; myocardial infarction, unstable angina) is common and highly stressful. Social support is important for ACS outcomes. Hispanic or Latino (HL) patients report more perceived social support than other ethnicities, but no study has assessed ethnicity and gender effects on perceived social support during life-threatening medical situations.
Methods: Within a 3 day median of ED ACS evaluation, 508 participants (age 61±1; 33.3% HL women, 17.7% non-HL women, 24.8% HL men, 24.2% non-HL men) reported the degree to which the social support provider present with them during ED evaluation was “responsive to your needs” and “able to comfort you” [scored from 1 (“none”) to 5 (“all of the time”)]. Analysis of covariance tested the influence of gender, ethnicity and gender*ethnicity on responses (covariates:age, race, Charlson Comorbidity Index, GRACE Risk Score).
Results: There was a significant interaction between gender and ethnicity on perceived responsiveness, F(1,499)=4.12, p=.043, ηp2 =.008. There were no main effects for gender (p =.962) or ethnicity (p =.146). HL men reported their support provider was more responsive (M=4.90, SE=.050) than HL women (M=4.80, SE=.045), non-HL women (M =4.82, SE=.063) and non-HL men (M=4.72, SE=.051). There was a significant main effect of ethnicity on providers’ ability to comfort patients F(1,497) = 4.03, p=.014, ηp2=.012 [gender (p=.773) gender*ethnicity (p=.091)]. HL patients reported more received comfort (M=4.74, SE=.05) than non-HL patients (M=4.53, SE=.062). Though not statistically significant, HL men reported more received comfort (M=4.81, SE=.073) than non-HL men (M=4.48, SE=.076). HL women reported feeling comforted slightly more (M=4.66, SE=.066) than non-HL women (M=4.58, SE=.094).
Conclusion: HL men reported the most social support received while in the ER, followed by both HL and non-HL women, then non-HL men. Prior studies suggest more social support may improve health outcomes. These are the first data to address gender and ethnic differences in received support during life-threatening medical events.

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FIRST GENERATION COLLEGE STUDENT STATUS, ACCULTURATION STRESS, AND PSYCHOSOCIAL RESOURCES PREDICT ANXIETY AND DEPRESSION

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Background: Mental health of college students is an important public health concern. College students in the US report high levels of stress, anxiety, and depression, which may lead to decreased academic performance and quality of life. First generation college students may experience increased risk, due to lack of academic and social support. We examined the prevalence of depression and anxiety in college students, risks associated with first generation college student status, and potential psychosocial mediators.

Methods: Students at a Northern California university (n=967) completed a survey, including: a demographic questionnaire, measures of self-efficacy, social support, acculturation stress, subjective social status, and parent/guardian relationship quality, as well as depression (PHQ-9) and anxiety (GAD-7) screening measures. The sample included 28% first generation, 65% female, and 40% non-white college students. Data were analyzed using T-tests and hierarchical linear regression. Depression and anxiety scores were square-root transformed to meet regression assumptions.

Results: 25% of students reported moderate or more severe depression, and 27% of students reported at least moderate levels of anxiety. Women reported more severe symptoms of both anxiety (T=3.42, df=912, $p < 0.001$) and depression (T=2.23, df=922, $p < 0.05$) than men. After adjusting for race and sex, first generation college students reported increased symptoms of depression and anxiety (p’s < 0.01) relative to continuing generation students. However, this effect was fully mediated by acculturation stress (p’s < 0.001) for both outcomes. In the fully adjusted model, self-efficacy, social support, and parental caring were inversely associated with depression and anxiety symptoms (p’s < 0.05). Subjective social status was inversely associated with anxiety ($p < 0.05$), while overprotective parenting was positively correlated with depression ($p < 0.05$).

Conclusions: First generation college students are at increased risk of anxiety and depression, due to acculturation stress. Interventions should increase support for first generation college students, and promote coping strategies, enhance social support, and increase access to mental health resources for all students.

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IN THEIR OWN WORDS: THE IMPACT OF STRESS ON CHRONIC DISEASE RISK FACTORS AMONG AFRICAN-AMERICAN CHILDCARE WORKERS

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Background: Stress, a potential mechanism explaining racial/ethnic and socioeconomic disparities in health, is socially patterned in the U.S. such that people of color, particularly African-Americans, and those of low SES are likely to experience more stressors. Yet, little attention is given to what stressors these groups experience and how these experiences impact their health risk factors like smoking status or physical activity. The purpose of this study is to quantitatively assess different sources of stress and health risk among African-American women who work in childcare, a low-wage industry and qualitatively include their perceptions of stress and its health impact.

Methods: This was amixed methodspilot studyconducted across 15 childcare centers in North Carolina during June 2016. Women (n=120) were surveyed about stress (job, financial strain, perceived stress, etc.) and mental and physical health. Descriptive, bivariate, and regression analyses were conducted in SAS. A subset of the women (n=38) also participated in semi-structured interviews that covered: identifying various sources of stress they experience; their greatest source of stress; how stress impacts their health, and recommendations for policymakers to reduce the amount of stress they experience. Transcribed interviews were analyzed using a deductive and inductive approach.

Results: Results suggest that reported perceived stress are low. Also, while women discuss financial strain as a major source of stress in interviews; only 15% report “not having enough to make ends meet” yet 43% reported having to borrow money from friends/family. Only 8% report being current smokers. Similarly from interviews, women discuss how experiencing multiple stressors leads to unhealthy eating, headaches, disrupted sleep, and high blood pressure, but also walking with friends to reduce stress. They also articulate that making more money will help reduce the stress they experience in all domains.

Conclusions/Lessons learned: Stress could trigger participation in health enhancing or damaging behaviors as a form of coping. Overall, addressing fundamental causes of stressors could reduce the disproportionate burden of health risk factors among African-American women. However, researchers should consider the meaning of the stress measures they use in order to adequately capture the reality of the communities they survey.

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PATHWAYS TO HARM: ALCOHOL USE PATTERNS BY SEXUAL ORIENTATION

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Although lesbian, bisexual, and questioning individuals are more likely to experience negative consequences from alcohol use than heterosexual individuals, they also tend to use alcohol in greater amounts. Researchers have not examined whether substance use is associated with more harmful outcomes controlling for level of use. Using the American College Health Associations' National College Health Assessment (N = 43,252), the present study examined whether sexual identity moderated the relationship between frequency of alcohol use and alcohol-related negative consequences. Consistent with existing literature, lesbian and bisexual women were more likely to use alcohol than heterosexual women, although the pattern of alcohol use was more variable for men. Sexual identity moderated the pathway from alcohol use frequency to alcohol-related harm. Bisexual women and individuals who were unsure of their sexual identity had stronger associations between use and harm compared to their heterosexual peers. A lesbian identity appeared to protect students from harm.

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PERSONALITY TRAIT INTERACTIONS AND SUBJECTIVE WELL-BEING THROUGHOUT THE LIFESPAN

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High conscientiousness is related to decreased mortality risk, in part because of salubrious health behaviors and healthy social support networks. High neuroticism is associated with decreased subjective well-being and poorer self-rated health, but there is dispute as to whether this reflects actual health problems or heightened sensitivity to somatic symptoms without a true increase in measurable disease. Combinations of conscientiousness and neuroticism, however, have received relatively little attention, and no study has examined associations between these combinations and well-being. Here, we tested the concept of "healthy neuroticism" (Friedman, 2000), which proposes that the vigilance associated with neuroticism is health protective when combined with the responsibility and persistence associated with conscientiousness. Participants were from the Terman study, following 1528 gifted children since 1921. Multiple regressions examined whether "healthy neuroticism" (modeled via simple linear interactions and multiplicative linear spline terms) in adulthood (1940) was related to multifactorial well-being (1940-1950), including measures of self-rated physical health, self- and observer-rated mental health, living up to potential, extent enjoying social relationships, and satisfaction with life.

For men, linear interactions were found for extent enjoying social relationships (B=-0.50, p=.01), such that men high in conscientiousness and neuroticism reported less enjoyment of social relationships. Spline interactions were found for self-rated health for men (B=-0.62, p=.01), observer-rated mental-adjustment (B=-0.44, p=.009), and satisfaction with life (B=-1.28, p=.05), such that men high in conscientiousness and neuroticism scored lower on these variables. For females, the only significant interaction was the spline for living up to potential (B=-1.69, p=.006), such that women high in conscientiousness and neuroticism reported feeling less likely to have lived up to their potential. Consistent with distinctions between subjective and objective health, the results suggest that "healthy neuroticism" is not predictive of a sense of well-being, particularly for men. These results have implications for understanding the associations between personality and well-being, as contrasted with mortality risk.

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SELF-EFFICACY AND AFFECTIVE EVALUATIONS: PARALLEL MEDIATING EFFECTS ON WEIGHT LOSS SUCCESS

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Both self-efficacy and affect consistently influence weight loss success. Less is known about how weight loss may affect self-efficacy and affect, or how these variables may have reciprocal deterministic relationships with each other. We expected successfully losing weight would promote feelings of self-efficacy and positive affect and, together, these factors would lead to continued progress towards weight loss goals. In each of 8 weekly meetings within a structured weight loss program, participants (N=51) were weighed, and they reported their confidence in achieving their goal weight and their affective evaluations of their progress towards that goal. Statistical analyses were conducted using structural equation modeling with maximum likelihood estimation. Cumulative weight loss by the program midpoint significantly predicted midpoint positive affective evaluations (b =.26, SE=.13, p=.047). Affect then predicted weight loss at the end of the program (b =.59, SE = .14, $p < .001$). The results revealed an indirect effect of midpoint weight loss on weight loss at the end of the program, through positive affective evaluations of goal progress, b =.15, 95% CI [.01, .43]. This suggests that greater weight loss predicted greater positive affect at the midpoint, which, in turn, predicted increased weight loss by the end of the program. Contrary to our hypothesis, self-efficacy at the beginning of the program did not predict weight loss or affective evaluations in later weeks, nor did it function as a mediator in parallel with affect. However, positive affect did emerge as a significant mediator between earlier weight loss and later weight loss. It may be that affective processes are particularly important in the continued success of weight loss, as it was both influenced by and predictive of weight loss throughout the program. Overall we found preliminary evidence of a possible reciprocal relationship between weight loss and affect, but no such association was found with self-efficacy.

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SOCIAL INFLUENCES ON SMOKING IN THE SOCIAL NETWORKS OF ADULTS WITH MENTAL ILLNESS ENROLLED IN CESSATION TREATMENT

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Introduction: Despite significant decreases smoking rates in the US over the past 50 years, an estimated 50-85% of adults with serious mental illness (SMI), such as schizophrenia, bipolar disorder, and major depression, smoke cigarettes compared to 16.8% of adults in the general population. Individuals with SMI generally have social networks of people similarly affected by mental illness and high rates of addiction. Whether and how these networks encourage or limit smoking cessation in this group has received little attention . The purpose of this study was to: (a) describe smoking behaviors in the social networks of individuals with SMI; and (b) explore participants' perceptions of how these networks influence their efforts to quit smoking.

Methods: Participants were 41 individuals with SMI who participated in a state Medicaid demonstration project of smoking cessation at public mental health centers. The study sample consisted of quitters (n=11) and non-quitters (n=30) following treatment. Data collected during cross-sectional egocentric social network interviews was used to estimate proportions of current smokers, former smokers, and never smokers in participants' networks. In addition, a series of open-ended qualitative questions explored participants' perceptions of the influence of individuals in their network (i.e., alters) on their attempts to quit smoking. Alters were defined as family members, friends, peers, significant others, and non-professionals with whom participants spent the most time with in the past 12 months.

Results: Most alters identified by participants were friends (45%) or family members (44%). In the study sample, 53% percent of alters were current smokers; 19% former smokers; and 28% had never smoked. These proportions did not differ significantly by participants' smoking status following cessation treatment. Participants' reported that pro-smoking social norms and attitudes, and alters' smoking habits were barriers to quitting smoking. Social facilitators to quitting included having cessation role models, quitting together with alters, and receiving emotional and practical support from alters for quitting smoking.

Conclusions: Similar to the general population, social factors appear to influence efforts to quit smoking among individuals with SMI enrolled in cessation treatment. A better understanding of the social context of smoking may help to enhance tobacco control research and practice for this high-risk population.

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THE EFFECT OF FAMILY COMPOSITION ON RISK COMMUNICATION AND SUBSEQUENT RISK TAKING BEHAVIORS

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The effect of family composition on risk communication and subsequent risk taking behaviors

Background: Upbringing and family dynamic in the home play a vital role in shaping behavior later in life. To date, there appears to be limited research on how varying differences in family composition affects risk communication in the home and the likelihood that children residing in the home participate in high-risk behaviors later in life. This study aims to fill that gap.

Methods: The sample was drawn from an online survey that was disseminated through academic institutions, community venues, and social media sites. Responses from 1,011 respondents were collected. Of these, 230 (22.7%) were classified as growing up with non-traditional families and 781 (77.3%) as growing up with traditional families. For the purposes of this study, a traditional family was defined as being raised by two opposite sex parents.

Results: Chi Square tests of independence were performed and results show that individuals who grew up with a non-traditional family were less likely to have received communication about alcohol use than were individuals who grew up with a traditional family (X^2=24.47, df=1, p < .001). Individuals who specifically grew up with a non-relative, grandparent, or extended relative in the home were less likely to have received risk communication about safe sex, substance use, and alcohol (X^2=5.91, df=1, p=.017). Additionally, individuals who grew up with a non-traditional family were more likely to report history of an STI (X^2=4.28, df=1, p=.041). Two-sided t-tests showed that individuals who grew up in a non-traditional family reported being spoken to about fewer risk related topics (mean=1.49, sd=1.24) than individuals who grew up with traditional families (mean=1.72, sd=1.13) (t=2.66, df=1009, p=.008). They also reported a younger age at first sex (mean=17.25, sd=3.74) than those who

grew up with traditional families (mean=17.99, sd=3.80) (t=2.46, df=335.88, p=.014).

Conclusions: These findings suggest that family composition during upbringing is related to both risk communication within the home and subsequent risk behaviors later in life. These results illustrate the importance of considering the social environment of the family in developing effective risk communication and reduction interventions.

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A187 6:00 PM-7:00 PM

ASSESSING COPING IN PREGNANCY: PSYCHOMETRIC PROPERTIES OF THE REVISED PRENATAL COPING INVENTORY

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It is well established that emotional distress during pregnancy increases women's risk of delivering a low birthweight or preterm infant. Coping research and theory suggest that the ways women manage stress during pregnancy can alleviate or exacerbate distress (Guardino & Dunkel-Schetter, 2013). However, few appropriate tools exist to measure coping in pregnancy. The purpose of the present study was to examine the psychometric properties of an instrument first developed almost 20 years ago to assess coping in pregnancy (Yali & Lobel, 1999).

Data were derived from a larger investigation of women receiving prenatal care from a university hospital midwifery health practice (N = 185). On average, participants were 30 years of age; married or partnered, with at least some college education. They were heterogeneous with respect to parity and ethnicity/race. The Revised Prenatal Coping Inventory (NuPCI; Hamilton & Lobel, 2008) was administered on average at 30 weeks of pregnancy (SD = 4.18). The 42-item NuPCI includes ways of coping that women use "to try to manage the strains and challenges of being pregnant" in the past month on a scale from 0 (never) to 4 (very often).

Data were analyzed with exploratory factor analysis using principal components analysis and orthogonal rotation. Items were eliminated if they failed to load at least 0.30 on any factor (11 items) or failed to contribute to the reliability of any factor (3 items). Five distinct, conceptually interpretable, and internally consistent coping factors were identified from the remaining 28 items: Prayer/Spirituality; Seeking Social Support; Planning/Preparation; Positive Appraisal; and Avoidance. Scores on the avoidance subscale were correlated with pregnancy-specific distress (r's .30 to .37, $p < .001$) and with state anxiety (r's .20 to .31, $p < .01$) at four time points across pregnancy; positive appraisal was inversely associated with state anxiety (r's -.20 to -.29, $p < .05$) in early and mid-pregnancy.

Results indicate that the NuPCI is a psychometrically sound instrument to assess coping in pregnancy. The instrument reliably differentiates ways of coping; frequency of use of two of these ways of coping is associated with emotional distress in predicted directions. The NuPCI can be used to examine how coping may alleviate or aggravate women’s distress during pregnancy and thereby alter the impact of prenatal stress on birth outcomes.

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A188 6:00 PM-7:00 PM

NEUROTICISM, STRESS, AND ERYTHROCYTE SEDIMENTATION: LONGITUDINAL FINDINGS FROM THE VA NORMATIVE AGING STUDY

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Objectives. Both neuroticism and stress have been shown to affect inflammatory processes, which in turn underlie many of the chronic illnesses of aging, including cancer, heart disease, diabetes, and neurodegenerative disorders. However, most studies of the association between psychosocial factors and inflammation are either cross-sectional or short-term longitudinal studies, and often use patient samples, in part because of the relative newness of many inflammatory measures and their expense. Erythrocyte sedimentation rate (ESR) is an assessment of general inflammation widely used in clinical settings. It is inexpensive, and has been in use since the 1970's, but is rarely used in behavioral medicine research. The purpose of the current study is to examine the relative contribution of neuroticism and stress to changes in ESR assessments of inflammatory process over 13 years.

Method. We used longitudinal data from the VA Normative Aging Study, selecting 1,229 men (Mage = 65.6 years, *SD* = 6.8) who completed a measure of neuroticism in 1988 and who subsequently completed stressful life events (SLEs) and hassles measures during one or more triennial physical examinations between 1989 and 2002 (observations = 3,134; M = 2.6, range = 1-5). ESR was assessed using the standard Wasserman test from a fasting blood draw (M = 13.99, *SD* = 7.93). We used multilevel models (MLM) to examine the between- and within-person associations among neuroticism, stress, and ESR levels and slope across time.

Results. Unconditional analyses showed that ESR increased over time. Between-person analyses showed that men with higher baseline neuroticism had steeper ESR increase over time. but SLE was only linked to ESR in within-person analyses. Adjusting for between-person differences in SLE, ESR levels were lower on occasions which men reported more SLEs. Controlling for health behavior habits and smoking attenuated this effect slightly. Hassles were not associated with ESR.

Discussion. Neuroticism was associated with increasing levels of inflammation in later life. However, major stressors were associated with lower ESR levels, supporting a two-stage

model; acute stress may decrease inflammation, but chronic stress (presumably experienced by those higher in neuroticism) may show increases (Franceschi & Campisi, 2014). Further long-term longitudinal research into the role of personality and stress in aging and inflammation is warranted.

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A189 6:00 PM-7:00 PM

STAFF PERCEPTIONS OF ALTERED DECISION MAKING IN NICU PARENTS

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BACKGROUND:

Extreme stress may result in acute stress disorder (ASD). Symptoms of ASD include emotional numbing, avoidance of feelings, sleep disturbances, concentration deficits, intense reactivity to reminders of the stressful event, flashbacks, or irritable behavior. Decisions must be made in all medical environments, including the neonatal intensive care unit (NICU), and some of those decisions influence health outcomes. The prevalence of ASD is 23-55% in NICU parents, and all NICU parents experience one or more symptoms of ASD. Despite the high prevalence of ASD in NICU parents, no known studies have directly examined parents’ impaired decision-making in the NICU.

OBJECTIVES:

Characterize how NICU staff members perceive manifestations of NICU parents’ impaired decision-making and explore how the staff reacts to this impairment.

METHODS:

A series of 25 semi-structured interviews were conducted among registered nurses, neonatologists, registered dieticians, lactation consultants, and social workers who worked in NICU environments. The NICU professionals were asked to share their in-hospital experiences related to parents’ stress and impaired decision making.

RESULTS:

The staff perceptions of causes for parents’ decision-making impairment were broadly categorized into circumstantial and personal reasons and then further subcategorized. Circumstantial reasons for impairment included the NICU environment, socio-economic status and limited access to enabling services, infant acuity, culture and religion, and information sources such as the internet or family members. Staff perceptions of personal reasons why the parents were having decision-making impairment included age and gender, family history, education and intelligence, preferred languages, the parents’ personal capacity for stress, physical or emotional condition, and the parents’ desire for control. The staff reported that they employed many strategies to help the parents with their decision-making including assessing parents' circumstances first and then deciding on a course of action such as taking over, focusing on empowerment, providing emotional and practical support, and tailoring the information delivery to meet the needs of the parents.

CONCLUSION:

All of the staff members recognized that the NICU parents were stressed. Staff also recognized and described manifestations of this decision-making impairment but, rather than attributing these behaviors to stress-related causes, the staff attributed the behaviors to the parents' circumstances or personal characteristics.

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THE EFFECTS OF A STRESS MANAGEMENT PROGRAM ON SELF-EFFICACY, STRESS, AND MOOD AMONG LOW INCOME AFRICAN-AMERICAN MOTHERS

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African-American women experience a number of chronic stressors (e.g. poverty, racial oppression; Lindblad-Goldberg et. al., 1985) and are twice as likely to die from stress-induced health issues when compared to White women (Heisler et al., 2004). Despite being disproportionately affected by stress, there are few effective interventions that are tailored to address specific risk-factors for African American women (El-Bassel et al., 2009). The present study evaluated the effectiveness of a community-based stress management program for low income African-American mothers. Classes met for two hours, once a week, for six weeks. The class topics included stress awareness, thought replacement, coping skills, social support, and communication. The majority of participants (n = 26) were single with an annual income of $15,000 or less. Mothers were evaluated at baseline and post-intervention using self-report scales to measure self-efficacy (Measure of Current Status), perceived stress (Perceived Stress Scale), depression (Edinburgh Postnatal Depression Scale), and anxiety (State Trait Anxiety Inventory). Pairwise samples t-test analyses revealed significant improvements in women's self-efficacy with reducing their tension by using relaxation skills[t (25) = -5.41, $p < .001$], being able to recognize that there body is physically tense during times of stress [t (25) = -5.81, $p < .001$], being assertive in communicating their needs to others [t (25) = -3.48, $p = .002$], and coping with their stress during difficult situations [t (25) = -3.67, $p = .001$]. Results also showed a significant decrease in perceived stress [t (25) = 3.20, $p < .05$], depression [t (25) = 5.68, $p < .001$], and anxiety [t (25) = 3.80, $p = .001$]. As an underserved population considered high-risk for stress-related health issues, it is imperative that similar interventions be developed and implemented. Given the effectiveness of the current study, the intervention could serve as a model for future clinicians and researchers.

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A191 6:00 PM-7:00 PM

AN EXAMINATION OF THE DECISIONAL BALANCE FOR DRUG USE AMONG TRANSGENDER WOMEN IN NEW YORK CITY

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Background: Greater rates of drug use and associated problems have been observed among transgender women compared to the general population. Efforts to curb drug use in high risk populations have often focused on the potential costs of use. Yet some evidence suggests that the perceived benefits of drug use may be a significant target for risk reduction interventions. The present study sought to examine the association between the perceived costs and benefits of drug use and rates of illicit drug use and associated problems in a sample of transgender women.

Methods: A sample of 184 transgender women living in NYC completed baseline assessments as part of the screening process for a transwomen-focused intervention. Baseline assessments included measures of demographic covariates, the Decisional Balance for Substance Use scale, the Short Inventory of Problems for Drug and Alcohol, and a timeline follow-back interview of drug use (previous 60 days).

Results: In total, 52% of the sample reported using one or more illicit drugs in the previous 60 days. After adjusting for demographic covariates, perceived consequences of drug use distinguished low and heavy marijuana users from non-users (B=-1.01, p=03; B=-1.55, p=.002, respectively) and was associated with drug/alcohol related problems (B=6.57, $p < .001$). Perceived benefits distinguished heavy marijuana users from non-users (B=1.48, p=.001), heavy club drug users from non-users (B=.94, p=.02), polydrug users from non-users (B=1.02, p=.005), and was associated with drug/alcohol related problems (B=2.16, p=.04).

Conclusions: Our findings are consistent with previous research and extend findings from previous research to transgender women. The results suggest that the perceived benefits of drug use may be a more meaningful target for reducing rates of drug use compared to

interventions that emphasize the potential consequences of use. Interventions that aim to identify and challenge the perceived benefits or assist in generating alternative strategies for obtaining the desired benefits will likely benefit transwomen more than the traditional risk focused approaches.

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EXPERIENCES OF DRUG EXPOSURE AND USE: A QUALITATIVE STUDY OF BLACK FORMERLY INCARCERATED DRUG OFFENDERS.

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Background: Black Americans are vastly overrepresented among those incarcerated for drug related offenses in the United States. Evidence suggests that post-incarceration, formerly incarcerated individuals may be at high risk of drug overdose deaths.
Objective: The purpose of this study is to explore the factors that influence drug use among formerly incarcerated Black drug offenders during the immediate post-incarceration period.
Methods: Qualitative structured interviews were conducted with thirty Black Americans who had been released from prisons in New York State within the past year. One-on-one in-depth interviews explored participant's drug behavior, institutional, environmental and social factors influencing drug use. Transcripts were transcribed, and analyzed using line-by-line coding that resulted in identifying themes by the research team.
Results: The following themes related to facilitating drug use emerged. Participants reported re-entering drug-enticing physical environments (i.e., neighborhoods or shelters) and social environment or social networks were at a greater risk of relapse. The following themes were reported sources for abating drug use: being on parole or other forms of community supervision, access to drug treatment facilities, and social support from family and friends.
Conclusion: Formerly incarcerated individuals continue to face challenges when attempting to reduce or avoid substance use post-incarceration. Interventions that incorporate a social determinants approach and consider the environment and social networks as significant leverage points for behavior change may be warranted.

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A193 6:00 PM-7:00 PM

EXPOSURE TO SECONDHAND MARIJUANA SMOKE: FINDINGS FROM A NATIONAL SURVEY

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As marijuana use, both medicinal and recreational, is legalized in a growing number of states, there is concern about the public health ramifications. There is evidence that secondhand marijuana smoke may be harmful. This study presents the first national data on exposure to marijuana secondhand smoke, and it compares the prevalence of exposure to that of tobacco smoke, which is a well-known public health hazard.

A national survey was conducted with a representative sample of the U.S. adult population in July-August 2016 (N=11,491).

Overall, 8.4% of U.S. adults used marijuana and 15.3% smoked cigarettes in the last 30 days. Of the population, 4.7% currently used marijuana only, 11.6% used cigarettes only, and 3.7% used both, while 80.0% of the population currently used neither.

Overall, 9.5% of the population was exposed to secondhand marijuana smoke in the last 30 days, while 21.4% of the population was exposed to secondhand cigarette smoke. Among those currently using neither marijuana nor cigarettes, 4.1% were exposed to secondhand marijuana smoke, while 12.6% were exposed to secondhand cigarette smoke. Among those exposed to secondhand marijuana smoke, 54.2% were exposed 1-3 days out of the last 30 days, 23.5% were exposed 4-14 days, and 22.3% were exposed 15+ out of the last 30 days. Among those exposed to secondhand cigarette smoke, 42.5% were exposed 1-3 days out of the last 30 days, 29.7% were exposed 4-14 days, and 27.8% were exposed 15+ out of the last 30 days.

When asked about rules about smoking marijuana and cigarettes at home, 81.6% of the population banned indoor marijuana smoking, while 80.3% banned indoor cigarette smoking. Interestingly, only 26.2% of all marijuana users were banned from smoking marijuana at home; in comparison, 50.1% of all cigarette smokers were banned from smoking cigarettes at home.

Overall, 71.2% of the population perceived exposure to secondhand marijuana smoke as harmful. This included 76.4% of those who used neither marijuana nor cigarettes, 58.2% of cigarette-only users, 40.2% of marijuana-only users, and 37.8% of dual users.

Nationally, secondhand exposure to marijuana smoke has reached approximately half that of the exposure to secondhand cigarette smoke. Given the spread of legalization, which is likely to increase prevalence (and in turn, exposure), and the preliminary evidence on risks of exposure to marijuana smoke, there is a need for continued monitoring of the extent of secondhand exposure to marijuana smoke.

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INTEGRATED DATA ANALYSIS OF TWELVE NIDA CTN SUBSTANCE USE TREATMENT TRIALS: BASELINE HIV RISK BEHAVIORS AND SUBSTANCE USE

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Background: Integrative data analysis (IDA) allows for secondary analyses of multiple original data sets that have been pooled into one using harmonized variables. The aim of this study was to (a) create a pooled data set with harmonized variables combining data from 12 individual behavioral substance use treatment trials conducted within the National Institute on Drug Abuse's (NIDA) Clinical Trials Network (CTN); and (b) characterize participant characteristics and baseline levels of HIV risk behavioral engagement and substance use during the past month across trials.

Methods: 12 behavioral drug treatment trials' data (CTN Trials: 0004, 0005, 0006, 0007, 0009, 0011, 0013, 0014, 0015, 0018, 0019, 0021) were integrated in the pooled dataset (N = 4,865). Participants had a M(SD) age of 34.8(11.4). Most participants were male (55.5%) and 58.6% of the sample were a racial/ethnic minority.

Results: At baseline, the number of participants reporting one or more days using the following substance(s) in the past month was: cocaine (n = 1,766); heroin (n = 661); other opiates (n = 609); and amphetamines (n = 418). Of those reporting injecting with previously used needles in the past month (n = 245), 60.4% endorsed inconsistent or no use of bleach to clean syringes. 48.9% reported having one sexual partner in the past month with 13.8% reporting more than one sexual partner; 37.3% had no sexual partners in the past month. Of those reporting vaginal sex in the past month (n = 2,818), 80.6% reported inconsistent condom use.

Discussion: Results highlight the utility of an IDA approach for examining HIV risk behavior patterns among individuals engaged in NIDA CTN behavioral substance use treatment trials. Data indicate elevated prevalence of HIV risk behavior engagement among individuals participating in community-based substance use treatment trials.

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A195 6:00 PM-7:00 PM

PRESCRIPTION OPIOID MEDICATION USE AMONG PEOPLE WITH MIGRAINE: NATIONAL SURVEY RESULTS

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The abuse of prescribed and illicit opioid substances has increased among US residents in recent years; with an estimated 1.9 million abusing prescribed opioid analgesics and 586,000 using heroin. Recent research has suggested that the recent rise in opioid abuse among US residents has been driven largely by the increased use of prescription opioid medication. Understanding the contributing factors to the prescription of opioid medication in a chronically ill population may inform and improve the use of opioid analgesics in this population. In this study, we report the findings of an online national survey of 4,139 adult US-based patients diagnosed with migraine. 989 (22.1%) were currently using prescription painkillers for their migraines. 1860 (41.5%) had been prescribed painkillers in the past but were no longer using them and 1290 (28.8%) had never used painkiller medication for their migraines. We assessed negative life events due to migraines and collected information on mental and physical comorbid diagnoses, a self-report mood measure, and other aspects of migraine treatment. Results reveal that the number of mental and medical comorbid disorders (R2=0.029; pfor migraine headache and reported functional impairment due to migraine. The results of the present study enhance understanding of the use of opioid medication prescribing for chronic migraine sufferers. While there are limitations to the present study, the results suggest an underdiagnosed level of psychological distress among chronic migraine sufferers that may be inappropriately addressed with prescription opioids since elevated levels of any type of comorbidity (including non-pain related comorbidities such as seasonal allergies) may lead to increase prescribing of opioids *for migraine headaches*. Methods to more accurately identify levels of psychological distress in people with chronic medical conditions in order to avoid opioid over prescribing are discussed.

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VIDA PURA: FEASIBILITY OF SCREENING AND BRIEF INTERVENTION TO REDUCE UNHEALTHY ALCOHOL USE AMONG LATINO DAY LABORERS

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Background: Due to stressors associated with immigration, Latino day laborers are at increased risk for unhealthy alcohol use. Vida PURA is a culturally adapted intervention that consists of promotores providing screening and brief intervention to Latino day laborers at a day labor worker center. **Methods:** We conducted a pilot randomized control trial to test the feasibility of the Vida PURA intervention and study procedures. Participants were screened for eligibility using the AUDIT (N = 181). Those with an AUDIT score ≥ 6 (N = 121) completed a baseline survey and were randomized into an intervention or control group. Follow-up surveys assessed changes in alcohol use at two weeks and eight weeks following the baseline. Participants in the intervention group received a brief counseling session including personalized feedback about the quantity of their daily and weekly drinking displayed on a tablet screen. Promotores also used motivational interviewing (MI) to assess their readiness to change and encourage behavior change. We evaluated intervention fidelity through a review of 44% of audio recorded counseling sessions for the presence of three steps of the intervention protocol. Additionally, we rated the promotores' motivational interviewing technique with the Motivational Interviewing Treatment Integrity (MITI) 4.2.1 tool and compared scores to competency and proficiency thresholds. We assessed recruitment, retention, and reach using logs and tracking forms. **Results:** Promotores delivered each of the three intervention steps in 78% of selected recordings. Evaluation of MI indicated that the promotores achieved basic competency across all domains and proficiency in 50% of the measures. At 58 weeks of data collection, 69% of screened participants were eligible for the study. Of those eligible, 50% had AUDIT scores ≥ 20, indicating alcohol dependence. Participant retention rates were 86% for the two-week survey and 85% for the eight-week follow-up. **Conclusions:** Initial results demonstrate that promotores can be adequately trained to deliver SBI and increase access to this intervention among an underserved population. Future research should assess the efficacy of Vida PURA to reduce unhealthy alcohol use, especially among those with high AUDIT scores.

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ENGAGEMENT IN SMOKING CESSATION TREATMENT FOLLOWING A BRIEF TELEPHONE EVALUATION AND REFERRAL SESSION

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Despite evidence that combined treatment with medication and counseling yields the best outcomes, few smokers employ both modalities when attempting to quit. This indicates the importance of efforts to enhance engagement in optimal evidence based treatments. The following reports on various aspects of treatment engagement in a sample of Veterans referred for outpatient smoking cessation treatment who completed a brief telephone call intended to assist with treatment engagement. Veterans were offered participation in outpatient groups or an in-house telephone tobacco cessation program. Of those who completed the brief telephone call, 78.2% (*N* = 308) indicated a desire to attend outpatient or telephone treatment. The present study examined the association of gender, age, ethnicity, diagnosis of a mental health disorder, importance and confidence to quit, attempt to quit in the last year, and number of cigarettes smoked per day with whether smokers were interested in and attended treatment. Veterans who indicated a desire to attend treatment smoked significantly more cigarettes per day (*M* = 19.05, *SD* = 19.73; *M* = 9.77, *SD* = 9.47; *p* < .001) and endorsed significantly higher levels of importance to quit smoking (*M* = 7.66, *SD* = 3.62; *M* = 4.59, *SD* = 4.31; *p* < .001) than those who did not. Of those who expressed a desire to attend treatment, 37.7% (*N*=116) attended. Veterans who attended treatment were older (*M* = 54.08, *SD* = 11.93; *M* = 48.56, *SD* = 13.47; *p* = .001), smoked more cigarettes per day (*M* = 25.63, *SD* = 27.81; *M* = 13.01, *SD* = 9.37; *p* < .05) and endorsed higher levels of importance to quit smoking (*M* = 7.81, *SD* = 3.39; *M* = 6.65, *SD* = 4.16; *p* = .01) than those who did not attend treatment. There were no significant differences found between those who selected individual telephone counseling (38.79%, *N*=45) and those who selected outpatient group counseling (61.21%, *N*=71) suggesting that Veterans are receptive to using various treatment modalities for smoking cessation. This study represents an initial effort to explore the treatment engagement process among Veterans who express interest in smoking cessation treatment and attending treatment. These findings highlight the need to further examine barriers to attending treatment and the importance of efforts to engage Veterans who are younger, smoke fewer cigarettes per day, and endorse lower levels of importance to quit smoking.

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PERCEPTIONS OF AN AFFORDABLE HOUSING SMOKING BAN DIFFER AMONG SMOKERS AND NONSMOKERS: IMPLICATIONS FOR POLICY IMPLEMENTATION

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BACKGROUND: In low incomecommunities, which have high smoking rates combined with a high proportion of multi-unit dwellings, smoking and exposure to secondhand smoke (SHS) pose a chronic health burden. A proposed rule to ban indoor smoking by the U.S. Department of Housing & Urban Development (HUD) may reduce tobacco use and improve protection for up to 2 million public housing residents. To tailor future smoke-free housing implementation strategies, we assessed factors associated with residents' support for a smoking ban and self-reported exposure to SHS, pre- and post-adoption of a smoke-free policy in a multi-unit, affordable housing setting.

METHODS: Adult residents(n=70 smokers; n=168 non-smokers) of 12 affordable housing developments in 4 eastern US states were surveyed immediately prior to, and 6 months after the adoption of a smoking ban. Change in support for the policy and self-reported seeing or smelling SHS in the past month was assessed at baseline and follow-up. Regression analyses assessed odds of supporting the ban and self-reported exposure to SHS at baseline after controlling for smoking status, gender, number of children in the household, level of education and race.

RESULTS: At baseline, only 25% of smokers supported the ban, compared with 83% of non-smokers. These proportions did not change significantly after adoption (30% smokers; 79% non-smokers: p's>0.3). Unemployed residents had lower odds of supporting the ban compared to employed (OR = 0.22; p = 0.021). SHS exposure decreased significantly among nonsmokers after adoption (66% at baseline vs. 40% at follow-up; p

CONCLUSIONS: Smokers and nonsmokers differed in their attitudes and perceived benefits (reduction in SHS exposure) of a smoking ban in multi-unit, low income housing. Smokers were less likely to support the ban compared with non-smokers, and attitudes for each group did not change after adoption. Self-reported SHS exposure decreased after policy adoption among nonsmokers, but not smokers. The findings suggest that smoke-free implementation

and communication strategies must be tailored to the needs of different residents, including smokers and non-smokers, as well as unemployed and younger residents, who may experience unique challenges in complying with a ban.

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A199 6:00 PM-7:00 PM

SLEEP QUALITY IS A SIGNIFICANT PREDICTOR OF QUIT-DAY SMOKING SELF-EFFICACY AMONG LOW-INCOME TREATMENT-SEEKING SMOKERS

Uma Nair, PhD[1], Patricia Haynes, PhD[1], Bradley Collins, PhD[2]

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Introduction: Sleep disturbances are prevalent among smokers. Compared to non-smokers, smokers have an increased risk for poor sleep quality. Extant evidence points to smoking self-efficacy as predictor of smoking behavior change outcomes, but few studies have examined whether sleep quality influences smoking self-efficacy. Purpose: To examine if baseline sleep quality is associated with quit day smoking self-efficacy among treatment-seeking smokers enrolled in a smoking cessation trial. Methods: After completing baseline assessments, N=101 low-income smokers were randomized to receive 4-weeks of (a) an integrated low-intensity physical activity programming with evidence-based standard smoking cessation intervention or (b) standard care cessation only. On their quit day (week4), participants attended an in-person session to complete quit day assessments. Baseline sleep quality was assessed using the Pittsburgh Sleep Quality Index (PSQI). Results: Sample characteristics included: 51% male, 77% African American, 59% high school education. Participants' mean age was 42.1(+ 10.9), BMI =29.9 (+ 7.4) and nicotine dependence = 5.2 (+ 1.2). Baseline sleep quality score was 6.8 (+3.9) and 55% scored >5, the clinical cut-off for poor sleep quality. Multivariate regression analysis showed that better sleep quality (b=-.63; p=.03) was associated with greater quit day smoking self-efficacy, after controlling for empirically relevant variables known to be associated with self-efficacy (e.g., nicotine dependence, depressive symptoms). Conclusion: Results suggest that sleep quality during the pre-quit period may undermine smoking self-efficacy. Given the overall poor levels of baseline sleep quality, these data suggest that sleep may be an important consideration in smoking cessation programs.

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A200 6:00 PM-7:00 PM

SMOKING AND URGENCY IN EARLY ADOLESCENCE: A 5 YEAR LONGITUDINAL STUDY

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Background: Among US early adolescents (i.e., youth ages 12-14 or middle school students), the prevalence of cigarette smoking is at its lowest level in recent decades. However, since the overwhelming majority of adult smokers began in early adolescence (and once established, smoking is a very hard behavior to curtail), it remains critically important to study early trajectories of smoking and identify new targets for prevention and intervention. **Objective:** This longitudinal study examines the prevalence of early adolescent smoking and tests a model of reciprocal determinism between smoking and urgency (i.e., the tendency to act rashly in response to intense positive or negative mood). **Method:** 1906 US early adolescents (50% female, 39% racial minorities) completed questionnaires 1-2 times per year starting in 5th grade and ending in 9th grade; retention was 75% across all eight waves. Structural equation modeling allowed tests of longitudinal, reciprocal relationships between smoking and urgency controlling for pubertal status and negative affect at each wave. **Results:** Ever smoking increased from 6% to 27% over time, with current smoking near 5% at the final wave. Urgency at each wave predicted smoking at the next wave, above and beyond the predictive utility of covariates and prior smoking (all $p < .001$). Likewise, in all but one case, smoking predicted an increase in urgency at subsequent waves above and beyond the predictive utility of covariates and prior urgency (all $p < .05$). **Conclusion:** With a large sample of US adolescents, this longitudinal study is unique in its examination of a bidirectional relationship between behavior and personality. Results show that while the overall prevalence of smoking may be low among early adolescents, risk for smoking increases with higher levels of urgency. Results also show that urgency increases secondary to participation in smoking. Moving forward, treatment studies should explore urgency as a point of prevention/intervention for smoking as well as smoking cessation as a means to lessen mood-based impulsivity.

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A201 6:00 PM-7:00 PM

TOBACCO PRODUCT USE AMONG PERSONS WITH MENTAL HEALTH SYMPTOMS

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Background: Individuals with current mental illness are twice as likely to use tobacco, smoke more cigarettes per day, and experience more difficulty quitting than those without mental illness. Challenges to quitting may lead smokers with mental illness try alternative tobacco products at higher rates than smokers without mental illness. The purpose of this study was to determine the use of cigarettes and other tobacco products among smokers with poor mental health. Method: Data from the adult sample of the Population Assessment of Tobacco and Health (PATH) study, a nationally representative survey of 32,320 tobacco users and non-users, were used. Participants rated their current mental health on a 5-point scale (excellent-poor) and self-reported awareness, ever and current use of tobacco products. Results: Poorer mental health was associated with higher rates of ever (OR=1.33, $p < .001$) and current smoking (OR=1.48, $p < .001$); e-cigarette awareness (OR=1.16, $p < .001$), ever (OR=1.25, $p < .001$) and current (OR=1.23, $p < .001$) e-cigarette use; cigar/cigarillo awareness (OR=1.11, $p < .001$); ever (OR=1.14, $p < .001$) and current (OR=1.19, $p < .001$) cigarillo use; pipe awareness (OR=1.07, $p < .001$), ever pipe smoking (OR=1.08, $p < .001$); and smokeless tobacco awareness (OR=1.08, $p < .001$), higher ever (OR=1.04, p=.004) but lower current (OR=0.94, p=.006) smokeless tobacco use. There was no association between self-reported mental health status and ever or current cigar use; current pipe smoking; hookah awareness, ever or current hookah use. Poorer mental health was associated with a greater number of ever and current tobacco products used (ps < .001). Conclusion: Consistent with cigarette smoking, awareness and use of other tobacco products was more prevalent among those with poorer mental health. Notable exceptions include tobacco products typically used in social situations (e.g., hookah). Multiple tobacco use places individuals with mental illness at a higher risk for tobacco-related disease. Targeted prevention and intervention strategies are needed for individuals with poor mental health.

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A202 6:00 PM-7:00 PM

USING ECOLOGICAL MOMENTARY ASSESSMENT TO INVESTIGATE SUBSTANCE CO-USE AMONG YOUNG ADULT SMOKERS

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Introduction: The use of alcohol and marijuana plays an important role for tobacco smoking behavior, especially among young people. Young adults smoke a large proportion of their cigarettes under the influence of these substances. However, previous findings about co-use of cigarettes, alcohol, and marijuana may be unreliable as they are based predominantly on retrospective survey studies covering recall windows of 30 days or more, which are limited by recall bias. Studies are needed to investigate patterns of co-use using assessments more closely timed around use occasions.

Methods: We used a smartphone-based assessment system to collect Ecological Momentary Assessment (EMA) data from young adult smokers, ages 18-26, and completed a pilot feasibility study with 9 participants (age M=23, 56% female, 56% daily smokers). Participants living in the San Francisco Bay Area were recruited on Facebook and completed screening, informed consent, and baseline questionnaires online. For a total of 30 days, participants were prompted once each morning to complete an assessment of tobacco, alcohol, and marijuana use, including detailed questions about substance co-use (e.g., smoking tobacco while using another substance) covering the entire previous day. Participants completed 78% of these previous-day assessments, contributing a total of 210 participant-days (23.3 days per participant).

Results: Cigarette use was reported on 96.2% of days, alcohol use on 32.9%, and marijuana use on 29.5%. Co-use of cigarettes and alcohol was reported on 19.5% of days and co-use of cigarettes and marijuana on 22.4%. Participants reported to have smoked the majority of cigarettes (all or most of them) under the influence of alcohol on 48.8% of co-use days and under the influence of marijuana on 25.5% of co-use days. On co-use days, the number of cigarettes was significantly associated with number of alcoholic drinks (r=.23; p=.05), but not with number of times of marijuana use (r=.10; p=.45).

Conclusion: Young adult smokers participating in our study reported a similar number of days co-using cigarettes and alcohol or marijuana. However, on these co-use days, a greater proportion of cigarettes were co-used with alcohol compared to marijuana. Smartphone

based EMA studies can help to elucidate patterns of substance co-use in great detail, improve our understanding of co-use, and inform development of mobile interventions.

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Thursday

March 30, 2017

8:00 AM-9:15 AM

Symposium 1 8:00 AM-9:15 AM

CONNECTING THE DOTS: TRANSLATING EVIDENCE TO ADVANCE HEALTH EQUITY IN PRECISION MEDICINE

Kassandra I. Alcaraz, PhD, MPH[1], Clement K. Gwede, PhD, MPH, RN, FAAN[2], Karen Yeary, PhD[3], Usha Menon, PhD, RN, FAAN[4], Kimlin Tam. Ashing, Ph.D[5]

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Precision medicine (PM) holds great promise for advancing disease prevention and treatment by considering genetic, environmental, and behavioral influences on health. However, underserved populations must be appropriately represented and engaged to eliminate health disparities. The ConNECT Framework, focusing on five broad and synergistic principles (Integrating Context, Fostering a Norm of Inclusion, Ensuring Equitable Diffusion of Innovations, Harnessing Communication Technology, and Prioritizing Specialized Training), is a new and actionable model designed to foster health equity in behavioral medicine. A multidisciplinary panel of experts will present the application of the ConNECT Framework to evidence-based health equity approaches pertinent to PM. The first presenter will discuss strategies for proactive and consistent inclusion of medically vulnerable and socially marginalized populations. The second presenter will discuss ways to elucidate context, using the social context of religion and spirituality as an example. The third presenter will discuss methods for equitable dissemination of new research knowledge with respect for unique cultural and social factors (e.g., religious beliefs) that influence individual receipt and co-production of health information. The discussant will synthesize and critically examine strategies presented including identifying potential challenges and barriers to implementation. The symposium will provide a plan of action for advancing health equity in the era of PM.

Symposium 1A

FOSTERING A NORM OF EQUITABLE INCLUSION IN PRECISION MEDICINE

Dr. Clement K. Gwede, PhD, MPH, RN, FAAN

The emphasis on precision medicine (PM), with its advancements in the biological bases on health, brings exciting new opportunities for the integration of behavioral, contextual, and place-based determinants of health. PM holds great promise for reducing health disparities, and stimulating equity efforts in behavioral medicine science and practice. Community-based participatory research (CBPR) provides an important and salient framework and approach to enhance inclusion and representation of underserved and vulnerable populations in behavioral medicine research and practice. CBPR-informed initiatives have effectively helped to increase participation of diverse groups in population health efforts including community-based interventions and clinical trials. The ConNECT framework, comprised of five broad and synergistic health equity-centric principles, emphasizes the essential role of CBPR to improve diversity and inclusion with the ultimate goal of maximizing equity in all areas of health. This presentation addresses the second ConNECT principle, fostering a Norm of Inclusion (*consistently engage and examine diverse groups)* to further integrate CBPR, PM, and emerging communication technologies to achieve health equity. It offers exemplars of how ConNECT improves inclusion in four areas: 1) stepwise integration of CBPR in the context of prevention, clinical, and community trials to increase representation and participation of historically underserved racial/ethnic minorities and other marginalized groups (e.g., sexual minorities); 2) promoting biobanking and participation in biospecimens research among historically vulnerable and at-risk groups; 3) leveraging communication technologies (e.g., smartphones, patient portals) for broader reach to diverse and underserved populations, and 4) disseminating cultural competence training for equitable care delivery across diverse levels of health care providers, public health practitioners, and policy makers. The ConNECT Framework helps generate and translate emerging PM knowledge into tangible and meaningful benefit for all patients, communities, and society so that no one is left behind.

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Symposium 1B

INTEGRATING CONTEXT: CONSIDERING RELIGION AND SPIRITUALITY IN PRECISION MEDICINE

Karen Yeary, PhD

Religion and spirituality (R/S) are important components of the social context that have documented relationships with health behaviors, in particular the acceptability, decision making, and uptake of health screening, diagnostics, and therapeutics. Precision medicine (PM) has prompted excitement in the scientific community for its capacity to treat and prevent disease through individual tailoring treatments and prevention strategies. Specifically, precision medicine takes into account an individual's unique biological, behavioral, and environmental—including social—context. Yet the social context component of R/S has not been adequately considered. R/S may have particular salience in health equity, as some groups bearing a disproportionate burden of disease report higher levels of R/S than the general population (e.g. African Americans). The ConNECT Framework, which emphasizes the importance of considering social and contextual health factors to foster health equity, is a model through which R/S's role in PM can be discussed.

Epidemiological literature has documented R/S's significant associations with both physical and mental health outcomes, including biological markers (e.g., CD4 counts/percentages). Qualitative research has explored the role of R/S beliefs in disease perception, treatment, and preventative behaviors (e.g., cancer, cancer screening). The fields of sociology and psychology have investigated the powerful role of religious institutions as social forces that influence health behaviors (e.g., alcohol use) through social norms. Moreover, intervention science has reported the important role of R/S in health promotion.

Guided by ConNECT Framework strategies, the proposed presentation will discuss: 1) the relevance of R/S to health equity in PM; 2) recommended R/S assessments to include in data collection for individualized health recommendations; 3) the use of R/S data to explicitly tailor information exchange and the design of studies (including communication technology) for individuals (e.g., health education material tailored to an individual's R/S beliefs); and 4) incorporation of R/S into provider and health practitioner training in PM delivery. Consideration of the R/S domain of care can align with the underlying tenets of individualized clinical care and treatment, and contribute to health equity in PM.

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Symposium 1C

PRECISION MEDICINE AND EQUITABLE DISSEMINATION OF INFORMATION

Dr. Usha Menon, PhD, RN, FAAN

In our recently published *ConNECT Framework: A Model for Advancing Behavioral Medicine Science and Practice to Foster Health Equity,*we addressed health equity from a behavioral medicine lens with one of the focal points being the equitable dissemination of research findings.Equitable dissemination of information is an important component in the growing field of precision medicine (PM).

PM offers a tremendous opportunity for revolutionizing how we prevent and treat disease and improve health. If we achieve the national goals set forth for the one million-strong Precision Medicine Initiative cohort by the White House, health care providers will be able to apply cutting edge genomics and genetic testing data to the personalized treatment of risk and disease. Ideally, these innovative treatments will also take into account individual differences in people’s genes, environments, and lifestyles.

However, as with any advances in medicine, we should learn from the past, in that as we ‘write the playbook’ for PM, considerations of health equity and underserved groups are well integrated into the planning and not as an afterthought. The dissemination component of the ConNECT Framework provides a roadmap for PM whereby participants are engaged in receiving and providing health information for the purposes of enhancing research, *information exchange of study findings*, and ensuring ethical practices in *PM.* Engaging multiple organizations and institutions within communities (e.g. community health clinics, faith-based organizations, non-profit organizations) is essential in equitable dissemination of information and to ensure that the information is responsive to the unique needs of these groups. To be fully effective, precision treatments of disease and risk reduction must be accessible to all communities and must not contribute further to health inequities. Further, factors that influence the participation of individuals in genetic studies as well as their desires to receive information related to their risk factors and current health conditions (e.g., cultural norms, spiritual and religious tenets, and medical truth-telling) should also be considered. We elucidate a framework for robust engagement through information exchange, treatment access, and diffusion of research findings that promotes health equity.

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Symposium 2 8:00 AM-9:15 AM

INCORPORATING CANCER SCREENING INNOVATIONS IN INTEGRATED HEALTH SYSTEMS

Sherri Sheinfeld Gorin, PhD, FSBM[1], Sara J. Knight, PhD[2], Suzanne O'Neill, PhD[3], Amy M. Kilbourne, PhD[4]

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Integrated health systems have a vested interest in population health focusing on cancer prevention and control. Yet, implementing innovations in cancer screening can be complex, often necessitating engagement of both patients and other stakeholders across multiple levels of the health system. Beyond dissemination of evidence, planned implementation processes are often needed to incorporate novel behavioral medicine interventions in integrated health systems. In this symposium, we examine two instructive cases of the dissemination and implementation of innovations in cancer screening—the introduction of genomic services to screen for Lynch syndrome, a hereditary colon cancer, in the Department of Veterans Affairs (VA) health system and the incorporation of technology to support breast density notification as a component of breast cancer screening in an integrated care setting in the Pacific Northwest. The two cases will illustrate how the characteristics of the innovations, conceptual models, research designs, stakeholder engagement methods, and organizational settings influence the adoption of new approaches to cancer screening in clinical practice in health systems. The first speaker will reflect on the multilevel contexts (policy, provider, and patient) for the translation of novel cancer screening interventions in large healthcare organizations and the broader social and political emphasis on efficient coordinated and patient-centered care. In the second presentation, the speaker will consider findings from a pre-implementation mixed methods project using the Greenhalgh Diffusion of Innovation model to examine the adoption of screening for Lynch syndrome in Veterans under age 50 diagnosed with colorectal cancer and cared for in the VA health system. The third speaker will describe a hybrid efficacy implementation project using the RE-AIM framework to inform a personalized web-based breast cancer risk communication and decision support tool for women with dense breasts and increased cancer risk seen in an integrated care setting. The discussant will compare and contrast the two cases offering an implementation science perspective on opportunities to improve the integration of novel cancer interventions in large health care organizations through the use of deliberate implementation processes.

Symposium 2A

MULTILEVEL CONTEXTS FOR IMPLEMENTING NOVEL INTERVENTIONS IN CANCER

Dr. Sherri Sheinfeld Gorin, PhD, FSBM

New sources of medical evidence or best practices, such as those provided by these two studies, and long-standing USPSTF guidelines, are not always put into use by health providers, or are put to use only inconsistently. This presentation will explore the multilevel (policy, provider, patient) barriers to successful implementation of novel, evidence-based cancer interventions that promote informed preference based medical decisions in large, integrated healthcare systems; Each level influences the other, either implicitly or explicitly. For example, patients and clinicians are never really isolated from the healthcare organization in which they are embedded. Patients may not make preference-informed medical decisions if clinicians do not engage them in discussion about the best evidence. Similarly, healthcare organizations may not incentivize such patient–clinician communication if patient loads and processes leave clinicians with little time or support to address the complexity of individualized decisions for patients. Organizational resources and tools to encourage, empower, and motivate clinicians to adopt the practice of individualized decision making and to ensure sustained awareness of the decision-making process can range from the simple to the complex, including decision aids and programs that might model likely patient outcomes. In response to external accountability demands or internal quality improvement initiatives, organizations may assess conflicts or inconsistencies within the context of health services delivery, particularly those arising between clinicians and patients regarding the use of new technologies, such as breast density measurement or routine Lynch syndrome assessment. In the event of a positive test, the follow up and monitoring, possible diagnosis and treatment of cancer are costly, especially among patients with multiple chronic problems. Population-based measures of access, uptake of preventive services, and mortality rates may be used by organizations to assess individualized decisions and the quality of the healthcare organization. Existing organizational performance indicators may be inadequate to assess the impact of routine genetic testing, however. The multilevel framework has its genesis in the Patient Protection and Affordable Care Act and the Institute of Medicine’s emphasis on efficient coordinated and patient-centered care. The findings from a recent systematic review and meta-analysis suggest that multilevel interventions have positive outcomes across a number of health behavior outcomes for racial/ethnic subgroups and the poor. The findings also suggest that multilevel interventions may improve the quality of health-care system processes for subgroups that often receive sub-par healthcare.

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Symposium 2B

LYNCH SYNDROME SCREENING IN ROUTINE CARE FOR VETERANS WITH COLON CANCER IN THE VETERANS AFFAIRS HEALTH SYSTEM

Dr. Sara J. Knight, PhD

Precision medicine, including genomics, is dramatically changing the way health risk assessments inform health decision making, a Department of Veterans Affairs (VA) health system priority. Screening for Lynch syndrome, a hereditary cancer associated with an 80% lifetime risk of colon cancer and lesser risk of seven other cancers, was one of the first applications in genomics to accumulate evidence for its clinical validity and utility. While national guidelines supported screening for Lynch syndrome, in many health systems, including the VA, adoption has been lower and more variable than would be expected based on the recommendations. To address this gap between evidence and practice, we sought to characterize the adoption of Lynch syndrome screening in the VA health system between 2003 and 2013. The Greenhalgh Diffusion of Innovation Model guided our selection of methods to examine system readiness for the innovation, stakeholder engagement, and potential for deliberate implementation processes.

We used mixed methods to: 1) establish a national retrospective cohort of all Veterans under age 50 and cared for in the VA between 2003 and 2010 using VA administrative data, clinical registry data, and the electronic health record (n=886) and 2) conduct national key informant interviews with stakeholders in 2013 to identify barriers and facilitators to the adoption of Lynch syndrome screening (n=58 clinicians). Quantitative and qualitative analyses were triangulated to understand system readiness for adoption of genetic consultation and tumor analysis, key elements used in screening to inform subsequent germline testing.

The analysis revealed a low rate of tumor analysis (8%) and genetic consultation (4.85%) from 2003 to 2008 with a slight rise in utilization during 2009. Of the 108 VA Medical Centers with colon cancer cases, 62% and 69% lacked documentation of tumor testing or referral to a clinical genomics expert, respectively. Key informant interviews in 2013 indicated that clinicians perceived both tumor testing and consultation with a genomics expert as advantageous and inexpensive, but clinicians reported challenges--lack of expeditious request and approval routines for referrals, knowledge gaps in genomics among health professionals, and lack of genomics expertise in VA clinical settings.

Triangulating information from multiple data sources and stakeholder engagement activities revealed receptiveness to Lynch syndrome screening among VA clinicians, but multiple barriers occurring at the individual and system level impeded routine use. Subsequent engagement of VA system level leaders has used these results to inform planning for deliberate implementation.

Symposium 2C

PREPARING TO TEST A DECISION SUPPORT TOOL FOR WOMEN WITH DENSE BREASTS IN AN INTEGRATED CARE SETTING: LESSONS LEARNED

Suzanne O'Neill, PhD

Background: Over half of US states require breast density disclosure to women following screening mammography. This proliferation has occurred without evidence of clinical benefit, clinical guidelines, or established best practices for risk communication or clinical integration. To address this gap, we have developed a personalized, web-based breast cancer risk communication and decision support tool for women with dense breasts and clinically elevated cancer risk. As we prepared to test this intervention vs. usual care in an integrated care setting, we completed a series formative stakeholder engagement activities.

Methods: Engagement activities included focus groups with patients, in-depth pre-testing of the preliminary tool with patients, interviews with health care providers and delivery system leaders and engagement of the breast care guideline committee within the health care system.

Results: Most focus group participants were aware of breast density, but unfamiliar with its role as a breast cancer risk factor. Women noted that the tool’s appearance and branding should convey its credibility and that the intervention methods should engage their primary care providers, as these were noted as a trusted source of information. Patients in usability testing (n=8, mean age=60) rated the tool high on acceptability and ease of use, and provided feedback to improve the communication of cancer risk and risk management approaches. Health care providers and clinical leaders highlighted key areas for provider engagement prior to the trial’s launch. These included clarifying referral pathways and mechanisms, alignment with the clinical guidelines within the system, and monitoring of clinical impact within the health system.

Discussion: Incorporating multiple stakeholder perspectives greatly facilitated the development of this web-based decision support intervention. Iterative feedback across a group of diverse stakeholders within this integrated health care system additionally supports the execution of our RCT. This formative work will also allow us to contribute to developing additional guidance to fill the ongoing clinical vacuum created by legislative mandates.

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Symposium 3 8:00 AM-9:15 AM

ACADEMIC-BUSINESS PARTNERSHIPS…BENEFITS, BARRIERS, AND OPPORTUNITIES, OH MY!

Amy McQueen, PhD[1], Gregory Norman, PhD[2], Jamie L. Studts, PhD[3], Audie Atienza, PhD[4]

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Academic researchers develop scientific expertise in niche areas and seek to apply their theories and results in dynamic real-world environments. For-profit and non-profit organizations engage with hundreds to millions of diverse individuals, and continually seek to innovate their services and products to increase their competitive advantage in the marketplace. Partnerships between academia and business are not new, but are not well understood. This symposia will present three successful examples of academic-business collaborations. Each speaker will address common phases of development (e.g., forming, storming, norming, performing) including challenges and benefits of each. They will discuss experienced-based approaches to dealing with funding, publication, conflicts of interest, protecting intellectual property and research credibility, as well as gains in knowledge, innovation, and the co-creation process. The first presentation will involve an overview of tobacco cessation research conducted as part of Small Business federal-government (SBIR/STTR) grants with a health technology company. The second presentation will provide an overview of a unique industry-funded Center for Health Behavior Change and the collaborative health communication research being conducted to engage commercially-insured and Medicaid-insured populations in life-centered health behavior change programs. The third presentation will describe the role of a unique medical research organization in facilitating collaborative research with hospitals, healthcare organizations, and foundations. The discussant will offer some perspective on the strengths, opportunities, and challenges of different models of academic-business partnerships that involve government, university, business, non-profit and healthcare stakeholders.

Symposium 3A

INNOVATIVE HEALTH COMMUNICATION RESEARCH INVOLVING MEDICAID BENEFICIARIES AT THE ENVOLVE™ CENTER FOR HEALTH BEHAVIOR CHANGE

Dr. Amy McQueen, PhD

Health communication campaigns can have great reach and impact attitudes, intentions and behaviors. However, people are inundated with health information from diverse sources. People do not pay attention to all messages, nor do they always prioritize health when other life demands are more salient. The industry-funded Center for Health Behavior Change is a research collaboration between two universities and a large corporation. The health communication research team examines new methods for reaching, informing, and engaging people in health programs. Specifically, we seek to explore life priorities, preferences for life activities, and life values as novel approaches to tailor messages and programs to meaningfully engage adults in their healthcare. Study 1 recruitment is ongoing; we completed qualitative interviews with adults with commercial (n=61) and Medicaid (n=25) health insurance. Interviews include card sort exercises involving 31 alternative terms for a health coach (e.g., advisor, helper, guide) or exposure to one of twelve paper prototypes of a future online health coaching and goal-setting program. Prototypes vary in approach (risk-based recommendation, choice of health behaviors to address, or choice of life-centric priorities to address) and formatting (when coaches are introduced, data capture methods). Results include preferences for coaching terms, expected services and characteristics of coaches; reactions to the different approaches and design features; and motivations and barriers for behavior change. Study 2 began recruitment of ~1200 Medicaid beneficiaries in four states to complete an online survey to validate a new measure of life values and examine how values influence health attitudes and behaviors. These formative studies will support a future intervention trial to compare different messaging or engagement approaches with Medicaid beneficiaries to improve health behaviors and outcomes. This unique academic-industry partnership has produced a synergistic learning environment for academic researchers and business professionals to expand their horizons toward impacting millions of Medicaid beneficiaries through evidence-based strategies tailored on meaningful life values and priorities.

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Symposium 3B

WEST HEALTH: AN INNOVATIVE MODEL OF COLLABORATIVE RESEARCH TO ENABLE SENIORS TO SUCCESSFULLY AGE IN PLACE.

Gregory Norman, PhD

The fastest growing segment of the US population is people over age 80. This group is part of a demographic shift happening in the US where about 10,000 baby boomers turn 65 each day, which will result in 20% of the US population over age 65 by 2030. There is a growing recognition that the current health care system is unable to support the unique needs of seniors including clinical and social supportive services.

The West Health mission is to enable seniors to successfully age in place, with access to high-quality healthcare and support services that preserve and protect seniors' dignity, quality of life and independence. West Health comprises the non-profit West Health Institute, the non-partisan West Health Policy Center and the Gary and Mary West Foundation. Through applied medical research, policy and advocacy and outcomes-based funding, West Health focuses on studying, developing and advancing scalable, sustainable and affordable healthcare delivery models that enable seniors to successfully age.

The presentation will discuss ongoing projects and lessons learned on conducting multi-discipline collaborations that address the patient, provider, and payer perspective of healthcare. One example of West Health's efforts is the establishment of a Qualified Clinical Data Registry (QCDR) for home-based medical practices. Currently, no nationally recognized quality of care measures exist. West Health is partnering with two academic institutions, a national professional society and a technology vendor to equip home-based medical care to engage in value-based care. Utilizing the QCDR, practices can engage in payer-required reporting, performance measurement, and quality improvement. In addition, the QCDR can fill gaps in payers' knowledge of the needs and outcome measures of seniors with multiple chronic conditions.

Another example is West Health's engagement in initiatives around geriatric emergency care. West Health is collaborating with an academic health system to establish the first Geriatric Emergency Department (GED) in San Diego. The GED will test a senior-specific workflow including screenings for fall risk, delirium, and functional ability. On a national level, West Health is partnering with health systems to incorporate GED guideline-based care improves patient outcomes and is cost effective, as well as build the data infrastructure for performance monitoring and evaluation of GEDs.

West Health works with researchers, clinicians, policy makers, and community organizations to create inter-disciplinary collaborations with a strong emphasis on adoption and sustainability. This unique research collaboration and funding model creates opportunities to address gaps in the science of aging, advance policy changes, and most importantly drive adoption of senior-specific care models at a more rapid pace than other extramural support mechanisms.

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Symposium 3C

CONDUCTING APPLIED TOBACCO CONTROL RESEARCH WITH SBIR/STTR FUNDING: AN ACADEMIC-INDUSTRY PARTNERSHIP

Dr. Jamie L. Studts, PhD

The Treating Tobacco Use and Dependence Clinical Practice Guideline firmly advocates for the integration of evidence-based tobacco treatment strategies in all healthcare settings. However, many clinicians receive suboptimal training in this important area of care and fail to implement tobacco control strategies with their patients who are current and former tobacco users. In a collaboration between a university and a health technology company, we have worked to adapt and evaluate QuitAdvisor, a web-based point-of-care clinical decision support tool designed to facilitate implementation of evidence-based tobacco treatment interventions in diverse health care settings and by a range of clinicians. This academic-industry collaboration has benefitted from a series of SBIR and STTR funded grants that have facilitated adaptation of the original primary care-based QuitAdvisor tool into QuitAdvisorDDS and QuitAdvisorOB and subsequent usability testing, pilot testing and clinical trials evaluating feasibility, acceptability, and efficacy of these tools. While the initial partnership was born of a desire for an independent evaluation of the QuitAdvisorDDS tool, the team evolved into sharing responsibility for generating targeted and tailored content while the industry partner maintained responsibility for technological design and support and the academic partner oversaw the research design and evaluation. This relationship allowed for independent responsibility of two separate domains of expertise but shared responsibility for the content arena. From the beginning of the collaboration, there were shared values pertaining to evidence-based care and a desire to expand access to high quality tobacco treatment. The principal challenge has involved the distributed nature of the collaboration with the two partners working thousands of miles apart and for arranging sufficient in-person and technology enhanced meetings to facilitate progress. This successful partnership has created new opportunities and is evolving toward a new line of research dedicated to integrating QuitAdvisor into a broader package of tools dedicated to improving health outcomes in alignment with current health policy and healthcare innovations.

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Symposium 4 8:00 AM-9:15 AM

MULTIMORBIDITY IN OLDER ADULTS AND CANCER SURVIVORS: BEHAVIORAL, COGNTITIVE-AFFECTIVE, AND BIOLOGICAL PROCESSES

Jerry Suls, PhD[1], Thomas V. Merluzzi, PhD[2], Elliot Friedman, PhD[3], Melanie Keats, PhD[4], M. Bryant Howren, PhD, MPH[5]

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Multimorbidity--the presence of two or more primary chronic conditions in an individual--is increasingly common and places considerable burden on patients and the healthcare system alike, including cost, adverse mental and physical health outcomes, and quality of life. Although health psychology and behavioral medicine have long focused on the co-occurence of psychological and medical morbidities, there has been much less attention paid to the behavioral mechanisms and associated factors which may contribute to the development of and adjustment to multiple primary chronic conditions. This symposium, sponsored by SBM's Multimorbidity Special Interest Group, will discuss the role that behavioral, cognitive-affective, and biological processes may play in understanding the development, progression, treatment, and recovery in those with multimorbidity. Dr. Merluzzi will examine the relationship between serious comorbidities and functional impairment and a mediated coping model testing how coping attenuates or exacerbates the relationship between comorbidities/functional impairment and distress. Dr. Friedman will outline a guiding model for, and present results from, studies examining the interactive influences of psychological well-being and inflammation on the links between multimorbidity and disability. Finally, Dr. Keats will describe results from a national prospective cohort study, focusing on the prevalence of physical activity in individuals with a self-reported history of chronic disease, particularly those with two or more chronic diseases.

Symposium 4A

THE ROLE OF COPING IN THE RELATIONSHIP BETWEEN SERIOUS COMORBIDITIES AND EMOTIONAL DISTRESS

Dr. Thomas V. Merluzzi, PhD

Introduction: Comorbidities add burden by increasing allostatic load (Sterling & Eyer, 1988) and negatively affecting quality of life (Vissers et al, 2013). Moreover, comorbidities are correlated with functional impairment, which may intensify distress. Data support the effects of comorbidities on patient care and mortality (Sogaard et al, 2013). However, comorbidity models that take into account functional impairment and coping mechanisms may clarify processes that mitigate or exacerbate outcomes. The current study examined 1) the relationship between comorbidities and functional impairment and 2) a mediated coping model testing how coping attenuates or exacerbates the relationship between comorbidities/functional impairment and distress. Method: 407 patients and survivors (mixed diagnoses) completed measures of Serious Comorbidities, Coping (BriefCOPE), Functional Impairment (Sickness Impact Profile-SIP) and Emotional Distress (HADS+QLACS-Negative Feelings). Regression analysis included age, time since diagnosis, education level, and income as covariates. The independent variable was a composite of the number of Comorbidities and Functional Impairment scores. Mediating variables were coping processes (Action Planning; Support/Advice Seeking; Disengagement/Denial). The outcome was Emotional Distress. Results: The mediation effect from Comorbidities/Functional Impairment to Disengagement/Denial Coping to Emotional Distress was significant: Path coefficients: Comorbities/Functional Impairment to Disengagement/Denial (Est.=1.839; CI: 1.257, 2.426), and Disengagement/Denial to Distress (Est.=4.604; CI: 3.751, 5.457). Also, there was significant direct effect of Comorbidities/ Functional Impairment on Distress (Est.=.437; CI: 0.552, 0.831); thus, the mediation was partial. Conclusions/Implications: Comorbidities and functional impairment can contribute directly to emotional distress; moreover, the only coping mechanism that was active in the relationship between comorbidities and distress was disengagement/denial, which exacerbated rather than mitigated distress. These results support the need to provide supportive care services for survivors to limit destructive coping in the context of comorbidities in order to improve emotional well-being.

Symposium 4B

THE PATH FROM MULTIMORBIDITY TO DISABILITY: EXAMINING PSYCHOSOCIAL MODERATION AND BIOLOGICAL MEDIATION

Dr. Elliot Friedman, PhD

Single and multiple chronic medical conditions have become more prevalent as the population of older adults has grown; by some estimates, most adults over age 60 have more than one chronic condition (multimorbidity). Multimorbidity not only presents challenges for medical management and cost of care, but it markedly increases the risk of a range of adverse health outcomes, including disability, cognitive impairment, and mortality. Importantly, however, there is variability in these outcomes among those with multimorbidity. Studies on very long-lived individuals, for example, show that multimorbidity need not compromise quality of life. Our research program seeks to better understand the factors that influence the extent to which multimorbidity results in adverse health outcomes. We focus specifically on the potential for psychosocial resources to mitigate the impact of chronic conditions as well as the potential mediating role of biological processes, notably inflammation, that have been implicated in a range of disease processes. This presentation will outline our guiding model and present results from studies examining the interactive influences of psychological well-being and inflammation on the links between multimorbidity and disability in particular. We have shown, for example, that higher ratings of eudaimonic well-being (e.g. purpose in life; fulfilling personal relationships) are linked to lower circulating levels of inflammatory proteins in general, and in those with multimorbidity specifically, compared to lower levels of well-being. Moreover, we have shown in longitudinal analyses that while multimorbidity increases later disability, greater eudaimonic well-being moderates this association. Finally, inflammation partially mediates the association of multimorbidity and later disability. As well-being in older adults appears to be modifiable, the results from this work suggest that interventions targeting well-being may have the potential to improve health outcomes across a range of chronic medical conditions and improve overall quality of life.

Symposium 4C

MULTIMORBIDITY AND PHYSICAL ACTIVITY IN ATLANTIC CANADIANS

Dr. Melanie Keats, PhD

Physical inactivity has been identified an important contributor to global chronic disease burden and as the fourth leading risk factor for mortality. Worldwide, physical inactivity is estimated to contribute to as much as 21-25% of breast and colon cancer, 27% of diabetes, and approximately 30% of ischemic heart disease burden. Given the shared lifestyle risk factors and the potential of a shared underlying biology for some diseases (e.g., inflammation), the co-occurrence of more than one chronic disease (i.e., multimorbidity) is becoming an increasing concern. While a wealth of data is available to show that physical activity is an effective preventive measure for more than 25 chronic diseases, interestingly although emerging data suggests an important dose-response relationship, much less is known about the potential role of physical activity reducing the burden of multimorbidity. Similarly, while the relationship between the presence of a chronic illness and physical activity has been reported, the impact of multiple chronic illnesses on physical activity levels has not been well described. This retrospective, population-based study will draw data from over 31,000 participants from the Atlantic Partnership for Tomorrow's Health (PATH) cohort. Atlantic PATH is part of Canadian Partnership for Tomorrow Project, a national prospective cohort study examining the influence of genetic, environmental, and lifestyle factors in the development of cancer and chronic disease. In brief, we will describe the prevalence of physical activity in individuals with a self-reported history of a chronic disease (e.g., cancer, cardiovascular disease, diabetes). We will also report the association between multimorbidity (i.e., 2 or more chronic illnesses) and physical activity levels. Implications of findings will be shared and discussed.

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Symposium 5 8:00 AM-9:15 AM

DESIGNING BEHAVIORAL HEALTH TECHNOLOGIES FOR ADOLESCENTS AND YOUNG ADULTS: FINDING COMMONALITIES ACROSS PATIENT GROUPS

Emily Lattie, Ph.D.[1], Sherif M. Badawy, MD, MS, MBBCh[2], Carly M. Goldstein, PhD[3], Sarah S. Jaser, PhD[4]

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Technology-based interventions, such as those delivered via mobile phones and online, offer the possibility to expand behavioral health treatment options and to reduce barriers to services. However, sustained long-term engagement with such interventions remains a challenge, particularly in younger age groups. Adolescents and young adults (AYA) appear to be ideal candidates for many of these technology-based interventions because they are typically digital natives and confident in their ability to access and navigate different digital interfaces. However, counter to older adults, AYA tend to view usability issues as the fault of the intervention or website and are quick to disengage when their needs and expectations are not met. For this session, we will present research examining different methods of using technology to promote healthy behaviors in AYA subgroups. The first presenter will discuss findings from a study on college student interest in and willingness to use mobile phone apps for a variety of health behaviors, and will provide tips on collaborating with technologists with designing for young adults. The second presenter will discuss her work in developing and testing a positive psychology intervention for teenagers with Type 1 diabetes delivered via text message and automated voice messages. The third presenter will share insights from his work in designing a mobile phone app to improve medication adherence and self-management in AYA with sickle cell disease. Finally, the discussant will provide a summary of these findings and lessons learned to date in designing behavioral health technologies for AYA. She will lead a discussion regarding ways to move the intervention field forward, with attention to sharing knowledge across disease/target behavior subgroups and capitalizing on the diverse expertise found in the members of the Society for Behavioral Medicine.

Symposium 5A

HU-GO APP: A NOVEL ENHANCING INTERVENTION FOR HYDROXYUREA IN ADOLESCENTS AND YOUNG ADULTS WITH SICKLE CELL DISEASE

Dr. Sherif M. Badawy, MD, MS, MBBCh

Background: Sickle cell disease (SCD) is the most common genetic disorder in the US, seen in 80-100,000 Americans. Hydroxyurea (HU) reduces morbidity, and mortality, and lowers healthcare utilization in SCD. Yet HU adherence is suboptimal. Data on the use of technology to improve HU adherence in adolescents and young adults (AYA) with SCD are limited.

Aims: (1) to determine access to smartphone technology among AYA with SCD and to identify preferred technology-based strategies for improving medication adherence; (2) to develop a smartphone app (HU-Go) to improve HU adherence using iterative user-centered design; and (3) to conduct a feasibility trial.

Methods: Part I: A cross-sectional survey was administered to AYA (12–22 yrs) with SCD. Part II: A usability phase of HU-Go app (n=5) over 4-weeks and a feasibility phase (n=15) over 12 weeks.

Results: Part I: Eighty participants completed the survey (51% female, 94% Black), and had a mean age of 15.3±2.8 years. Most owned or had access to smartphones (85%), tablets (83%), laptops (72%), or desktops (70%). The top app feature was daily medication reminders, followed by education about SCD, adherence text prompts, education about SCD medications, and medication log. Part II: Based on patients' input and our conceptual model, we were able to develop a novel multi-functional HU-Go app with personalized features as a single platform that provides patients with: a) education (SCD/HU), b) reminders for daily medications, refills and appointments, c) interactive communication with SCD team, d) community resources, and e) health tracker (medications, pharmacies, event/symptom log, quality of life, patient portal and wearable sensors). All patients approached agreed to enroll. The usability phase is ongoing, and the feasibility trial will begin in October 2016.

Conclusions: Most AYA with SCD owned or had access to smartphones or other electronic devices. The development of a multi-functional smartphone app to improve HU adherence is feasible. The feasibility trial of HU-Go will provide a "proof-of-concept" evidence for the feasibility and acceptability of a novel app-based approach to disease management that we plan to extend to AYA with other chronic conditions.

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Symposium 5B

WILLINGNESS TO UTILIZE SMARTPHONE APPS FOR HEALTH INTERVENTIONS: IMPORTANT CONSIDERATIONS FOR EMERGING ADULTS

Dr. Carly M. Goldstein, PhD

Objective:

Currently, 86% of emerging adults (ages 18-29) own smartphones. This study’s purpose was to measure willingness to use smartphone applications (“apps”) to monitor or change health behaviors and common targets of behavioral interventions.

Methods:

Undergraduates (n=249) at a large, Midwestern university were recruited to complete surveys about engagement in and willingness to use apps to monitor health behaviors through an online secure-socket layer technology program.

Results:

This sample of emerging adults (19.78 ± 2.98 years; 91.2 % white; 81.9% female) were most interested in using apps to target exercise patterns, nutrition, calorie intake, stress, and overall health; they were less willing to target body image, sleep patterns, and anxiety. Higher BMI was related to willingness to use apps for overall health ($\beta = .15$, $p < .05$). Greater perceived body fatness in the lower body was related to higher willingness to use apps to monitor diet ($\beta = .14$, $p < .05$), body image ($\beta = .24$, $p < .001$), caloric intake ($\beta = .22$, $p < .01$), and overall health ($\beta = .13$, $p < .05$). Higher feelings of fatness predicted higher willingness to use apps for monitoring body image ($\beta = .29$, $p < .001$), diet ($\beta = .20$, $p < .01$), calorie intake ($\beta = .24$, $p < .01$), and exercise ($\beta = .15$, $p < .05$). More intense body loathing scores were related to willingness to use apps to monitor body image only ($\beta = .13$, $p < .05$). Worry was related to increased willingness to use apps to monitor anxiety ($\beta = .17$, $p < .05$).

Discussion:

Emerging adults’ willingness to use technology was related to numerous measurable factors within the present study. Researchers are encouraged to design interventions to match emerging adults’ willingness and needs; researchers interested in designing app-based or app-inclusive interventions should allot additional development focus to matching design intervention components uniquely tailored for this age group, their preferences, and potential factors that could improve engagement.

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Symposium 5C

USING TECHNOLOGY TO DELIVER A POSITIVE PSYCHOLOGY INTERVENTION FOR ADOLESCENTS WITH TYPE 1 DIABETES

Sarah S. Jaser, PhD

The majority of adolescents with type 1 diabetes (T1D) are not meeting treatment goals, and many struggle with adherence to the intensive treatment regimen. Positive psychology interventions have been shown to improve adherence in adults with chronic illness (e.g., Charlson et al., 2010), but they have not been widely tested in pediatric populations. In our study, we adapted the protocol successfully used in adults to promote positive affect, including self-affirmations, small gifts, and gratitude, for adolescents with T1D, by increasing the frequency of contact from bi-weekly to weekly and including parental affirmations.

Adolescents with T1D (n = 120, mean age 14.8 yrs, 52.5% female, 87.5% White) were randomized to either an education (n=60) or positive affect (PA) intervention (n=60). We used automated phone calls (interactive voice technology, n = 30) and text messages (SMS, n=30) to deliver the PA reminders and to collect data on adolescents' mood during the 8-week intervention. There was a significant difference in the response rate to the weekly PA messages: only 14.3% of adolescents answered or returned phone calls, as compared to 67.5% of adolescents who responded to text messages (p<.001). The response rate to the mood assessments were not significantly different between text message (68.5% complete) vs. interactive voice technology (57.8%) groups (p = .134). Exit interviews revealed that the greatest barrier to participation was timing/inconvenience. The PA intervention had a positive effect on quality of life; adolescents in the PA group demonstrated significant improvement in quality of life at 3 months, compared to the education group (estimated mean difference = 3.9, p = .020), after adjusting for age, sex, race/ethnicity, income, depressive symptoms, pump use, and baseline measurement for each outcome. In addition, the PA group showed a trend toward improvement in adolescents' adherence (estimated mean difference = 1.2, p=.129), particularly in the text group (1.5, p=.136). The intervention had no effects on glycemic control.

The next phase of our work will be to administer the intervention solely through text messages, increasing the frequency of messages (from weekly to daily), and enhancing involvement of parents (training on parental affirmations).

Symposium 6 8:00 AM-9:15 AM

PHYSICAL ACTIVITY AND WELLNESS: IMPLICATIONS FOR INTERVENTIONS IN AGING POPULATIONS

Brenna N. Renn, PhD[1], Neha Gothe, MA, MS, PhD[2], Susan Aguiñaga, PhD[3], Elizabeth Awick, MS[4], Kelsey C. Bourbeau, MA[5], Sandra Jane. Winter, PhD, MHA[6]

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The health benefits of physical activity (PA) are extensively documented across the lifespan. However, many aging individuals engage in low levels of PA and have an elevated risk of developing chronic diseases associated with inactivity. Understanding the benefits of PA in this population is necessary to better tailor PA interventions and engage individuals in behavior change. In this symposium, presenters will describe data regarding PA among aging adults in the context of wellness and quality of life (QoL), with special attention to implications for behavioral interventions. The first presenter will discuss perceived benefits and affective experience of PA in midlife, which is an age group that represents a key developmental time point for improving health and preventing age-related chronic disease processes associated with physical inactivity. Her data provide a foundation to further investigate motives for PA among aging individuals to inform interventions and improve wellness. The second speaker will present data from an exercise intervention for older adults in which PA improved global QoL indirectly by reducing distress. The presenter conceptualizes distress broadly (i.e., anxiety, depression, perceived stress, and disturbed sleep) and will underscore the importance of these variables in PA interventions for greater well-being in older adults. The third presenter draws on findings from a Latin dance program for Spanish-speaking older adults with mild cognitive impairment. While she noted improved physical function during the course of the intervention, such improvements were also observed in wait-list participants receiving other services in an enriched adult day center environment. She will present her findings in the context of implications for future interventions with this population who have increased risk of chronic disease. Finally, the fourth speaker will discuss how PA contributes to physical functioning in older adults who have suffered a stroke. Her findings, based on objectively measured activity levels, suggest that both light and moderate-to-vigorous activity play an important role in functional ability in this vulnerable population. The discussant will comment on these findings and initiate a discussion from the perspective of health promotion interventions among older adults. Together, these presentations highlight the importance of PA promotion as part of general wellness and QoL in aging.

Symposium 6A

PERCEIVED BENEFITS AND OUTCOME EXPECTATIONS OF PHYSICAL ACTIVITY IN MIDLIFE

Dr. Brenna N. Renn, PhD

Midlife represents a key time point for engaging in behaviors to promote health and forestall age-related chronic disease. Physical activity (PA) is one such behavior of interest. However, adults become less active with age, and there is a scarcity of literature examining psychological factors associated with PA in middle-aged adults. Social cognitive theory (SCT) highlights the role of outcome expectations in both the adoption and maintenance of PA, but little attention has been paid to such influence in middle age.

The present study examined cross-sectional outcome expectations of PA in 195 middle-aged adults (M_{age} = 58.29±4.15 years, range 50-64 years, 65.6% female, 9.4% ethnic minority) recruited from community settings. Primary outcomes were the Exercise Benefits/Barriers Scale (EBBS) and Physical Activity Enjoyment Scale (PACES). Physical activity was assessed using the short-form International Physical Activity Questionnaire (IPAQ-SF). Additional SCT variables of self-efficacy and self-regulation were assessed.

Less than half (43.1%) of the sample reported activity consistent with national guidelines (150 min/week of moderate-to-vigorous PA [MVPA]). Although the majority of the sample was aware of the benefits of regular PA, individuals who reported ≥ 150 min/week of MVPA perceived significantly more benefits of activity than their less active counterparts, $F(1, 182) = 35.61$, $p < .001$, $\eta_p^2 = .16$. Those meeting MVPA guidelines also reported higher levels of enjoyment associated with PA, $F(1, 182) = 47.89$, $p < .001$, $\eta_p^2 = .21$. Both active and sedentary respondents perceived physical fitness benefits from PA, including improved cardiovascular functioning and muscle strength. However, those who reported meeting MVPA guidelines were more likely to perceive psychological benefits of PA, such as decreased stress, improved mental health, sense of personal accomplishment, and improved well-being (ps < .001). After controlling for total activity levels, greater enjoyment of PA (beta = .47, $p < .001$) and greater use of goal-setting strategies for PA (beta = .24, $p = .002$) predicted greater perceived benefits of PA.

Causal inferences are limited by the cross-sectional methodology, but these data suggest that appreciating both physical and psychological benefits of PA are associated with higher levels of MVPA. Given the importance of outcome expectations in predicting engagement in PA, future research should explore how best to leverage or modify such outcome expectations. Identifying and addressing how to increase perceptions of benefits and enjoyment of PA may lead to more effective interventions and sustained behavior change among aging individuals.

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Symposium 6B

IMPACT OF A LATIN DANCE PROGRAM ON PHYSICAL ACTIVITY AND PHYSICAL FUNCTION IN OLDER LATINOS WITH COGNITIVE IMPAIRMENT

Susan Aguiñaga, PhD

Older Latinos have a greater risk of developing chronic conditions involving modifiable disease factors in comparison to non-Latino whites. Presence of these chronic diseases, compounded with poverty, may increase the risk of mobility disability for this population. Physical activity (PA) has been shown to improve chronic diseases and may protect against mobility disability. Unfortunately, older Latinos participate in low levels of leisure-time PA. Thus, the purpose of this study was to examine the impact of a Latin dance program on PA and physical function among older Latinos with mild cognitive impairment (MCI) attending an adult day center. Spanish-speaking older Latinos [N=21, 75.4 ± 6.3 years old, 76.2% female, 22.4± 2.8 MMSE score] were randomized into a 16 week, twice-weekly dance intervention or to a wait-list control group; the wait-list control group received the dance intervention at week 17. Participants were given a waterproofed ActivPal inclinometer to wear on their non-dominant thigh for 7 consecutive days. Physical function was assessed using the Late-life function and disability instrument (LLFDI), Short Physical Performance Battery (SPPB), and the Timed up and go (TUG). Data was collected at baseline, month 2, 4, 6, and 8. Repeated measures ANOVA were used to determine overall time effect and time x group interaction effects. We calculated Cohen's *d* values as an estimate of the effect sizes. Results revealed no significant time or interaction effects for light or moderate-vigorous PA as measured by the ActivPal, and no effects for the LLFDI. There was a time effect for the chair stand component of the SPPB, *F* (2, 38) = 10.02, *p*= .001, d= .83, and the TUG, *F* (2, 38) = 8.27, *p* = .001, *d* =.74. These results suggest that a Latin dance program for older Latinos with MCI has modest effects on physical function, but not more so than a wait-list control group. Whether improvement was due to our intervention or due to the enriched adult day center environment, these changes may be clinically meaningful for this population. Researchers interested in this population should consider conducting research with older Latinos with MCI who are not attending adult day centers in order to determine if PA interventions are efficacious among individuals who do not have access to these centers.

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Symposium 6C

PHYSICAL ACTIVITY, DISTRESS AND QUALITY OF LIFE IN OLDER ADULTS: A PANEL MODEL

Elizabeth Awick, MS

Physical activity has been consistently and significantly associated with improved life satisfaction in older adults. However, less is known about the mediating effects of changes in distress on this relationship, specifically within the context of an exercise intervention. The purpose of the present study was to examine how changes in moderate to vigorous physical activity (MVPA) and distress influenced changes in quality of life (QOL) in older adults across a six-month period. Community-dwelling older adults (N=247, M age=65.39) were recruited to participate in a six-month randomized controlled exercise trial designed to examine cognition and brain function. Participants wore accelerometers to measure MVPA and completed measures of psychological health outcomes and QOL at baseline and after the intervention, six months later. Distress was defined as a latent composite of self-reported measures of anxiety, depression, sleep disturbance, and perceived stress. In a panel model, parallel changes in MVPA, distress, and QOL during the six-month intervention were estimated as latent change scores, including constraints for measurement invariance over time. The hypothesized model provided excellent fit to the data (χ^2=62.099(53), *p*=.184, RMSEA=.026 [90% CI=.000, .050], CFI=.992, TLI=.990, SRMR=.037). Overall, individuals with greater increases in average daily MVPA over the intervention period demonstrated significantly reduced distress from baseline to 6 months (β = -.18, *p*<.05). In turn, individuals with greater reductions in distress across the intervention reported significantly greater increases in QOL from baseline to 6 months (β = -.30, *p*<.001). Reductions in distress partially explained the benefits to QOL from increased MVPA [indirect effect = 0.05; bias-corrected bootstrapped 95% CI=.005, .125]. These findings suggest that several domains of psychological health (e.g., anxiety, depression, sleep disturbance, stress) may play an important role in the influence of physical activity behavior change on global life satisfaction. Future research should target such psychological factors in concurrence with physical activity behavior for greater improvements in well-being in an aging population.

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Symposium 6D

RELATIONSHIP BETWEEN LIGHT PHYSICAL ACTIVITY AND FUNCTIONAL FITNESS IN STROKE SURVIVORS

Kelsey C. Bourbeau, MA

Purpose:

Impairment caused by stroke is a major cause of disablement in older adults. Loss of physical function often results in a decreased ability to perform activities of daily living. Physical activity has been shown to improve physical functioning, however little research has been done to explore how activities of different intensities may affect functional fitness outcomes in stroke survivors. The purpose of this study was to examine the relationship between physical activity and self-reported and objective functional fitness measures in this population.

Methods:

Stroke survivors (N=30, Mean age=61.77±11.17) completed the Short Physical Performance Battery (SPPB) and the Late-Life Function and Disability Instrument (LLFDI). Physical activity levels were measured objectively using a 7-day Actigraph accelerometer wear period and scored using the Copeland cutoffs for sedentary (counts/minute ≤50), light (counts/minute <1,041), and moderate to vigorous (MVPA; counts/minute ≥ 1,041) activity.

Results:

Light activity significantly correlated with total SPPB score (r= .390 p=.033). Light activity also significantly correlated with several subscales of the function component of the LLFDI, including: basic lower extremity (r= .490, p=.006), advanced lower extremity (r= .568, p=.001), upper extremity (r= .465, p=.010) and total function (r= .585, p=.001). MVPA significantly correlated with total SPPB score (r= .491, p=.006), and the LLFDI including: advanced lower extremity subscale (r= .443, p=.014) and total function (r=.380, p=.038).

Conclusion:

These findings suggest that light activity and MVPA may contribute to better physical functioning in stroke survivors. While MVPA had a greater association with objective measures of physical function, light activity displayed greater significant correlations across all subscales of the self-reported function component of the LLFDI than MVPA. Disabilities resulting from stroke may limit this population from engaging in MVPA, and these findings highlight the importance of light physical activity, which may offer similar functional benefits. Future studies should focus on development of effective exercise interventions for stroke survivors by incorporating not only MVPA but also light intensity physical activities.

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Symposium 7 8:00 AM-9:15 AM

LOCAL AREA HEALTH ASSESSMENT: COLLECTING ACTIONABLE DATA FOR PLANNING, RESEARCH AND INTERVENTIONS

Richard P. Moser, PhD[1], Kate Brett, PhD[2], John M. Boyle, PhD[3], Kelly D. Blake, ScD[4], Bradford Hesse, PhD[5]

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Increasingly, health systems such as cancer centers and other hospitals are being held responsible for assessing and improving the health of people in their local catchment areas, not just those patients who walk in their doors. These data can be used by providers, planners and health researchers to improve the health of a local area, however defined, and ultimately contribute to improved public health. In order to accurately assess these needs at a local level, however, relevant and precise data are needed. Having these precise and accurate data are critical as national data will not contain the detailed information to identify the needs of a local area such as a state, county, city or even a neighborhood. These local data can then be compared with results from national health-related surveillance systems, such as the Health Information National Trends Survey (HINTS), to identify and understand the needs and potential unique health disparities of a local area. These health concerns, for example, may include understanding rates of behaviors such as use of tobacco products including combustible cigarettes and e-cigs, HPV vaccination rates, preferred health communication media channels and other health-related knowledge, perceptions and attitudes. Data from these local assessments can potentially be disaggregated to understand and target the needs of important racial/ethnic subgroups or other under-represented groups, and together, be used to improve local and larger population health outcomes. This symposium will present several efforts to perform local area health assessments including: 1) a measurement framework to support community health; 2) research using non-probability survey collection methods to assess health outcomes for local geographic areas; and 3) a description of health assessments being done in cancer center catchment areas. These health assessments are critical and can provide researchers, providers, coalitions and local planners with important information to stimulate hypothesis-driven research, better characterize local disparities and inequities and develop appropriate evidence-based interventions.

Symposium 7A

A MEASUREMENT FRAMEWORK FOR COMMUNITY HEALTH AND WELL-BEING: REPORT ON BEHALF OF THE NATIONAL COMMITTEE ON VITAL AND HEALTH STATISTICS

Dr. Kate Brett, PhD

As healthcare pivots toward greater accountability for population health, professionals in behavioral medicine are being called upon to design and implement actionable programs for disease prevention and health promotion. This shift takes place at a time many communities are driving to achieve health equity. Despite many increasingly favorable conditions, communities have articulated their ongoing struggle with barriers that make it difficult for them to work effectively with data to decide where and how to intervene. Although a host of indicators and metrics exists, there is a shortage of sub-county data, compounded by other data gaps and by issues with timeliness, standardization, analytic capacity, and data stewardship. More fundamentally, many communities remain uncertain about precisely what they should measure, given the multitude of health determinants. On September 27 2016, the Population Health Subcommittee of the National Committee on Vital and Health Statistics convened a daylong workshop to promote multi-sector approaches for improving community health and well-being. In this symposium, the lead staff member of the Subcommittee will provide SBM conference attendees an in-depth report on the conclusions and follow-up actions reached by members of the subcommittee. Topics to be covered will include:
(a) status of a multi-sector measurement framework to serve as the basis for a public/private collaboration at the community-level; (b) opportunities and gaps in sub-county level data metrics; (c) opportunities to align, leverage, and build multi-sectoral sub-county level metric-centric efforts to improve health and well-being; and (d) report on collaborative efforts to continue work in this arena.

Symposium 7B

USING NON-PROBABILITY SURVEY DATA COLLECTION METHODS TO ASSESS HEALTH NEEDS, BEHAVIORS AND OUTCOMES FOR LOCAL GEOGRAPHIC AREAS

John M. Boyle, PhD

Most public health programs are implemented and evaluated at the community level, but few public health surveillance systems generate community measures. National health surveys lack the sample size to provide estimates at the community level. Local area health surveys could enhance the information needed by researchers, providers and planners to assess intervention needs and program outcomes at the local level. However, costs for traditional probability surveys have been a barrier to adoption of community health surveys.

Non-probability samples provide a low cost and quick turnaround alternative to traditional probability samples for local area assessments. Non-probability samples are not based on statistical models that permit variance estimates and confidence intervals about their estimates. However, they are not necessarily inferior to probability samples in other aspects of total survey error. They are commonly used in evaluations, including clinical trials.

In this paper, we will describe the methods used in several recent surveys we have conducted using non-probability web panels and results related to health needs, behaviors and outcomes. This information includes health status, exercise, height, weight, tobacco use, doctor visits, screening tests, and other health-related knowledge, attitudes, beliefs and behaviors. We also tested respondents' willingness to use new technology, like smartphones to take pictures of their health records and their willingness to share their electronic health records with health agencies.

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Symposium 7C

POPULATION HEALTH ASSESSMENT IN CANCER CENTER CATCHMENT AREAS

Dr. Kelly D. Blake, ScD

The National Cancer Institute (NCI) recently announced the opportunity for supplemental funding to conduct research to better characterize the populations and communities within the NCI-designated cancer center catchment areas. Supplemental funding was provided to 15 cancer centers to enhance their capacity to acquire, aggregate and integrate data from multiple sources, as well as plan, coordinate, and enhance catchment area analysis activities, including reviewing and selecting measures and planning a strategy for enhancing data collection in the catchment area. The short-term goal is to conduct local research to better define and describe the cancer center catchment area using a multilevel population health framework. The long-term goal is to facilitate collaborations in which local area providers, public health practitioners, policymakers, and nonprofit organizations can utilize data to develop or expand applied cancer control research, planning, intervention, and implementation efforts, with particular attention to local level health disparities and communication inequalities. Although there are several national level, public use datasets for health behavior research, national surveillance vehicles such as HINTS, BRFSS, and NHIS do not collect a large enough sample at smaller geographic units to be optimally useful at the local level for targeted outreach, intervention planning, clinical trials recruitment, and patient engagement. A number of methodological questions remain as to the feasibility of using small area samples to complement data streams embedded within national surveys. How do small area estimates compare to national estimates? How do nonprobability samples compare to random samples in terms of bias, error, coverage, and reliability? Can bias in local data be overcome by calibrating estimates to national anchors? The research funded by NCI's population health assessment initiative will help to answer these methodological questions, and by so doing should improve the viability of aggregating local and national data to inform local needs assessment and planning in cancer prevention and control. We will report on innovative data collection methods being used across the funded sites, as well as common constructs and measures that will be used for local and national comparisons.

Symposium 8 8:00 AM-9:15 AM

CONTEXTUALIZING HEALTH BEHAVIORS AND OUTCOMES: THE ROLE OF GEOGRAPHY

Jennifer L. Moss, PhD[1], Kevin Cassel, DrPH, MPH[2], Natalie Colabianchi, PhD[3], S. Bryn Austin, ScD[4], Rebecca E. Lee, PhD[5]

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Behavioral medicine has traditionally focused on intrapersonal determinants of health risks and outcomes. Increasingly, however, researchers have placed more emphasis on the role of geography in contextualizing health behaviors. Geographic disparities in health reflect variation in factors such as norms, sociodemographics, access, and the built environment, which can have direct effects on health or can be mediated through individual-level constructs. Understanding the influence of neighborhoods, communities, and environments on health behaviors is important for developing messages and interventions that can effectively promote public health. A variety of data collection and analytic techniques are available for researchers interested in studying geography and health. In this symposium, we propose to present three studies that illustrate the breadth of opportunity for incorporating geographic perspectives into health behavior research. First, Speaker 1 will discuss research on childhood obesity that examines the role of the built environment across 130 U.S. communities. Next, Speaker 2 will present results from a geographic information systems (GIS) analysis of census block groups that have higher-than-expected numbers of tanning salons across seven large cities in the U.S. Then, Speaker 3 will describe findings from an in-depth analysis of the role of social and community factors for health behaviors and well-being among residents of a designated Hawaiian home land. Finally, the Discussant will integrate findings and themes from these presentations and suggest directions for future innovations in this field of research. This symposium will highlight creative analyses of how geography contextualizes a variety of health behaviors and outcomes and will consider implications for future behavioral medicine research studies.

Symposium 8A

THE PAPAKOLEA HAWAIIAN HOMESTEAD COMMUNITY HEALTH SURVEY

Dr. Kevin Cassel, DrPH, MPH

In an effort led by Prince Kalanianaole, Congress passed the "Hawaiian Homes Commission Act" (HHCA) in 1921, which set aside 200,000 acres in Hawaii as a land trust for Native Hawaiians. This trust was recompense for the U. S. siege of Crown lands in 1893. The HCCA was established to help Hawaiians maintain traditional ties to their land and grow culturally important crops. Today, many homesteads are located in lower socioeconomic areas associated with poor health outcomes. However, there has not been a comprehensive health assessment of Hawaiian homesteads and their unique geographical locations.

Papakōlea, Kewalo and Kalawahine are neighboring homesteads, jointly referred to as “Papakōlea”, established in 1934 in Honolulu. It is the only homestead location chosen by Hawaiians. In 2014, Papakolea’s community-based organization, Kula no na Poe Hawaii, expanded a partnership with the University of Hawaii to assess the health of residents. The information was intended to inform programs to address the community’s health needs.

In 2015, a survey was developed, pilot-tested, and mailed to 390 lessees and/or residents in Papakolea. The survey consisted of five sections, including questions on: 1) Demographics - age, ethnicity, education, income and household size; 2) Health Status - diagnosis of hypertension, cancer, diabetes, and other medical conditions; 3) Health Behaviors – diet and physical activity; 4) Cancer Screening - mammography, Pap , prostate, and colorectal tests; 5) Psychosocial Factors - life satisfaction, flourishing

In all 124 surveys (32%) were completed. Most respondents were ages 50 to 70 (55%), female (72%), and Native Hawaiian (99%). Many residents (35%) reported very good or excellent health, 35% good health, and 26% poor or fair health. More residents reported poor health than that reported by the general population (15%) and Hawaiians statewide (19%). Most residents (56%) reported hypertension. Cancer screening data indicated most residents were screened for colon cancer (72%), had Pap testing (97%) and mammography (99%).

The Papakolea Hawaiian Homestead Community Health Survey was one of the first health assessments of a Hawaiian homestead. The survey provided important data on residents’ health status, identified strengths, including high rates of cancer screening and areas needing interventions. The survey provides a model for the planned assessment of 30,855 residents in 49 Hawaiian homestead communities across 7 islands.

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Symposium 8B

THE BUILT ENVIRONMENT AND CHILDHOOD OBESITY: THE HEALTHY COMMUNITIES STUDY

Dr. Natalie Colabianchi, PhD

The built environment has been shown to have an important influence on childhood obesity. For children, built environment characteristics of the street segment on which they live may be an important influence on their weight status. This study documented five different street segment characteristics using an in-person audit tool for 3,600 children in 130 communities. Specifically, presence of litter, residential quality, presence and quality of sidewalks, street type (e.g., major/moderate busy thoroughfare) and presence of burned up/abandoned houses were examined. In addition, an index was created that combined these 5 items. Body Mass Index (BMI) was calculated from objectively measured height and weight and converted to BMI z-scores. Two separate linear mixed models were used to examine the association between 1) the individual street segment attributes and BMI z-score and 2) the overall street segment index and BMI z-score. Both models controlled for age, gender, race, ethnicity, family income, parental BMI, and community poverty rate, and adjusted for the clustering of participants within communities. The sample was between the ages of 4 and 15. Forty-five percent of the sample identified their ethnicity as Hispanic (via parental report). Two-thirds of the sample identified their race as White while 22% of the sample identified their race as African-American. About 50% had a family income under $35,000. The sample was nearly split between boys and girls. When the five individual street segment components were examined in the same model, street type was significantly associated with BMI z-score (p=.04) after controlling for the other covariates. Those who lived on streets that were not major/moderate busy thoroughfares had lower BMI z-scores relative to those who did live on those types of streets. The overall index of street characteristics was significantly associated with BMI z-score in adjusted models (p=.01) with those who had more favorable street segment characteristics having lower BMI z-scores. These findings highlight the role the built environment plays on childhood BMI, in particular the area near their home.

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Symposium 8C

PREDICTING SPATIAL DISTRIBUTION OF BUSINESSES OFFERING UV INDOOR TANNING ACROSS SEVEN U.S. METRO AREAS

Dr. S. Bryn Austin, ScD

Introduction: Societal appearance ideals drive consumer demand for UV indoor tanning, which now generates approximately $3 billion in revenue annually in the US. The rapid growth and infiltration of UV tanning into other industries (e.g., gyms) has been followed by a corresponding rise in melanoma. While proximity to businesses offering UV tanning is likely an important predictor of use by consumers, little is known about their geographic distribution. **Methods**: In fall 2014 and 2015, we gathered phone survey data on whether businesses offered UV tanning from 21,387 businesses in 7 major U.S. metro areas (Boston, NYC, Chicago, Seattle, LA, Dallas, Miami). We then linked business survey data to block group characteristics (sociodemographics, land use, presence of businesses of all categories) to build multivariable logistic regression models to predict probability of businesses offering UV tanning. We generated predictive maps of the spatial distribution of these businesses. **Results**: UV indoor tanning services were reported in the highest prevalence by tanning salons (90.2%), health clubs (17.3%), gyms (10.8%), and laser-treatment and tattoo-removal businesses (both 8.0%). The probability of UV tanning services in a block group was positively associated with percent of population of white race/ethnicity (p<0.01) and higher density of businesses (p<0.05) and negatively associated with percent of population with college degree (p<0.05). Sunbelt metro areas (Miami, Dallas, LA) had lower prevalence of businesses offering UV tanning compared to northern areas (p<0.01 for all 3 metros). **Discussion**: We observed important variability in spatial distribution of UV tanning. Presence of these noxious services may both normalize UV tanning as a societally valued behavior and increase use by nearby residents. Societal idealization of tanned skin, particularly in populations of white race/ethnicity with lower education in northern cities, fuels demand for UV indoor tanning, putting consumers at elevated risk for melanoma.

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Symposium 9 8:00 AM-9:15 AM

ONE SIZE DOESN'T FIT ALL: TAILORING INTERVENTIONS TO ADDRESS INDIVIDUAL VARIABILITY IN TREATMENT RESPONSE

Christine Pellegrini, PhD[1], Allison J. Carroll, M.S.[2], Jessica Unick, PhD[3], Michelle Drapkin, PhD[4], Angela Fidler Pfammatter, PhD[2]

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There are many established treatment approaches for improving health behaviors; however, even the most effective programs are unlikely to improve behaviors across all participants. While most programs adopt a “one size all” approach, adapting interventions based on individual treatment response and adherence may be a more promising and cost-effective approach. This symposium highlights the need to develop interventions that account for variability in treatment response across multiple health behaviors. Additionally, speakers will present potential approaches to target or adapt interventions to address this individual variability in response. The first presenter will present the results from a systematic review and meta-analysis evaluating the response to various smoking cessation treatments among smokers with a history of depression, and discuss potential opportunities to develop targeted treatment for these high-risk smokers. The second presenter will describe a preliminary study exploring the effect of providing additional support to individuals who are not responding early to an internet-delivered weight loss intervention. The results suggest that identifying early non-responders and providing additional support can enhance adherence and weight loss outcomes over a 3 month period of time. Finally, the third presenter will present two sequential multiple assignment randomized trials (SMART) which examine whether offering patients who are not engaged or drop out of treatment for substance abuse disorders improve outcomes. Engagement and the results from making additional outreach or providing choices to patients not engaged will be presented. The discussant will provide an overview on individual variability in the response to treatment across several health behaviors, collectively integrate the findings from the three presentations, and highlight evolving challenges and future directions related to the development and implementation of adaptive interventions.

Symposium 9A

DO ANTIDEPRESSANT SMOKING CESSATION TREATMENTS PRODUCE THE BEST OUTCOME FOR DEPRESSED SMOKERS?

Allison J. Carroll, M.S.

Background: In a prior systematic review and meta-analysis (Hitsman et al. 2013 Addiction), past major depression (MD) was associated with 17% and 19% lower odds, respectively, of short- and long-term abstinence. Using the same database, this study examined whether antidepressant smoking cessation treatments produce the best outcome for past MD smokers. Methods: For each study in our 2013 meta-analysis (N=42), we coded the highest-level experimental arm and the lowest-level placebo/alternative control arm for psychological and pharmacological components. Four factors were coded: 1) standard behavioral treatment (none, self-help, face-to-face); 2) cognitive behavioral mood management (CBMM; none, self-help, face-to-face); 3) standard cessation pharmacotherapy (none, placebo, nicotine replacement therapy [NRT], other); 4) and antidepressant cessation pharmacotherapy (none, placebo, varenicline, serotonergic, catecholaminergic). We used Generalized Estimating Equations, with study ID as the cluster identifier, to predict short- (≤3 months) and long-term abstinence (≥6 months) using the coded treatment components. For the analysis of long-term abstinence, we included separate terms to distinguish standard (Results: Short-term abstinence (N=30, n=2,604) was significantly increased by CBMM face-to-face (6 arms; odds ratio [OR]=2.04), NRT (21 arms; OR=2.86), catecholaminergic medication (11 arms; OR=1.36), and varenicline (2 arms, OR=2.92). For long-term outcomes (N=35, n=2,836), only catecholaminergic medication (14 arms; OR=1.49) and varenicline (2 arms, each 12-week duration; OR=2.49) improved abstinence. Neither CBMM (6 arms) nor NRT (22 arms) had an effect on long-term abstinence. Conclusion: Varenicline was shown to provide the greatest long-term benefit for smokers with past MD, more than doubling long-term abstinence rates. However, a novel, targeted behavioral treatment model may be needed to produce sustained smoking cessation among these high-risk smokers.

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Symposium 9B

EARLY INTERVENTION AS A TREATMENT APPROACH FOR ADDRESSING VARIABILITY WITHIN BEHAVIORAL WEIGHT LOSS PROGRAMS

Jessica Unick, PhD

A large degree of individual variability in response to behavioral weight loss (WL) programs is consistently observed. Intensive lifestyle interventions have been shown to elicit a ≥10% WL in approximately one-third of participants, while an additional one-third of participants fail to achieve a clinically significant WL (i.e., <5% WL). Thus it is important to understand factors which contribute to this variability and develop tailored interventions targeting those with a poor likelihood of success. This presentation examines the variability in response to both in-person and Internet-based WL interventions and discusses early non-response (i.e., 4-week WL) as a potential target for improving overall treatment outcomes and increasing the proportion of individuals achieving a clinically significant WL. Preliminary data will be presented from a randomized trial comparing WL and treatment adherence among those receiving a 12-week Internet-based WL program (IBWL; n=50) to those receiving the same Internet program plus the possibility of extra support (IBWL+ES; n=50). The only difference between the two treatment conditions was that participants in IBWL+ES with a 4-week WL d=0.84). Further, those 'early non-responders' receiving additional support viewed significantly more video lessons (p=0.02, Cohen's d=0.91) and had better self-monitoring adherence (p=0.06, Cohen's d=0.87) compared to IBWL 'early non-responders'. These preliminary data suggest that individuals at risk for poor WL success following treatment may be able to be 'rescued' if intervened upon early. Additional studies are needed to determine whether this improved adherence and altered WL trajectory observed with early intervention leads to a greater proportion of individuals achieving clinically significant WL at longer follow-up periods. Investigations into whether this stepped-care approach is also beneficial from a cost-effectiveness perspective are warranted.

Symposium 9C

SEQUENTIAL MULTIPLE ASSIGNMENT RANDOMIZED TRIAL (SMART) ADAPTIVE STUDIES FOR SUBSTANCE USE DISORDERS (SUD)

Dr. Michelle Drapkin, PhD

Individuals with substance use disorders (SUD) have limited options for and mixed experiences with treatment. High dropout rates are common. In these studies we examined several research questions using a sequential multiple assignment randomized trial (SMART): Does offering patients who do not engage in treatment a choice of other interventions improve outcomes? Does offering patients who engage but then drop out a choice of other interventions improve outcomes? Does a second attempt to offer treatment choice to non-engagers improve outcomes? A SMART design enabled us to examine an alternative option with greatest chance of success for patients who do not engage while at the same time recognizing that there will still be some patients who remain disengaged after. Sequential randomization is needed to address these goals. In this presentation we will review the study design and findings and discuss the unique aspects of two SMART trials. Participants recruited from intensive outpatient (IOPs) in publicly funded and VA programs. One study recruited individuals who were cocaine dependent (N=300), 80% with past or current alcohol dependence; the other recruited individuals who were alcohol dependent (N=200), 40% with past or current cocaine dependence. Participants were randomized to two engagement strategy interventions, both using Motivational Interviewing (MI) delivered over the phone: one used MI to help participants re-engaged in the IOP; the other used MI to provided choices for treatment (IOP, medication, individual cognitive behavioral therapy (CBT), or telephone monitoring and adaptive counseling). By the second week of the treatment, 37-38% of the samples were no longer engaged; before the eighth week, an additional 20-23% had disengaged. Our findings indicated that there was not an advantage to providing outreach and a choice of interventions to patients who engage initially but then drop out. Providing further outreach with a choice of interventions to those not engaged at two and eight weeks did not improve SUD outcomes compared to no further outreach. We will discuss the main effect analyses and implications in this presentation.

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Symposium 10 8:00 AM-9:15 AM
SLEEP INTERVENTIONS IN CHRONIC ILLNESS POPULATIONS

Kelly Glazer. Baron, PhD, MPH, CBSM[1], Michelle Drerup, PsyD[2], Christina McCrae, PhD[3], Patricia Haynes, PhD[4]

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There is a large literature demonstrating the relationship between sleep disruption and a variety of health conditions including neurologic health, chronic pain and cardiometabolic disorders. Furthermore, there are several well established and highly effective behavioral sleep interventions for sleep disorders which are known to improve sleep and quality among patients with chronic illness. However, less is known about the application of sleep interventions to prevent and treat medical disorders and mechanisms driving those effects. The focus of this symposium will be to identify sleep interventions tested in three chronic illness populations (neurologic disorders, chronic pain and cardiometabolic disorders), discuss how interventions such as cognitive behavioral therapy for insomnia (CBT-I) have or have not been adapted for use among patients with chronic illness and discuss how sleep interventions have affected clinical outcomes or disease process. The first presentation will discuss applications of CBT-I to MS and Parkinson’s Disease (Dr. Drerup). The second presentation will discuss CBT-I in chronic pain populations (Dr. McCrae). The third presentation will discuss the role of improving sleep duration and quality in patients with cardiometabolic disorders. Dr. Haynes will serve as the discussant and integrate the presentations, discussing current challenges and opportunities for future research in sleep interventions among chronic illness populations.

Symposium 10A

SLEEP INTERVENTIONS IN CARDIOMETABOLIC DISORDERS

Dr. Kelly Glazer. Baron, PhD, MPH, CBSM

Short sleep duration and poor sleep quality have been associatiated with increased risk for cardiovascular disease, hypertension and diabetes. However, few studies have evaluated sleep interventions to reduce risk for cardiometabolic disorders. Sleep may represent a modifiable risk factor for these conditions. Several proposed pathways have been explored including indirect pathways (role of sleep in influencing diet and physical activity) and direct pathways (e.g. sympathetic nervous systems activity). The presention will demonstrate the association of sleep duration and timing with diet and physical activity. In addition, a novel intervention to extend sleep duration among individuals with short sleep duration and prehypertension will be presented.

Symposium 10B

TREATMENT OF INSOMNIA AMONG PATIENTS WITH NEUROLOGIC DISORDERS

Dr. Michelle Drerup, PsyD

The incidence of sleep problems in individuals with neurological disorders, including multiple sclerosis and Parkinson's disease, has been estimated to be 3-5 times higher as compared to the general population. Sleep disorders such as insomnia in individuals with neurological conditions are often underdiagnosed and undertreated, oftentimes misunderstood as other symptoms of the disorder such as fatigue. Initial research suggests that Cognitive Behavioral Therapy for Insomnia (CBT-I) may be an effective clinical intervention for individuals with neurological disorders but minimal research to date has been done looking at this behavioral intervention in this specific population. Recent data will be reviewed including a retrospective case analysis of individuals who underwent CBT-I (individual or group modality) who demonstrated improvements in insomnia symptoms, increased self reported total sleep time, as well as decreased fatigue and depression ratings. In addition, pilot data exploring the feasibility and outcomes of using a web-based CBT-I intervention in individuals with Parkinson's disease comorbid with insomnia will be reviewed.

Symposium 10C

SLEEP INTERVENTIONS IN PATIENTS WITH FIBROMYALGIA

Christina McCrae, PhD

Fibromyalgia (FM) is a prevalent and costly chronic pain condition. FM sufferers experience high rates of insomnia and fatigue. Targeting and improving pain, insomnia, and related symptoms (I.e., mood, fatigue) in these patients can be challenging. Cognitive behavioral therapy (CBT) holds great promise, because it can be designed to target multiple symptoms. Recent trail data comparing the impact of CBT for insomnia (CBT-I) to CBT for pain (CBT-P) on sleep, pain, fatigue, and mood in patients with comorbid fibromyalgia and chronic insomnia will be reviewed. Pilot data examining the impact of a hybrid CBT-PI on those same patient centered outcomes will also be presented.

Symposium 11 8:00 AM-9:15 AM

MHEALTH TECHNOLOGY TO IMPROVE MEDICATION ADHERENCE

Janet DeMoor, PhD, MPH[1], Michael J. Stirratt, PhD[2], Karen B. Farris, PhD[3], Frank A. Treiber, PhD[4], William Riley, PhD[5], Sara Browne, MD, MPH[6]

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Recent years have seen exponential growth in the use of mobile health (mHealth) technologies to address medication adherence. Various examples include electronic monitoring of prescription refills, wireless electronic drug monitors, pills that wirelessly detect/report drug ingestion, and cellphone text messaging (SMS) and smartphone/tablet-based programs to promote medication adherence. These technologies provide novel capacities for active monitoring of adherence behavior, improved delivery of medication adherence reminders, patient-centered education on medication and requirements, provision of feedback to and from patients and providers, and individually-tailored adherence and monitoring interventions. The symposium will feature three examples of mHealth approaches for supporting medication adherence and explore how these approaches contribute to advancing the science of medication adherence. The first presentation will discuss how ingestible sensors can be used to monitor adherence to diabetes treatment. The second presentation will explore how artificial intelligence and text messages can improve medication adherence among adults with uncontrolled hypertension. The third presentation will examine how mHealth technology can improve medication management among individuals with chronic illness. Following the three presentations, a discussant will review the major outstanding knowledge gaps that need to be addressed as well as the barriers and drivers to incorporating mHealth tools into clinical practice.

Symposium 11A

MHEALTH TECHNOLOGY TO IMPROVE MEDICATION ADHERENCE

Professor Karen B. Farris, PhD

Mobile health (mHealth) strategies including SMS may improve medication adherence, yet most are based on deterministic protocols with programmed responses. We propose a model medication adherence system using Reinforcement Learning that can automatically adapt SMS communication based on “what’s working” for each individual. In Phase I, we conducted a single group study among 19 participants with hypertension. Electronic pill bottle openings served as the outcome that the reinforcement learning agent sought to optimize. Five categories of messages were developed and up to two messages were sent daily. The distribution of messages delivered changed over time, indicating that the messages adapted based on participants’ experience. The proportion of participants reporting they took their medications as prescribed on 5+ days in the past week increased from 89.5% at baseline to 94.7% at six months. There were no statistically significant differences in the disease and medication beliefs from baseline to 6 months, although medication necessity beliefs increased and medication concern beliefs decreased. In Phase II, 48 participants, with a medication possession ratio <0.5 and taking at least one anti-hypertensive medication, were enrolled into a 6-month, randomized, controlled trial. Participants in the intervention group could receive one of five messages up to once daily. In interim analysis for n=43 with an average of 102 days of participation, participants had a baseline self-reported Morisky adherence score of 7.02 ± 1.55 in the treatment group and 6.78 ± 1.32 in the control group (p=0.58). We built a preference for no messages into the system, and the percentage of time that no message was sent increased from 43% in month one to 65% in month three and to 79% in month six. Intervention participants were more likely to be adherent at 6 months than controls (94% versus 80%; p=0.06). Results from two studies suggest that a reinforcement learning SMS system can adapt the content of SMS messages over time and may improve medication adherence.

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Symposium 11B

FACILITATING SUCCESSFUL MHEALTH MEDICATION ADHERENCE: LISTENING TO THE PATIENTS

Frank A. Treiber, PhD

Poor medication adherence (MA) remains a critical problem in management of all chronic diseases and impacts ~50% of patients. Numerous technology-enabled devices/ systems have emerged to address the problem. They enable real time capture of use of pill bottles/trays, actual pill intake, provide various reminder tactics for med intake and often include efforts to increase health literacy. Clinical trial data are emerging which suggest some solutions remain cost prohibitive, do not link MA to biofunctioning relevant to the meds and/or use of reminder alerts (e.g., visual/audio signals , SMS messages, etc.) don't necessarily result in robust sustained improvements. Approaches may not have fully capitalized upon expertise of the intended users and lacked tactics to facilitate sustained motivation to adhere to the technology enhanced clinical regimens.

This presentation will provide an overview and update of ongoing refinements of a patient/provider centered, theory guided mHealth medical regimen self-management system. This iterative design process began with key informant interviews and focus groups with patients and healthcare providers for prototype development. Usability testing followed including expert and user based heuristic and cognitive walk through evaluations. Refinements were made and field based usability tests run. Subsequent large group survey/demo studies followed to gather patients' guidance for final refinement. Three feasibility trials were run with different patient groups, all with uncontrolled hypertension (HTN) (i.e., transplant recipients, FQHC HTN patients, post-stroke patients). Findings revealed high usability and satisfaction, 95-100% MA, large BP reductions, and 65-100% BP control compared to far lower outcomes in standard care groups. Our most recent examination of these trials and interim analyses from ongoing research have shown that patients who maintain MA scores >.90 during first 3 months and are taking < 5 meds desire to revert back to a standard plastic tray. They have successfully maintained BP control. Subjects with single morbidity of HTN are often more challenging to establish sustained adherence than those HTNs with multi-morbidities .Experiences during the trials/ post-trial interviews verified importance of identifying patients' motivational drivers (e.g., family, faith, friends, short /long term life goals).Linking patients' behavioral changes (e.g., increased MA) to these drivers facilitated regimen adherence . Recent analyses suggest MA is sustained following trial cessation. We will present how we have refined our system including expansion of tailored motivational /social reinforcement SMS message library and use of audio recordings, photo voice, etc. to further enhance relevance of the feedback messages aimed at fostering greater autonomous motivation for sustained adherence.

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Symposium 11C

LET VISUALS TELL THE STORY: MEDICATION ADHERENCE IN PATIENTS WITH TYPE II DIABETES CAPTURED WITH AN INGESTION SENSOR PLATFORM

Dr. Sara Browne, MD, MPH

Background: A novel sensing platform, Digital Health Feedback System (DHFS), can detect ingestion events and physiological measures simultaneously, using an edible sensor, personal monitor patch, and paired mobile device. The DHFS generates dense data.

Objective: To use modern methods of visual analytics to represent continuous and discrete DHFS data, plotting data simultaneously to evaluate the potential of the DHFS to capture longitudinal patterns of medication-taking behavior and self-management.

Methods: Visualizations were generated using time domain methods of data obtained by the DHFS use in 5 Subjects with type II diabetes over 37-42 days. The DHFS captured at-home metformin adherence (via sensor co- ingestion) with heart rate, activity, and sleep/rest. A mobile glucose monitor captured glucose testing and level (mg/dl). Algorithms were developed to analyze data over: the entire study, daily, and weekly. Following visualization analysis, correlations between sleep/rest and medication ingestion were calculated.

Results: A total of 197 subject days, and 141,840 data events were analyzed. Individual continuous patch use varied between 87-98%. On average, the cohort took 78% (SD 12) of prescribed medication and took 77% (SD 26) within the prescribed ±2-hour time window. Average activity levels per subjects ranged from 4000-12,000 steps per day. The combination of activity level and heart rate indicated different levels of cardiovascular fitness between subjects. Visualizations over the entire study captured the longitudinal pattern of missed doses (the majority took place in the evening), the timing of ingestions in individual subjects, and the range of medication ingestion timing, which varied from 1.5-2.4 hours (Subject 3) to 11 hours (Subject 2). Individual morning self-management patterns over the study period were obtained. Visualizations combining multiple data streams over a 24-hour period captured patterns of broad daily events: when subjects rose in the morning, tested their blood glucose, took their medications, went to bed, hours of sleep/rest, and level of activity during the day. Visualizations identified highly consistent and highly erratic daily patterns in different Subjects. Correlation between sleep /rest and medication ingestion was evaluated. Subjects 2 and 4 showed correlation between amount of sleep/rest over a 24-hour period and medication-taking the following day (Subject 2: $r = 0.47$, $P< .02$; Subject 4: $r = 0.35$, $P< 0.05$). With Subject 2, sleep/rest disruptions during the night were highly correlated ($r = 0.47$, $P< 0.009$) with missing doses the following day.

Conclusions: Visualizations integrating medication ingestion (via sensor co-ingestion) and physiological data from the DHFS over varying time intervals captured detailed individual longitudinal patterns of medication adherence and self-management in the natural setting.

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Symposium 12 8:00 AM-9:15 AM

EMERGING PERSPECTIVES ON TREATMENT AND SELF-MANAGEMENT CHALLENGES OF CHRONIC DISEASE IN EMERGING ADULTHOOD

Amanda S. Phillips, M.S.[1], Deborah Wiebe, MPH, PhD[2], Susmita Kashikar-Zuck, PhD[3], Elizabeth J. Siembida, Ph.D.[4], Cheryl LP. Vigen, PhD[5]

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Treatment and self-management considerations for emerging adults managing chronic disease are a growing priority. Emerging adults experience unique challenges concerning psychosocial adjustment and behavioral self-management of chronic disease. For example, millions of emerging adults in the United States make the decision to move away from their parents’ home each year. These emerging adults are often lost in the transition from pediatric to adult care. For some conditions, youth are now surviving into adulthood, creating challenges for adult care physicians who are not experienced with these pediatric conditions or with the normative developmental context of emerging adults. Greater understanding of the patient, illness, and health care provider factors that contribute to illness management is needed for this understudied emerging adult population. This symposium will examine the common and unique challenges emerging adults face in working with health care providers and self-managing three chronic conditions: fibromyalgia, diabetes, and cancer. The chair will provide a brief overview of the symposium and impact of chronic disease on emerging adults. The first panelist will present original longitudinal research outlining trajectories of pain and mood symptoms from adolescence to emerging adulthood among those with fibromyalgia. Early psychosocial factors affecting adjustment to chronic pain and key risk factors to be targeted in treatment will be examined. The second panelist will present original research concerning the association of depressive symptoms and diabetes distress with glycemic control in low-SES emerging adults with diabetes, and will discuss treatment implications. The third presenter will discuss the role of the doctor-patient relationships and cognitive development in cancer patients’ perceptions of quality of care, and the importance of using particular clinical skills when treating emerging adult cancer patients. Finally, an integrated overview of the challenges of chronic illness management in emerging adulthood will be provided by the discussant.

Symposium 12A

TRAJECTORIES OF PAIN AND MOOD SYMPTOMS IN A LONGITUDINAL COHORT OF YOUTH WITH FIBROMYALGIA AND PREDICTORS OF LATER ADJUSTMENT

Dr. Susmita Kashikar-Zuck, PhD

Juvenile fibromyalgia (JFM) is one of the most poorly understood chronic pain conditions. Until recently, very little attention was paid to the prognosis of JFM into adulthood, the long-term impact of JFM on functioning or early indicators of adjustment to this potentially debilitating pain disorder. In a prospective longitudinal study of adolescents with JFM (N = 116) and healthy controls (N = 43), we conducted a series of detailed assessments of physical and psychosocial functioning at from adolescence to adulthood (Mean age = 15 years at Time 1 and 23.4 years at Time 4). Of the JFM group, the majority (>85%) continued to experience pain or other JFM symptoms and nearly half (48%) met full criteria for fibromyalgia in adulthood. This presentation focuses on results of longitudinal growth models showing 3 distinct trajectories of pain and 2 trajectories of depressive symptoms from adolescence to adulthood in the JFM group, and the impact of these trajectories on physical functioning over time. The subgroup of JFM participants with unremitting pain and worsening depressive symptoms had the poorest outcomes. Prior research has shown that regular participation in physical activity and using active psychological coping strategies are essential to successful management of chronic pain. However, no studies have examined risk and resilience factors that impact the management of pain and disability in the crucial transition from adolescence to young adulthood. As part of the longitudinal study, we examined family functioning, trauma history, social support, mood and physical activity participation in youth with JFM. Several factors such as a controlling family environment, early exposure to traumatic events and lower perceived social support were significantly related to psychosocial adjustment in adulthood. Depressive symptoms and smaller social networks were associated with lower physical activity participation. The presenter will discuss how key findings from this longitudinal examination of JFM illuminate our understanding of specific risk factors that need to be targeted for optimal long-term management of pain and disability in fibromyalgia, especially as adolescents with JFM transition into adulthood.

Symposium 12B

ADOLESCENT AND EMERGING ADULT CANCER PATIENTS: THE IMPORTANCE OF DOCTOR-PATIENT RELATIONSHIPS AND COGNITIVE DEVELOPMENT IN QUALITY OF CARE

Elizabeth J. Siembida, Ph.D.

Emerging adults are unique from their older and younger counterparts because of their more sophisticated cognitive skills, such as improved decision making and information processing, but the necessity of supportive adults in their lives. Emerging adults diagnosed with cancer are not immune to this developmental trajectory, and the current study was undertaken to examine the experience of quality of care in a sample of adolescent and emerging adult cancer patients (diagnosed between the ages of 10 and 20). This cross-sectional survey examined participants' perception of engagement in care; the doctor-patient relationship; quality of care; their cognitive development, specifically their decision making and evaluative thinking skills; and readiness for transition into adulthood. Bivariate and multivariate analyses found little difference in perceptions of quality of care based on age or transitional readiness. Instead, increased cognitive development (β=.226, $t(94)$=2.468, p=.015) and experiencing the opportunity for bi-directional information provision with providers was associated with increased quality of care (β=.345, $t(94)$=3.324, p=.001). The lack of a significant relationship between chronological age and quality of care points to the importance of developmental milestones, rather than age, as an important factor in initiating the transition to adult healthcare. The role of increased cognitive development highlights the need for a certain level of decision making and evaluative skills that are only gained as an individual enters late adolescence and begins the developmental transition into emerging adulthood. The significant relationship with bi-directional information provision points to the important role doctors play in the cancer experience for adolescents and emerging adults. In looking for ways to improve the transition from adolescence to emerging adulthood within the oncology context, doctors appear to be ideally situated to help provide support and guidance to their patients as they begin to take on an increased role in their care.

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Symposium 12C

DEPRESSIVE SYMPTOMS, DIABETES DISTRESS AND GLYCEMIC CONTROL IN LOW-SES EMERGING ADULTS WITH DIABETES

Cheryl LP. Vigen, PhD

Emerging adults (EAs) with diabetes experience high rates of elevated blood glucose (as indexed by hemoglobin A1c), depressive symptoms (DS), and diabetes distress (DD), all of which contribute to increased risk of diabetes complications, disability and mortality. We examined relationships between DS, DD, and A1c among a cohort of low-SES, largely minority EAs with diabetes, using baseline data from an occupational therapy diabetes management intervention randomized controlled trial.

Participants were 81 EAs (75% type 1 diabetes; mean age 22.6 years; mean A1c 10.8%). We assessed DS via the Patient Health Questionnaire (PHQ-8) and DD via the Problem Areas in Diabetes-Short Form (PAID-5). Spearman correlations and p-values are presented; differences in medians are evaluated with Wilcoxon rank sum tests.

Women had higher DS than men (median PHQ 6.0 vs 4.0, p=0.02); no other demographic variables were associated with DS scores. In univariate analysis, DD was not significantly associated with A1c (r=0.19, p=0.09). In contrast, DS was associated with increased A1c (r=0.27, p=0.02). This relationship remained after adjusting for potential confounders and for blood glucose monitoring and medication adherence, both strong behavioral predictors of A1c.

EAs with a depression diagnosis in their medical records (n=14) did not have higher DS than those who did not (median PHQ 6.0 vs 5.0, p=0.10); the association between A1c and DS remained significant when restricted to those without a diagnosis. Among EAs with PHQ scores below the cut-off for major depression (PHQ <10), there was no association between DS and A1c (r=0.06, p=0.67), but for those with scores ≥10, the association was substantial (r=0.47, p=0.03).

Overall, in a cohort of low-SES, largely minority EAs, DS was more closely associated with A1c than was DD; furthermore, the relationship between DS and A1c was not explained by blood glucose monitoring or medication adherence. The PHQ cut-off score for major depression may be a threshold above which DS affects A1c. Given the high proportion of EAs with both DS and elevated A1c, screening and providing psychosocial intervention for DS may be effective in improving both physical and mental well-being in this population.

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Symposium 13 8:00 AM-9:15 AM

PROMOTING PHYSICAL ACTIVITY INTERVENTIONS AMONG PEOPLE WITH MENTAL DISORDERS: A CONTINUUM

Ahmed Jerome Romain, PhD[1], Felipe Barreto Schuch, PhD[2], Simon Rosenbaum, PhD[3], Joseph Firth, BSc[4], Philip B. Ward, BMedSc, PhD[5]

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Within the last years, there was a growing interest towards the benefits of physical activity among people with mental disorders. Even though recent studies highlighted the positive impact of physical activity, more work is needed to facilitate its initiation as to develop more efficacious interventions to sustain it over time.

As such, the present international symposium (Australia, Brazil, England, and Canada) aims to propose several presentations on the need for lifestyle interventions in people with mental disorders at various stages and further propose new interventions to improve their physical and mental health over the long term.

In a first presentation, we will show that the co-occurrence of obesity and mood disorders was associated with poor psychological well-being, more health comorbidities, higher use of health services and less adequate health behaviours. In a second presentation, we will present results from a trial assessing whether physical activity is feasible in first-episode psychosis individuals and if the health benefits could be maintained overtime. The other speaker will talk about a project with 3 phases, developed in coordination with the national insurer for workplace injury, on the implementation of physical activity in first-responders people developing posttraumatic stress disorder. Then, the next speaker will discuss the results from a 6-month RCT intervention, conducted among people with major depressive disorder, which aimed to promote physical activity using wearable technology and a theoretical model of motivation. Finally, given the necessity to have a reliable measure of physical activity, the last talk will be on the first results from the international and cross-cultural validation of the simple physical activity questionnaire in people experiencing mental illness.

All bring together, these presentations will cover several aspects of the lifestyle intervention prism going from the prevention, through methodological and interventions studies with follow-up. Moreover, the symposium, as the presenters will have the objective to highlight the necessity to develop more appropriate lifestyle interventions in people with mental disorders to improve their functioning and quality of life.

Symposium 13A

IMPACTS OF OBESITY AND MOOD DISORDERS ON PSYCHOLOGICAL WELL-BEING, COMORBIDITIES, HEALTH BEHAVIOURS AND USE OF SERVICES.

Dr. Ahmed Jerome Romain, PhD

Introduction: Obesity is highly prevalent in North-America people with mood disorders (e.g., bipolar disorder, major depressive disorders) are more likely to be affected. Even though obesity and mood disorders frequently co-occur, few studies examined if the presence of a mood disorder can be an aggravating factor of obesity-related conditions.

Objective: to analyze whether people with obesity and mood disorders (POMD) differ from those without mood disorder (Ob) in terms of psychological well-being, comorbidities, health behaviours and use of health services.

Methods: Cross-sectional study based on the Canadian Community Health Survey (CCHS) conducted in 2007-2008. Sample of people with obesity (n = 1298) was weighted to represent the inhabitants from the province of Quebec (Canada). The CCHS used diagnostic criteria outlined in the DSM-IV-TR to screen respondents.

Results: POMD (n = 99) were more likely to be women than Ob (n = 1199), (65%, 95%CI[56.29-75.05%] vs 45%, 95%CI[42.92-48.56%]). In terms of psychological well-being, POMD were more likely to report poor mental health (40%, 95%CI[31.81-51.32%] vs 3.17%, 95%CI[2.32-4.34%]) with more psychological distress (37.5%, 95%CI[28.96-48.55%] vs 4.25%, 95CI [3.23-5.59%]) and anxiety disorders (39.79%, 95%CI[31.19-50.76%] vs 4.01%, 95%CI[3.04-5.28%]).

Regarding comorbidities, higher percentages of POMD reported arthritis (32.65%, 95%CI[24.57-43.39%] vs 16.58%, 95%CI [14.60-18.83%], low back pain (41%, 95%CI[32.41-51.87%] vs 19.48%, 95%CI[17.36-21.86%]). No significant differences were found in migraine, hypertension and type 2 diabetes.

In terms of use of services, compared to Ob, POMD had more frequents consultations to doctors (86.87%, 95%CI[80.46-93.78%] vs 74.21%, 95%CI[71.77-76.73%]), nurses (27.27%, 95%CI[19.77-37.62%] vs 15.44%, 95%CI [13.52-17.63]) and psychologists (21.21%, 95%CI[14.51-31.0%] vs 3.08%, 95%CI[2.25-4.24]).

Regarding their health behaviours, higher percentages of POMD reported to be inactive (79.59%, 95%CI[71.99-87.98%] vs 66.67%, 95%CI[64.05-69.39%]), or to be limited in their physical activity (37.37%, 95%CI[28.96-48.23%] vs 13.90%, 95%CI[12.07-16.01%]). No differences were found on tobacco and fruits/vegetables consumption.

Discussion: The presence of a mood disorder seems to be an aggravating factor in obesity because it was associated with poor health in several areas. There is a need to more consider obesity as health behaviours among POMD.

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Symposium 13B

PHYSICAL ACTIVITY PROMOTION IN PEOPLE WITH MAJOR DEPRESSIVE DISORDER USING WEARABLE DEVICES: A CLINICAL TRIAL

Felipe Barreto Schuch, PhD

People with major depressive disorder (MDD) have decreased levels of physical activity(PA) when compared to the population levels. Also, there is evidence that this relationship is bidirectional, and that increasing PA reflects in the alleviation of depressive symptoms in people with depression. Motivational and other cognitive strategies have been used to help people with MDD to achieve the recommended PA levels, however, the results suggest the need for additional strategies. The present study aims to increase PA levels of outpatients with MDD (n=120). It is a randomized clinical trial with 6 months of intervention, single blinded for the main outcome (depressive symptoms assessed by the clinician). Participants are being randomized into two groups: an intervention group, that wore a wearable pedometer, with daily goals of steps to achieve and received a contact using self-determination theory elements. The aims of daily steps to be achieved increase every month until reach the public health recommendations of 10.000 steps per day; and a control group that received general recommendations of PA promotion. Both groups were under usual treatments for depression (pharmacotherapy). Patients were contacted once per week by telephone or face-to-face contacts. Analysis on the effects of the intervention on PA levels, depressive symptoms (both self and clinician assessed), and quality of life will be evaluated. Also, the study plans to evaluate potential factors that predict success/failure.

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Symposium 13C

IMPLEMENTING PHYSICAL ACTIVITY IN PTSD: APPLYING EVIDENCE-BASED PROGRAMS FOR WORKPLACE-RELATED PSYCHOLOGICAL INJURIES

Dr. Simon Rosenbaum, PhD

Emergency service workers and first-responders (police, fire, ambulance officers) are at significantly higher risk of poor mental health, including developing posttraumatic stress disorder (PTSD) and/or increased risk of suicide, in response to occupational exposure to potentially traumatising experiences. PTSD is also associated with high rates of preventable cardiometabolic disease including obesity and metabolic syndrome, with symptoms of hyperarousal associated with lower physical activity participation. Despite increased community and organisational recognition of the risks associated with poor mental health among veteran populations, translation of targeted programs to address the specific physical and mental health needs of first responders is in its infancy. This study aims to build on findings from an RCT of exercise augmentation for inpatients with PTSD in which exercise reduced both PTSD and depressive symptoms at a clinically significant level and improved body composition, compared to treatment as usual. The goal of the present study was to translate this exercise program for community-based first responders identifying as suffering from psychologically injury. To facilitate translation of the intervention, a multi-phase evaluation process was conducted. Phase 1 involved conducting focus groups with current emergency service crews (n>50 participants; fire and rescue) to document their views regarding mental health help-seeking behaviour, physical activity and opportunities for promoting access to exercise interventions. Themes identified included the acceptability of exercise as a coping strategy for first responders, and highlighted the need for interventions aimed at reducing stigma towards mental health issues among first-responders. Phase 2 involved longitudinal monitoring of the physical and mental health of first responders using a mobile phone application (n=17). A significant proportion of respondents (41%: 7/17) failed to achieve basic physical activity guidelines (150 minutes of moderate to vigorous physical activity per week). Results are being used to inform Phase 3, in which we will design and implement an exercise program for first responders with psychological injury, in partnership with the national insurer for workplace injury.

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Symposium 13D

INVESTIGATING THE FEASIBILITY AND BENEFITS OF EXERCISE IN EARLY PSYCHOSIS

Mr. Joseph Firth, BSc

Exercise has previously been shown to reduce symptoms of schizophrenia in long-term patients, along with improving their physical health and cognitive functioning. However, the effects of exercise in the early stages of psychosis have not been widely investigated. This study aimed to examine the feasibility of using individualized exercise training to improve physical and mental health outcomes in people with first-episode psychosis (FEP), and to explore if the benefits of exercise can be sustained overtime. Twenty-eight people with FEP participated in 10-weeks of twice-weekly supervised exercise, using activities tailored to their own choice. Participants were assessed at baseline, 10-weeks, and then six-months after the supervised intervention, and compared to a group of patients with FEP who did not receive exercise training. During the 10 weeks of supervised exercise, participants achieved 107 minutes of moderate-to-vigorous exercise per week. Post-intervention assessments found significant improvements in psychiatric symptoms, verbal memory and social functioning. After 6 months, 55% of participants had continued their exercise. Only those who had maintained regular exercise after 6 months continued to show reductions in psychiatric symptoms, whereas the symptoms of those who had ceased exercising had returned to baseline scores. Previously-observed benefits of exercise for social functioning were also maintained at the follow-up, although cognitive improvements were lost. Future research should establish the effectiveness of exercise for early psychosis in randomized controlled trials, along with exploring optimal methods for implementing exercise interventions into clinical care, in order to improve symptomatic and functional recovery from the earliest stages of illness.

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Symposium 13E

EVALUATING PHYSICAL ACTIVITY INTERVENTIONS : DEVELOPMENT & VALIDATION OF THE SIMPLE PHYSICAL ACTIVITY QUESTIONNAIRE (SIMPAQ)

Prof. Philip B. Ward, BMedSc, PhD

Physical activity is consistently associated with improved physical and mental health among people experiencing mental illness. Given increasing interest physical activity as a component of treatment, ensuring that valid, clinically useful and feasible measures of physical activity are available for routine use is of paramount importance. Existing self-report measures fail to address unique considerations and limitations faced by people experiencing mental illness. The SIMPAQ is a 5–item clinical tool taking between five and 10 minutes to complete, designed to assess physical activity among populations at high risk of sedentary behaviour, such as those experiencing mental illness. This study aimed to determine the reliability and validity of the SIMPAQ among mental health service users against an objective measure of physical activity (accelerometer). We hypothesise that the SIMPAQ will demonstrate acceptable reliability and criterion validity (i.e. correlation > 0.3 or above for total physical activity) against the objective measure.The SIMPAQ is currently being validated across >25 sites in >18 countries. Eligible participants are adults aged 18-65 years, currently treated at participating treatment facilities, who meet DSM or ICD criteria for any mental disorder (excluding eating disorders). Demographic and anthropometric information, psychiatric diagnoses, somatic co-morbidities, medication usage, symptom severity (DSM-5 Cross-Cutting tool) and cognitive capacity (Montreal Cognitive Assessment) are assessed. Participants complete the SIMPAQ through a structured interview. Participants are given a tri-axial accelerometer to wear during waking hours for seven days. This study aims to recruit approximately 1000 participants across a variety of psychiatric treatment facilities.As of September 2016, validation data has been collected from n=95 subjects in six countries (Australia, Brazil, Spain, USA, India, Switzerland).Preliminary analysis demonstrates that the SIMPAQ is clinically feasible and acceptable across a range of languages and clinical settings.

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Symposium 14 8:00 AM-9:15 AM

METHODOLOGICAL CHALLENGES IN STUDIES WITH STIGMATIZED POPULATIONS OF WOMEN

Karen F. Stein, PhD[1], Lisette Jacobson, PhD, MPA, MA[2], Leigh Ann Simmons, Ph.D., M.F.T.[3], Laura L. Hayman, PhD, RN, FAAN, FAHA[4]

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Stigma is broadly recognized as a fundamental cause of inequities in health and health care. While both men and women experience stigma, data show that women are frequently the gatekeepers of their families' health. Thus, women in groups that are stigmatized due to racial/ethnic identity, immigrant status, geographic residence, and overweight and obesity experience additional educational, economic, and social barriers that negatively affect not only their own health outcomes but also those of their children and families. Moreover, women in these stigmatized groups experience disproportionate rates of physical and mental health disorders, yet remain among those least likely to seek health care services. However, studies designed to address the health care needs of these underserved populations of women encounter unique challenges in all aspects of the research process. These challenges are far reaching and include accessing the population, recruitment, retention, valid and reliable measurement tools, and culturally sensitive intervention design and implementation. The purpose of this symposium is to describe methodological challenges associated with conducting research with stigmatized populations of women and to provide practical solutions to overcome these common barriers to research. Karen Stein will discuss two projects focused on body weight perceptions, eating and weight control behaviors in undocumented, low acculturated women of Mexican origin living in rural farming communities in Western New York. Lisette Jacobson will discuss the process of completing two pilot studies to understand the needs of an obstetrical population located in an extremely remote rural region of a Midwestern state prior to designing a health promotion intervention. Leigh Ann Simmons will discuss two interventions with women who experience weight stigma associated with entering pregnancy overweight or obese or gaining excess weight during pregnancy. Discussant Laura Hayman will provide a critical analysis and synthesis of presentations with emphasis on directions for future research with stigmatized populations.

Learning objective 1: Identify and describe methodological challenges encountered in health research focused on stigmatized population of women.

Learning objective 2: Describe strategies to improve recruitment, retention, construct measurement, and other design challenges encountered in health research with stigmatized populations of women.

Learning objective 3: Describe initial steps toward designing culturally sensitive interventions that consider the intersection of stigma with other factors that affect health outcomes.

Symposium 14A

LIVING IN THE SHADOW: UNDOCUMENTED MEXICAN AMERICAN WOMEN AND RESEARCH CHALLENGES.

Karen F. Stein, PhD

Objective: Undocumented Mexican women living in the U.S. are a stigmatized group who experience significant health disparities and limited access to health care. Particularly in border states, the threat of deportation and separation from children and family result in high levels of fear and isolation. Consequently, despite their numerous health disparities and significant unmet health care needs, undocumented Mexican American (MA) women remain an understudied population. The primary purpose this paper is to describe the challenges associated with conducting research with this population and present practical solutions developed in two studies focused on body weight perceptions, eating and weight control behaviors in samples of undocumented young adult Mexican American women.

Design and Methods: Two studies using qualitative (focus groups) and quantitative (ecological momentary assessment) were completed with two samples of non-pregnant Spanish speaking MA women ages 18-45 years (total N=75) with undocumented legal status, low acculturation, low health literacy and living in rural farming communities in Western New York. Methodological challenges common across studies included: (1) accessing the target population, (2) addressing exceptional needs for anonymity, (3) engaging family gatekeepers, (4) identifying meaningful participant incentives, (5) avoiding socially desirable responses shaped by stigma and embarrassment. Practical solutions were developed through collaboration with community member advocates, institutional review board representatives, study participants and trial and error.

Conclusion: Research with undocumented populations of MA women requires attention to their unique stigmatized social position and cultural nuances to ensure validity and reliability of study results. Adjustments to study protocols that meaningfully address these challenges are feasible and essential to successful completion of much needed research with this understudied population of women.

Symposium 14B

PROPOSING AN INTERVENTION TARGETING UNDERSERVED RURAL PREGNANT WOMEN: LESSONS LEARNED FROM TWO PILOT STUDIES

Dr. Lisette Jacobson, PhD, MPA, MA

Background: In the United States, pregnant women who live in rural locations are more likely to experience adverse birth outcomes compared to women in urban locations. This is partially due to limited access, availability, and delivery of obstetrical healthcare services in rural regions. Serving an underserved population in a Midwestern state, a rural hospital with 300 deliveries per year experienced a high rate of complicated pregnancies and births. The purpose of this presentation is to describe the methodological challenges associated with studies involving the pregnant population in this rural area.

Methods: Two pilot studies, quantitative (i.e., obstetrical health assessment) followed by qualitative (i.e., focus groups), were completed. Results from the health assessment (N=177) indicated that the majority of pregnant women were Hispanic and of low socio-economic status, were overweight/obese, did not engage in exercise, and had a family history of diabetes. Further, focus group findings (N=17) showed that women reported having limited access to health promotion programs and breastfeeding support.

Results: Common themes across both studies included: (1) buy-in from local stakeholders; (2) importance of relationship building among local healthcare providers and researchers; (3) ease of work flow and continuous follow-up with on-site clinic personnel; (4) being mindful of the “no-show factor”; and (5) identifying meaningful incentives. Study findings were used in application for a K-award with the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) testing the feasibility of a health promotion intervention that contains physical activity, dietary habits, and breastfeeding support.

Conclusion: Proposing an intervention approach that targets underserved rural pregnant women requires prior in-depth study of this population. Moreover, inclusion of these women, local key stakeholders, and healthcare providers in discussions surrounding behavioral change could be beneficial with recruitment, participation, and retention in future interventions.

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Symposium 14C

BEHAVIORAL WEIGHT MANAGEMENT TRIALS DURING PREGNANCY AND POSTPARTUM AMONG OVERWEIGHT AND OBESE WOMEN: THE ROLE OF WEIGHT BIAS

Dr. Leigh Ann Simmons, Ph.D., M.F.T.

Objective: Weight bias contributes to negative healthcare experiences among pregnant and postpartum women with overweight and obese BMIs. Studies of patients in maternity care settings show they experience discomfort, guilt, and shame for their weight status, as well as indifference, judgment, and disrespectful treatment from providers. Underscoring these findings, research also shows that many obstetric providers hold negative attitudes toward pregnant women with $BMI \geq 25$, including less positive attitudes toward caring for these patients and negative judgments about their self-management behaviors. Given the pervasiveness of obesity stigma in obstetric care, designing interventions aimed at limiting pregnancy weight gain or promoting postpartum weight loss for women with prepregnancy $BMI \geq 25$ requires consideration of how weight bias may influence their research participation.

Data and Methods: Design considerations and lessons learned regarding intervention approaches and content were characterized for two studies: (1) a digital intervention to promote healthy prenatal diet for women who entered pregnancy with a $BMI \geq 25$; and (2) a telephonic coaching intervention for women who gained gestational weight in excess of Institute of Medicine recommendations for prepregnancy BMI.

Results: Interventions that address pregnancy weight gain and postpartum weight loss among women with $BMI \geq 25$ who may experience weight bias should consider the following strategies to promote recruitment, adherence, and retention: (a) focus change behaviors on meeting healthy dietary goals rather than numbers-based targets, such as weekly pounds gained prenatally or lost postpartum; (b) use computer-mediated communication, mobile technologies, or telephonic coaching instead of in-person behavioral support strategies to protect participants' visual anonymity; and (c) develop interventions that address the whole person and recognize the transition to parenthood as a unique, challenging time versus interventions that focus solely on weight-related behaviors like diet and exercise.

Conclusions: Among women with overweight and obese BMIs, weight bias and obesity stigma likely affect research participation in behavioral weight management trials. Study designs that consider participants holistically, reflect the unique nature of pregnancy and the postpartum period, and offer women options for remaining visually anonymous to interventionists may facilitate recruitment, adherence, and retention with this vulnerable group of participants.

Symposium 15 8:00 AM-9:15 AM

PAIN MANAGEMENT: TRANSLATING POLICY AND GUIDELINES INTO PRACTICE

Martin Cheatle, PhD[1], Robert Twillman, PhD, PhD[2], Lara Dhingra, PhD[3], Rollin Mac. Gallagher, MD, MPH[4]

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Pain Management: Translating Policy and Guidelines into Practice

Approximately one-third of the adult American population experience chronic or recurrent pain and this number increases each year. The annual combined cost of pain care (healthcare costs, lost productivity and disability) has been estimated as reaching $600 billion which is far greater than what is expended on other major diseases including heart, diabetes and cancer. Effective pain management requires a balanced and multimodal approach which includes, in some cases, the use of opioid analgesics. There has been a growing controversy, however, over both the efficacy and safety of opioid analgesics in managing patients with chronic pain. This debate has stimulated a great deal of scholarly activity on both developing strategies and guidelines to identify and mitigate the risk of prescription opioid misuse, abuse and opioid-related fatalities but also a broader discussion on National pain policies and developing more effective pain care models. This multidisciplinary panel will discuss the current pain management policy activity and proposed National pain strategies; a review and critique of the recently published CDC guidelines of opioid prescribing in chronic pain and an integrated pain care model developed in the VHA.

Symposium 15A

CDC GUIDELINE FOR PRESCRIBING OPIOIDS FOR CHRONIC PAIN: TRANSLATING GUIDELINES INTO CLINICAL PRACTICE

Dr. Martin Cheatle, PhD

Over the past decade there has been a significant increase in the prescribing of opioids for chronic noncancer pain which has been paralleled by an increase in opioid related deaths and admissions to treatment facilities for opioid abuse. There has been considerable scholarly activity dedicated to developing risk assessment and mitigation strategies to curb the burgeoning opioid epidemic while preserving patients right to pain relief including the use of guidelines. This presentation will discuss the evolution of the opioid prescribing guidelines, review the latest CDC guideline and examine the challenges in translating the guideline into real-world clinical practice.

Symposium 15B

NATIONAL PAIN POLICY INITIATIVES

Dr. Robert Twillman, PhD, PhD

This presentation will present an overview of current policymaking activity related to pain management. While there has been a great deal of activity in this arena for several years, an increased focus on prescription drug abuse, addiction, and overdose on the part of the media and citizens in general, coupled with the issuance of the CDC's guideline for the use of opioids to treat chronic pain in primary care and the National Pain Strategy, has caused a new surge in policymaking. The challenges of crafting policies that permit the appropriate practice of pain management while simultaneously addressing problems related to prescription opioids will be highlighted, and solutions that could address both problems simultaneously and successfully will be proposed.

Symposium 15C

INTEGRATED STEPPED PAIN CARE: A POPULATION-BASED MODEL ADDRESSING THE PUBLIC HEALTH PROBLEMS OF CHRONIC PAIN & OPIOID OVER-USE

Dr. Rollin Mac. Gallagher, MD, MPH

Over 50 % of Veterans suffer chronic pain often complicated by PTSD and traumatic brain injury related to combat exposure and multiple deployments. As policy the VHA adopted a patient-centered, integrated, team-based, biopsychosocial Stepped Care Model based on the foundation of an informed Veteran learning self-management skills with integrated primary care teams supported by behavioral and integrative health and interdisciplinary pain specialty programs. This presentation describes implementation challenges, such as training deficits in pain management and safe opioid prescribing and the programs designed to address these deficits, such as behavioral and integrative health in primary care, the Pain Mini-Residency, and academic detailing in the Opioid Safety Initiative and SCAN-ECHO.

Symposium 16 8:00 AM-9:15 AM

THINK OF “ME”: SUBSTANCE USE IDENTITIES IN SUBSTANCE USE

Andrew Hertel, PhD[1], Kristen P. Lindgren, Ph.D., ABPP[2], Alexander W. Sokolovsky, MA[3], Andrew Hertel, PhD[1], Robin Mermelstein, PhD[4]

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Basic identity research demonstrates that our identities influence our behaviors and vice versa. Extensions of this research into the domain of substance use provide a more comprehensive view of substance use, as identity encompasses a set of correlates that are distinct from other known cognitive, affective, motivational, and neurobiological correlates. In particular, an emerging body of research demonstrates that substance use identities, which reflect that a behavior is no longer exclusively perceived as simply something one does but also as something that defines who one is (e.g., “I smoke” vs. “I am a smoker), can emerge from and contribute to substance use, from uptake through cessation. In this symposium, we present research on substance use identities, both explicit and implicit, from cross-sectional and longitudinal observational investigations in three different behavioral domains (alcohol consumption, electronic nicotine delivery system (ENDS) use, and cigarette smoking). The first presenter will show a within-subject reciprocal relationship between alcohol consumption and implicit drinking identity, using data from a longitudinal, repeated measures study among college students. Using data from studies aimed at development of an ENDS use continuation motives measure for young adult ENDS users, the second presenter will show a unique ENDS user identity factor and its relationships with ENDS continuation. The third presenter will show that implicit and explicit drinker and smoker identities are associated with craving for alcohol and cigarettes as well as attentional bias towards alcohol and cigarette cues, using data from observational studies among college student moderate drinkers and smokers as well as adult heavy smokers. Combined, the presentations inform understanding of the relationships between substance use identities and behaviors and indicate the value of including identity in explanations of substance use. The discussant will integrate the findings, discuss how they contribute to our understanding of substance use and inform intervention efforts, and suggest future avenues of inquiry.

Symposium 16A

WITHIN-PERSON CHANGE IN IMPLICIT DRINKING IDENTITY: CHANGES IN DRINKING IDENTITY PREDICT CHANGES IN DRINKING AND VICE-VERSA

Dr. Kristen P. Lindgren, Ph.D., ABPP

There has been a surge of interest in evaluating the role of implicit (fast/reflexive/impulsive) cognitions in substance use. In the domain of alcohol use, attention has been increasingly devoted to evaluating implicit cognitions about alcohol's association with the self (i.e., implicit drinking identity or associations with drinking and me vs. not me, Lindgren et al., 2013a). There is evidence that implicit drinking identity is a robust predictor of drinking cross-sectionally (Lindgren et al., 2013a, 2013b), across a wide age range (Lindgren et al., 2016a), and over time (Lindgren et al., 2016b). A critical next step toward establishing whether implicit drinking identity may represent a mechanism of behavior change and/or intervention target is to evaluate whether changes in implicit drinking identity are associated with changes in drinking behavior and vice-versa. Thus, the goal of the current study was to investigate whether changes in implicit drinking identity were associated with subsequent changes in drinking. Participants included 506 undergraduates (57% women), who completed assessments of their drinking behaviors and implicit drinking identity at 3-month intervals for a total of 8 assessments. Due to extreme non-normality in drinking behavior (50% of participants reported no drinking at Time 1), participants' drinking behaviors were converted to categories based on NIAAA's criteria: non-drinkers, low risk drinkers (men: no more than 14 drinks/week; women: no more than 7 drinks/week), and high risk (men: > 14 drinks/week; women: >7 drinks/week). Models, thus, evaluated whether within-person changes in implicit drinking identity were associated with changes in (i.e., increasingly risky) drinker categories and vice-versa. Cross lagged panel models indicated that changes in implicit drinking identity were positively associated with changes in drinker categories ($p < .001$). Further, changes in drinker category were also positively associated with changes in implicit drinking identity ($p < .001$). Results will be discussed in terms of implications for theory and intervention.

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Symposium 16B

MOTIVES FOR CONTINUATION AMONG YOUNG ADULT USERS OF ELECTRONIC NICOTINE DELIVERY SYSTEMS: THE ROLE OF IDENTITY

Mr. Alexander W. Sokolovsky, MA

Substance users, including users of electronic nicotine delivery systems (ENDS) can develop identities associated with their use behavior that then contribute to maintenance and escalation of use. Substance use identities thus represent one of many possible social, emotional, environmental, and behavioral motives that are associated with continued substance use. Multifactorial measures developed to index cigarette smoking continuation motives often query behaviors unique to cigarette smoking that may not represent experiences of ENDS users. We used a mixed-methods approach to develop a novel measure of motives for ENDS use continuation among young adults (18-24). In a **qualitative** study, young adults ($N = 15$; 8 male; 8 non-Hispanic white; 2 African American; 2 Hispanic; 3 Asian) who reported past-week ENDS use and self-identified as regular ENDS users were invited to complete intensive longitudinal interviews in a private clinical setting. Emergent themes related to motives for continuation included ENDS user identity, as well as snacking, sensory experience, affiliative attachment, tolerance, craving, positive reinforcement (mood and social), negative reinforcement (mood and withdrawal), cognitive enhancement, task/skill mastery (i.e. hobbyism, modding, or device construction), automaticity, and cue reactivity (social and environmental). These themes informed the development of an item pool that composes this study's focal measure. In a **psychometric** study, a separate sample of young adults ($N = 304$; 61.5% male; 62.7% white; 21.7% Asian; 5.9% black; 81.6% non-Hispanic or Latino) self-identifying as regular ENDS users completed a survey on the Amazon MTurk platform. We probed for distinct factors and investigated validity and reliability of these factors. A unique ENDS user identity factor emerged. When controlling for DSM tobacco use disorder symptoms, ENDS user identity was associated with past-month days used ($\beta = .71$, SE = .15, $p < .05$), lifetime-use (OR = 1.08, 95% CI = 1.02-1.14, $p < .05$), and escalation (i.e. controlling for prior-year report of outcome) in nicotine concentration ($\beta = .19$, SE = .08, $p < .05$). These results suggest that ENDS user identity is a salient and unique correlate of ENDS use, independent of past use and dependence.

Symposium 16C

SUBSTANCE USE IDENTITIES, CRAVINGS, AND ATTENTIONAL BIAS IN CIGARETTE SMOKING AND ALCOHOL CONSUMPTION

Dr. Andrew Hertel, PhD

Substance use identities (e.g., smoker identity) are associated with regular substance use, but the reasons why are not well known. Understanding the correlates of substance use identities could inform substance use intervention efforts. Substance use craving and attentional bias (AB) toward substance use cues are proximal motivational and cognitive antecedents of regular substance use. In two studies, we examined whether substance use identities were associated with substance use cravings and AB toward substance use cues. In **Study 1**, college students who consumed alcohol in the past 30 days, a subset of whom also smoked a cigarette in the past 30 days ($n = 65$, age $M = 20.1$, 60.0% female, 70.6% White; $n = 32$ smokers), completed measures of explicit and implicit drinking- and smoking-related identities, alcohol and cigarette craving, as well as alcohol cue and smoking cue AB (Stroop tests). Alcohol craving was correlated with implicit drinker identity [$r(63) = .29$, $p = .021$] and explicit future non-drinker identity [$r(63) = -.31$, $p = .012$], but not when controlling for drinking frequency. Both cigarette craving and smoking cue AB were correlated with explicit smoker identity [*r*(30) = .67, *p* < .0001; *r*(29) = .42, *p* = .022] and explicit current non-smoker identity [*r*(30) = -.40, *p* = .024 ; *r*(29) = -.42, *p* = .020]; when controlling for smoking frequency, only cigarette craving was correlated with only explicit smoker identity [*r*(30) = .45, *p* = .011]. In **Study 2**, adult regular smokers with no intention of quitting in the next 30 days (*n* = 46, age *M* = 39.2, 51.1% female, 80% White) completed measures of explicit and implicit smoking-related identities, cigarette craving, and smoking cue AB (Stroop and visual dot probe tests). Regardless of nicotine dependence level, cigarette craving was associated with explicit smoker identity [*r*(42) = .43, *p* = .005] and implicit smoker identity [*r*(43) = .32, *p* = .038]; AB – Stroop was associated with implicit smoker identity [*r*(43) = .31, *p* = .044]; and AB – visual dot probe was correlated with explicit smoker identity [*r*(41) = .43, *p* = .006]. The findings indicate a need for future investigations of the dynamic relationships between substance use identities, craving, and attentional bias with respect to substance use as well as consideration of substance use identities in substance use interventions.

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Symposium 17 8:00 AM-9:15 AM

CARING FOR TRAUMA SURVIVORS: CAREGIVER CHARACTERISTICS, COMPASSION FATIGUE, AND OUTCOMES OF A SPIRITUAL INTERVENTION

Andrea D. Clements, PhD[1], Jill E. Bormann, PhD, RN, FAAN[2], Rose Constantino, PhD, JD, RN, FAAN, FACFE, Fulbright Scholar[3]

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This symposium will present three papers addressing different aspects of religiousness/spirituality applied to the realm of caregiving for trauma survivors. Religiousness/spirituality will be explored as a characteristic of caregivers, as a buffer of compassion fatigue for caregivers, and as an intervention in trauma survivors. The first paper addresses characteristics of caregivers by occupation with particular emphasis placed on the caregiver's own traumatic history through self-reported Adverse Childhood Experiences (ACE) scores, self-reported level of compassion, and self-reported intrinsic religiosity. The second paper offers a discussion of compassion fatigue in caregivers, pointing out the importance of self-care and care for colleagues who experience compassion fatigue, endorsing the importance of spiritual care among caregivers. The final paper will present findings from a prospective randomized trial that tested the effects of a spiritual intervention with veterans diagnosed with post-traumatic stress disorder (PTSD). It is hoped that a more general discussion will follow regarding religious/spiritual contributions to the care of trauma survivors.

Symposium 17A

ACES, INTRINSIC RELIGIOSITY, AND COMPASSION IN “HELPING PROFESSIONALS” TARGETED FOR TRAUMA-INFORMED CARE TRAINING

Dr. Andrea D. Clements, PhD

Background: Trauma-Informed Care (TIC), an empathy-centered paradigm focused on ameliorating the impact of experienced trauma, is being disseminated to helping professionals, but some occupational fields have been more receptive than others, inspiring investigation of receptivity predictors. Total *Adverse Childhood Experiences* (*ACE*) score, i*ntrinsic religiosity* (IR), and *compassion* were compared across helping occupations, conjecturing that individuals in resistant occupations may differ.

Objective: To investigate differences in *ACE* score, *IR*, and *compassion* across "helping professionals" targeted to receive TIC training.

Methods: Surveys of TIC implementation and respondent characteristics were administered 6 months apart. Email invitations were sent to community crime reduction coalition members (judicial, corrections, police, mental health, faith-based, medical, and other social service organizations). Recipients were asked to complete the survey and forward the email to invite others in these categories to complete the survey. Self-report items included occupation, the ACE Test, *IR, compassion*, and demographics.

Results: At time 1, 30 surveys were completed and at time 2, 43 were completed by currently employed human service workers and volunteers. *ACE* scores differed significantly ($F(5,85) = 2.50$, $p = .036$). *Judicial/Corrections/Police* had the fewest *ACEs*, but only significantly differed from the *Other* group. *Compassion* differed across occupations with *Volunteers*, *Educators*, and *Counselors* reporting higher levels than *Judicial/Corrections/Police* ($X^2(10, n=73) = 18.88$, $p = .04$). *IR* differed by occupation, with *Judicial/Corrections/Police*, *Volunteers*, and *Clergy* reporting high levels of *IR* and *Counselors*, *Judicial/Corrections/Police*, and *University Faculty* reporting the lowest levels of *IR* ($X^2(20, n=72) = 45.82$, $p = .001$).

Discussion: *Judicial/Corrections/Police* and *Educators* have been more resistant to TIC training than other groups such as *Counselors* and *Social Workers*. *Judicial/Corrections/Police* employees tended to be lower in *ACEs*, *IR*,and *compassion* than those in other fields. This could begin to explain the lack of TIC receptivity in probation/parole employees. Teachers were high in *compassion*, so it seems that *compassion* alone may not predict receptivity to TIC.

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Symposium 17B

EFFECTS OF MANTRAM REPETITION ON SPIRITUAL WELLBEING AND MINDFULNESS IN VETERANS WITH PTSD: A RANDOMIZED TRIAL

Dr. Jill E. Bormann, PhD, RN, FAAN

Objective: Few spiritually-based interventions have been tested for effects on spiritual wellbeing and mindfulness in Veterans with posttraumatic stress disorder (PTSD). We compared 8-weekly, one-hour individually delivered sessions of the Mantram Repetition Program (MRP) with Present Centered Therapy (PCT) on subscales of spiritual wellbeing and mindfulness.

Method: A prospective, randomized trial was conducted in 169 veterans with PTSD randomly assigned to either MRP (*n*=87) or PCT (*n*=82). The Functional Assessment of Chronic Illness Therapy-Spiritual Wellbeing (FACIT-Sp-12) and Five Facet Mindfulness Questionnaire (FFMQ) subscales were assessed at baseline and post-treatment. Repeated measures analysis of variance (ANOVAs) were used for analysis.

Results: Participants were 85% male, 65% white, 34% married/partnered with average age of 49 years (*SD*=14.46). There were group by time interaction effects showing that MRP participants had significantly greater improvements in the subscales of FACIT-Peace, *F*(1,132)=4.24, *p*F(1,132)=3.96, *p*F(1,133)=11.15, *p*=.001.

Conclusion: The MRP significantly improved levels of spiritual peace and mindful non-reacting compared to PCT in Veterans with PTSD, suggesting possible for mechanisms of action. Both MRP and PCT resulted in improvements over time on spiritual meaning.

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Symposium 17C

TITLE: EXPLORING THE CONSEQUENCES OF COMPASSION FATIGUE IN HEALTHCARE PROVIDERS AND HEALING IN SPIRITUALITY

Dr. Rose Constantino, PhD, JD, RN, FAAN, FACFE, Fulbright Scholar

Purpose: The purpose of this presentation is to inform the attendees of the signs, symptoms, and consequences of Compassion Fatigue (CF), the various ways it is displayed and the healing effects of spirituality. The signs and symptoms of CF are not readily seen by the untrained eye especially by the sufferer; it is an insidious and gradual lessening of compassion over time to the observant, trauma-informed, and compassionate co-worker, supervisor or partner.

Literature Review: We present applicable evidence based literature, examine protective factors and spirituality in both the healthcare provider and the CF sufferer. For example, Berg and others (2016) studied CF in a trauma team and found that team members were not managing work stresses as well as they perceived themselves to be**.** Wong (2004) presented a vision of positive holistic care through compassionate and spiritual care.He urgedhealthcare providers to consider the benefits of a "bio-psychosocial-spiritual model" which is effective, accessible and efficient.

Case Study: An extreme case of tension and preoccupation with the suffering of those being helped to the degree that it traumatizes the helper describes CF. It has been suggested that we enter into the healthcare giving field already with CF. CF differs from burnout as burnout is exhaustion from the chronic tedium of the job (Tabor 2011). The clinician in the case study will perform her duties and provide compassionate care to the patient devoid of CF. We will leave it to the audience to imagine what if the healthcare provider in this case was suffering from CF.

Implications: Whether we like it or not, believe or not, realize it or not, healthcare providers are in the ministry of compassionate and spiritual care because we "help" and "care"; dedicated to serving the sick and relief of human suffering. Without compassionate and spiritual care we become heartless and soulless. Spiritual care prods us to suffer with the others, to enter the dark places where it hurts. To healthcare providers in CF, they are unable to extricate themselves from those places and people who hurt; they stay there. Let's help them through compassionate and spiritual care.

Conclusions: No one is immune to job-related trauma and stress. We need to care for each other. We are indeed our brothers'/sisters' keeper. Being a compassionate and spiritual healthcare professional is not expensive nor does it remove anything from us in fact it adds something to the vast knowledge, information and evidence-based practice we already possess. Watch out for CF in ourselves, in our family, co-workers and healthcare providers.

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Symposium 18 8:00 AM-9:15 AM

PROVIDING BRIEF EVIDENCE-BASED INTERVENTIONS IN HOSPITAL AND MEDICAL SETTINGS

Katherine Eisen, PhD[1], Neda Kharrazi, PsyD[1], Valerie Hoover, PhD[2]

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With a move towards biopsychosocial conceptualization and integrated health care, psychologists have taken on additional roles in medical settings. Psychologists across various medical settings are paving the way for new roles and treatments to best meet the needs of highly diverse individuals who seek and/or require psychological services. Brief psychological interventions have increased in hospital settings, yet the empirical evidence for Cognitive Behavioral Therapy interventions remains heavily dominated by studies with multiple sessions (e.g. 12) and are often outpatient samples. There is a demand for very brief psychological interventions to support patient care in medical settings, as well as some research to support that such interventions can improve patient outcomes and be cost effective for health care systems. This symposium will discuss some of the current literature, as well as highlight the needs for future research.

Two presenters will focus on acute inpatient interventions for psychiatric patients. One presenter will focus on psychosocial needs specific to cardiac patients, as well as a model for integrated health care in cardiac care. Together, these presenters will explore three main areas of discussion: (1) how to navigate best practices when psychological intervention time is quite limited in medical settings; (2) how to collaborate effectively as a psychologist in an interdisciplinary medical setting; and (3) areas for future research. A combination of empirical and anecdotal evidence will be shared.

Symposium 18A

BUILDING AN EFFECTIVE COGNITIVE BEHAVIORAL THERAPY GROUP IN AN ACUTE INPATIENT PSYCHIATRIC SETTING

Dr. Katherine Eisen, PhD

Implementing an effective CBT group program in an inpatient psychiatric hospital setting presents myriad challenges. Rapport must be established rapidly, groups have frequent patient turnover, and group members present with high levels of symptomology, variable presenting problems, and varying degrees of motivation. However, the inpatient setting presents some unique advantages as well. The entire therapeutic milieu can reinforce the work done in therapy groups, and because group members are inpatients, the frequency of sessions can be much more intensive. Research shows that adding CBT group programming to inpatient psychiatric units is correlated with improvements in patient satisfaction and patient outcomes, reduced length of stay, and lowered readmission rates in the 30 days following discharge. Because CBT is a collaborative, action-oriented, and goal directed form of psychotherapy, it lends itself especially well to brief interventions. Effective inpatient CBT groups maximize impact by targeting themes that will be relevant to individuals who are in crisis, regardless of specific diagnosis. In this presentation, the author will briefly review the literature and will draw from relevant clinical experiences to provide recommendations for adapting traditional CBT group formats to meet the unique needs of acute inpatient settings. Topics will include: 1) Identifying individuals most likely to benefit from CBT groups, 2) Maximizing the impact of brief interventions with selection of appropriate high-yield group topics, 3) Integration of DBT, ACT, and other mindfulness-based approaches into a more traditional CBT-based group curriculum, 4) Selection of appropriate homework topics that allow patients to continue their work outside of group hours, and 5) Strategies for communicating effectively with multidisciplinary staff about group content and homework assignments so that themes covered in group are reinforced throughout the milieu.

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Symposium 18B

PROVIDING MEANINGFUL & EFFECTIVE BRIEF INDIVIDUAL PSYCHOLOGICAL INTERVENTIONS IN AN ACUTE INPATIENT SETTING

Dr. Neda Kharrazi, PsyD

Despite the demand for very brief psychological interventions in acute inpatient hospital settings, much of the empirical evidence for Cognitive Behavioral Therapy (CBT) interventions is based on both (1) outpatient treatment and (2) a relatively set number of weekly sessions (e.g., 12 weeks). There is a growing evidence base to support brief CBT interventions in acute inpatient psychiatric settings, but given the highly variable presenting problems, lengths of stay, and multicultural factors, within the context of a multidisciplinary team approach, there is a need for continued research and discussion about what brief individual treatments are most effective for various individuals in acute inpatient settings.

CBT interventions lend themselves well to brief interventions, given the nature of the theory, which can be practiced flexibly to best meet the needs of the particular individual. During this presentation, current brief individual CBT approaches will be explored as they apply within an acute inpatient hospital setting. Given the importance of building rapport quickly under time constraints in such settings, foundational therapeutic factors will be discussed. Case examples will be used to illustrate both the utility of CBT in individual cases, as well as some of the challenges.

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Symposium 18C

INTEGRATED BEHAVIORAL HEALTH CARE IN AN OUTPATIENT CARDIOLOGY SETTING: OPPORTUNITIES, CHALLENGES AND CASE ILLUSTRATION

Dr. Valerie Hoover, PhD

Recent policy changes with the Affordable Care Act are increasingly moving the U.S. healthcare system towards integration of mental and physical health services. Broadly, research on integrated care has been shown to improve disease management and early identification of mental health needs, and decrease health care utilization and associated costs to individuals and systems.

Research shows that certain psychiatric disorders occur at higher rates among cardiac patients than in the general population. Furthermore, the presence of certain psychosocial factors and psychiatric disorders – most notably depression, anxiety, anger/hostility, low social support, and chronic stress (including work, marital and caregiving strain) – can place patients at increased risk for adverse cardiac outcomes. Mechanisms are multifactorial and may include chronic activation of the sympathetic nervous system and HPA axis, increased inflammation and endothelial dysfunction, as well as indirect causes such as poor adherence to medical regimens and heart-healthy lifestyle behaviors.

There is a relative paucity of data on integrated care models in the cardiology setting compared to primary care. This presentation will provide a brief overview of common psychosocial needs in cardiac patients, and describe one model of integrated behavioral health care delivery in an outpatient cardiology setting. The presentation will include discussion of clinic needs assessment data, development of a brief assessment and treatment model, psychosocial intervention targets and brief treatment modalities, reimbursement and funding considerations, and outcomes measurement.

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Paper Session 1: Is Daily Weighing Best: Research on Weight Tracking 10:45 AM-11:00 AM

THE TRACKING STUDY: LONG-TERM WEIGHT CHANGES BY WEIGHING FREQUENCY CONDITION IN A RANDOMIZED BEHAVIORAL WEIGHT LOSS TRIAL

Jennifer A. Linde, PhD

University of Minnesota, Minneapolis, MN

Background: Weight control trials, community studies, and systematic reviews suggest daily weight tracking promotes better weight loss outcomes than less frequent tracking. However, this has yet to be examined in the context of a larger long-term randomized trial with extended follow-up.

Purpose: The goal of the Tracking Study was to test the effects of study-assigned self-weighing frequency on weight loss outcomes during a 12-month weight loss program with a 12-month follow-up.

Methods: Three hundred thirty-nine adults were recruited and randomized to daily, weekly, or no weighing conditions. All were enrolled in a 12-month weight loss program designed to integrate each weight tracking instruction with standard behavioral weight loss techniques (goal setting, self-monitoring, stimulus control, dietary and physical activity enhancements, lifestyle modifications) and with wireless technology (scales and iPods) for the two tracking conditions. All groups were scheduled for 32 sessions over one year. Participants completed surveys and were weighed by trained study staff every six months from baseline to 24 months.

Results: Mean age of participants was 46.5 ± 10.2 years; 65% were women. Sixty-eight percent were married or partnered and 64% had a college degree. Mean baseline body mass index (BMI) was 33.0 ± 3.6 kg/m^2. Study retention at 24 months was 83.6% (n=280), with no differences between conditions. General linear models assessed 24-month weight change, adjusting for baseline weight. On average, participants regained 3.3 kg from 12 to 24 months. For women, a weak dose-response association for weight change by weighing frequency was observed, such that daily weighers had better weight outcomes on average than weekly weighers, followed by those who did not weigh (-3.87 kg vs. -3.63 kg vs. -2.76 kg, respectively); for men, weekly weighing forestalled weight regain better than daily or no weighing (-7.41 kg vs. -5.22 kg vs. -5.39 kg, respectively).

Conclusions: Results suggest that self-weighing promotes weight loss for adults seeking to lose weight. A potential gender difference in response to weighing remains to be explored.

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Paper Session 1: Is Daily Weighing Best: Research on Weight Tracking 11:00 AM-11:15 AM

CITATION AWARD WINNER

ASSOCIATIONS OF WEIGHT TRACKING FREQUENCY WITH PSYCHOSOCIAL OUTCOMES OVER 24 MONTHS IN A RANDOMIZED WEIGHT LOSS TRIAL

Jennifer A. Linde, PhD

University of Minnesota, Minneapolis, MN

Background: Some weight control experts argue that frequent body weight tracking may carry adverse psychological consequences, yet scant data have been reported on the effects of differential weight tracking frequencies on psychosocial outcomes over time.

Methods: 339 adults were randomly assigned to track weight daily, weekly, or never during a 12-month behavioral weight loss program with a 12-month follow-up. Participants completed surveys and height/weight measurements every six months from baseline to 24 months. Depression, anxiety, body image, binge eating, and barriers to weight tracking were assessed at the same time points; participants assigned to weighing conditions reported weight tracking perceptions at 6, 12, 18, and 24 months. Repeated measures models assessed changes over time and differences by weighing frequency condition.

Results: Mean age of participants was 46.5 years; the sample was 65% female. Mean baseline body mass index was 33.0 kg/m^2, and 4% of the sample reported binge eating symptoms at baseline. Study retention at 24 months was 83.6%; participants achieved mean weight losses of 8% at 12 months (post-intervention) and 4.4% at 24 months (final follow-up). There were no differences in changes in depression, anxiety, body image, or self-esteem by weighing frequency condition over time (*p*=.46-.87). On average, depression and anxiety remained in the low normal range over the intervention and through follow-up. Body image suggested a neutral to slightly unfavorable opinion of physical appearance at baseline but transitioned to a slightly favorable and stable opinion over time (*p*ppp=.77-.86).

Conclusion: The study was highly successful at assigning weight self-monitoring at varying frequencies without adverse psychological effects.

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Paper Session 1: Is Daily Weighing Best: Research on Weight Tracking 11:15 AM-11:30 AM

PREDICTORS AND OUTCOMES OF LAPSES IN DAILY WEIGHING AND PHYSICAL ACTIVITY TRACKING AMONG YOUNG ADULTS IN WEIGHT GAIN PREVENTION

Brooke T. Nezami, PhD, Carmina G. Valle, PhD, MPH, Deborah F. Tate, PhD

University of North Carolina at Chapel Hill, Chapel Hill, NC

Self-monitoring is a key strategy for weight loss and maintenance. However, adherence to self-monitoring in weight control interventions generally declines over time and little is known about predictors of lapses in adherence. The goal of this study was to examine predictors of lapses in daily weighing and wearing PA trackers, and the relationships between lapses in self-monitoring with weight and activity outcomes. Data were drawn from a sample of young adults enrolled in ongoing interventions within the SNAP weight gain prevention study. Participants included in this analysis (N = 161, BMI = 25.2 ± 3.1 kg/m^2, 32.5 ± 4.9 years) had at least five observations of self-monitoring data from a wireless scale and PA tracker within a 90-day interval. A weighing lapse was identified as one or more days without weighing and a PA tracker lapse was identified as one or more days without wearing the tracker. Lapse length in days was calculated for weighing and tracker use. Additional data included transmitted scale weights and steps/day. Generalized estimating equations accounting for repeated observations within individuals were used to evaluate associations between weighing and PA tracker lapses and changes in weight and steps/day. There were 1629 lapses in weighing and 514 lapses in tracker use, with mean lapse lengths of 3.2 (± 4.2) and 3.3 (± 6.1) days, respectively. For weight observations with no lapses (i.e. daily weighing), there was a mean weight change of -0.09 lbs. per day. Every 1-day increase in lapse length was associated with a 0.06-lb. increase in weight since the prior weight observation ($p < .0001$). Predictors of a weighing lapse included any weight gain (vs. loss) since the prior weight observation (OR = 1.20, 95% CI: 1.09, 1.32) and weight change over the prior 7 days, with an increase in odds of a weighing lapse of 1.07 for each 1-lb. increase in weight (95% CI: 1.04, 1.10). PA tracker lapse length was not associated with changes in steps/day or weight between wear days. The only predictor of a PA tracker lapse was weight change over the prior 7 days, with an increase in odds of a PA tracker lapse of 1.08 for each 1-lb. increase in weight (95% CI: 1.02, 1.14). These results suggest that there may be greater barriers to daily weighing as compared to wearing PA trackers, and that weight gain may discourage adherence to self-monitoring. Future research could examine the type and frequency of messaging required to reduce the frequency and length of lapses in self-monitoring.

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Paper Session 1: Is Daily Weighing Best: Research on Weight Tracking 11:30 AM-11:45 AM

CITATION AWARD WINNER

NONADHERENCE TO DAILY WEIGHING AND ACTIVITY TRACKING IS ASSOCIATED WITH WEIGHT FLUCTUATIONS AMONG BREAST CANCER SURVIVORS

Carmina G. Valle, PhD, MPH, Chantel L. Martin, PhD, MSPH, Deborah F. Tate, PhD

University of North Carolina at Chapel Hill, Chapel Hill, NC

Background: Daily self-weighing (DSW) and daily activity tracking (DAT) have recently been shown to be useful strategies for preventing weight gain among African American breast cancer survivors. However, self-monitoring behaviors vary over time, increasing an individual's risk of weight gain. This study examined the association of nonadherence to DSW and DAT with corresponding weight fluctuations among a sample of African American breast cancer survivors participating in a 6-month pilot intervention trial focused on DSW to promote weight gain prevention.

Methods: Women were randomized into one of three groups: 1) DSW (INT); 2) DSW + DAT (INT+); or 3) delayed intervention control. Intervention participants received a wireless scale and activity tracker (INT+ only) that transferred objective data to a mobile app and website, email lessons on weight control, and tailored feedback on objective weight (and activity data). The intervention encouraged use of DSW as the primary self-monitoring strategy to prevent weight gain. Participants in the INT+ group additionally were encouraged to track their physical activity daily. Nonadherence to DSW was defined as one or more days without a weight measurement, and nonadherence to DAT was defined as one or more days without a bout of physical activity. Generalized estimating equations (GEE) accounting for repeated measurements within individuals were used to examine the association between nonadherence to DSW and weight fluctuations (kg) among women included in both the INT and INT+ groups (n=24; n=2,438 weight measurements). We also used GEE to assess the association of nonadherence to DAT in relation to weight fluctuations among women in the INT+ only group (n=11; n=1,214 weight measurements).

Results: At baseline, women were 52.4 ± 8.2 years of age with BMI of 33.3 ± 5.7 kg/m^2. Over the 6-month study period, women provided on average 119.2 ± 46.0 weight measurements and 120.3 ± 53.5 days with bouts of physical activity. Interruptions in DSW and DAT were associated with weight fluctuations. For every 1-day increase in nonadherence to DSW, weight increased by 0.031 kg (95% CI: 0.012, 0.050; $p < 0.01$). Additionally, weight increased by 0.035 kg (95% CI: 0.019, 0.050; $p < 0.0001$) for every 1-day increase in nonadherence to DAT. During periods of DSW, weight change was, on average, -0.03 kg (-0.04, -0.01; *p* <

0.0001), while during periods of DAT, mean weight change was -0.05 kg (-0.08, -0.02; $p < 0.01$).

Conclusion: Our findings demonstrate, among a sample of African American breast cancer survivors, the significance of DSW and DAT for weight gain prevention. Further research is needed to better understand predictors of nonadherence to DSW and physical activity tracking in larger study populations.

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Paper Session 2: Work Site Wellness Programs to Promote Physical Activity and Prevent Obesity 10:45 AM-11:00 AM

CITATION AND MERITORIOUS AWARD WINNER

A COMPARISON OF REACH, RETENTION, UPTAKE AND SATISFACTION BETWEEN THREE DELIVERY MODES OF FUEL YOUR LIFE

Heather M. Padilla, MS, RDN, LD[1], Heather S. Zuercher, B.S., MPH[2], Melissa Mitchell, M.S.[3], David DeJoy, PhD[4], Mark G. Wilson, HSD[5]

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Background: A randomized control trial has shown that a worksite translation of the Diabetes Prevention Program, *FUEL Your Life*, can be effectively delivered using three different modes – phone coaching, small group coaching, and self-study. Participants in all conditions lost weight with the phone condition demonstrating significantly greater weight loss and higher costs than the other two conditions. The purpose of this presentation is to describe the feasibility of each delivery modality including strengths and weaknesses.

Methods: The process evaluation framework by Saunders, Evans, and Joshi (2005) was used to compare reach, retention, dose received (uptake), and satisfaction among the three delivery modes. Sources of data include participant surveys and health coach records. Differences between delivery modes were tested using Pearson Chi-Square test and one-way ANOVA.

Results: A total of 660 employees enrolled in the study at three worksites. Twenty-one percent of eligible employees enrolled at the worksite assigned to the phone condition compared to 15% for the small group condition and 9% for the self-study condition. Retention in the program at the end of the intervention was higher in the self-study condition than in the phone and small group conditions and the small group condition had higher retention than the phone condition ($p < 0.01$). The mean number of lessons read was higher for the phone (13.1) and small group (12.4) conditions compared to the self-study condition (9.2; $p < 0.01$). A higher percentage of participants in the group (48%) and phone (43%) conditions reported keeping track of their weight weekly compared to the self-study condition (36%), although these differences were not statistically different ($p=0.13$). More than 90% of participants in all conditions reported that the program provided the information that they

needed to lose or maintain weight and overall satisfaction.

Discussion: Reach in this worksite weight management study was higher for phone and small group coaching conditions compared to the self-study condition. Additionally, participants in the phone and group coaching conditions also reported higher intervention uptake likely attributable to the coaches holding participants accountable for adherence to these elements. Retention was higher for the self-study condition compared to the other two modes of delivery and may differ due to the level of effort needed to participate in the self-study compared to the other conditions and the lack of ongoing contact with a health coach. Despite differences in uptake and retention, satisfaction was similar among the groups. It is important to consider reach, retention, uptake and satisfaction when comparing intervention effectiveness and determining the best way to offer interventions in the future. Differences between the modalities and implications for future research will be discussed.

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Paper Session 2: Work Site Wellness Programs to Promote Physical Activity and Prevent Obesity 11:00 AM-11:15 AM

A HOLIDAY WEIGHT MANAGEMENT PROGRAM HELPS EMPLOYEES LOSE WEIGHT

Heather M. Padilla, MS, RDN, LD[1], Mark G. Wilson, HSD[2], Michael Bien, BS[1], Carmen Daniel, BS[3]

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Introduction: Adult weight gain during the holidays (Nov.-Jan.) averages 0.5 kg though it varies as much as -7 to 4.1 kg among individuals. Holiday weight gain appears to be due to both excess energy intake and decreased expenditure. Previous studies suggest that the weight gained is retained thus likely contributing to the obesity epidemic. This study examined the effects of a team-based weight management program offered in a worksite setting on prevention of holiday weight gain.

Methods: Holiday Survivor is a 10-week program offered to employees at the Georgia Department of Public Health in November – January. Participants form teams of four with coworkers to support one another with mindful eating and physical activity through the holiday season. Pre-test and post-test weight and waist circumference are measured by wellness staff. Additionally participants complete a pre- and post-test survey on physical activity, eating behaviors, social support, and program participation.

Results: In 2015, 102 employees enrolled in the program. Participants had a 2.45 kg reduction in mean body weight ($p < .0001$) and a 1.1 inch reduction in waist circumference ($p < .0001$). Overall, 82% of participants lost some weight and an additional 3% maintained their weight. Self-reported physical activity increased, fast food consumption decreased and fruit and vegetable intake increased. Participants reported that weigh-ins, fitness classes, cash prizes for winners, walk/runs with their team, giveaways, and logging meals were important to their success.

Discussion: A team-based behavioral weight management program was effective for weight loss during the holiday season. Increased physical activity and improved eating behaviors offset typical holiday weight gain. Holiday weight gain should not be considered inevitable. Future research will examine the effects of the program on maintenance of weight loss and positive eating and activity behaviors.

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Paper Session 2: Work Site Wellness Programs to Promote Physical Activity and Prevent Obesity 11:15 AM-11:30 AM

TAKING WELLNESS TO THE BANK: AN INTEGRATED SERVICES WORKSITE WELLNESS PROGRAM FOR BANK EMPLOYEES

Morgan S. Lee, PhD, MPH, CPH[1], Paige Whitney, Health Promotion, MSc[2], Mary Ann Kluge, BS, MS, PhD[3]

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American adults spend half their waking time at work, often in highly stressful and sedentary roles. Thus, the workplace is a critical environment for healthy lifestyle choices regarding stress management, physical activity, and diet. Increasingly, employers are adopting worksite wellness programs (WWPs) to promote healthy behaviors and disease management. Although experts have called for multidimensional and integrated approaches to WWPs, few of these programs meet such standards.

The Kirkpatrick Bank Workplace Wellness program (KBWWP) uses an integrated model to provide comprehensive assessment of several domains of health and wellbeing, personalized behavior change recommendations and coaching, and an array of related services. KBWWP aims to help participants become more educated, mindful, and proactive about healthy lifestyle choices and to make sustainable health behavior changes that produce long-term benefits including improved health and reduced healthcare utilization. Additionally, KBWWP will evaluate which program components have the greatest impact, what intervention dose is needed to produce significant improvements, and how behavior change influences work stress, work productivity, and healthcare utilization.

The KBWWP process begins with a health coach consultation as well as physical activity (PA) and nutritional assessments, after which the providers' recommendations are used to create an integrated wellness plan. Participants complete an 8-week engagement phase with opportunities including wellness services (e.g., personal training and nutrition education classes) and additional appointments with service providers. A mid-program evaluation is then conducted, and new recommendations are formulated for an 8-week maintenance phase, which is followed by a final assessment.

The KBWWP has reached the end of the 8-week engagement phase, and 16 of the 19 participants enrolled in the program have completed both baseline and mid-program assessments. Participants' weekly minutes of moderate and vigorous PA increased from baseline (*M* = 173.00, *SD* = 163.43) to mid-program (*M* = 217.97, *SD* = 132.07), and sugar-sweetened beverage intake decreased from baseline (*M* = 0.78, *SD* = 0.79) to mid-program (*M* = 0.50, *SD* = 0.63). Participants were confident they could maintain the behavior changes they made in the engagement phase (*M* = 8.15, *SD* = 1.68; 1-10 scale), and additional results are forthcoming at the end of the maintenance phase.

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Paper Session 2: Work Site Wellness Programs to Promote Physical Activity and Prevent Obesity 11:15 AM-11:30 AM

DOES A WORKPLACE PHYSICAL ACTIVITY PROGRAM WORK?

Rebecca Ellis, PhD, Duke Biber, MA

Georgia State University, Atlanta, GA

Objectives: Desire2Move (D2M) is an 8-week team-based program designed to encourage university employees to meet the physical activity (PA) guidelines through participation in moderate-to-vigorous physical activity (MVPA). The purpose of this study was to evaluate D2M using the RE-AIM framework. ***Methods:*** During D2M, departments competed as teams to accumulate the greatest average mins of MVPA. Each team selected a captain who sent weekly emails with reminders, motivational tips, and team standings. Each team member recorded minutes of MVPA using the *MapMyRun* mobile application or website. Graduate assistants were assigned to specific teams to collect minutes. One week after D2M, an electronic survey link was emailed to assess adverse events, program satisfaction and implementation (1 = strongly disagree, 5 = strongly agree), and individual maintenance of MVPA (Godin Leisure Time Exercise Questionnaire). ***Results:*** Twelve departments were invited to participate in D2M, but only nine agreed (75.0% adoption rate). From these departments, 157 employees volunteered for the 8-week program (26.7% participation rate), and 72 consented to complete the follow-up survey (45.9% response rate). During the program, participants recorded a weekly average of 233.50 mins of MVPA and only 1 participant reported an adverse event. Participants also reported the program encouraged them to be more active than usual (M = 3.74, SD = 1.27). Participants reported satisfaction with D2M by indicating they would participate in future programs (M = 4.35, SD = 1.05) and would recommend it to their co-workers (M = 4.40, SD = 1.08). Participants perceived the program was well implemented by captains emailing information about how to record PA (M = 4.51, SD = 0.94), weekly reminders (M = 4.54, SD = 0.95), and weekly team standings (M = 4.62, SD = 0.93). Finally, participants reported maintaining their PA since the end of the program (M = 3.06, SD = 0.67) and reported an average of 53.51 METS (SD = 39.37) of MVPA. ***Conclusions:*** The RE-AIM evaluation revealed the program effectively, safely, and satisfactorily encouraged university employees to meet the PA guidelines while demonstrating a very good adoption rate, but a low participation rate. The results provide support for the translation of D2M to other workplace settings, but strategies that improve reach must be identified.

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Paper Session 3: Sun Safety and Preventing Skin Cancer Among Youth 10:45 AM-11:00 AM

CITATION AWARD WINNER

UV PHOTOGRAPHY INCREASES SUN PROTECTION INTENTIONS IN YOUNG ADOLESCENTS

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Ultraviolet (UV) exposure from the sun or indoor tanning devices during adolescence increases skin cancer risk. A UV light photograph reveals skin damage caused by UV exposure. This skin damage is not visible in a standard (visible light) photograph. Immediately after viewing a UV photograph of the face, adults report increased sun protection intentions, stronger perceptions of photoaging susceptibility and more negative tanning attitudes. To our knowledge, our study is the first randomized controlled trial (RCT) to examine immediate effects of UV photography on socio-cognitive factors in young adolescents. We conducted a 2-arm cluster-RCT in 12 Houston-area middle schools. Schools were pair-matched and randomized to intervention (UV photography and brief education) or comparison (brief education only) before participants (N=290 7th and 8th graders) completed baseline. Intervention-school participants were shown their standard and UV photographs side-by-side for comparison. Study personnel reviewed with participants the photographs, including any skin damage visible in the UV photograph. Personnel then provided brief education by reviewing with participants a skin cancer prevention handout. Comparison-school participants received only brief education. Immediately after the intervention/comparison session, participants completed a post-intervention survey. The trial design was conducted in 2015 (4 schools, N=98) and 2016 (8 schools, N=192) and data were combined. Generalized linear mixed models were conducted, with treatment condition as a fixed effect and a school-specific random intercept to account for the nested design. Analyses were adjusted for age, race, ethnicity and study year. The majority of participants were female (71.7%), white (73.6%) and not Hispanic or Latino (73.7%). Mean age was 13.2y (SD=.75, range 12-15y). There was a significant, positive intervention effect on sun protection intentions (effect=.16, SE=.05,

P < .01): the intervention group showed a greater positive change from baseline to post-intervention in the sun protection intentions score, which was the average of four items that assessed intention to use sunscreen, wear a sleeved shirt, wear a hat and stay in the shade. There were no significant effects on intentions to sunbathe or indoor tan, tanning outcome expectations, sociocultural influences to tan, perceived severity of photoaging or perceived skin cancer risk. Results suggest UV photography may be a valuable intervention for increasing sun protection intentions in young adolescents. UV photography may be less effective in immediately affecting other socio-cognitive factors, such as those that may require more time to demonstrate change. A 3-month follow-up is underway to examine longer term effects of UV photography on socio-cognitive factors and UV exposure and protection behaviors in adolescents.

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Paper Session 3: Sun Safety and Preventing Skin Cancer among Youth 11:00 AM-11:15 AM

INDOOR TANNING AMONG DIVERSE U.S. YOUTH: RESULTS FROM A NATIONAL SAMPLE

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Sexual minority males have one of the highest known prevalence rates of skin cancer, at 4.3% to 6.6% (an increased odds of 1.5 to 2.0) compared to heterosexual males. One likely explanation for this health disparity is sexual minority males' use of indoor tanning, a Group 1 carcinogen. However, no known studies have examined indoor tanning by sex, sexual orientation, and race/ethnicity, casting uncertainty regarding which groups are most vulnerable for developing skin cancer.

Data were used from the 2015 Youth Risk Behavior Survey (YRBS), a nationally representative survey that examines the prevalence of health risk behaviors among 9-12 grade public and private school students. Sexual minority status was defined from responses to two items: sexual identity and sex of sexual partners, with sexual minorities denoted as participants who reported a non-heterosexual identity or reported sex with a member of their own sex (a common approach in the field). Past 12 month indoor tanning was dichotomized as one or more times vs. none. The total employed sample was N = 10,660, with 1,256 sexual minority participants (21.0% females; 5.6% males). Logistic regressions were used, with independent variables of sex, sexual orientation and race/ethnicity (i.e., dummy coded Black, Hispanic, with White as the referent). Complex Samples in SPSS 24 was used to account for weighting, cluster, and stratification.

Significant three-way interactions were revealed, thus, analyses were stratified by race/ethnicity. Among Black participants, there was a main effect of sexual orientation (OR = 6.5, 95% CI: 3.3, 12.9, $p < .01$) and sex (OR = 2.9, 95% CI: 1.2, 7.3, $p = .02$), with sexual minorities and males reporting elevated indoor tanning. Among Hispanic participants, there was a main effect of sexual orientation (OR = 5.7, 95% CI: 2.3, 14.2, $p < .01$), with sexual minorities reporting elevated indoor tanning. Among White participants, there was a sexual orientation by sex interaction ($F_{1,35} = 28.0$ $p < .01$). Follow-ups revealed that sexual minority status was a risk factor within males (OR = 3.1, 95% CI: 1.3, 7.7, $p = .01$), and a buffer variable within females (OR = .41, 95% CI: .24, .73, $p < .01$).

Results highlight the need to incorporate sex, sexual orientation, and race/ethnicity when developing skin cancer prevention programs for youth. For example, Black sexual minority males reported the highest prevalence of indoor tanning, a rate equivalent if not higher than White females. Clinicians working with sexual minority males, particularly males of color should consider assessing use of indoor tanning during routine evaluations. Future research would benefit from exploring motivations to tan among diverse groups of adolescents, as sexual minorities may use indoor tanning as strategy to regulate excess negative affect.

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Paper Session 3: Sun Safety and Preventing Skin Cancer among Youth 11:15 AM-11:30 AM

SUNBURN, SUN PROTECTION AND TANNING BEHAVIOR IN YOUNG ADOLESCENTS

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Overexposure to ultraviolet (UV) radiation from the sun and UV exposure from indoor tanning during adolescence increases skin cancer risk. Very little is known about UV exposure and sun protection behaviors in young adolescents in the US. We analyzed baseline data from participants (N=290) in 12 Houston-area middle schools enrolled in a group-randomized trial of a UV photography intervention. The trial design was conducted in 2015 (4 schools, N=98) and 2016 (8 schools, N=192) and data were combined. The majority of adolescents were female (71.7%), white (73.6%) and not Hispanic or Latino (73.7%). Mean age was 13.2y (SD=.75, range 12-15y). Sun protection practice “most of the time” or “always” varied by behavior: using sunscreen (31.4%), wearing a shirt with sleeves covering the shoulders (68.7%), wearing a hat (5.9%) and staying in the shade (13.1%). Averaging behavior scores (1-5 “never” to “always” scale) showed adolescents “sometimes” practiced sun protection (M=2.88, SD=.52). More adolescents reported intentions to use sun protection in the next 3 months: sunscreen (87.6%), sleeved shirt (84.5%), hat (49%) and shade (64.3%). A 4-point scale showed moderate intentions overall (M=2.87, SD=.45). Sunburn in the past year was reported by 81.1%. One adolescent (.3%) reported using an indoor tanning device in the past year. Five adolescents (1.7%) intended to indoor tan in the next 3 months. Sunbathing “often” or “always” was reported by 10.4%. Intention to sunbathe in the next 3 months was reported by 33.5%. Some wished they had a tan like people on TV (14.1%) or responded that friends said they looked good when tan (35.0%). On 4-point scales, adolescents perceived negative tanning outcome expectations (mean=2.10, SD=.45) and moderate perceptions about the severity of photoaging (mean=2.75, SD=.68). Most (75%) perceived themselves unlikely to develop skin cancer. In multivariable analyses, sun protection behavior correlates that remained significant were stronger sun protection intentions, lighter skin color and male sex. Significant sunbathing correlates were stronger sunbathing intentions, weaker sun protection intentions, more positive tanning outcome expectations and female sex. Results show that early adolescence is a critical time for intervention to reduce UV exposure. Adolescents reported sunbathing, significant sunburn history and inadequate sun protection. Reported

intentions to sunbathe and indoor tan suggest that more adolescents planned to practice these risky behaviors over the next few months. Intentions to sunbathe and use sun protection and tanning outcome expectations are important factors to influence with interventions designed to reduce UV exposure in adolescents.

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Paper Session 3: Sun Safety and Preventing Skin Cancer among Youth 11:30 AM-11:45 AM

PHYSICAL ACTIVITY MOTIVES AND SUN SAFETY AMONG TEENS

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Recent evidence suggests that physically active adults have higher melanoma rates, ostensibly via relatively greater incidence of sun exposure and sunburn. Adolescents, especially active teens, may also experience greater sun exposure than adults, and sunburn during youth is especially predictive of melanoma later in life. Using data on adolescents (N = 1661) from the National Cancer Institute's Family Life, Activity, Sun, Health, and Eating (FLASHE) national survey, our purpose was to determine if physical activity level and motivational differences for physical activity are associated with sun exposure and sun safety. After controlling for demographic factors, results demonstrated a 3-way interaction between physical activity, sports performance motivation, and history of sunburn on sunscreen use, b = .001, p = .029. Among highly active teens with a history of sunburn (at least one in the past 12 months), sunscreen use was reportedly greater among those high on sports performance motivation. However, sports performance motivation for physical activity was also associated with increased likelihood of sunburn (OR = 1.23, p = .008), regardless of physical activity level. There was also an interaction between appearance motivation and sunbathing on sunscreen use, b = .120, p = .023. Appearance motivation for physical activity was positively associated with sunscreen use, but only among adolescents who engage in sunbathing (b = .078, p = .029). Motivation for physical activity may play an important role in understanding why adolescents engage in sun protection strategies. For at risk teens (i.e., those with a history of sunburn), physical activity and high sports motivation was associated with greater reported sunscreen use, but this relationship was not found among those without a history of sunburn. This may reflect an inattentiveness to sun exposure when involved in sports and outdoor physical activity, suggesting the need for greater vigilance and infrastructure to support sun safety in physical activity contexts (e.g., sunscreen availability). In contrast, adolescents with high appearance motivation for physical activity and a sunbathing history reported greater sunscreen use, suggesting a possible strategic form of sun protection (i.e., to tan, but not burn). These results highlight the importance of considering multiple motives for physical activity and possible behavioral phenotypes for effective policy change and health behavior promotion related to sun safety.

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Paper Session 4: What Drives Activity? Motivation Science 10:45 AM-11:00 AM

USING SELF-DETERMINATION THEORY TO EXAMINE PROSPECTIVELY THE RELATION OF BODY SATISFACTION WITH FITBIT-ASSESSED EXERCISE

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Regular physical activity (PA) is critical for promoting health and preventing disease but it declines in young adulthood. Body dissatisfaction, which increases in young adulthood, could exacerbate this decline in PA. Research is needed to test this association and examine the mechanisms through which this occurs. Previous research shows that components of Self-Determination Theory (SDT), mainly autonomous motivation and psychological needs satisfaction, mediate this association cross-sectionally using self-reported PA. However, intrinsic goals (e.g., exercising to improve health versus appearance) may mediate this association as well, which would indicate an additional point for intervention. Further, objective PA measurement and longitudinal data are needed to assess these associations more precisely. The current study examined the extent to which intrinsic goals, psychological needs satisfaction, and autonomous motivation mediated the association of body satisfaction with PA measured objectively.

Participants (n=121, 73% White, mage=25y, BMI =24kg/m2, 75% female) reported their body satisfaction and motivation, goals, and psychological needs satisfaction for PA. Fitbits recorded their PA over the following two weeks; PA was operationalized as the proportion of days with an exercise session/days wearing the Fitbit. Bootstrapping process macro 6 was used to test whether the proposed SDT framework that included intrinsic goals mediated the association of body satisfaction with PA adjusting for gender and BMI.

Body satisfaction was significantly associated with PA ($\beta = 0.23$, p=0.03). Bootstrapping revealed support for the hypothesized model where intrinsic goals, psychological needs satisfaction, and autonomous motivation all mediated the association of body satisfaction with PA (Standardized Indirect Effect =0.0003, 95%CI: 0.0000, 0.0013).

Findings support and extend previous literature by using objective and prospective data to identify intrinsic goals as an additional point for intervention. Based on these findings, researchers and health professionals could improve PA in this age group by promoting body satisfaction or targeting goals, needs satisfaction, or autonomous motivation directly. For example, researchers could promote health-focused (intrinsic) versus appearance focused (extrinsic) PA goals. The strengths and limitations to using Fitbits for data collection will also be discussed.

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Paper Session 4: What Drives Activity? Motivation Science 11:00 AM-11:15 AM

MOTIVATIONAL PREDICTORS OF PHYSICAL ACTIVITY AND SEDENTARY BEHAVIORS AFTER REHABILITATION: A 6-MONTH PROSPECTIVE STUDY

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Two-third of the patients who followed a Pulmonary Rehabilitation (PR) program is insufficiently active 6 months after. Previous studies have consistently highlighted that exercise tolerance was a significant predictor of active behaviors after PR. Beyond this physiological variable, motivation may also influence patient's behaviors. Grounded in contemporary dual models, this study sought to examine the contribution of controlled (intentions) and automatic (implicit attitudes) motivational processes in the physical activity (PA) and sedentary behaviors (SB) adopted after PR.

Patients with chronic diseases (N=62, Mage=61 years, MBMI=29kg/m²) were recruited at the end of a 5-week PR. Patients were evaluated on their exercise tolerance with walking tests. Intentions to practice regular PA and to limit SB were measured by questionnaires. Implicit attitudes (PA versus SB) were measured with an Implicit Association Test. PA and SB were evaluated by questionnaires 6 months after PR. Regression were conducted for PA and SB, respectively, with exercise tolerance, intentions and implicit attitudes as independent variables, and behaviors as dependent variables.

Regarding PA, exercise tolerance ($\beta=.43$; $P < .001$) and implicit attitudes ($\beta=.29$; $P=.020$) were significant predictors. Intentions were not associated to PA ($\beta=.10$; $P=.416$). The equation was statistically significant: $F(3,53)=7.13$; R^2adjusted=.30; $P < .001$. Regarding SB, exercise tolerance ($\beta=-.45$; $P < .001$) was a significant predictor. A statistical tendency was observed for implicit attitudes ($\beta=-.21$; $P=.097$), but intentions were not associated to SB ($\beta=.15$; $P=.247$). The equation was statistically significant: $F(3,51)=5.98$; R^2adjusted=.27; $P=.002$.

Implicit attitudes are significantly associated with PA 6 months after PR, independently from patients' exercise tolerance. Hence, this variable may represent a relevant target for future behavioral interventions. Studying independently implicit attitudes for PA and SB is now needed to understand the patterns of relationships between those

motivational processes and behaviors. A replication study with an objective measure of behaviors is also required.

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Paper Session 4: What Drives Activity? Motivation Science 11:15 AM-11:30 AM

SELF-REGULATION AND MOTIVATIONAL RESULTS OF A WEARABLE ACTIVITY MONITOR INTERVENTION

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Background: As adults age, their physical activity decreases, leading to increased risk of numerous negative health outcomes. Increasing intrinsic motivation (i.e., motivation related to intrinsic enjoyment) and self-regulation can increase physical activity. It has been hypothesized that mobile applications (apps) combined with wearable activity monitors may be an effective method of increasing both motivation and self-regulation. However, to our knowledge, this hypothesis has not been tested. Thus, the purpose of this study was to investigate the effect of an intervention that used an app and wearable monitor on intrinsic motivation and self-regulation (self-efficacy, goal setting, and planning).

Methods: Adults (N = 40) aged 55 – 79 who self-reported as sedentary (< 60 minutes physical activity/week) were randomized to a 12-week intervention or to a wait-list control. A Jawbone Up24 wearable monitor, a tablet with the Up app installed, and weekly brief telephone counseling were provided for the intervention group. Intrinsic motivation was tested using the Behavioral Regulations in Exercise-2 questionnaire. Barrier and task self-efficacy were assessed using the Barriers Self-Efficacy Scale and Rogers and colleagues' Task Self-Efficacy Scale. Goal setting and planning was assessed using Rovniak and colleagues' measure.

Results: Participants were 61.5 ± 5.6 years old, with a BMI of 30.3 ± 3.5 kg/m^2, 85% female and 65% White. Analyses of covariance comparing the intervention to the wait-list group, controlling for baseline values, found significant and large effects for intrinsic motivation ($p = .007$, partial $\eta^2 = .18$), task self-efficacy ($p = .009$, partial $\eta^2 = .17$), barrier self-efficacy ($p = .003$, partial $\eta^2 = .22$), goal setting ($p < .001$, partial $\eta^2 = .41$), and planning ($p = .012$, partial $\eta^2 = .16$). The intervention group at 12 weeks reported 65% confidence to overcome barriers, 79% confidence to complete activity tasks, and intrinsic motivation of 3.0 on a 1 to 5 scale.

Discussion: As hypothesized, an intervention using an app and wearable monitor increased intrinsic motivation, self-efficacy, goal setting, and planning. The large effect sizes found in this pilot study suggest that these systems hold promise for targeting specific theoretical constructs associated with behavior change.

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Paper Session 4: What Drives Activity? Motivation Science 11:30 AM-11:45 AM

THE RELATIONSHIP BETWEEN SELF-EFFICACY, MOTIVATION, SOCIAL-SUPPORT AND EXERCISE IDENTITY

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Introduction: Physical inactivity is a prominent health concern. Physical activity interventions that integrate social support or studies that are grounded in behavioral theory (e.g. Social Cognitive Theory, Self-Determination Theory) have been implemented to change behavior. One concept that is not often evaluated in these studies is exercise identity. Identity may work with other behavioral techniques to add meaning and value to exercise which can elicit behavior change. The purpose of this investigation was to investigate the relationship between self-efficacy, social support, motivation and exercise identity.

Methods: Baseline data from a physical activity intervention were used. Participants (n=40) enrolled in the intervention were 18-69 years of age, inactive, and overweight or obese (body mass index 25-35 kg/m^2). Self-reported measures were used to assess self-efficacy, motivation, social support, and exercise identity. Self-efficacy was divided into task and barrier self-efficacy using the scale developed by Rogers et. al. The Behavioral Regulation in Exercise Questionnaire-2 was used for motivation and included subscales for amotivation, external, introjected, identified, and intrinsic regulation. Perceived family and friend social support was estimated from the Social Support and Exercise Survey. Exercise identity was based off the Anderson measure. Bivarate Pearson correlations were used to identify significant relationships between questionnaire subscales and exercise identity.

Results: On average, participants were 46.7 years old with a body mass index of 29.9 kg/m^2. Most participants were female (55%) and non-Hispanic White (65%). Barrier self-efficacy (r=0.53; p

Conclusion: Exercise identity is strongly correlated to particular subsets of commonly used behavioral constructs and strategies. Future research should evaluate the causal pathway between these variables and investigate the influential differences between barrier and task self-efficacy in addition to family and friend support. Furthermore, researchers should identify

methods to incorporate barrier self-efficacy and family support within the context of Self-Determination Theory to enhance motivation.

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Paper Session 5: Depression in Diverse Populations 10:45 AM-11:00 AM

RELAPSE PREVENTION IN MAJOR DEPRESSIVE DISORDER: 24-MONTH FOLLOW UP OF MINDFULNESS-BASED COGNITIVE THERAPY VS. ACTIVE CONTROL

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Background: Studies demonstrating the efficacy of mindfulness-based cognitive therapy (MBCT) for depression relapse prevention and symptom reduction have primarily compared it to treatment as usual and have scarcely examined outcomes beyond 12 months.

Objective: We evaluated the comparative effectiveness of MBCT versus an active control condition (ACC) for depression relapse prevention and depressive symptom reduction over a 2-year follow up.

Method: Participants (*n*=92) in remission from major depressive disorder with residual depressive symptoms were randomized to an 8-week MBCT or a validated ACC intervention that is structurally equivalent to MBCT and controls for non-specific effects (e.g., interaction with a facilitator, perceived social support, outcome expectations). MBCT is a standardized intervention that combines training in mindfulness and cognitive therapy. The ACC was based on the 'Health Enhancement Program' developed as a control condition for mindfulness interventions by researchers at the U. of Wisconsin and NIH. It combines training in physical activity, nutrition, and music therapy. Both interventions were delivered according to their published manuals.

Results: Intention-to-treat analyses indicated no differences between MBCT and ACC in incidence or time to relapse over a 2-year follow up (Fisher's *p*=.65; Hazard ratio=.77, CI [.35-1.68], *p*=.52). Piecewise analyses using mixed effects regression indicated significant reductions in depressive symptoms for both groups over year 1, after which both groups

experienced a marginal rebound of depressive symptoms. Group x Time interactions indicated differential symptom trajectories up to year 1. During the treatment period, the ACC group experienced steeper declines in symptoms. From post-treatment to year 1, the MBCT, but not the ACC group continued to experience symptom declines.

Conclusions: Over a 2-year follow up, MBCT did not differ from an ACC on depression relapse rates or symptom reduction, suggesting that the ACC is as effective as MBCT for improving depression outcomes. The trajectory of symptomatic improvement that favored MBCT after the treatment period was not maintained after year 1. These findings underscore the importance of comparing psychotherapeutic treatments to ACCs to isolate specific versus nonspecific therapeutic components and to test the comparative effectiveness of approaches that may have differential cost and dissemination advantages.

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Paper Session 5: Depression in Diverse Populations 11:00 AM-11:15 AM

THE IMPORTANCE OF BASELINE PAIN, FATIGUE, SLEEP & PHYSICAL ACTIVITY: PREDICTING CHANGE IN DEPRESSION IN ADULTS WITH MS

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Individuals with Multiple Sclerosis (MS) often suffer from a myriad of symptoms that place them at higher risk for developing depression. These symptoms include pain, fatigue, and poor sleep quality, and limited engagement in physical activity. However, little is known about the impact of these symptoms on the course of depression over time. The current study examined baseline levels of pain, fatigue, sleep quality, and physical activity level to determine if they predicted either clinical improvement or development of depression 3.5 years later. The study involved 489 adults with a diagnosis of MS, who received two mail in surveys that were 3.5 years apart. A PHQ-9 cut off score of ^{3} 10 was used to indicate probable major depression and scores < 10 indicating a sub-clinical level of depression. For the analysis, two binary linear regressions were conducted. The first regression examined the role of baseline pain, fatigue, sleep quality, and physical activity in predicting the likelihood that non-depressed individuals at baseline later became depressed at follow up. The second binary linear regression examined the role of baseline pain, fatigue, sleep quality, and physical activity in predicting the likelihood that depressed individuals at baseline clinically improved at follow up. Both regressions also controlled for age, sex, and diagnosis severity. The sample was primarily female (82%), White/Caucasian (94%), highly educated (with 83% receiving at least some college), and diagnosed with relapsing-remitting MS (53%). Our findings indicated that poorer sleep quality and increased fatigue at baseline predicted the development of depression (PHQ-9 ^{3} 10) 3.5 years later among those not depressed baseline. None of the study factors predicted the improvement of depression among those classified as depressed at baseline. These findings indicate that clinical interventions should emphasize treatment of fatigue levels and sleep quality among those with MS to help prevent the future development of depression, and that pain and physical activity level may not be as important. Concurrently, the findings indicate that these factors may also not be important when examining the long term improvement of depression among those with MS.

Learning Objective 1: Describe the impact of pain, fatigue, sleep quality, and physical activity on depression among those with MS.

Learning Objective 2: Discuss the implications of sleep quality and fatigue contributing to the future development of depression over and above pain and physical activity.

Learning Objective 3: Discuss other possible factors (besides pain, fatigue, sleep quality, and physical activity) that may contribute to the improvement of depression.

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Paper Session 5: Depression in Diverse Populations 11:15 AM-11:30 AM

MATERNAL DEPRESSIVE SYMPTOMS AND LENGTH OF RESIDENCE IN THE US ARE POSITIVELY RELATED TO OBESITY AMONG LOW-INCOME LATINA MOTHERS

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Background: Latinos are the largest and fastest growing minority population group in the United States (US). Low-income Latina women are at elevated risk of being obese, making obesity prevention a pressing public health concern in this population. Both depressive symptoms and obesity are modifiable factors that can improve the health of women of childbearing-age and their children. The purpose of this study was to examine the association between maternal depressive symptoms and obesity among low-income, Latina women of childbearing age.

Methods: Participants (n=147) were low-income mothers enrolled in the "*Latina Mothers' Child Feeding Practices and Styles (LMCFPS) Study",* a cross-sectional study examining psychosocial and cultural influences on child feeding practices and styles of low-income Latina mothers of preschool-aged children. Women were eligible to participate if they were Latina, mothers, eligible for or enrolled in the Special Supplemental Nutrition Program for Women, Infants and Children and living in Rhode Island. Enrolled participants completed an interviewer-administered survey in Spanish administered by bilingual interviewers in the state of Rhode Island.

Results: Obesity (34%; ≥ 30kg/m(2)) and elevated depressive symptoms (28.3%; CES-D ≥ 16) were prevalent in this low-income, majority immigrant (69.4%) female Latina sample. Mothers with elevated depressive symptoms (Center for Epidemiologic Studies Depression Scale score ≥ 16) had increased odds of being obese [odds ratio (OR) = 2.80, 95% CI: 1.24–6.33]. Additionally, length of residence in the US was associated with increased odds of obesity (OR = 1.05, 95% CI: 1.02–1.09).

Conclusions: The present study adds to the understanding of the importance of maternal depression as a modifiable risk factor for obesity in Latina women of childbearing-age. Findings underscore the need for screening and interventions for maternal depressive symptoms for Latina women of childbearing-age.

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Paper Session 5: Depression in Diverse Populations 11:30 AM-11:45 AM

COMPLEX PATIENTS' DESCRIPTIONS OF DEPRESSION SYMPTOMS, CAUSES, AND ILLNESS INTERACTIONS: A QUALITATIVE PRIMARY CARE STUDY

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The recognition and treatment of depression among complex patients (patients with concomitant illnesses) remains a significant challenge for primary care providers. Understanding of the complex patient's experience with depression is often missing during the clinical encounter, improve patient-provider dialogue, and inform treatment options and clinical interventions. The aim of this qualitative study was to elucidate how complex patients describe causes and symptoms of depression and how it impacts their health. A purposive sample of 19 complex patients receiving their primary care from Denver Health and Hospitals were interviewed. Questions focused on how patients understand, experience, and negotiate depression, along with their perceptions of the relationship between their mental and physical health. Each participant had at least one chronic illness and were screened for depression using the PHQ-9. All handling of the data was done using ATLAS.ti. The semi structured interviews were analyzed thematically using the Iterative Process Model and organized using constructs discussed in Kleinman's Illness Narratives. Three primary themes emerged about the connection between physical illness and depression: 1) the burden of physical illness is a contributing source of depression, 2) simply being a complex patient causes depressive symptoms, and 3) the increasing severity of physical illnesses causes feelings of distress and hopelessness. Specific examples of how patients described the relationship included feelings of sadness because of a loss of social and daily functioning (e.g., loneliness) normalcy (e.g., unemployment), and hopelessness (e.g., feeling defeated because of having illnesses with no hope for remission). Patients identified other causes including financial troubles (e.g., health care costs associated with multiple illnesses), family stressors (e.g., divorce, family estrangement), and bereavement/personal loss (e.g., death of a loved one). The results indicate that patients perceive the causes and symptoms of their depression as connected to contextual factors often not mutable in primary care treatment. Traditional approaches for depression may not be impactful for complex patients if they perceive their depression as a result of their health status and not as a separate coexisting illness. Given this, providers should ask patients to describe their experience with depression to effectively target the patient's perceived sources of depression.

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Paper Session 6: Advancing Understanding of PREP Use and ART Adherence in the Context of HIV 10:45 AM-11:00 AM

CITATION AWARD WINNER

DAILY RELATIONSHIPS BETWEEN RESPONSES TO PROBES OF METHAMPHETAMINE USE AND ANTIRETROVIRAL MEDICATION ADHERENCE

Elizabeth Pasipanodya, Ph.D.[1], Jessica L. Montoya, M.S.[2], Anya Umlauf, MS[3], Alexandra Rooney, B.A.[4], Ben Gouaux, BA[1], David J. Moore, Ph.D.[5]

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Background: Adherence to antiretroviral therapy (ART) is key to improving the health outcomes of those living with HIV, as good ART adherence aids HIV suppression and prevents adverse events like ART resistance. Methamphetamine (meth) use, however, poses a significant barrier to ART adherence. **Method:** In an intervention study that aimed to promote ART adherence, a text message assessing meth use was sent to 71 (22 control and 49 intervention) HIV+ meth users for 42 days. We examined the daily associations between self-report of meth use via text message (“no”, “yes”, or non-response) and ART adherence measured by the Medication Event Monitoring System (MEMS) by conducting concurrent and lagged analyses. Overall, participants reported meth use on 19.2% of days and abstinence on 55.8% of days. On the remaining (25.1%) days, participants did not provide a response to the meth use text (non-response). Daily adherence was modeled using logistic regression and average daily adherence across the study period was modeled continuously; these within-person and between-person effects were simultaneously estimated in the same multilevel model. **Results:** When examined concurrently, no association was seen between daily ART adherence and self-reports of meth use. Across individuals, having a higher proportion of non-responses, relative to “no” responses, to the meth use texts was associated with decreases in average daily adherence (B= -3.997, p= 0.002). Furthermore, those that responded with a greater proportion of “no” responses to the meth texts had marginally greater average daily adherence as compared to those that responded “yes” (B= 3.062, p= 0.050). When the daily link between categories of meth use responses and adherence was examined using a lagged model, the contrast between “no” responses to the meth use texts and a non-response showed that a “no” response on one day was associated with increased odds of adherence the next day (B= 0.303, OR= 1.354, p= 0.032), controlling for the previous day’s adherence. No

differences were found in this lagged daily relationship when meth use was endorsed “yes” as compared to a non-response. **Conclusion:** In the context of a text messaging intervention among HIV+ meth users, non-responsiveness to daily text messages about substance use may be prognostic of next-day ART adherence. These results may have implications for interventions targeting those at risk for ART non-adherence due to substance abuse, as a lack of engagement may be more predictive of adherence difficulties than endorsement of substance use.

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Paper Session 6: Advancing Understanding of PREP Use and ART Adherence in the Context of HIV 11:00 AM-11:15 AM

FAMILY COMMUNICATION AND HIV DISCLOSURE PREDICTING ART ADHERENCE AMONG A VULNERABLE POPULATION LIVING WITH HIV/AIDS

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Background: Adherence to antiretrovial therapy (ART) is vital for reducing morbidity and mortality among people living with HIV/AIDS (PLHIV). Maintaining adequate ART adherence is especially important among disadvantaged, current or former drug using PLHIV. While individual characteristics have been studied in relationship to ART adherence, few studies have examined social network factors that influence adherence. We hypothesized that negative family communication and drug use at baseline would predict poorer adherence at 12-month follow-up, while family problem solving and HIV disclosure to network members would predict better adherence at follow-up.

Methods: We used data (n=313) from the BEACON study, which sampled primarily disadvantaged, inner city African Americans.

Results: Using factor analysis and structural equation modeling, we found support for our hypotheses such that negative family communication and current substance use predicted a lower likelihood of adherence at 12-month follow-up, while controlling for baseline adherence; and family problem solving and PLHIVs' greater disclosure of their HIV serostatus to their network members predicted an increased likelihood of adherence at follow-up.

Discussion: These results indicate the importance of family and social network factors in targeting and developing interventions to increase ART adherence among this disadvantaged population of PLHIV. ART adherence interventions that target social network members, especially family members, and promote family/network communication and problem solving may help to improve ART outcomes in this population.

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Paper Session 6: Advancing Understanding of PREP Use and ART Adherence in the Context of HIV 11:15 AM-11:30 AM

BEYOND TEXT MESSAGE REMINDERS: TRANSLATING BASIC NEUROSCIENCE INTO A NEW ADHERENCE INTERVENTION FOR YOUTH LIVING WITH HIV

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Despite inadequate medication adherence among youth living with HIV (YLH), and the importance of adherence for virologic suppression and reductions in morbidity and mortality, few interventions have been tested with youth. The purpose of this study was to test the proof-of-concept of a text-delivered prospective memory (PM) intervention for taking ART among YLH with suboptimal adherence. PM, the neurocognitive capacity to successfully form, maintain, and execute an intention at a particular point in the future, can be used to target basic neurocognitive processes involved in remembering to take medications.

Twenty-four, primarily male (87.5%), youth participated and were a mean age of 21.38 years (SD = 2.32). Participants were prescribed a median of 3 ART medications. Baseline mean CD4-1 was 552.83 cells/mm^3 (SD = 286.06) and log10 transformed viral load was 2.49 (SD = .81). Baseline measurements included a brief neuropsychological assessment, weekly phone-based pill counts, and the Visual Analogue Scale (VAS). The intervention included a one-time in-home session utilizing motivational interviewing and visualization to form implementation intentions that paired taking medication with a salient cue in participants' daily routines. The intervention session was followed by a 12-week tapering text-based reminder of the cue-intention pairing. Bi-weekly pill-counts and the VAS continued through the intervention and follow-up periods. Viral load and hair sample assays were obtained at baseline, 18 and 24 weeks.

From baseline to 18-weeks, 46.7% of youth evidenced a log drop ≥1 in viral load (0.5 drop considered clinically significant). By 24-weeks, 73.3% of youth evidenced a log drop ≥1. Data from the hair assays, pill counts and VAS were inconclusive. Rates of metabolizing medications and ceiling effects in reports of adherence may account for these findings, respectively. Qualitative analysis of exit-interviews supported the feasibility and acceptability of the

intervention via self-reports of acceptance of frequency of text messaging, feeling supported through their involvement, and enhancement of their ability to develop a medication routine and utilize visual cues to remember to take medications.

Targeting PM via brief interventions holds promise to improve health outcomes among YLH and reduce transmission via viral load suppression. Findings suggest the intervention is worthy of a controlled pilot trial as the next step while finding alternative adherence measures.

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Paper Session 6: Advancing Understanding of PREP Use and ART Adherence in the Context of HIV 11:30 AM-11:45 AM

CORRELATES OF WILLINGNESS TO USE PRE-EXPOSURE PROPHYLAXIS (PREP) AMONG HIGH-RISK DRUG USERS IN TREATMENT

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Introduction: Although people who use drugs (PWUDs) are one of the key risk populations who could benefit from the use of pre-exposure prophylaxis (PrEP), to date, very little if any attention has been given to incorporating PrEP into HIV prevention approaches targeting this underserved group. This study aimed to fill a conspicuous gap in literature surrounding the knowledge base and acceptability of PrEP use among high-risk PWUDs in a common treatment setting.

Methods: A cross-sectional study was conducted among 400 HIV-negative individuals who reported drug- and/or sex-related risk behaviors and were enrolled in methadone maintenance program in New Haven, CT. Univariate and multivariate logistic regression analyses were used to assess self-reported demographic and behavioral correlates of willingness to use PrEP and the likelihood of drug- and sex-related risk reduction while on PrEP among high-risk PWUDs in treatment.

Results: Of the total participants, only 18% reported to have heard of PrEP and 62.7% reported that they would be willing to use PrEP. Willingness to use PrEP was independently associated with neurocognitive impairment status (aOR = 2.143, $p = .013$), and higher perceived risk for HIV infection (aOR = 3.811, $p < .0001$). Among participants who were willing to use PrEP, only 12.5% and 28.2% indicated they would always use condom and not share needles or works while on PrEP, respectively. The likelihood of consistent condom use was associated with higher income (aOR = 5.743, $p = .041$) and always using condoms with casual partners (aOR = 6.597, $p = .001$) and not sharing or needles or works was associated with age (aOR = .952, $p = .043$) and high perceived risk for HIV infection (aOR = .191, $p = .019$).

Conclusions: The results show that the majority of participants were unware of PrEP; however, after being informed about the basics of the medication, the majority indicated that they would be willing to take PrEP as part of HIV prevention. Our findings suggest that, because the use of PrEP has the potential to lead to risk compensation, the next generation of interventionists must carefully incorporate intervention content that simultaneously focuses on both HIV risk reduction and PrEP adherence over time.

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Paper Session 7: Health Behaviors and Psychological States in Cardiac Rehabilitation 10:45 AM-11:00 AM

INTERGENERATIONAL EFFECTS IN CARDIAC REHABILITATION PATIENTS

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Intergenerational transmission of illness behaviors from parents to children and health outcomes have been explored in individuals with chronic medical conditions such as cardiovascular disease. Research has demonstrated a relationship between maladaptive illness behaviors—i.e., preoccupation with illness or denial of disease—and poor cardiovascular outcomes, such as increased severity ofcardiac disease. Illness behaviors may be transmitted from parents to offspring via behavior modeling. Parental modeling of illness behavior has also been found to impact healthcare utilization (e.g., frequency of outpatient physician visits). In this study, intergenerational transmission of illness behavior was evaluated in a sample of outpatient cardiac rehabilitation patients. Adult participants' illness behavior was hypothesized to mediate the relationship between perceived parental illness behavior and participants' cardiac disease severity. Additionally, participants' illness behavior was hypothesized to mediate the relationship between perceived parental illness behavior and participants' healthcare utilization. The primary outcome variables were cardiac disease severity, measured by left ventricular ejection fraction, and healthcare utilization, which was assessed by number of outpatient physician visits and number of emergency room visits. Cardiac rehabilitation patients (n=111; 81 males, 30 females) completed measures regarding their illness behaviors and recollection of their parents' illness behaviors. Mediation analyses yielded significant relationships between perceived parental illness behavior and participants' illness behavior: recollection of perceived maternal illness behavior was significantly associated with participants' illness behavior (coefficient=.33, SE=.07, $p < .001$), and recollection of perceived paternal illness behavior significantly predicted participants' illness behavior (coefficient=.40, SE=.08, $p < .001$). No evidence was found for indirect effects or direct effects on outcome variables. When maternal illness behavior served as the predictor, participant illness behavior was significantly associated with higher frequency of ER visits (coefficient=.18, SE=.09, p=.05), suggesting that mothers' behavior may play a role in predicting ER presentations. These results implicate the role of parental modeling in illness behavior and warrant further research on intergenerational relationships in cardiac-related outcomes and healthcare utilization.

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Paper Session 7: Health Behaviors and Psychological States in Cardiac Rehabilitation 11:00 AM-11:15 AM

A QUALITATIVE STUDY OF VALUES AND MOTIVATIONAL FACTORS IN CARDIAC AND PULMONARY REHABILITATION PATIENTS

Jordan Ellis, MA, Matthew C. Whited, PhD, Licensed Psychologist, John T. Freeman, B.A., Ansley Taylor Corson, M.A.

East Carolina University, Greenville, NC

Participation in cardiovascular and pulmonary rehabilitation programs (CVPR) can lead to improved functional abilities, improved quality of life, and reduction of lifestyle related risks for those who have chronic cardiac or pulmonary conditions. Unfortunately, attendance and adherence to these programs remain suboptimal. Third wave behavioral therapies, including Behavioral Activation Treatment for Depression and Acceptance and Commitment Therapy, have emphasized the importance of life value identification as a guide for goal setting and behavior change for both psychological and physical health conditions. Individuals who choose to engage in behaviors that align with their life values are thought to be intrinsically reinforced. Thus, value identification and clarification could serve as a simple and individualized intervention strategy for CVPR patients to establish reason and meaning for engaging in lifestyle behavior change, which could improve attendance and adherence outcomes. The purpose of the following qualitative study was to interview CVPR patients about their own life values and motivating factors related to healthy behavior changes.

Thirty cardiac or pulmonary patients were recruited from a CVPR program in the Southeastern US, participated in a 20 to 30-minute interview, and completed a 10-item values engagement measure. Qualitative interview questions elicited conversation about values and motivating factors that guide the patient's engagement in the lifestyle change behaviors (e.g., exercise and dietary change) monitored by the CVPR program. The interviews were audio recorded and transcribed, and then coded thematically by the research team in NVivo.

Results showed that participants identified a wide range of values (17 in total) related to program engagement. It was predicted that most participants would directly identify their health improvement/maintenance as a value, given that this is the focus of goal setting at CVPR; however, only half of the patients did so. The most frequently endorsed life values (N= 17 total values) included, being active (70.0%), family (63.3%), and independence (56.7%). The interviews indicated that while patients make lifestyle changes in the program to improve their physical functioning, there are often other values that primarily guide their choice to engage in, and maintain, lifestyle behaviors. Results also indicated that approximately half of the patients had experienced a value shift, such that the most prominent values driving lifestyle behavior change shifted to values more directly associated with the things they enjoy in life (e.g. being active with family members).

Life values can serve as a powerful guide for individual behavior change, and the present study suggests that the piloting of brief values interventions early in CVPR treatment is warranted, and have the potential to improve patient outcomes.

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Paper Session 7: Health Behaviors and Psychological States in Cardiac Rehabilitation 11:15 AM-11:30 AM

COPING, OPTIMISM, AND PHYSIOLOGICAL OUTCOMES IN CARDIAC REHABILITATION

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Coping, Optimism, and Health-Related Outcomes in Cardiac Rehabilitation

Among Cardiac Rehabilitation (Rehab) patients the relationships between psychosocial factors and disease onset and progression are varied and complex. Coping strategies and optimism are among the psychosocial variables of interest in this population. The present study sought to assess relationships among four coping strategies (Distraction, Instrumental, Palliative, and Emotion-focused) in relation to physiological outcomes (metabolic equivalent task (MET), blood pressure, and BMI) in Cardiac Rehab patients. Additionally, the impact of optimism in these relationships was explored through moderation analyses. Physiological outcome data from 120 Cardiac Rehab patients was gathered at the start and completion of the 90-day program. Participants also completed psychosocial questionnaires on coping strategies, optimism, and depression at the start of the program. Results showed that Palliative coping has a deleterious effect on METs in Cardiac Rehab patients ($\beta = -.21$, $t(117) = -2.07$, $p = .04$), while Instrumental coping is associated with improvements in METs ($\beta = .21$, $t(117) = 2.35$, $p = .02$). Thus, Palliative and Instrumental coping have a distinctly different impact on health-related outcomes in Cardiac Rehab patients; passive behaviors are damaging to Cardiac Rehab patients while problem-focused behaviors are associated with better outcomes. Also, Emotional Preoccupation coping was predictive of the change in BMI ($\beta = .27$, $t(117) = 2.63$, $p = .01$), which suggests that participants who reported more emotion-focused coping behaviors gained weight during enrollment in Cardiac Rehab. Further, optimism was especially important in the relationship between Palliative coping and weight-related outcomes, where as optimism increased the relationship between Palliative coping and weight gain was weakened ($b = -.00$, $t = -2.14$, $p < .05$). Therefore, low optimism appears to be a risk factor for individuals engaging in passive coping behaviors. Consequently, this study has implications for cardiac patient care in the assessment and treatment of cardiovascular disease patients.

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Paper Session 7: Health Behaviors and Psychological States in Cardiac Rehabilitation 11:30 AM-11:45 AM

THE EFFECTS OF VARYING LEVELS OF OPTIMISM ON PHYSICAL ACTIVITY AMONG CARDIAC PATIENTS

Rachel A. Millstein, PhD, MHS, Christopher Celano, MD, Eleanor Beale, BA, Jeff Huffman, MD

Massachusetts General Hospital, Boston, MA

Background: Over 1 million Americans suffer an acute coronary syndrome (ACS: myocardial infarction or unstable angina) each year. Positive psychological constructs may improve cardiac-related outcomes. Optimism has been associated with adherence to health behaviors, like physical activity, that can lead to improved functioning and cardiac health. We sought to examine the role of different levels of optimism on physical activity. Methods: Data from 156 patients was collected at 2 weeks and 6 months following hospitalization for an ACS as part of an observational study. We measured optimism using the 6-item Life Orientation Test-Revised (LOT-R) and divided the scores into quartiles. Objectively measured physical activity (average steps per day) was collected using the Fitlinxx Pebble uniaxial accelerometer. ANOVA with post-hoc tests and t-tests were used to explore univariate associations between levels of baseline optimism and physical activity 6 months post-ACS. A preliminary Latent Profile Analysis (LPA) was run to determine unique groups of patients with respect to their optimism scores. Results: LOT-R scores were not normally distributed and ranged from 7-30 (mean=23.72, SD=5.61). Quartiles were created: Q1 (scores 7-19), Q2 (scores 20-24), Q3 (scores 25-27), Q4 (scores 28-30). Participants in the highest quartile of optimism scores had the highest mean steps per day, and those in the second quartile had the lowest mean steps per day (Q1: 5190.56 steps/day, Q2: 4240.79, Q3: 4806.27, Q4: 5987.13). Omnibus ANOVA showed that LOT-R quartiles were significantly associated with steps (F (148)=2.78, *p*=.043). Post-hoc tests showed that Q4 mean steps were significantly higher than Q2 (Bonferroni comparison *p*=.039). Q4 mean steps were also significantly higher than Qs1-3 combined (t (150)=-2.51, *p*=.013). Initial LPA results suggest that there are three distinct latent classes of optimism scores. Conclusions: Cardiac patients with the highest optimism scores at 2-weeks post-ACS were most physically active 6 months later, compared to all other quartiles. These findings support prior literature indicating the importance of optimism for cardiac health and preventive behaviors. These findings suggest that interventions to promote optimism may have promise for helping cardiac patients improve physical activity after hospitalization. Next steps will include using LPA results to further define optimism profiles and understand their relationships with physical activity.

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Thursday

March 30, 2017

11:45 AM-12:45 PM

F001 11:45 AM-12:45 PM

HEALS: A FAITH-BASED HYPERTENSION CONTROL PROGRAM FOR AFRICAN AMERICAN COMMUNITIES: RESULTS, CHALLENGES AND LESSONS LEARNED

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Background. Health disparities related to cardiovascular diseases have remained higher in African Americans (AAs) than many other populations. In this study,we examined the feasibility and efficacy of a multi-level, faith-based hypertension control and prevention program, Healthy Eating And Living Spiritually (HEALS).

Design. In a pre-post single arm study design with a community based participatory research (CBPR) approach, we developed and implemented HEALS in a low-income urban AA church. Study participants were high-risk adult AA church members with known or newly diagnosed hypertension or pre-hypertension. The HEALS intervention included 3 months of weekly sessions (1 session per week for 12 weeks) followed by a 6 month maintenance period that included monthly booster sessions. The program was delivered by trained lay church members and had group, individual, and church level components. Fruits & Vegetables were also provided for the first 5 months of the program. Data were analyzed using repeated measures ANOVA at baseline, 3 months, 9 months, and monthly follow up blood pressure readings were also recorded. The primary outcome of interest was change in systolic blood pressure (SBP).

Results. Of the 52 church participants screened, 51 met the eligibility criteria and 37 provided written informed consent (n=37). A retention rate of 92% (34/37) and 73% (28/37) was observed at 3 and 9 months post-baseline, respectively. A SBP reduction of 12.6 mm Hg (p=0.0194) was observed at 3 months and 1.7 mm Hg (p=0.9998) at 9 months. The SBP reduction was greatest at 5 months (13.2 mm Hg from baseline; p=0.04)

Conclusion and Implications. Our study presents a feasible and efficacious model of a PREMIER /DASH modified CBPR program for hypertension control and prevention in AA communities, a group disproportionally affected by health disparities. More research is needed to test this intervention experimentally and to barriers to sustaining the lowered SBP.

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F002 11:45 AM-12:45 PM

UNITED MOTHERS: DEVELOPING AN EFFECTIVE PRENATAL INTERVENTION

Paola Ilescas, Student[1], Raquel C. Good, MA (in progress)[2], Kimberly D'Anna-Hernandez, PhD[1]

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Gestational diabetes mellitus (GDM) is a growing public health concern that has detrimental effects. Affected women have a higher risk of developing type 2 diabetes. Maternal obesity and a diet of high fat, correlated with GDM, increases the susceptibility of the offspring developing health complications, including diabetes and obesity, and mental health and behavioral disorders. There is a health disparity found among pregnant minority women of which Mexican-American seem to be most affected. Between 1990 to 2001, a 96% increase of GDM cases was observed among Mexican mothers, the most rapid growth of GDM in any ethnic group. It is imperative to serve this population with a culturally sensitive prenatal program that aims to reduce these health disparities in GDM.

We are engaging in community-engaged research with a local community clinic for a pilot prenatal program tailored to the needs of the community with the goal of reducing gestational weight gain. First, six qualitative was gathered with clinic providers and patients data to understand those needs. The three clinic staff focus groups included 3 health educators, 3 medical assistants and two providers. The patient focused groups included pregnant women who were at risk for obesity-related complications during birth. One woman had previously participated in a prenatal program, 3 women were English-speaking and 5 women were Spanish speakers. The average age was 30 years and average BMI was 34.4, obese by NIH standards. Focus groups were led by research assistants with questions related to experiences in the clinic and feedback for future prenatal programs. After analyzing the discussions, the themes were patient-provider interactions, negotiating cultural barriers and patient empowerment. For pregnant women, we discovered waiting times and continuity of care were the main barriers to receive adequate prenatal care. Others were lack of emotional support when diagnosed with GDM and lack of access to more information, control over own medical care and cultural competence. Clinic providers expressed concerns over the lack of motivation, participation, empowerment and networking among pregnant women. After discussion with clinic leadership, we are proposing a culturally-competent group medical visit prenatal program. This program will be adapted for GDM and focus on continuity of care, patient empowerment amongst providers and patients, and increasing perinatal knowledge related to GDM. It will also provide psychoeducation related to fetal brain development and the maternal-fetal programming hypothesis as it relates to GDM - a need discovered by the focus groups. This will be one of the first prenatal group visit models to incorporate GDM,

culture and psychoeducation of neuroscience early in life to decrease gestational weight gain and promote healthy perinatal outcomes in Mexican-American pregnant women to reduce health disparities.

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F003 11:45 AM-12:45 PM

ACCESS TO PSYCHOSOCIAL SERVICES AMONG LATINO CANCER PATIENTS: MENTAL HEALTH PROVIDERS' PERSPECTIVES

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Title: Access to psychosocial services among Latino cancer patients: A Mental Health Provider's perspective

Background/Purpose:
Research suggests that multiple structural, organizational, and psychological factors negatively impact Latinos' access to psychosocial services utilization **(PSU)** (1-4). This study aimed to determine the most common barriers identified by Mental Health Providers **(MHP)** from the United States **(US),** Latin America **(LA)** and Puerto Rico **(PR)** for PSU among Latino cancer patients **(LCP)** and to provide recommendations to improve psychosocial services **(PS)** access for Latinos in the US, LA, and PR.

Methods:
MHPs were invited to complete an online survey about barriers to PSU among LCP. Descriptive and chi-squares were used to identify common barriers and compare barriers by location of practice.

Results:
A total of 64 MHP participated. The most common barriers reported, included lack of: availability of MHP who speak Spanish, knowledge about how PS can help them, knowledge about where to receive PS, availability of MHP who understand patient's culture and health insurance, and also the belief that PS are too expensive. In analysis by location of practice (US vs. LA) the lack of availability of MHP who speak Spanish and the inconvenience of counseling centers' location for cancer patients were significantly greater barriers in the US.

Conclusions:

In sum, the most common barriers are access to (e.g. lack of availability of providers with cultural sensitiveness and language skills) and education about PS (e.g. lack of knowledge about where to receive PS or how PS can help). Only linguistic and location barriers were more common in US than LA. The majority of the barriers were encountered across locations with similar proportions.

Implications:

These results support the need for more culturally and linguistically competent MHP to treat LCP in the US. Our findings demonstrate the importance of developing culturally and linguistically adapted PS for LCP. To promote the utilization and access to PS in Latinos patient activation and the integrated Behavioral Health Care model can be employed by MHP.

Psychosocial Services Utilization **(PSU)**
Mental Health Providers **(MHP)**
United States **(US)**
Latin America **(LA)**
Puerto Rico **(PR)**
Psychosocial Services **(PS)**
Latino Cancer Patients **(LCP)**

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F004 11:45 AM-12:45 PM

ASSOCIATION BETWEEN SEVERITY OF PRETREATMENT SYMPTOMS AND COMPLIANCE WITH RADIATION THERAPY IN HEAD AND NECK CANCER PATIENTS

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Introduction: Radiation therapy (RT) is one of the primary modes of treatment for head and neck cancer (HNC). Nonadherence to RT treatment (received dose < total planned dose or > 1 week break in treatment) has been shown to be associated with inferior locoregional control and survival. Although previous studies have reported that higher pretreatment levels of several emotional and physical symptoms, and poorer quality of life, predict inferior survival in this patient population, little attention has been paid to possible effects on treatment adherence. The goal of this prospective pilot study was to explore differences in pretreatment symptoms between patients who were subsequently adherent or not adherent to RT, as a first critical test of our overarching hypothesis that such associations may mediate relationships between pretreatment patient-centered variables and survival rates.

Methods: HNC patients scheduled for RT were recruited, signed informed consent, and completed self-report measures prior to RT. Validated questionnaires assessed pre-RT variables previously reported to be related to inferior clinical outcomes including levels of pain, fatigue, sleep, anxiety, and depression, as well as demographic data and quality of life. Clinical data were collected via chart review, and RT adherence defined as above. Relationships between pre-RT variables and RT adherence were explored with Mann-Whitney U tests in a sample of 15 patients (3 women, mean age 57 yr).

Results: Four of the 15 participants (27%) were nonadherent to RT. There were no significant differences in demographic or tumor characteristics between the two groups. Significant differences ($p < 0.05$) were found in baseline levels of: fatigue, pain, appetite loss, insomnia, sensory problems, physical function, role function, cognitive function, and pain self-efficacy.

Discussion: Prior literature has shown associations between patients' pretreatment symptom levels and HNC outcomes including survival, but few studies have included RT adherence in their analyses. Of the 11 pre-RT variables previously reported to be associated with poor clinical outcomes, 9 were found in this study to be significantly associated with nonadherence to RT. Although our results are correlative in a small sample, they suggest the importance of future research to evaluate RT compliance as a mediating factor in studies of the relationships between pre-RT patient experience and clinical outcomes including regional control of HNC and survival.

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F005 11:45 AM-12:45 PM

FACTORS THAT INFLUENCE PROSTATE CANCER SCREENING IN HISPANIC MEN: A SYSTEMATIC REVIEW

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In a time when the Hispanic population continues to grow and prostate cancer screening recommendations have changed, it becomes important to systematically review the available literature for factors that influence men to screen. This article employed the socioecological model (SEM) to identify factors that influence prostate screening in Hispanic men at the intrapersonal, interpersonal, and community/societal levels. Academic Search Premier, CINAHL Plus, PsycINFO, PubMed, MEDLINE, and Google Scholar were queried without a timeframe; 21 articles met inclusion criteria and were selected. At the intrapersonal-level low health literacy, machismo, and other past cancer screening experiences were identified to influence prostate cancer screening in Hispanic men. At the interpersonal level, both the patient-physician relationship and the involvement of immediate family influenced screening. Lastly, at the community/societal level the following were identified as factors that influence prostate cancer screening: (a) access to care, (b) lack of cultural competence & tailoring, and (c) providers not engaging clients in prostate cancer screening discussions. Cultural norms, such as machismo, and socio-economic depravation were factors that manifested through all levels of the SEM. The results from this review will help healthcare professionals tailor their message when advocating and communicating the importance of screening in this underserved population.

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F006 11:45 AM-12:45 PM

NURSES' READINESS TO ADVISE BREAST CANCER SURVIVORS WITH COGNITIVE PROBLEMS: A META-SYNTHESIS STUDY

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Purpose: After the completion of chemotherapy, 16 to 50% of breast cancer survivors experience cognitive problems. Since this health problems hampers survivors' back-to-normal life, it needs to be intervened based on their needs. The purpose of this study was to synthesize the result of qualitative studies related to cognitive problems of breast cancer survivors by conducting meta-synthesis review.

Methods: Literature search was conducted from 2007 to 2016 published in nursing, education, preventive medicine, and psychology journals using MEDLINE, CINAHL, EMBASE, PsycINFO, and Pubmed databases. Inclusion criteria were: 1) research focusing on the aspects of cognitive dysfunction in breast cancer survivors among chemotherapy; 2) papers published by peer reviewed journals; 3) research involving qualitative or mixed-method methodologies. Meta-synthesis was guided by Sandelowski & Barroso (2007), which is comprised of meta-summary and meta-synthesis.

Result: From past 10 years of search, 125 publications were reviewed and 9 articles were finally selected. After the quality assessment using Critical Appraisal Skills Program (CASP), articles were reviewed and analyzed by two separate investigators. For the meta-summary, four themes were revealed: 1) experience of cognitive decline; 2) impact on life after finishing the treatments; 3) coping strategies used to overcome the difficulties; and 4) lack of care and education from health care providers. One additional theme was found by meta-synthesis, which is 'emotional struggle through cognitive decline'.

Conclusion: According to the review, breast cancer survivors with cognitive impairments are struggling with their daily life and they feel they need more care and education from nurses regarding this issue. Although there are some guidelines to be utilized when counseling survivors with cognitive decline, more detailed and patient-tailored educational resources need to be organized and disseminated so that health care providers including nurses can advise breast cancer survivors with cognitive problems.

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F007 11:45 AM-12:45 PM

PROFESSIONAL IDENTITY AND TRAINING NEEDS OF LAY PATIENT NAVIGATORS

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PROFESSIONAL IDENTITY AND TRAINING NEEDS OF LAY PATIENT NAVIGATORS

Purpose: Lay patient navigators work with people to “navigate” the health care system and access appropriate social and financial services. The objective of this qualitative study was to describe lay health workers’ perceptions of their professional identity and suggestions for patient navigator training.

Methods: Using a standardized focus group guide, 8 focus groups were conducted with lay health workers in four U.S. states (n=51; 90% female; 75% 40 years or older). Participants were recruited through email and word of mouth. All focus groups were audio recorded, transcribed verbatim, and analyzed using content analysis.

Results: Two specific themes emerged from the focus groups related to lay health workers’, the perceptions of their professional identity and needs for training. Focus group participants expressed confusion regarding the qualifications one must possess to be a lay patient navigator. Most participants identified as being a health promoter rather than being a patient navigator. Lay health workers provided many suggestions regarding topics of training that should be included in a lay patient navigation curricula, including: 1) physical and mental health ; 2) community and organizational resources that can facilitate access to care; and 3) communication and people skills, especially in assessment and intervention.

Conclusions: Data from focus groups indicated that lay health workers may not identify as being a patient navigator, despite having qualification of a lay patient navigator. Focus groups also indicated that there is substantial need for training of lay patient navigators and that training is needed across a wide range of topics.

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F008 11:45 AM-12:45 PM

STRENGTH OF CLINICIAN RECOMMENDATION OF HPV VACCINATION AND VACCINE DELIVERY RATES

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PURPOSE: We tested the hypothesis that strength of clinician recommendation of the human papillomavirus (HPV) vaccination would be associated with rates of vaccine delivery at the practice-site level.

METHODS: We conducted a survey of primary care clinicians (n=280) in a 27-county geographic region from October 2015 through January 2016 to assess clinician behaviors regarding HPV vaccination. The overall response rate for the survey was 41.0%, with 52 clinical sites represented. Additionally, we used the clinical data linkage infrastructure of the Rochester Epidemiology Project to ascertain actual HPV vaccination rates among patients residing in the same 27-county geographic region at the site level. We examined associations of clinician survey data on strength of recommendation for HPV vaccination for male and female patients aged 9 to 18 years with rates of initiation (1 dose) and completion (3 doses – the recommendation during our study period) among patients age 9 to 18 years (n=68,272) at the clinical site level.

RESULTS: Among clinicians who completed the survey, 71.1% indicated that they strongly recommend the HPV vaccine to their female patients while 58.2% strongly recommend to their male patients. The percentage of clinicians who strongly recommend the HPV vaccine was significantly higher among those practicing in pediatrics and board certified in pediatrics compared to those practicing in and certified in other primary care settings. Results of Poisson regression models were consistent with our hypothesis. Strength of recommendation of the HPV vaccination was associated with higher rates of HPV vaccination initiation and completion. Higher rates of initiation [Incident Rate Ratio (IRR)=1.15; 95% CI (1.08-1.23)] and completion [IRR=1.12; CI (1.02, 1.23)] were associated with stronger recommendations for vaccination among females; similar associations were observed for initiation [IRR=1.29; CI (1.21,1.38)] and completion [IRR=1.19; 95% CI (1.09, 1.31)] among males. All models were

adjusted for the following site-level characteristics: percent white, percent female, percent ages 9-13, and percent with government insurance or self-pay.

CONCLUSIONS: Clinicians more frequently strongly recommended the HPV vaccine to their female patients than to their male patients. Strength of clinician recommendation of the HPV vaccine is associated with HPV vaccine delivery rates-initiation and completion. These data can guide efforts to improve HPV vaccine delivery in clinical settings.

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F009 11:45 AM-12:45 PM

ANTIDEPRESSANT USAGE AT TIME OF STROKE IS RELATED TO BETTER MENTAL FUNCTIONING

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Objective: An acute stroke may serve as a major life event that disrupts health-related quality of life. Post stroke depressant is prevalent and related to poorer outcomes. We examined the potential buffering relationship of antidepressants at time of stroke on mental health functioning among patients discharged from two health care systems: Veterans Health Administration (VHA) and a Joint Commission Stroke Center.

Methods: We enrolled 258 participants into a randomized controlled trial to evaluate a stroke self-management program which targeted functional recovery and risk factor management. All participants completed written consent and a baseline assessment which included demographics, anxiety (GAD), depressive symptoms (PHQ9), antidepressant usage, stroke specific, health-related quality of life (SSQoL) and pain (BPI). We conducted multivariate analyses to evaluate the relationship of antidepressant usage with baseline mental functioning.

Results: We enrolled our sample, on average, within 81.5 days after hospital discharge for stroke/TIA. Our sample included 19% women with an average age of 61.7 (10.8) years. The average NIH stroke scale score was 3.0 indicating minor stroke and did not differ among those with and without antidepressants. Demographics were not significantly related to SSQoL in the multivariate models. Among our cohort, 201 (78%) reported baseline usage. Among those using antidepressants, a significantly less proportion (26.4%) reported moderate to severe depressive symptoms compared to those who reported no usage (53.7%) (p

Conclusions: Stroke survivors reporting antidepressant usage reported moderate to severe depression symptoms at half the rate of stroke survivors without antidepressant usage. Antidepressant usage at the time of a stroke event may buffer the development of poorer

mental health functioning. Post stroke depression is prevalent and associated with morbidity and mortality. Therefore, post stroke programs which target depression at the early onset of survivorship may enhance stroke specific, quality of life.

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F010 11:45 AM-12:45 PM

EFFECTS OF SLEEP, DIET, AND PHYSICAL ACTIVITY ON CARDIOVASCULAR DISEASE IN THE UNITED STATES: AN AGENT-BASED MODEL SIMULATION

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INTRODUCTION: Cardiovascular disease (CVD) is the number one reason for health-related morbidity and mortality in the United States. To reduce the burden of CVD, several behavioral prevention strategies (eliminate smoking, healthy diet, and increased physical activity) have been implemented. Unfortunately, these efforts have only yielded modest improvements, and in some groups (racial/ethnic minorities) the burden of CVD is mounting. Recent evidence that sleep is associated with increased CVD risk, acknowledges sleep as a novel and potentially impactful target to reduce CVD burden. The current study explored the long-term impact reducing the prevalence of insufficient sleep can have on the burden of CVD (diabetes, stroke, and myocardial infarction) in the US, compared to healthy diet (eating fruits and vegetables) and moderate physical activity.

METHOD: Using a representative sample of 100,000 hypothetical participants who do not have sufficient sleep in an Agent-Based Model simulation (a dynamic simulation technique), we investigated how reducing the prevalence of insufficient sleep (≤6 hrs.) and improving the prevalence of average sleep duration (7-8 hrs.), health diet and physical activity by 10% and 20% impact the prevalence of CVD (including diabetes, myocardial infarction, and stroke) over a 10 year period. We also compared the relative effect sleep, healthy diet, and physical activity have on diabetes and CVD over a 10-year period.

RESULTS: Based on the simulation, reducing the prevalence of insufficient sleep by 10% and 20% could potentially reduce the prevalence of diabetes among insufficient sleepers by 1.7% and 2.6%, respectively, in 10 years. In comparison, improving healthy diet or physical activity by 10% and 20% activity had much less significant effect; the prevalence of diabetes was only reduced by less than 1% in all simulated scenarios related to improved diet and physical activity. In addition, reducing insufficient sleep could reduce the prevalence of stroke and myocardial infarction by 0.5% in 10 years.

CONCLUSION: Improving sleep could be more impactful in preventing or reducing prevalence of diabetes, myocardial infarction and stroke, compared to healthy diet and physical activity.

Future research should examine the impact of improving sleep in other population groups, especially those with high risks of diabetes, myocardial infarction, and stroke.

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F011 11:45 AM-12:45 PM

MOMMIO: A VIDEOGAME FOSTERING THE USE OF EFFECTIVE VEGETABLE PARENTING PRACTICES WITH PRESCHOOLERS

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Vegetable consumption is related to better child diet quality; however, many parents report that their children dislike vegetables. Simulation is one way to produce a fun and engaging experience for parents to learn new skills to facilitate child vegetable consumption. The Mommio game was designed to produce such an experience, especially for mothers who oversee food parenting. Mommio was designed to be played on smartphones in short time frames (e.g. 5-10 min) when busy mothers have time to play. The three dimensional environment includes a home, back yard, automobile, and a grocery store. The player can choose specific characteristics for the child avatar (Kiddio) such as gender, hairstyle, and skin color. Artificial intelligence governs the child's behavior. The mother character is controlled by the player and can explore all aspects of the three dimensional food environment including kitchen cabinets, refrigerator, and recipe box. During gameplay, Kiddio becomes hungry and the player is required to search for vegetables in the home (or at the store) and prepare them for consumption. When Kiddio refuses to eat the vegetables, the player must select from a list of effective and ineffective parenting practices to deal with the child. Choosing more effective vegetable practices results in winning whereas choosing more ineffective practices results in losing. The player can also set a goal to use an effective practice later with their real world child. Episodes include a lunch, a dinner, riding in the car, shopping at the grocery store, and preparing a vegetable dish with the child. Extensive formative research was conducted to guide the design of the videogame. Tests of alternative forms of providing feedback on ineffective practice choices revealed that feedback should avoid vague warnings and provocation of guilt, use succinct but correct grammar, and clearly identify why the choice was problematic. Early alpha testing revealed mothers' desires for more extensive recipes in the recipe box. Tested recipes met their need for quick easy to prepare dishes that tasted good to their child and self. Two novellas, *Totally Frobisher* and *CHA*, provide backstory.

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F012 11:45 AM-12:45 PM

PARENTS' OPINIONS ABOUT USING THEIR CHILDREN'S EMR FOR RESEARCH: A CONTINUUM OF PERSPECTIVES ACROSS THREE GENETIC GROUPS

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Introduction: The advent of electronic medical records (EMR) has led to a tremendous shift in health care delivery and the ability to mine large amounts of clinical data. Simultaneously, advances in genomic science have led to increased understanding of rare diseases. These developments elicit the need to examine parents' preferences for using their children's EMR for research purposes. Specifically, there is a need to understand the perspectives of those with suspected or known genetic conditions; these groups may have the most to gain from research but also face increased risks.

Methods: Using a semi-structured guide, we conducted focus groups in the triangle area of North Carolina with parents of typically developing (TD) children with no known genetic conditions (n=8); parents of children with autism spectrum disorder (ASD), a suspected genetic condition (n=5); and parents of children with fragile X syndrome (FXS), a known genetic condition (n=6). The majority were mothers (74%). Participants were 63% White, 26% Black or African American, and 11% Asian; 5% identified as Hispanic. Approximately 74% were married and 53% reported family incomes of $75,000 or less. Focus groups were recorded, transcribed, and analyzed for thematic content.

Results: Almost all participants were in favor of sharing their children's EMR for research purposes, although there was a continuum of perspectives. Parents of TD children were the most conservative in their preferences. Parents of children with ASD were the most open to sharing, stating that research was the only way to better understand ASD. Parents of children with FXS were also supportive of EMR research for similar reasons, but had more caveats. Both known (FXS) and suspected (ASD) genetic groups were willing to share sensitive information about their children, such as genetic test results and mental health issues, which they considered part of their children's conditions. It was also important to these groups to receive research results. A main concern of all groups was the risk of personal information being accessed and misused for non-research purposes (e.g., identity theft, stigmatization, discrimination). All groups also had reservations about pharmaceutical companies using their

children’s EMR for research, with many worrying that data could be used for ulterior motives. The known and suspected genetic groups were more willing if the work was conducted in partnership with trusted researchers. Perceived benefits of sharing EMR data were altruistic in nature, with the two genetic groups also seeking personal benefit for their children.

Conclusions: Overall the genetic groups believed EMR research would offer more benefits than risks. Ensuring that parents have sufficient information to make an informed decision about their children’s participation was critical to all groups’ preferences.

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F013 11:45 AM-12:45 PM

EXAMINING THE RELATIONSHIP BETWEEN OMEGA-3 FATTY ACIDS AND ANXIETY: POSSIBLE MECHANISMS AT PLAY

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Background: One of the most under-recognized factors in the development of mental health disorders is the role of nutrition. Omega-3 fatty acids (ω-3 FAs) possess numerous physical and mental health benefits and are a necessary component of a healthy lifestyle. Given the anti-inflammatory properties of ω-3 FAs, they are being tested as a potential treatment option for various physiological and psychological diseases characterized by high levels of inflammation. Much of the literature examining ω-3 FAs and mental health has targeted depression with growing support that ω-3 FA supplementation has therapeutic benefits in reducing depressive symptoms but has been studied much less within anxiety. The aim of the present systematic review is to assess the current understanding of the possible mechanisms underlying the relationship between ω-3 FAs and anxiety. **Methods:** 1,277 citations were identified as a result of the initial literature search, after the removal of duplicates (n=388) and irrelevant literature (n=712), the full-text of 177 studies were screened for eligibility criteria. Six studies met inclusion criteria for the systematic review. **Results:** The six studies were grouped into three sections determined by clustering of primary outcomes reported by each study (Physiological Correlates, Inflammatory Response, and Neuroendocrine Processes). Several mechanisms (e.g., IL-6, salivary cortisol) have been noted to potentially explain the association between ω-3 FAs and anxiety. No support was found for other variables (e.g., heart rate variability, IL-β) as possible mechanisms. **Future Implications:** This systematic review is the first to examine the potential mechanisms underlying the relationship between ω-3 FAs and anxiety. Findings showed a large amount of heterogeneity between studies and future work should implement more rigorous methodology (e.g., consistent dosage and duration of ω-3 FA supplements, assessment of dietary patterns). While it is not possible to make robust conclusions given the literature is in its early stages, initial empirical findings of this review provide a preliminary understanding of possible mechanisms by which ω-3 FAs influence anxiety. These findings indicate that future research should aim to directly test mechanisms of physiological correlates (e.g., cortisol) and the inflammatory response (e.g., IL-6) underlying this relationship. Elucidating these mechanisms can help improve the prevention and treatment of anxiety.

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F014 11:45 AM-12:45 PM

IMPACT OF A DECISION AID ON SEVERE COPD PATIENTS’ MOTIVATION TO ENGAGE IN ADVANCE CARE PLANNING

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Purpose: To assess impact of the InformedTogether COPD decision aid on patient motivation to engage in advance care planning (ACP) i.e. wanting life support vs. comfort care for a severe breathing exacerbation.

Methods: Severe COPD patients were identified through our health system’s EHR and recruited at 7 outpatient clinics. Patients viewed the decision aid with their clinician, and were interviewed prior to, immediately after, and 1 month after viewing the decision aid. To assess motivation to make an ACP, patients were asked at each of these time-points about the likelihood that they would make an ACP within the next year, and were scored using a 5 point Likert scale. Clinical encounters using the decision aid, and 1 month follow up interviews were recorded and transcribed for qualitative analysis.

Results: N=38 patients were enrolled. Mean age: 66 ±10; majority education: 9th-12th grade; race: n=19 White/n=7 Black/n=11 Hispanic/n=1 other; mean health: good/fair; numeracy: n=19 high/n=19 low. At baseline, 17 people (45%) did not have an ACP or were not highly motivated to make one. Of those 17, by 1 month: 12 had increased motivation, 3 stayed the same, 2 had decreased motivation (4 had made, and 5 said they definitely would make, an ACP). Qualitative analysis showed that 9 people (53%) discussed ACP with their families as a result of using the decision aid; and the decision aid had helped them to focus on the process of ACP. At 1 month, one patient stated: “You know, throughout the years I’ve said, “I want this, I want this,” but after seeing the decision aid, I became serious and discussed exactly what I want.” Another stated: “You know, [since seeing the decision aid] it has been really weighing on my mind. Almost like, it’s just made me feel like, you gotta get things done.”

Conclusion: Our decision aid was intended to increase patient motivation to discuss end of life care preferences, but not necessarily require that a decision be made. For patients with advanced COPD, ACP facilitated by a decision aid may serve as one variable motivating an individual to prepare for end of life decision making. For many people, specific events trigger opportunities for deliberation and planning at different periods in time. Our decision aid

created one such opportunity for patients by allowing them to introduce a difficult topic with others involved in their care.

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F016 11:45 AM-12:45 PM

RISKY BEHAVIORS AND DIABETES OUTCOMES IN THE TRANSITION FROM ADOLESCENCE TO EMERGING ADULTHOOD WITH TYPE 1 DIABETES

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Adolescence and emerging adulthood are important developmental periods for establishing health-promoting behaviors, though youth are also vulnerable to risky behaviors (e.g., smoking, drinking alcohol, and unhealthy weight loss behaviors). Such risky behaviors are especially problematic for youth with type 1 diabetes, as they increase the risk for developing health complications in adulthood. This study explored the concurrent and longitudinal associations between risky behaviors (i.e., smoking, drinking, and skipping insulin to lose weight) and diabetes management (i.e. adherence and glycemic control). We examined these associations during the transition from late adolescence to emerging adulthood for individuals with type 1 diabetes who were in their last year of high school (*N* = 247, M age = 17.76) at Time 1 and one year later (Time 2). Adherence was measured by the *Diabetes Behavior*Rating Scale (DBRS) and glycemic control was assessed through HbA1c assay kits. As engaging in risky behaviors is related to higher externalizing behavior problems, all analyses controlled for oppositional behaviors (as assessed by Conner's Rating Scales) to isolate the effect of risky behaviors in addition to gender, race (white/non-white), pump status, and years since diagnosis. Furthermore, as smoking and drinking are highly associated with one another, analyses of these variables were examined simultaneously. Hierarchical regression analyses revealed that participants (time 1) who had smoked a cigarette in the past six months had poorer HbA1c levels. At time 2, participants who had smoked a cigarette in the past six months had lower adherence. From late adolescence to emerging adulthood, participants who had smoked a cigarette in the past six months at time 1 showed larger decreases in adherence (time 2, after controlling for adherence at time 1). Drinking did not account for significant variance in either HbA1c or adherence. Finally, at time 2, participants who skipped insulin to lose weight had poorer HbA1c. From late adolescence to emerging adulthood, those who skipped insulin to lose weight more at time 1 changed over time to have poorer HbA1c (time 2, while controlling` for time 1 HbA1c). The risk behaviors of smoking and skipping insulin appear to be especially detrimental for adherence and HbA1c in the transition from late adolescence to emerging adulthood both concurrently and longitudinally.

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F017 11:45 AM-12:45 PM

THE ONE DROP MOBILE APP AND EXPERTS PROGRAM IS EVIDENCE-BASED AND IMPROVES BLOOD GLUCOSE

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Overview: Mobile health apps must incorporate best practices for clear health communication, behavior change, psychosocial care and education. The One Drop iOS and Android app is used by over 120,000 people worldwide. The app facilitates blood glucose (BG) and self-care tracking, and provides recipes, insights, tips and community support ('likes', stickers, data sharing). In December 2016, One Drop released the 'Experts' coaching service. Certified Diabetes Educators deliver a structured in-app program and offer 'on call' support. Here, we describe One Drop's grounding in scientific evidence, incorporation of best care practices, and present its initial efficacy.

Mobile App: The app's self-care tracking feature is designed to enhance understanding (information) of the link between behaviors and BG. The combination of in-app recipes, inspirational content and community data sharing and praise is designed to enhance favorable attitudes and social normative support that, combined, fuel motivation. The medication and BG check reminders, data-driven insights, and health tips are designed to enhance self-efficacy or behavioral skills. In these and other ways, the One Drop app is grounded in the empirically-supported Information—Motivation—Behavioral Skills model of behavior change. Finally, all content is presented clearly, including numerical information.

Experts: 'Experts' uses best practices for clear health communication, omitting jargon, simplifying instructions and lessons, and using the teach-back technique to confirm understanding. 'Experts' teaches evidence-based behavioral techniques (e.g., setting realistic goals, using environmental cues to remember behaviors). It also provides emotional and instrumental support, and behavior change accountability. Finally, 'Experts' provides strategies to overcome psycho-social barriers to performing self-care.

Initial Efficacy: After one month, people tracking food and BG with the One Drop 'App + Experts':

6. Reduced their average BG by 15% (27 mg/dL)
7. Lowered their average BG from 185 mg/dL (A1c 8.1%) to 158 mg/dL (A1c 7.1%)

8. Reduced their percentage of high BG readings from 18.5% to 3.7%
9. Achieved 40% more in-range BG readings

Conclusions: One Drop incorporates critical programmatic elements associated with self-care and A1c in the scientific literature. At one month, the One Drop ‘App + Experts’ significantly improved BG. Evidence-based and effective mobile health programs may serve an important public health role in providing self-care support in a scalable manner.

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F018 11:45 AM-12:45 PM

BODY MASS INDEX OF COLLEGE STUDENTS EXHIBITING AVOIDANT/RESTRICTIVE FOOD INTAKE DISORDER AND PICKY EATING BEHAVIOR

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Avoidant/Restrictive Food Intake Disorder (ARFID) is a new DSM-5 diagnosis designed to capture patients with clinically significant restrictive eating problems that result in persistent failure to meet nutritional/energy need or cause psychosocial difficulties. Picky eating (PE) behaviors are one manifestation of ARFID. PE is characterized by the consumption of a limited variety of food, through the avoidance or rejection of familiar and unfamiliar foods. PE research has largely focused on children but PE can persist in to adulthood, and develop into adult ARFID. It is not known if picky eating among adults results in failure to meet energy need as it can in children.

The current study examined relationships between Body Mass Index (BMI), ARFID, and adult PE, to explore differences between PE and traditional ED symptoms in regards to BMI. Previous research has shown clear relationships between BMI and traditional EDs, but research on BMI and PE has been mixed. Some studies have indicated that childhood picky eaters are more likely to be underweight, but these relationships remain unclear in adults and are important given BMI’s status as a health indicator.

Participants in a college sample (*n* = 1219; 4.1% underweight, 63.2% normal weight, 21.0% overweight; 11.8% obese) completed the Nine Item ARFID Screener (NIAS), Adult Picky Eating Questionnaire (APEQ), Eating Disorders Diagnostic Scale (EDDS), and ARFID Symptom Checklist (ARFID-cl). The ARFID-cl is used to confirm an ARFID diagnosis based on DSM-5 criteria and was used to classify a probable ARFID diagnostic group (*n* = 31), subclinical ARFID group (*n* = 86), group who screened for some picky eating behaviors (*n* = 799), and typical eating group (*n* = 272).

Pearson correlations indicated no significant associations between BMI and the NIAS (r = -.01, p = .84), or APEQ (r = .05, p = .10). A bootstrapped ANCOVA, with the EDDS composite score as a covariate, showed BMI did not differ across ARFID groups, F(3, 1202) = .70, p = .55. ARFID groups were also compared across BMI groups (i.e. underweight, normal weight, and

overweight/obese), and revealed no significant differences by group (X^2 (6) = 1.76, p = .94) As expected, the EDDS was positively correlated with BMI (r = .29, p < .001), and ED risk groups were associated with BMI in the expected directions.

In the current sample, BMI was not associated with ARFID group, indicating that adult PE behaviors do not appear to contribute to failure to meet energy need.

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F019 11:45 AM-12:45 PM

PREGNANT WOMEN’S KNOWLEDGE OF GESTATIONAL WEIGHT GAIN: ONLINE NEEDS ASSESSMENT

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BACKGROUND: The Institute of Medicine (IOM) recommends a range for healthy gestational weight gain (GWG) based on pre-pregnancy Body Mass Index (BMI). Health practitioners are the primary source of health information during prenatal appointments. Mobile applications (apps) and websites hold potential as convenient and available resource for pregnant women. Electronic health (e-health) interventions could be used as a parallel or supplemental tool to provide pregnancy weight-related information, specifically IOM recommendations for GWG. Understanding pregnant women’s knowledge and perceptions regarding GWG is essential for the development of meaningful resources.
METHODS: Using Facebook and Twitter social media sites, pregnant women living in the United States who owned a smartphone were recruited to complete a brief one-time online survey regarding the needs and interests of pregnant women to guide the development of an e-health intervention. The survey included questions regarding pregnancy history, weight-related knowledge and behaviors, topics discussed with health care practitioners, information sought by pregnant women, and interests in electronically delivered health information. Descriptive statistics, chi-square, and regression analyses were used to summarize the data.
RESULTS: A total of 324 pregnant women completed the survey and self-reported pre-pregnancy height and weight (mean BMI =26.1±6.5). Majority of the sample was normal weight (53.1%). Half of the participants (50.6%) reported that they did not receive recommendations for healthy GWG from their physicians during pregnancy. Provider recommendations were not associated with pre-pregnancy BMI classification (X^2=0.189, *p*=0.979). When asked about how much weight would be healthy to gain during pregnancy, 46 participants (14.5%) cited GWG below recommendations for their BMI class, 200 (62.9%) cited within recommendations and 72 (22.6%) cited above recommendations. Normal weight women most often cited GWG within IOM recommendations (N=114, 35.8%), while overweight/obese women most often cited GWG above recommendations (N=50, 41%).
CONCLUSIONS: Normal weight participants frequently responded with a GWG recommendation within IOM guidelines, while overweight/obese participants responded with a GWG that exceeded IOM guidelines. This indicates that more targeted resources and efforts

are needed to increase overweight/obese pregnant women's knowledge of healthy GWG. Physician-provided information to address IOM guidelines may help close that gap in knowledge, but mobile apps or websites geared towards pregnancy can address GWG recommendations as well.

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F020 11:45 AM-12:45 PM

THE EFFECTIVENESS OF INTERVENTIONS TO SUPPORT HEALTHIER FOODS AND BEVERAGES IN SCHOOLS: NEW FINDINGS FROM THE COMMUNITY GUIDE

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Purpose: Schools can play an important role in promoting healthier dietary habits and preventing obesity because most US children attend school six hours a day and consume as much as half of their daily calories at school. This systematic review evaluated the evidence on effectiveness of interventions to support healthier foods and beverages in schools.

Methods: This review included the subset of studies from the Agency for Healthcare Research and Quality's *Childhood Obesity Prevention Programs: Comparative Effectiveness Review and Meta-Analysis* that focused on dietary-only approaches in schools, combined with an electronic database search through February 2016. Using the CDC Comprehensive Framework for Addressing the School Nutrition Environment and Services, studies were stratified into four intervention types: 1) Meal and fruit and vegetable snack interventions to increase the availability of healthier foods and beverages provided by schools (MFVS), 2) Interventions supporting healthier snack foods and beverages sold or offered as a reward in schools (SFB), 3) Multicomponent interventions to increase availability of healthier foods and beverages in schools (multicomponent), and 4) Interventions to increase water access in schools (WA). Community Guide systematic review methods were used to identify studies and judge quality of execution. Evidence was evaluated using measures of dietary habits and weight outcomes including, but not limited to, fruit/vegetable consumption and obesity prevalence. When possible, relative percent change, medians and interquartile intervals (IQI) were calculated for each outcome.

Results: Thirty-five studies were included. Highlights of dietary and weight-related outcomes include that MFBS interventions were effective in increasing fruit/vegetable consumption (5 studies/6 arms; relative percent increase of 25.7%, IQI: 0.25%-55.2%) and multicomponent interventions were effective for stopping the increase in overweight/obesity prevalence (6

studies, favorable findings for 4). Evidence was insufficient for SFB and WA, due to too few studies.

Conclusions: Interventions to support healthier foods and beverages in schools show improvements in several dietary and weight-related outcomes for MFBS and multicomponent interventions. More research is needed for SFB and WA, and behavioral researchers are encouraged to develop consistent measures of diet and weight outcomes to allow for synthesizing and strengthening the evidence base.

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F021 11:45 AM-12:45 PM

DO SOCIOECONOMICALLY DISADVANTAGED POPULATIONS USE TECHNOLOGY?

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Background: Socioeconomically disadvantaged and racial/ethnic minority populations experience disproportionately high rates of obesity and have the least access to medical care. Obesity treatment delivered via mobile technologies may be a viable option for this population. We sought to examine trends in technology use among a medically vulnerable population enrolled in a behavioral weight loss program.

Methods: Participants (N=351) were enrolled in Track, a 12-month randomized controlled weight loss trial in primary care. The obesity treatment intervention included weekly self-monitoring via interactive voice response and text messages, 18 coaching calls with dietitians, e-scales for daily self-weighing, and skills training. Using baseline data, we analyzed the proportion of Track participants that used technology and whether use varied by sociodemographic variables or was associated with engagement in the intervention (i.e., percentage of coaching calls and self-monitoring interactions (IVR or text) completed).

Results: Over half (54%) of participants were Black, only 10% received a college degree and 30% were living below the U.S. poverty threshold. All participants were required to own a text-enabled cell phone, but 9% of individuals reported no SMS use. Over half (53%) owned a smartphone, 57% had social media (Twitter or Facebook), 75% owned computers (laptop or desktop), and 85% used Internet or email, while 86% reported using at least one of these technologies. Individuals with greater education were more likely to use smartphones, social media, computers and Internet/email (all ps < .01). Those at or above the poverty threshold were more likely to use the Internet/email (90% vs. 81%) and computers (83% vs. 67%; all ps < .01). Individuals who were younger were more likely to use all forms of technology (all ps < .001), as were those with higher health literacy (all ps < .01). Blacks were less likely to have social media, compared to non-Blacks (51% vs. 64%; p < .05). There was no difference in technology use by gender or BMI. Among intervention participants, there was no association between technology use and either of the engagement variables.

Conclusion: As obesity is highly prevalent in medically vulnerable populations, innovative strategies are needed that are both accessible and engaging. Digital health solutions may be an appropriate treatment option. Track's population displayed high uptake of technologies;

these rates are comparable to those found among U.S. adults. Surprisingly, engagement in the intervention did not vary by any of the technology use variables, suggesting that limited technology use did not impede an individual’s engagement with the intervention. Obesity interventions targeting socioeconomically disadvantaged populations should consider using mobile technologies for treatment delivery.

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F022 11:45 AM-12:45 PM

EXPLORING ETHNIC/RACIAL DIVERSITY IN RECRUITMENT AND RETENTION IN A MOBILE HEALTH INTERVENTION TARGETING OBESITY

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Background: Although the mobile delivery of health behavior interventions may address treatment barriers, such as inabilities to physically present to a clinic due to cost, childcare, or work, the extent to which mobile interventions are sought after and utilized across individuals of differing ethnic background remains unknown. Here, we sought to explore ethnic/racial differences in recruitment, enrollment, and completion of a 28-day (28-lesson) smartphone-delivered mindful eating intervention targeting reductions in craving-related eating.

Methods: Participants (n=104) learned of the study via social media (e.g., Facebook, Craigslist) and UCSF communications (e.g., university-wide email, paper patient letters). Participants completed in-person visits and text-based assessments before, and one month after competing, the 28-day smartphone-delivered mindful eating intervention. We used Monte Carlo estimates of exact tests to examine whether the following differed significantly by race/ethnicity: 1) initial eligibility, defined as BMI≥25, age≥18 yrs, female, smartphone-owning, locale status, no diabetes, no history of eating disorders, and intractable food cravings most days of the week; 2) enrollment status, defined as enrolling or not; and 3) intervention completion per protocol [≤90 days] or at all [≤150 days]. We used one-way ANOVAs to examine whether race/ethnicity was associated with 4) number of lessons completed, and 5) number of days to complete all 28 lessons.

Results: Of 1651 participants who completed an online screener, 719 met initial eligibility criteria, and 104 completed a baseline visit and began the intervention. Of these 104 participants (M BMI=31.2; M Age=46.1), 71 (68.3%) identified as White, 11 (10.6%) as Hispanic/Latino, 10 (9.6%) Asian/Pacific Islander, 5 (4.8%) as Black, 6 (5.8%) as Mixed Race/Other, and 0 (0 %) as Native American/Native Alaskan. Participants completed an average of 22.9 days (lessons). The following variables did not significantly differ by race/ethnicity: Initial eligibility (p=.124); enrollment status (p=.675); intervention completion per protocol (≤90 days; n=64; p=.412), or at all (≤150 days; n=77; p=.368); number of lessons completed (F=1.46, p=.222); and days to complete intervention (F=0.26, p=.905).

Conclusions: Diverse populations seek out, are eligible for, and participate in, smartphone-delivered interventions targeting health behavior change. The steadily increasing rate of smartphone ownership in the US will render these interventions highly disseminable. Researchers and clinicians should consider smartphone-delivery as a feasible and acceptable means of intervention delivery in diverse populations, especially for individuals who are unable to regularly attend traditional in-person behavioral interventions.

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F023 11:45 AM-12:45 PM

THEORETICAL FACTORS ASSOCIATED WITH REAL-TIME USE OF AN MHEALTH APP DESIGNED FOR HIV SELF-MANAGEMENT

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Background: Despite the ubiquity of mobile health (mHealth) apps, few mobile phone users consistently integrate them into their daily lives. Not many empirical studies explore reasons behind this lack of sustained interest by focusing on theory-based factors that potentially influence mHealth app acceptance/usage from an end-user perspective.

Purpose: Guided by the modified Unified Theory of Acceptance and Use of Technology (UTAUT2), this secondary analysis of data from the Music for Health Project (MFHP) – an mHealth app-based HIV self-management intervention (iApp) conducted in rural Georgia – evaluated theoretical factors associated with the acceptance and real-time adoption of the iApp.

Methods: We compared the results of UTAUT2, smartphone experience (SPexp), and electronic health (eHealth) literacy surveys with iApp usage among 34 MFHP persons living with HIV/AIDS (PLWHA) in the first 100 days of study participation. Except for SPexp (baseline only), surveys were administered at baseline/three months and measured UTAUT2 constructs (behavioral intention [BI], effort expectancy [EE], hedonic motivation [HM], and performance expectancy [PE]) and eHealth literacy (confidence finding/using Internet-based health information). Usage metrics included frequency of iApp openings and duration of time spent in the app.

Results: At baseline and three months, most scored at or near the highest attainable in all surveys. UTAUT2 subscales, eHealth literacy, and SPexp were positively intercorrelated with each other (all $p \leq .05$) but not with frequency or duration of iApp usage. Younger participants (Mdn 31-33 years) scored the highest in the UTAUT2 survey, indicating the most intent (BI) to adopt mHealth apps and reporting stronger beliefs that mHealth apps could be easy to use (EE), enjoyable (HM), and helpful to maintain health ([PE], all $p < .025$). Despite the near universal willingness to adopt mHealth, almost half (14/34, 41%) did not open the iApp - these individuals were typically newly diagnosed with HIV less than six months prior to entering the MFHP ($p < .025$). Among those who did open the app, both frequency and duration of use peaked in the first four weeks of the study, then declined to almost zero over the next nine weeks.

Conclusions: Findings indicate that a person’s theoretical *willingness* and his/her behavioral *readiness* to use mHealth are not the same. Thus, the intention to adopt mHealth does not necessarily translate into initial or sustained action. Factors moderating this intention-behavior mismatch should be more fully evaluated. Moreover, a "one-app-fits-all" approach might not be the most effective way to improve disease self-management equally among all HIV-positive patients. Newly diagnosed PLWHA may require an mHealth app specifically geared to their needs in order to improve disease outcomes and engagement-in-care in this vulnerable group.

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F024 11:45 AM-12:45 PM

USING FOCUS GROUPS TO INFORM DEVELOPMENT OF A FACEBOOK INTERVENTION FOR TOBACCO USE AND HEAVY EPISODIC DRINKING

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Introduction. Intervention addressing smoking and heavy episodic drinking (HED) may result in better tobacco and alcohol outcomes for young adults who exhibit both behaviors. We analyzed qualitative data from focus groups to inform development of an intervention for smoking and HED on Facebook. *Method:* Young adults (N=25, M age = 20.3, 12% female, 72% non-Hispanic White) aged 18-25, who reported past month smoking and HED (5+ for men, 4+ for women) were recruited through Facebook and assigned to one of the three 90-minute focus groups on Facebook. Focus groups followed a semi-structured guide facilitating discussion around smoking, drinking, and social media intervention. Content was independently coded by two research staff using a grounded theory approach until saturation was reached. *Results.* Participants were 40% daily smokers who smoked an average of 5 cigarettes per day on 4 days per week. Participants reported drinking 9 (SD=6.6) days and 8 (SD=6.2) HED episodes in the past month on average. Drinking and smoking was reported most commonly in social contexts including with friends and at parties. Few reported ever trying to change smoking or drinking and none had ever tried an online group to quit. Participants were more receptive to quitting smoking than drinking, and preferred an intervention targeting one substance over a combined intervention. Participants had mixed reactions to joining a group on Facebook targeting smoking and/or drinking, with main concerns being related to privacy and not being ready to change use of either substance. However, there were many suggestions as to what would be appealing in an intervention, including about one social media post daily that would address smoking and drinking separately. Most people were inclined towards seeing pictures and videos in posts. Participants were interested in live sessions with a counselor and suggested once a week for 20-30 minutes. Most participants reported they were not aware of or not concerned about Facebook privacy policies, but had concerns about sharing information about substance use on FB. *Conclusions/Discussion:* Given low motivation to change tobacco use and HED, social media intervention for combined tobacco use and HED should focus on motivational enhancement and engagement. Integrated intervention is warranted and should take into

account the social context of combined tobacco use and HED, but early focus of an intervention may need to separate information about tobacco and alcohol use for highest receptivity.

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F025 11:45 AM-12:45 PM

MEDIA COVERAGE OF A CRISIS RESPONSE: EXPLORING EBOLA AND TRAVELER HEALTH

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Media Coverage of a Crisis Response: Exploring Ebola and Traveler Health

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The Check and Report Ebola (CARE) program, implemented by CDC in October 2014, was designed to support monitoring of travelers entering the US from a country with an Ebola outbreak. One component of the evaluation of the CARE program is an effort to understand the information environment in which CARE was created and implemented, including how media coverage may have been related to key events in the epidemic. We analyzed the volume of coverage related to CDC's response and the CARE program, focusing on enhanced entry risk assessment and post-arrival monitoring. We searched US newspapers and TV news transcripts available through Nexis® between July 1, 2014-June 30, 2015, which corresponded with the major events of the outbreak and response in the US. We used Google Trends to examine the association between news coverage and online searches to provide insight into how the public responded to media coverage by looking for additional information. The volume of media coverage and online searches corresponded with major events in the US throughout the timeline of the Ebola crisis, peaking in early October 2014 with the diagnosis of the first imported case of Ebola in the US. By the time entry risk assessment and monitoring began for all travelers from countries with outbreaks, media coverage and online searches had begun to decrease, largely declining by the first week of November. Among TV news sources, CNN was the main driver of coverage, beginning with early coverage of two American healthcare workers brought to the US for treatment through CDC's announcement of entry

risk assessment and monitoring procedures and the implementation of the CARE program. Among newspapers, *The Washington Post* included the most coverage of key topics throughout the selected timeframe. Understanding how the volume of coverage changed over time provides important context to describe the environment in which this response took place. This analysis provides program planners with information that can be used for media advocacy and strategic and emergency risk communication in future crises. Next steps may include a focused analysis of the content of media coverage, as well as an analysis of relevant conversations on social media.

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F026 11:45 AM-12:45 PM

SIMULATION FOR CHRONIC PAIN OPIOID MANAGEMENT: SYMPATHY AFFECTS PHYSICIAN PRESCRIBING DECISIONS

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Opioid related deaths are a major public health issue. Physician overprescribing has been blamed as a major cause. While many physicians prescribe safely, some do not. Physician characteristics and patient-physician interaction factors must be assessed to determine what leads to improper prescribing. Simulation is an emerging tool in health education, which allows for observation and feedback in a consistent clinical setting. Here, we used simulation to characterize factors associated with safe and unsafe opioid prescribing.

Twenty pain medicine trainees participated in an opioid simulation at the Stanford Center for Immersive and Simulation-based Learning. Participants were oriented to a simulated patient (SP) story, which indicated risk for abuse, and to on-site Risk Evaluation and Mitigation Strategy tools. Participants were given 45 minutes to interact with the SP and type an encounter note. SPs provided feedback on a standardized instrument, which included a patient-provider interaction score (PPI) and overall score (OS). Participants also completed the Thomas-Kilmann Conflict Mode Instrument (TKI), which measures five conflict-handling modes. All interactions were video recorded and sent to RIASWorks for coding using the Roter Interaction Analysis System (RIAS).

Both PPI (M=5.87, SD=1.02) and OS (M=6.05, SD=1.13) were scored on a 9-point Likert scale. Participants with higher scores for RIAS global affect ratings such as interest, warmth, respect, and sympathy showed strong and significant relationships with higher SP scores for both PPI and OS. Higher physician affect ratings of anxiety and anger reflected lower ratings for PPI and OS as well. Participants who scored higher on the avoiding TKI mode had lower emotional rapport-building scores (r= -.692, p=.001), and made less empathetic and reassuring statements. Higher collaborating TKI scores were reflective of higher OS scores (r =.453, p =.045) and engaged affect (r=.491, p=.028). Physicians who were rated with higher sympathy scores (M=4.56, SD=.727) were more likely to prescribe opioids than those with lower scores (M=2.75, SD=.957); t(18) = 3.539, p=.025.

Our pilot findings suggest physicians’ global affect and conflict-handling have effects on both patient-reported outcomes and decision making in a simulated opioid interaction. While sympathy played a role in building social rapport and higher patient satisfaction, it also influenced physicians' prescribing decisions for a high risk patient. Further simulation studies are needed in order to better characterize these factors and translate this knowledge into improved education on safe opioid prescribing.

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F027 11:45 AM-12:45 PM

WHY HELP OTHERS WHEN YOU CAN HELP YOURSELF? A STUDY INVESTIGATING THE EFFECTIVENESS OF FLU VACCINATION MESSAGES

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Influenza infection is associated with social and financial concerns (e.g., missing events or work due to illness) as well as negative health outcomes (e.g., hospitalization, premature death). By receiving the flu vaccine people not only protect themselves from the virus; they also protect others. Certain vulnerable populations (e.g., infants, the elderly, immuno-compromised patients) may be unable to receive the vaccine and thus rely on herd immunity (i.e., high rates of vaccination in a population to reduce risk of contracting the virus). We conducted two experiments to examine whether educating individuals about the benefits of flu vaccination for themselves only (self-focused) or for themselves and vulnerable others (herd-focused) would lead to more favorable attitudes and stronger intentions to get vaccinated. We hypothesized that the herd-focused message would be more effective than the self-focused message. Furthermore, we hypothesized that the herd-focused message would be even more effective for some people (e.g., females, democrats, people who had previously been vaccinated, collectivists). Study 1 included 186 Americans from Amazon's MTURK (ages 19 to 75, 58% male, 83% white). Study 2 included 78 American college students (ages 18-23, 73% female, 79% white). The method was identical for studies 1 and 2. Participants reported baseline vaccination attitudes, vaccination history, and personal characteristics. Participants were randomly assigned to read either a self-focused or herd-focused flu vaccination message. Lastly, participants reported their vaccination attitudes and intentions. Contrary to our hypotheses, participants who read the self-focused or herd-focused message reported equivalent vaccination attitudes and intentions. Additionally, personal characteristics like gender, political orientation, vaccination history, and collectivism/individualism did not interact with message type. Study 2 replicated these null findings. Findings suggest that adding information about herd immunity may not increase the effectiveness of flu vaccination messages. Results may have differed if herd-focused messages mentioned benefits to specific family members and/or friends rather than people in general.

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F028 11:45 AM-12:45 PM

CITATION AND MERITORIOUS AWARD WINNER

MAPPING A SYNDEMIC OF PSYCHOSOCIAL RISKS DURING PREGNANCY AMONG HIV-INFECTED WOMEN IN SOUTH AFRICA

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Background: A variety of risk factors are known to negatively impact maternal and child health across the perinatal period in resource-limited settings, and HIV-infected women often bear a heavy burden of these perinatal risk factors. According to syndemic theory, when risk factors cluster together, the combination of these risk factors tends to produce worse outcomes than any risk factor alone. This study sought to use network modeling to characterize the co-occurrence of psychosocial risks during pregnancy among HIV-infected women living in KwaZulu-Natal (KZN), South Africa, which has the world's highest rates of HIV among pregnant women.

Methods: A cohort of 200 HIV-positive pregnant women was recruited from antenatal clinics in KZN. Various risk factors were assessed during the third trimester, including antenatal depression; HIV-related stigma; exposure to physical violence; low-income status; low social support; unintended pregnancy; distress upon pregnancy recognition; and younger age at childbearing. Network analysis was conducted in R using mixed graphical modeling to visualize associations between risk variables, adjusting for variable type(s) and the presence of all other variables in the network. Centrality statistics were examined to assess relative importance of each node in the network.

Results: The resulting network revealed complex relationships between risk factors. Of note, antenatal depression was associated with distress upon pregnancy recognition, which was strongly tied to unintended pregnancy. Antenatal depression was also connected to low social support and marginally to physical violence exposure. In turn, low social support was associated with low-income status and HIV-related stigma. Furthermore, HIV-related stigma

was independently associated with distress upon pregnancy recognition, as was younger age. The most central risk factor in the network was distress upon pregnancy recognition, which served to connect several other factors.

Conclusions: Our results characterize a network of psychosocial risks during pregnancy in a sample of HIV-positive women in South Africa. Emotional aspects of unintended pregnancy emerged as a central feature of this network, suggesting that unintended pregnancy in contexts of poverty, younger age, HIV-related stigma, and low social support is particularly distressing and may even contribute to further risks to maternal and child health, such as depression. Prevention of unintended pregnancies and interventions for coping with unplanned pregnancies may be especially critical in populations where multiple risks intersect. In addition, efforts targeting single risk factors (e.g., depression) should recognize the influence of other contextual variables and consider an integrated, multilevel approach to supporting the wellbeing of HIV-infected women during the perinatal period.

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F029 11:45 AM-12:45 PM

AN INNOVATIVE POPULATION HEALTH MODEL REDUCES EMERGENCY DEPARTMENT UTILIZATION IN A LARGE URBAN HOSPITAL SYSTEM

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Background: Individuals who are uninsured and from lower income communities have higher rates of chronic disease and are typically greater utilizers of emergency department (ED) and inpatient (IP) health services. Population health approaches that integrate individual, community, and environmental factors with access to a patient centered medical home have the potential to improve health and reduce health inequities and healthcare costs. This study evaluated whether individuals who accessed the Baylor Scott and White Health and Wellness Center (BSW HWC) had reduced ED or IP health services at Baylor Scott & White Health, a large urban hospital system in Dallas, TX.

Methods: The BSW HWC, a population health approach of Baylor Scott and White Health, located in an underserved urban community, contains: 1) a medical clinic, 2) a city maintained recreational center, 3) a teaching kitchen, 4) prevention programs for diabetes, weight management, and wellness, 5) access to community health workers for navigation, 6) social services, 7) weekly farm stands, 8) community outreach staff, and 9) academic and research staff. Participants with two or more visits to the BSW HWC between January 2010 and January 2015 were included in this analysis. Baylor Scott & White Health ED and IP utilization prior to and following initiation of care at the BSW HWC was evaluated with t-test and chi-square statistics.

Results: Data included 906 and 322 participants for the ED and IP utilization analysis, respectively (N=1056, 56% African American, 31% Hispanic, 8% Caucasian, 65% female, 65% uninsured, 14% Medicaid/Medicare, mean age = 50.0±13.3). The average number of Baylor Scott & White Health ED encounters significantly decreased by 17.7% ($p < .001$) following initiation of care at BSW HWC with an average cost decrease of 34.5%. The average number of Baylor Scott & White Health IP encounters decreased 36.7% ($p < .0001$) following initiation of care at BSW HWC with an average cost decrease of 54.4%.

Conclusion: As rates of chronic disease rise, particularly in lower income communities, population health approaches that improve health outcomes and act cost effectively will need to be adopted. Approaches that address social determinants of health, access to health care, prevention and management services, and ancillary health services can reduce ED and IP utilization in large urban healthcare systems leading to better population health and reduced costs.

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F030 11:45 AM-12:45 PM

COMORBIDITY OF ANXIETY AND DEPRESSION IN A CLINICAL SAMPLE OF INTERNALIZING YOUTH

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Comorbidity and Severity of Anxiety and Depression in a Primary Care Sample of Anxious and/or Depressed Youth

Objectives: To examine the sociodemographic and clinical characteristics of youths with anxiety compared to youths with comorbid anxiety and depression in a primary care sample of internalizing youths.

Brief rationale: One-third of adolescents meet DSM-IV criteria for an anxiety disorder, and 11.4% for depression (Merikangas et al., 2010). Furthermore, 10-15% of youths meet criteria for both (Nolen-Hoeksema & Hilt, 2010), putting them at risk for increased impairment over time (Garber & Weersing, 2010). Most internalizing youths are less likely to be identified by parents and teachers, compared to externalizing youths; thus, primary care service providers are usually the first line of defense in identifying this population (Dwyer, 2006). Therefore, the present study, based in a primary care setting, evaluated the additional burden that comorbid depression places on anxious youths, in terms of current symptom severity and impairment.

Methods: The current study evaluated baseline characteristics of 185 youths participating in a clinical trial in primary care (61.1% anxiety only, 32.4% comorbid depression). Clinical and sociodemographic characteristics between these two groups were compared.

Results: Youths meeting DSM-IV criteria for both anxiety and depression scored significantly and consistently higher than those in the anxiety only group on self- (Mc=37.85; Ma=27.96), parent- (Mc=34.28; Ma=29.88), and clinician- (Mc=45.35; Ma=16.08) rated measures of anxiety and depression symptoms (all $p < .05$), respectively. Comorbid youths were also more severe on many secondary symptom domains, including hyperactivity (Mc=4.83; Ma=3.81), emotional symptoms (Mc=6.05; Ma=3.56), problems with peers (Mc=3.10; Ma=2.41), and suicidal risk (Mc=.03; Ma= -.65), (all $p < .05$). Furthermore, anxious youths without depression scored significantly higher on current levels of general functioning (Mc=52.17; Ma=58.22).Analyses supported that a comorbid presentation was associated with increased symptom severity and clinical complexity (Bernstein, 1991; Garber & Weersing, 2010). The final poster will explore treatment response in an effort to inform intervention selection in comorbid cases. Additional sociodemographic comparisons (e.g., gender, race, education level) may also help address baseline health disparities in primary care settings, which may contribute to the translation of mental health behavioral medicine research into policy and practice.

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INNOVATIVE PLATFORM (MEVOKED) USES DIGITAL FOOTPRINT TO SUPPORT DEPRESSION MANAGEMENT IN PRIMARY CARE

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Effective depression management in primary care often includes use of a clinical registry to track patient symptom severity and response to treatment over time, nurse care coordination, and patient self-management support. While accurate and repeated depression assessment data are necessary for optimizing clinical treatment, patients with depression have barriers to adherence (Wing et al., 2002), including completion of self-report measures and clinical data collection with calls and clinic visits. MEVOKED program uses the individual's "digital footprint" to collect data relevant to a depressed person's self-management (e.g., minutes of online activity during the night, emotional valence of online content). Additionally, pop-ups collect quick and simple ratings of mood, quality of life, and medication adherence. MEVOKED provides a weekly summary of online behavior and self-assessment ratings emailed to the patient. In this study, a team of mental health providers, technology developers, and patient education researchers, assessed the feasibility and acceptability of MEVOKED within a primary care clinic already successfully implementing depression care management. Patient and provider use and satisfaction with MEVOKED were assessed with individual qualitative interviews. Data sources also included user behavior metrics, such as pop-up response rate and rating scales. A convenience sample of patients provided informed consent and qualitative and quantitative data to assess the addition of MEVOKED to their current depression management program. Of 35 participants using MEVOKED, 21 completed a qualitative interview (week 6 and 12). Subgroup analysis of clinical data (PHQ-9 scores, diagnoses, psychiatric medication) indicated participants were representative of patients enrolled in depression management. Qualitative interview data were analyzed by behavioral researchers experienced in *NVivo* qualitative data analysis software and methods of content analysis. Predominant patient themes included increased awareness of mood states and usefulness of behavioral prompts for medication adherence. Participant mean ratings (0-10; 0 = very negative/none; 10 = very positive/high) for MEVOKED program at end of study: 7.36 (SD = 2.92) for overall impression of MEVOKED); 7.54 (2.81) for perceived added value

treatment and 8.50 (2.96) for likelihood of recommending MEVOKED to others. User difficulties with technology were communicated to MEVOKED team allowing for responsive program refinement. Provider feedback emphasized integrating MEVOKED data into existing clinical systems to minimize burden. For those actively using MEVOKED, individualized reports of online behavior and mood ratings contributed to depression self-management and were perceived by many as a valuable addition to evidence-based depression management.

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F032 11:45 AM-12:45 PM

THE IPE DEBRIEFING HOUR: CREATING SPACE WITHIN INTERPROFESSIONAL EDUCATION TO FACILITATE AND PROCESS LEARNING

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We developed an interprofessional education (IPE) experience where students from schools of pharmacy, medicine, and social work longitudinally to serve as a care coordination team for patients identified complex and at high risk for unplanned healthcare utilization. Over the course of 10 four-week blocks, students and medical and pharmacy residents cared for 36 patients within a high volume clinic. Participating students (N = 29) in the pilot phase of its development were in their late 20’s (M = 29 years old), mostly women (72%), and largely White (38%) or Asian (38%). Students completed a pre-and-post measure evaluating their attitudes toward health care teams (Heinemann, 1999), including assessment of their attitudes toward the quality of care achieved through collaborative care and physician centrality. No significant change in attitude was demonstrated among the participants, likely because participants involved in the learning experience were to some degree interested in interprofessional care and thus provided scores favorable of IPE.

Lessons learned from this pilot project stemmed largely from the debriefing sessions facilitated by one or both of the authors, held for one hour at the end of Weeks 1, 3, and 4. These sessions provided the opportunity for learners to reflect in formal debriefing sessions on the experience of working as an interprofessional team. Debriefings included structured activities, including “getting to know you” exercises and discussion of assigned articles, and the creation of a safe space in which students learners processed their experience of IPE. We aim to share the barriers and facilitators experienced throughout the development of this program, which we have continued into its second year, with the goal to aid others interested in creating similar IPE programs at their own institutions.

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F033 11:45 AM-12:45 PM

EXAMINING JOHN HENRYISM AND MEDICATION ADHERENCE AMONG AFRICAN-AMERICAN WOMEN WITH HYPERTENSION

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John Henryism is a measure of maladaptive active coping that has been linked with health conditions including hypertension, diabetes, and prostate cancer. Few studies have examined the relationship between John Henryism and health behaviors among individuals with hypertension. Forty-seven percent of African-American women have hypertension, and approximately half have controlled hypertension. Adherence to antihypertensive medications is essential for hypertension control and preventing hypertension-related complications. The objective of this study was to examine the relationship between John Henryism and medication adherence among African-Americans women with hypertension. Data were obtained from the TRUST study, and included 553 African-American women with hypertension receiving care at a safety-net hospital in the Deep South. Medication adherence was measured using the 4-item Morisky Medication Adherence scale and John Henryism was measured using the 12-item John Henryism Active Coping Scale. Associations were quantified using ordinal logistic regression and adjusted for age, education, income and physical and mental health status. Within our sample of African-American women, individuals with high John Henryism scores reported lower adherence to medication (OR: 0.95, CI: 0.92-0.99). Our findings also indicated that higher self-reported mental health status (OR: 1.04, CI: 1.02-1.05) was linked with greater adherence. This study of John Henryism provides insights to the complex psychological and behavioral responses to stress seen among African-American women with hypertension. The findings of this study support the need for interventions that promote coping strategies and tailored approaches for improving medication adherence among African-American women.

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PATIENT ATTITUDES TOWARDS AN INGESTIBLE BIOSENSOR MEDICATION ADHERENCE SYSTEM

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Introduction: Measuring medication adherence in the real-world is fraught with difficulty. Direct measures of adherence monitoring (eg. directly observed therapy) are one of the few methods that provide reliable confirmation of medication ingestion and adherence. A novel direct measure of adherence, such as a digital pill, can provide reliable ingestion data in the real-world. Digital pills are composed of a radiofrequency emitter in a standard gelatin capsule encapsulating a desired medication. Upon ingestion, the digital pill is activated, transmitting real-time ingestion data to a cloud-based program that displays adherence data to clinicians. We have previously reported successful deployment of digital pills for opioid ingestion pattern monitoring from the emergency department (ED). Here, we report initial qualitative data regarding patient attitudes, beliefs and preferences towards use of this system for medication adherence.

Methods: We conducted our study at an academic, urban emergency department (ED) in individuals who were >18 years old, English speaking, without a history of substance abuse, and sustained acute fractures that would be treated on an outpatient basis. Study participants were outfitted with a digital pill (eTectRx, Newbury FL) and received brief instruction on operating the system prior to discharge. Participants used the digital pill for one week, and returned to our clinical research center for a guide-based open-ended interview regarding attitudes/beliefs/preferences of the ingestible biosensor system. Interviews were transcribed, reviewed and analyzed using the technique of applied thematic analysis.

Results: During our study period, 26 individuals were eligible for the study. We approached and consented 12 participants. Eleven participants (92%) reported acceptance of the digital pill and the monitoring device, finding the technology easy to operate after the training session in the ED. Nine participants (75%) perceived real-time adherence monitoring through a digital pill as acceptable and valuable. Nine participants (75%) found reassurance in confirmatory text messages, and would have preferred consistent reminder messages to reinforce adherence. Seven participants (58%) reported they would have preferred increased

battery life and a smaller hip monitor. No participants reported concerns regarding privacy of data transmission.

Conclusion: Digital pills are acceptable as a medication adherence monitoring device among ED patients. Mobile phone-based confirmatory text messages are an acceptable method to deliver real-time adherence data to users of digital pills.

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F035 11:45 AM-12:45 PM

CHANGES IN BOTH DIET AND EXERCISE IMPROVE DEPRESSION SYMPTOMS AMONG PERMANENT SUPPORTIVE HOUSING RESIDENTS

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Background: There is increasing evidence supporting lifestyle interventions for depression. For example, there is strong evidence for an inverse relationship between physical activity and depressive symptoms. In addition, there is growing evidence supporting dietary interventions as an effective treatment approach for depression. While depression disproportionately affects people with low income or a history of homelessness, it is unclear if exercise, diet, or a combined treatment approach should be emphasized in interventions for depression among this population.

Methods: We used baseline and 6-month follow-up assessments from 315 people who were participating in m.chat, a technology-assisted health coaching program for people with mental health symptoms residing in permanent supportive housing. Subjects were categorized into 4 groups based on their improvement in diet and/or exercise over this 6-month period: Group 1 consisted of subjects who improved both diet and physical activity; Group 2 consisted of subjects who improved diet only; Group 3 consisted of subjects who increased physical activity only and Group 4 consisted of subjects who did not improve on either measure.

Results: We calculated the change in Patient Health Questionnaire (PHQ-9) scores between baseline and 6 months and compared the difference between the 4 groups using a one-way ANOVA. A statistically significant difference was observed between the groups (F3,311 = 3.12, p = 0.0263). Next, we conducted pairwise comparisons among the 4 groups and observed a significant difference between groups 1 and 4 (Mean difference = 3.076, 95% CI 0.154 -5.997) after making Bonferroni corrections for multiple comparison. On average, PHQ-9 scores were 3 points lower for subjects who made improvements on both diet and exercise compared to those who did not make any improvement in either category.

Conclusion: Lifestyle interventions for depression that target both physical activity and diet may be more effective than interventions that target either physical activity or diet alone in members of disadvantaged populations.

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F036 11:45 AM-12:45 PM

EVALUATION OF AN MHEALTH APP: A PILOT TRIAL OF ‘DESTRESSIFY’ ON UNIVERSITY STUDENT MENTAL HEALTH

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1 in 5 Canadians experience mental health issues (Smetanin et al., 2011), with those aged 15 to 24 being most at risk (Statistics Canada, 2013). Mental health issues are of a particular concern for university students as they have shown significantly higher rates of mental health problems than the general public (Stallman, 2010). Current university support services are limited by factors such as available staff and finances, and social stigma has frequently been identified as an additional barrier that prevents students from accessing these resources (Eisenberg, Golberstein, & Gollust, 2007; Sasaki & Sasaki, 2014). Mobile health (mHealth) apps are one form of alternative health support that is discrete and accessible to students, and while they are recognized as a promising alternative, the efficacy of such apps has yet to be demonstrated through research (Donker et al., 2013).

The efficacy of the commercially available app Destressify Pro was tested in a sample of 163 undergraduate students from the University of British Columbia Okanagan using validated measures of quality of life, stress, anxiety, depressive symptomatology, sleep quality, and work productivity. Individuals in the experimental group (n=77) received Destressify Pro and were instructed to use the app for 4 weeks before completing a follow-up survey. Participants in the wait list control group (n=86) received no intervention material.

The experimental and control groups were statistically similar at baseline in terms of age, sex, ethnicity, program enrolment, mental health diagnosis percentage, and mental health service use (p>.05). Responses were compared between treatment groups using ANCOVA, repeated measures (RM) ANOVA, and RM MANOVA. App use was associated with lower trait anxiety (p=.005), higher energy and less fatigue (p=.005), as well as greater emotional wellbeing (p=.002). These differences were all of small effect size (h_p^2.05).

This research provides insight into the efficacy of mHealth apps in improving stress, anxiety, and related symptomatology in university students. The results of this study may be used by student-focused mental health support services to develop future initiatives using an evidence-based mHealth app to best support students. While changes in stress were not statistically different between groups (p=.06), mean changes over time were noteworthy in that the experimental group appeared to be decreasing in stress values (M_{pre} = 18.58; M_{post} = 17.78) as compared to control group (M_{pre} =19.60; M_{post} =19.84). Similarly, depressive symptomatology was not statistically different between groups but also showed similar trends (M_{exppre} = 8.36; $M_{exppost}$ = 6.36; M_{conpre} = 8.08; $M_{conpost}$ = 7.37). Future research may benefit from examining Destressify Pro and similar mHealth apps over a longer period of time and in university staff and faculty.

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MENTAL HEALTH STIGMA AND ATTITUDES TOWARD SEEKING MENTAL HEALTH SERVICES IN TAIWANESE IN TAIWAN AND US

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Limited research has examined mental health in Taiwanese in Taiwan and Taiwanese descent in the US. The aim of the current study is to examine: 1) the relationship between mental health stigma (MHS) and mental health help seeking attitudes (MHHSA) in Taiwanese in Taiwan and in the US; 2) the association of acculturation with MHS and MHHSA; 3) whether loss of face moderates the relationship between MHS and MHHSA, and 4) factors that should be addressed by culturally appropriate interventions to reduce MHS and improve MHHSA in Taiwanese in Taiwan and the US. The sample consisted of 243 participants (114 Taiwanese in Taiwan and 129 Taiwanese descent in the US). Participants completed an online survey assessing mental health self-stigma, public stigma, loss of face, acculturation (for US sample only), and MHHSA. Independent-Samples t-Test and Hierarchical Multiple Regression analyses were conducted. The results showed that Taiwanese in Taiwan reported greater levels of self-stigma (M = 2.34, SD = .54) than Taiwanese in the US (M = 2.18, SD = .61), $p < .05$. However, differences in public stigma was not found between the two groups. Taiwanese in the US (M = 3.12, SD = .47) reported significantly more positive MHHSA than their counterparts in Taiwan (M = 2.91, SD = .46), p =.001. Increased levels of self-stigma and public stigma significantly predicted less positive MHHSA for both groups. Acculturation as measured by levels of immersion into Taiwanese and US mainstream cultures predicted MHHSA. Specifically, greater levels of immersion into Taiwanese culture significantly predicted less MHHSA (B = -.01, SE = .002, p = .001) whereas greater levels of immersion into US culture significantly predicted more positive MHHSA, B = .01, SE = .002, p = .005. Loss of face did not moderate the relationship between MHS and MHHSA in both Taiwan and US samples. The results of this study inform research on the relationship between MHS and MHHSA. This finding calls for future examination of other factors that may moderate the relationship between MHS and MHHSA. Findings also highlight the significance of developing interventions to reduce mental health stigma and also interventions that are sensitive to cross-cultural and acculturative differences across Asian and other immigrant populations.

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F038 11:45 AM-12:45 PM

REACTIONS TO ACUTE MEDICAL EVENTS: TRAUMATIC VS. NON-TRAUMATIC STRESSORS

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Posttraumatic stress disorder (PTSD) is one of the few psychopathologies requiring a specific antecedent for the diagnosis. Criterion A for PTSD in the DSM-5 defines a traumatic event as one that involves exposure to actual or threatened death, serious injury, or sexual violence. Operationalizing what constitutes a trauma is challenging as individual perceptions and appraisals differ and can alter the impact of the event (Stein, Wilmot, & Solomon, 2016). One area where this distinction is especially difficult to discern is medical illness. Research on PTSD due to acute medical events has largely focused on heart attacks and strokes, two life-threatening occurrences that do meet the Criterion A threshold. However, some non-traumatic medical stressors may be associated with similar psychological effects (Edmondson, 2014). The purpose of the current study is to explore the impact different types of acute medical events/stressors (AMES) have on subjective responses and psychological symptoms.

Participants (N = 51) completed an online study of reactions to AMES, defined as serious acute illness or stressful diagnostic/treatment procedures. Participants first reported which AMES they had experienced (out of a list of 10) and identified the one they considered most distressing. Next, they answered questions about their subjective responses to the event, including pain, helplessness, fear, belief that they would die, and current distress. AMES were classified into categories to reflect whether or not they met Criterion A. Traumas (e.g., heart attack, miscarriage; n = 17) were compared to non-traumatic stressors (e.g., surgery, diagnostic procedures; n = 34) to identify differences in subjective responses and scores on measures of PTSD (PTSD Checklist; PCL-5) and depression (Beck Depression Inventory; BDI-II).

Results showed no significant differences between trauma groups for subjective responses, PTSD symptoms, or depression symptoms. However, regressions predicting symptoms from subjective response scales were significant; PCL: $R^2 = .38$, $p < .001$; BDI: $R^2 = .24$, $p = .018$. Belief that one would die was the only significant predictor (at the time of the event) for both PTSD symptoms ($\beta = .38$, $p = .004$) and depression ($\beta = .35$, $p = .015$). This suggest that whether a medical stressor meets PTSD Criterion A is less important than the patient's interpretation of the event in determining its long-term effects on mental health.

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F039 11:45 AM-12:45 PM

SCREENING OF MOOD SYMPTOMS IN NEW PATIENTS PRESENTING TO REPRODUCTIVE ENDOCRINOLOGY CLINIC: TIME FOR EARLY INTERVENTION?

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AIM
Women are at greatest risk for mood disorders during childbearing years and infertility is a significant and stressful life event further impacting emotional well-being. The aim of this study was to determine presence of clinically significant anxiety or depression in new patients establishing care within reproductive endocrinology clinic with goal of early intervention with clinical health psychologist.

METHODS
Data was collected for all new patients presenting to the Reproductive Endocrinology clinic for consultation regarding infertility. A total of 170 patients were assessed during a 3-month time period from April 2016 through June 2016. Fertility preservation consults were excluded. New patients were given the Patient Health Questionnaire-9 (PHQ-9) and the Generalized Anxiety Disorder-7 (GAD-7) scale by nursing staff to complete prior to their physician appointment. Scores were calculated for the presence of mild, moderate, or severe symptomatology. A cut-off of 10 indicating moderate anxious or depressed symptoms was set to prompt physician discussion regarding emotional well-being with patients and referral for psychological intervention early in treatment process.

RESULTS
Of the 170 patients evaluated, 126 of the patients (74%) scored below 5 on both measures indicating minimal to no emotional distress at this early time point in the fertility process. 33 patients (19%) endorsed mild symptoms of depression or anxiety and the remaining 11 patients (7%) indicated moderate symptoms. No patient endorsed severe symptoms of either depression or anxiety at this time point. Of the 11 patients indicating moderate symptoms, 7 patients were referred for initial psychological evaluation and 3 elected to schedule and attend the appointment.

CONCLUSIONS
Despite the incidence of mood disorders in general population and the stress associated with reproductive time period for women, a lower than expected amount of patients endorsed clinically relevant mood symptoms at their initial infertility consult. Of those that endorsed

clinically significant mood symptoms, relatively few followed through with establishing with health psychology. Ongoing assessment of whether there is clinical utility in initial psychological distress measures is warranted. Based on these results, for next steps clinical providers modified the threshold for referral to mild symptoms and initiated re-evaluation time points, including after failed treatment interventions when emotional distress is likely to increase. Barriers to early intervention with health psychologist should also be identified.

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DEVELOPMENT AND ASSESSMENT OF HEALTH SURVEYS: FITTING A GRADED RESPONSE MODEL

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Objective: The graded response model, an item response theory (IRT) model, can be used to improve the development of surveys, even when sample sizes are restricted. Typically, health-based survey development utilizes classical statistical techniques (e.g., reliability and factor analysis). In a review of four prominent journals within the field of Health Psychology, we found that IRT-based models were used in less than 10% of the studies examining scale development or assessment. However, implementing IRT-based methods can provide more details about individual survey items, which is useful when determining the final item content of surveys. An example using a disease specific quality of life (QoL) questionnaire for patients treated for Cushing's syndrome is discussed. Cushing's syndrome is a rare hormonal disease characterized by chronic exposure to elevated cortisol levels. Patients suffering from Cushing's syndrome serve as a disease model for chronic stress.

Design: Patients treated for Cushing's syndrome were recruited from a patient organization's (The Cushing's Research and Support Foundation) email listserv and Facebook. Patients completed an online version of the Cushing's Quality of Life (QoL) questionnaire (CushingQoL; English version) and demographic questions.

Results: Patients with Cushing's syndrome ($n = 397$) completed the CushingQoL. Results from the graded response model supported a 2-subscale scoring process for the survey [$M2(17) = 19.25$, $p = .31$). All items were deemed as worthy contributors to the survey (all slopes > 1.0).

Conclusion: The graded response model can accommodate unidimensional or multidimensional scales, be used with relatively lower sample sizes, and is implemented in free software. Use of this model can help to improve the quality of health-based scales being developed within Health Psychology.

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F041 11:45 AM-12:45 PM

FACTORIAL INVARIANCE AND RELIABILITY OF THE DECISIONAL BALANCE AND SELF EFFICACY SCALES FOR EXERCISE

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Two crucial psychometric requirements for any measure are scale reliability and factorial invariance. This paper evaluates the Decisional Balance for Exercise and the Self-Efficacy Scale for Exercise, using a sample of parents or legal guardians of 9th-grade students (N = 347) across Rhode Island. Three levels of invariance were tested, from least to most restrictive: Configural Invariance, Pattern Identity Invariance, and Strong Factorial Invariance. **In Study I**, the Decisional Balance Scale for Exercise, consisting of two uncorrelated factors with three items each for (Pros) and (Cons) was evaluated. Strong Factorial Invariance was a good fit for the model across educational level (CFI: 0.92), Pattern Identity Invariance across gender (CFI: 0.94), annual income (CFI: 0.93), and stage of change (CFI: 0.91), and Configural Invariance across age (CFI: 0.95). Internal consistency (Coefficient Alpha) was .85 for Pros, and .69 for Cons. **In Study II**, the Self Efficacy Scale for Exercise had a hierarchical model that consists of two factors with two items for (Internal Confidence) and four items for (External Confidence). Strong Factorial Invariance was a good fit for the model across gender (CFI: 0.99), age (CFI: 0.92), educational level (CFI: 0.98), annual income (CFI: 1.00), and stage of change (CFI: 0.91). Coefficient Alpha was .36 for Internal Confidence, .68 for External Confidence, and .66 for the Total Scale. Together, invariance and reliability provide empirical support for the validity of these two measures.

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F042 11:45 AM-12:45 PM

IDENTIFYING ATYPICAL RESPONSES IN THE CUSHING'S QUALITY OF LIFE QUESTIONNAIRE: USING PERSON FIT STATISTICS TO DETECT OUTLIERS

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Context: Cushing's syndrome is a rare hormonal disorder characterized by the chronic overproduction of cortisol. Symptoms include physical, psychological, and health impairments. Upon remission, symptoms typically improve, however quality of life (QoL) remains impaired despite long-term remission. Because impairments in QoL are persistent in patients treated for Cushing's syndrome, the Cushing's QoL (CushingQoL) questionnaire was developed to evaluate disease specific QoL concerns. When evaluating QoL using the CushingQoL questionnaire, outlier detection is important. However, traditional methods of outlier detection (e.g., boxplots) can miss patients with "atypical" responses to the questions that otherwise have similar total (subscale) scores. In addition to detecting outliers, it can be of clinical importance to determine the reason for the outlier status, or "atypical" response.

Objective: The aim of the current study was to illustrate how to derive validity scores for outlier detection through a statistical method examining person fit.

Design and Patients: Patients treated for Cushing's syndrome (n=394) were recruited from the Cushing's Support and Research Foundations listserv and Facebook page. All patients were asked to complete an online version of the CushingQoL.

Results: Conventional outlier detections methods revealed no outliers reflecting extreme scores on the subscales of the CushingQoL. However, person fit statistics identified 18 patients with "atypical" response patterns, which would have been otherwise missed ($Zh > |\pm 2.00|$). Twelve of the patients with "atypical" responses tended to endorse the more extreme "always" or "never" responses and were deemed as "invalid responses." The other 6 patients tended to endorse the "sometimes" or "somewhat" responses and were deemed as "overfitting".

Conclusion: While the conventional methods of outlier detection indicated no outliers, person fit statistics identified several patients with "atypical" response patterns who otherwise appeared average. Person fit statistics allow healthcare providers to delve further into the underlying problems experienced by these "atypical" patients treated for Cushing's syndrome. Person fit statistics are an important tool for physicians and researchers when working with a

variety of patient groups. This method can also be extended to other types of health-related questionnaires.

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F043 11:45 AM-12:45 PM

LATENT GROWTH CURVE MODELS FOR BIOMARKERS OF THE STRESS RESPONSE

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Objective: The stress response is a dynamic process that can be characterized by predictable biochemical and psychological changes. Biomarkers of the stress response are typically measured over time and require statistical methods that can model change over time. Through a search in the journal Health Psychology since 2000, the most commonly used methods to evaluate change over time in biomarkers were ANOVA and multilevel modeling approaches. Despite its flexibility, we identified no studies using latent growth curve models (LGCMs). Stress researchers may be unaware of how these methods can be useful. Therefore, our purpose is to provide an overview of LGCMs in the context of stress research.

Methods: The use of LGCMs are discussed in the context of the Trier Social Stress Test (TSST), a common laboratory acute stress paradigm. Results: The following four specifications of the LGCM are described: basic LGCM, LGCM for multiple groups (observed or unobserved), piecewise LGCM (PLGCM), and LGCM for two parallel processes. The basic LGCM is best suited for evaluating the rate of change over time. The LGCN for multiple groups can evaluate differences in growth trajectories for measured groups (e.g., gender, experimental groups) or unobserved groups (e.g., nonresponders vs. high responders). The piecewise LGCM is best suited for evaluating nonlinear change where the location of the bend (i.e., time-point where growth becomes nonlinear) in the growth trajectory line is known a priori. The LGCM for two parallel processes is best suited to model the relationships between two different simultaneous measures of the stress response.

Conclusions: The LGCM and the alternative specifications of the LGCM are a useful tool for stress researchers evaluating change over time of biomarkers such as cortisol or alpha-amylase. Ultimately, the choice of which statistical method to use will be determined by the research question and characteristics of the data. A link to example code of each specification of the LGCM will be provided on the poster.

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F044 11:45 AM-12:45 PM

MODEL (MIS)FIT IN A CONFIRMATORY FACTOR ANALYSIS OF THE RELIGIOUS ORIENTATION SCALE – REVISED

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The Religious Orientation Scale-Revised (ROS-R) was developed to assess religious motivation with two sub-scales (i.e., intrinsic – religion as an end, an individual who lives his/her life according to their religious beliefs; extrinsic – religion as a means to an end, an individual who uses religion to achieve personal non-religious goals). The ROS-R is a 14-item questionnaire derived from the 20-item original measure; the ROS-R's two-factor structure was originally tested, via confirmatory factor analysis, in a sample of students who attended secular and religious colleges. The ROS and ROS-R are the most commonly used measures when examining religious orientation in relation to health. Within the broader health literature, individuals who are intrinsically oriented are less likely to partake in unhealthy behaviors and experience fewer anxiety symptoms than those who are extrinsically oriented. The aim of the present study was to confirm the factor structure of the ROS-R in a large sample of college students (*N* = 810; 71.3% female, *M* age = 20.1, *SD* = 2.9). Confirmatory factor analysis evaluated the goodness of fit of the previously validated, two-factor structure. Comparative fit index (CFI), root-mean-square error of approximation (RMSEA), and weighted root mean square residual (WRMR) indicators of model fit were considered. Results indicated poor model fit for all models tested (e.g., significant χ^2 values; CFIs < .90, RMSEAs > .10; Hu & Bentler, 1999). Results suggest greater caution when health researchers consider using the suggested two-factor structure of the ROS-R. Future research should be conducted to further examine the factor structure and psychometrics of the ROS-R in diverse samples.

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F045 11:45 AM-12:45 PM

IMPLEMENTATION OF A TBI SCREENING CLINIC FOR OEF/OIF VETERANS

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Approximately 6.7% (Taylor, 2011) of Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF) Veterans are returning from deployment with traumatic brain injury (TBI), also known as the "signature injury" of this conflict. TBI can be associated with a host of neuropsychological deficits such as problems with attention, memory, and executive functioning. Although most individuals who sustain a mild TBI have full recovery within days to weeks post injury, a small proportion have cognitive deficits that extend beyond one year. Reports of cognitive complaints are often complicated by co-occurring mental health symptoms. The current study sought to understand the prevalence and relationships among TBI, post-traumatic stress disorder PTSD, and depression among OEF/OIF Veterans within the context of a neuropsychological screening evaluation which was conducted during the same appointment as the nationally mandated second level TBI evaluation. The purpose of the clinic was to improve access and quality of care by conducting brief (one hour) neuropsychological screening exams, the results of which were used to connect Veterans to the most appropriate level of care. The majority of the 138 participants was male (95%) and Caucasian (71%); 44% were married, 48% employed, and the number of deployments ranged from 1 to 14 (M=1.79 SD=1.40). On average, Veterans reported clinically significant levels of depression (Beck Depression Inventory-II; M=23.76, SD=13.34) and PTSD (PTSD Checklist, military version; M=51.74, SD=16.02) symptoms. Averages for neuropsychological subscales, as measured by the Neuropsychological Assessment Battery (NAB), were within normal limits (reported as standard scores between 85-115) for attention, memory, and executive functioning. Correlations were also examined; while PTSD symptoms were negatively correlated with all three subscales of the NAB, depression symptoms were only negatively correlated with memory (all *p's* < .05). After this brief assessment, 20% of veterans were referred for full neuropsychological batteries and 70% to mental health services. The results of this study highlight the potential benefits of a brief screening assessment to improve services, access, and provide psychoeducation to newly returned Veterans.

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F046 11:45 AM-12:45 PM

MIXED-EFFECTS MODEL ANALYSIS OF REDUNDANCY IN LONGITUDINAL ELECTRONIC HEALTH RECORDS

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Widely adopted copy-and-paste function in electronic health records (EHRs) system impacts negatively on patient care by introduction of errors, decreasing the efficiency in patient care due to redundant information in EHR, and imposing cognitive burden on physicians requiring unnecessary sifting through the clinical notes in a limited time during patient encounter. Previous studies on redundancy in EHRs have limitations. They only focused on the whole note even though nested sections have different redundancy or used only a small number of notes, no systematic regression approach was applied that can correctly capture covariance structure and multi-levels inherent in EHR redundancy data. We collected 950 clinical notes from 100 patients seen by 18 physicians over 31 time-points from Veterans Affairs (VA) San Diego hospital. Each note was tagged and split into sections of assessment plan, labs, medications, past medical history, physical exam, vital sign, and a whole note. Preprocessing was applied with natural language processing (NLP) that includes lower-casing, punctuation/comma removal, stop-word removal, and lexical normalization. A series is defined as a set of notes for a single patient in a chronological order. Within a series, the note created at the earliest time-point was deemed as a reference note, from which a distance to all other notes, within a series, was measured. Three distance functions are normalized Levenshtein edit distance, Needleman-Wunsch (NW) global alignment based distance, and Smith-Waterman (SW) local alignment based distance. A mixed-effects model was fit using DISTANCE as an outcome, PATIENT identifier as a group variable, TIME as a nested/correlated within a patient, and three covariates; document type (DOCTYPE), ALGORITHM for distance, preprocessing of either NLP-processed or not. Python 2.7 and Natural Lanuage Toolkit (NLTK) 3.0 were used for data management and R 3.3.1 was used for statistical analysis. Starting with the null model, each covariate was sequentially added if ANOVA test of a full model and a nested model was significant. The resulting random effects model retained 4 covariates, DOCTYPE, ALGORITHM, NLP, and TIME, all significant at p-value threshold 0.05. Profiling per-section trend of redundancy in an individual patient showed the marked difference of pattern for each section in reference to the whole note. For example, the past medical history section level pattern showed plateau pattern while the whole note level pattern fluctuated along the

time. Hence different sections contribute differently to the redundancy between two clinical notes. When the rank-based correlation was measured between distance algorithms, Levenshtein and NW showed high correlation ranging [0.87, 0.97]. Our study shows that section instead of a whole note is preferred unit of redundancy analysis, and demonstrates the usefulness of mixed-effects model.

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F047 11:45 AM-12:45 PM

ROBOTIC THERAPY IN A VA LONG TERM CARE FACILITY - EFFECTIVENESS DATA ON AN ITEM LEVEL

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Robotic technology has become increasingly widespread in its adoption and acceptance in mainstream society. One of the most recent developments in the clinical use of robotics is that of the socially assistive robot, with the most prominent and early entrant to this social robotics niche taking the form of a baby harp seal, dubbed 'Paro.'

Paro has been studied and used with a variety of populations, and most extensively, with older adults in residential and custodial care settings. Paro has been previously found effective in reducing depression, subjective loneliness, and improving cognitive function in older adults, and there has been evidence suggesting Paro is effective in reducing behavioral and psychological symptoms of dementia. Recently, the Department of Veterans Affairs has become interested in using social robotics with older adult long-term care veterans as a psychosocial intervention at their Community Living Centers (AKA, VA nursing homes).

The current proposal involves an item-level reanalysis of previously published data demonstrating the broad effectiveness of Paro in improving mood and behavior in residents at a specialty geropsychiatric CLC facility. Previous data has found that use of Paro tends to be more effective in improving observations of positive mood and prosocial behavior, rather than decreasing negative mood states and antisocial behaviors (e.g., both internalizing and externalizing in nature). It is thought that this is because introduction of a nonpharmacological intervention tool like Paro is effective for subjects who are not acutely distressed, and therefore are more receptive to introduction of a companion robot.

What is as yet unclear is for what specific kinds of behavioral and mood symptoms and states the introduction of Paro might be most or least effective for in veteran long-term-care residents. This kind of information could help to guide clinicians in helping to structure and target their introduction of such an intervention to patients and residents for whom they stand the best chance of success.

Results suggest that while the greatest magnitude of change in behavioral and mood descriptors observed by nursing staff was in positive mood and behavioral descriptors such as

“conversing,” and “bright affect,” there was evidence that Paro was effective in reducing nursing observations of negative states such as “anxiety” and even externalizing behaviors such as “wandering.” It should be noted that, in line with expectations, observations such as “pacing,” “yelling,” or “complaints of pain” were essentially flat.

Reasons for these findings will be briefly discussed, as well as clinical implications for veteran and non-veteran populations, and suggestions for further research.

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SMOKING AND DRINKING BEHAVIORS OF MILITARY SPOUSES: FINDINGS FROM THE MILLENNIUM COHORT FAMILY STUDY

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The association between stressful military experiences and tobacco use and alcohol misuse among service members is well-documented. However, little is known about whether stressful military experiences are associated with tobacco use and alcohol misuse among military spouses. Using 9872 service member-spouse dyads enrolled in the Millennium Cohort Family Study, we employed logistic regression to estimate the odds of self-reported cigarette smoking, risky drinking, and problem drinking among spouses by service member deployment status; communication regarding deployment; and stress associated with military-related experiences while adjusting for demography, mental health, military experiences, and service member military characteristics. Current cigarette smoking was reported by 17.2%, risky drinking by 36.3%, and problem drinking by 7.3% of military spouses. Current deployment was not found to be associated with spouse smoking or drinking behaviors. Communication about deployment experiences with spouses was associated with lower odds of smoking, but not with risky or problem drinking. Spouses bothered by communicated deployment experiences, and those who reported feeling very stressed by a combat-related deployment or duty assignment, had consistently higher odds of both risky and problem drinking. These results demonstrate how a deployment experienced by military spouses is associated with their smoking and alcohol misuse. A focus on deployment occurrence without consideration of a spouse's experience may miss important correlates of this exposure.

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F049 11:45 AM-12:45 PM

ASSOCIATIONS BETWEEN EXPERIENTIAL AVOIDANCE AND PSYCHOLOGICAL DISTRESS IN OVERWEIGHT AND OBESE INDIVIDUALS

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Background: Experiential avoidance (EA) is a pattern whereby individuals attempt to avoid experiencing physical sensation, thoughts and feelings. This avoidance pattern is theoretically related to exercise dependence, disordered eating, depression, anxiety, and stress; however, these relationships remains unclear in subclinical populations. Understanding the associations between these variables in groups such as pre-obese and obese individuals can help clinicians and researchers better individualize recommendations to reduce weight and effectively change behavior. Thus, the purpose of this study was to examine experiential avoidance strategies and other related variables in a sample of approximately 30% overweight and 32% obese individuals using BMI and body dissatisfaction as weight measures.

Method: Participants (N=1075; Mean Age = 42.05, SD = 15.37, 60% female) completed an online survey that included the Multidimensional Experiential Avoidance Questionnaire (MEAQ), Eating Aptitudes Test (EAT-26), and the Depression Anxiety Stress Scale (DASS-21). Correlation and regression analyses were used to identify associations between experiential avoidance, eating pathology, psychological distress variables and weight measures.

Results: BMI and body dissatisfaction were related to depression (r= .107, p< .001, N= 1068; r= .135, p< .001, N= 1067), anxiety (r= .121, p< .001, N= 1069; r= .122, p< .001, N= 1068), stress (r= .067, p= .027, N= 1068; r= .087, p= .005, N= 1067), and overall psychological distress (r= .103, p= .001, N= 1061; r= .124, p< .001, N= 1060) levels in the sample. Mean comparisons further indicated that overall psychological distress levels increased across BMI categories as participants' BMI increase. Further analyses indicate that individuals' psychological distress level was related to their levels of experiential avoidance (r= .454, p< .001, N= 1057). An inverse relationship between BMI and obligatory exercise was found (r= -.191, p< .001, N= 1057), indicating that individuals with higher BMI have less compulsive desire to engage in exercise. A multiple regression model with disordered eating pathology, overall experiential avoidance, and specific experiential avoidance strategies of procrastination, distraction and suppression, and behavioral avoidance as predictors of psychological distress: R^2= .305, F(5, 1056) = 92.59, p< .001 .

Discussion: Results suggest the associations among disordered eating pathology, psychological distress, and experiential avoidance require further research and understanding,

particularly in the treatment and care of overweight and obese individuals. This study may inform researchers and clinicians on ways to better assess and treat individuals with weight and eating difficulties, and further analyses are expected to explain the relationship between these theoretically related constructs.

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F050 11:45 AM-12:45 PM

EFFECTS OF BEHAVIORAL WEIGHT-LOSS TREATMENT ON SYMPTOMS OF FOOD ADDICTION IN ADULTS WITH OBESITY

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Introduction: Food “addiction” (FA) involves the compulsive consumption, despite adverse consequences, of highly palatable foods such as those high in sugar or fat. In this study, we examined the effect of behavioral weight-loss treatment on FA symptoms, and we explored potential correlates of decreases in FA symptoms, including weight loss and changes in the consumption of sweets and fruits.

Methods: The study sample included 127 adults (82.7% women, 83.5% Caucasian; M±SD; age = 55.6±10.4 years, BMI = 36.5± .5 kg/m^2) who completed a 4-month behavioral weight-loss program. The Yale FA Scale (YFAS), a 25-item self-report questionnaire using modified DSM-IV substance dependence criteria, was administered pre- and posttreatment. Consumption of sweets and fruits were measured by the Rapid Eating Assessment for Participants-Shortened Version (REAPS). Analyses were conducted using bootstrapped one-way ANOVAs and bootstrapped hierarchical regression.

Results: At baseline, participants endorsed a mean of 2.4 out of 7 FA symptoms, and 14.2% met the YFAS criteria for FA (^{3}3 symptoms coupled with distress/impairment). The intervention produced a mean weight loss of 8.7% initial body weight ($p < .001$). From pre- to posttreatment, the mean number of FA symptoms fell to 1.5 ($p < .001$) and the proportion of participants who met the YFAS diagnostic criteria decreased to 2.4% ($p = .001$). Reduction in FA symptoms was associated with reduced frequency of sweets consumption (B = -.446, $p = .011$) and increased fruit intake (B = -.408, $p = .005$), but weight change was not significantly related to FA symptom change (B = -.332, $p = .900$). The following blocks were entered in the hierarchical regression: 1) racial status, baseline BMI; 2) weight change; 3) change in sweets consumption, change in fruit intake. Racial status and baseline BMI explained a significant amount of the variability in FA symptom changes ($R^2 = .073$, $p = .009$); weight change did not contribute significantly (R^2 change = .012, $p = .201$), but changes in consumption of sweets and fruit explained a significant amount of variability beyond weight change (R^2 change = .112, $p < .001$).

Discussion: The findings in this study showed that participation in behavioral weight-loss treatment significantly decreased FA symptoms. However, the reduction in FA symptoms was not related to weight loss but was associated with increased intake of fruits and decreased consumption of sweets.

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F051 11:45 AM-12:45 PM

EVALUATING A TARGETED, UNIVERSAL MIDDLE SCHOOL PROGRAM FOR CHILDHOOD OVERWEIGHT AND OBESITY: STAYINGFIT

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Childhood obesity is a pressing public health concern associated with significant medical and psychosocial comorbidities. Intervention is crucial, and schools are often suggested as an optimal venue through which to intervene, although the results of such interventions are inconsistent and mixed. The present study sought to expand on the literature by evaluating the effectiveness of an evidence-based, online, targeted and universal school-based obesity intervention, *StayingFit,* in three middle schools in a rural community of low-socioeconomic status. The intervention was tested in both a cluster-randomized (Study 1, N=524) and pre-post (Study 2, N=307) design. *StayingFit* was feasible to implement and was generally liked by students and teachers, however, outcome results were limited and inconsistent between Study 1 and 2.In Study 1, the interventionresulted in decreases in fruit juice (B=-0.01, pStayingFit was ineffective in creating changes in relative weight, diet, physical activity, sleep, or psychosocial outcomes (all other *p*s>.05). Possible reasons for the limited effectiveness of the intervention include implementation challenges, the nature of the population and community, insufficient use of behavioral strategies and technology, limited program duration, low completion rates, and lack of parental engagement. This study contributes to the mixed findings in the school-based intervention literature, and highlights many of the challenges encountered when implementing interventions in high-risk communities. There is a pressing need for further research to design and test multi-level and multi-sector interventions that can create meaningful and necessary change in these communities.

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F052 11:45 AM-12:45 PM

FOOD SELECTION DURING BINGE EPISODES IN HISPANICS WITH BINGE EATING DISORDER

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Binge eating disorder (BED) has been identified as the most prevalent eating disorder among Hispanics. This ethnic group has also shown high rates of obesity, a medical condition strongly associated with BED. Yet, few studies have examined the type of foods consumed during binge episodes and such studies have consisted of primarily Caucasian samples limiting the generalizability of the findings to other ethnic groups. Given that recent research has shown no ethnic differences in BED, studies investigating nutritional aspects of binge eating episodes among ethnic minorities, especially Hispanics who are obese, are needed. We examined the food selection during binge episodes for Hispanics with BED and obesity. Participants were 14 Hispanic adults aged 20 to 62 (M = 47.21, SD = 13.17) with a mean body mass index of 36.46 (SD = 6.34). Approximately 93% of the sample was born in the U.S. Participants were administered the Eating Disorder Examination in which they were asked to describe foods consumed during a binge episode. Two raters coded the binge episodes to identify which food pyramid categories (e.g. grains, fruits, vegetables, meats and beans) and food types (e.g. Bread/pasta/tortillas, potatoes, rice, sweet snacks, salty snacks, high-fat meat items) were consumed. The two raters reached 100% agreement after discussing the few coding discrepancies. The predominant food consumed during the binge episode was identified by food pyramid category as well as food type. Participants had an average of 3.22 binge episodes per week (SD = 2.69) for the past three months. Of the binge episodes, 85% contained high-fat meat items, 68% contained sweet snacks, and 64% contained breads/pastas/tortillas. For food pyramid categories, the most common predominant food consumed during a binge episode was meats and beans (64%) followed by grains (21%). Specifically, when examining type of food consumed during a binge episode, high-fat meat items were the most common predominant food (53%) followed by bread/pasta/tortillas (14%). Study findings indicate that high-fat meats and sweet snacks are common binge foods in Hispanics with BED and obesity which partially supports prior research with primarily Caucasian samples. Additional research is warranted to further determine food selection patterns during binge episodes in this ethnic minority group. Such research could provide valuable information that can be utilized to modify BED treatments for Hispanics.

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F053 11:45 AM-12:45 PM

OBESITY STIGMA: EFFORT, ANXIETY, AND COGNITIVE FUNCTIONING

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Background: Health-related stigma is a fundamental yet understudied contributor to health problems. Among health conditions that are stigmatized, obesity ranks near the top. Negative effects of obesity stigma have been found in healthcare, education, employment, and interpersonal relationships. Health behaviors have been shown to be directly affected by experiences of stigma as demonstrated by several experiments in which acute stigmatization leads individuals to eat unhealthy foods and engage in less physical activity. Less is known about the mental processes that mediate these effects and how experiencing stigmatization might affect cognitive functioning. Two experiments explored these effects.

Methods & Results: Experiment 1 tested the hypothesis that being stigmatized for having obesity acutely affects overweight individuals' effort compared to normal weight participants and controls. In a laboratory setting, participants ($N = 97$) were randomly assigned 1 of 3 conditions. They received either mildly stigmatizing information about their weight status, strongly stigmatizing information about obesity stereotypes, or no stigmatizing information. The dependent variable of effort was measured by the amount of time participants spent attempting to solve very difficult anagram tasks. No between group differences were observed ($p > .05$). Experiment 2 was of similar design ($N = 155$), but with different dependent variables: implicit bias toward anxiety-related words and working memory. Deleterious effects were hypothesized for overweight individuals vs normal weight participants and controls. Implicit bias toward anxiety-related words was measured using a computerized dot probe task. Working memory was measured using a computerized operation span memory task. No between group differences were observed ($p > .05$).

Conclusions: In both experiments, participants who were overweight fared no worse in these realms than other participants after being stigmatized for their weight. All participants who were stigmatized performed as well as controls regardless of level of stigmatization. These findings suggest a limit exists to how badly individuals are affected by experiencing acute stigma. This evidence contradicts other studies that do show individuals suffer from acute stigmatization and a broad literature that suggests cumulative effects of stigma are

detrimental. It is possible that chronic stigmatization leads to problems not apparent in acute stigmatizing episodes. It may also be that health stigma only affects individuals in specific relevant behaviors as in stereotype threat phenomena.

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F054 11:45 AM-12:45 PM

UNDERSTANDING OF DYNAMIC INTERRELATIONS BETWEEN POSITIVE EMOTIONS AND CRAVINGS FOR UNHEALTHY SNACKS AND DRINKS

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Background: Few efforts have been made to investigate dynamic interrelations between “positive emotions” and “cravings for unhealthy snacks and drinks” among adolescents. Ecological momentary assessment (EMA) has been recommended to acquire ecologically valid real-time information on snacking behaviors and related psychosocial factors. The time-varying effect model (TVEM) allows regression coefficients, which quantify behavioral associations, to vary over time and to be expressed dynamically and graphically, as smooth functions of time. This model therefore provides a novel approach for modeling dynamic interrelations. In this study we analyzed data from a longitudinal assessment of momentary ratings of four types of positive emotions and craving for unhealthy snacks and drinks among adolescents with the purpose of advancing understanding of their dynamic interrelations over time.

Methods: EMA data were collected during a 7-day period on handheld PDA devices among 158 adolescents aged 14 to 17 years. Time-varying measurements included momentary self-reported scores of positive emotions (i.e. feeling “relaxed”, “happy”, “energetic” and “cheerful”, scores ranging 0-100) and self-reported scores of three craving outcomes (i.e. craving for a “sweet snack”, a “salty snack” and a “sweetened drink”, scores ranging 0-100). Multilevel random-effect models and TVEM models were employed in the longitudinal analysis with adjustment for gender, ethnicity, age and obesity status.

Results: Results from the multilevel random-effect models revealed significant positive associations of positive emotion scores with scores of craving for a sweet snack (feeling relaxed: β=0.04, p=0.03; feeling happy: β=0.07, p=0.003; feeling energetic: β=0.10, p0.0001; feeling cheerful: β=0.08, p=0.001) and with scores of craving for a sweetened drink (feeling relaxed: β=0.08, p=0.0001; feeling happy: β=0.14, p

Conclusions: Our study demonstrated an initial effort to understand the process of time-varying interrelations between momentary assessments of positive emotions and craving for unhealthy snacks and drinks among adolescents. A better understanding of the underlying mechanisms for this dynamic process may help foster development of effective interventions.

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USE OF A NOVEL TECHNOLOGY-BASED APPROACH TO HARNESS SOCIAL NETWORKS FOR WEIGHT LOSS IN ADULTS: PILOT RANDOMIZED CONTROLLED TRIAL

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Engaging social support and giving individuals tangible resources are methods that have been found to improve weight loss outcomes. This study examined the effect of leveraging existing social networks through the provision of advanced technologies for increasing weight losses over current best practices. Adults were randomized to a 16-week, evidence-based, standard behavioral weight loss treatment (SBT; n=18) or SBT plus social support resources for weight loss (Enhanced; n=18). Both groups received weekly, in-person group counseling sessions targeting dietary and physical activity (PA) behavior change, a Fitbit Zip PA tracker, digital body weight scale, and access to a study website. The Enhanced group also received additional Fitbit Zips and digital scales which they were asked to share with up to two people of their choice within their social circle. Repeated measures ANOVA was used to compare baseline and 16-week measured weight, social support for diet and PA (measured on a 5-point Likert scale with higher scores indicating greater support), and reported number of appropriate weight control practices. X^2analysis was used to measure the group difference in the proportion of participants who lost ≥5% of their initial weight. Participants averaged 45±8.9 years, had a BMI of 36.1±7.3 kg/m^2 and were 94% female and 39% African-American. Intent-to-treat analyses showed significant weight decreases (p < .001) in both SBT (-3.8±3.6 kg) and Enhanced (-4.6±5.1 kg), with no difference between groups (p=.56). The proportion losing ≥5% of initial weight was similar between groups (33% for SBT vs 50% for Enhanced, p=.31). In SBT and Enhanced, respectively, the increases (ps < .05) in social support from pre (3.0±0.6 and 3.3±0.4 for diet; 2.9±0.9 and 2.9±0.6 for PA) to post (3.4±0.7 and 3.6±0.6 for diet; 3.2±0.9 and 3.4±0.7 for PA) were not different (ps>.05). At 4 months, SBT reported using 14.9±3.0 appropriate weight control practices (out of 23) versus 13.9±3.7 for Enhanced, an increase from baseline (p < .001), with no between group difference (p=.60). Simply providing advanced technologies to participant-selected support partners did not enhance weight losses beyond current best practices. A similar but less minimalistic approach (e.g., providing resources and support partner guidance) may be more effective. Future research should continue to explore how to best capitalize on the joint influence of technologies and social support to increase weight losses in larger samples.

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DETERMINANTS OF PYSCHOSOCIAL VARIABLES AND PHYSICAL ACTIVITY AMONG ADULTS WITH KNEE OA PAIN: A SYSTEMATIC REVIEW OF THE EVIDENCE

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Background: Knee OA is a chronic degenerative disease affecting functional mobility and psychosocial variables. While it is recognized that psychosocial variables such as depression and anxiety are associated with individuals who have knee OA pain, no systematic literature review has focused on examining the effect physical activity has on these psychosocial variables. The aim of this systematic literature review was to determine whether physical activity has an effect on psychosocial factors such as depression and anxiety among adults with knee OA pain.

Methods: A literature search using PubMed, CINAHL, Research gate, Sage database, and references of retrieved articles was conducted. Studies published from 2006-2016(through September) using a predefined search criteria: women with knee OA, mention of an anxiety/depression scale, pain assessment, addressed the role of physical activity were reviewed.

Results: The search terms: Physical Activity, Knee OA yielded 5,621 studies. After adding key terms: Women, Anxiety and Depression, and Pain, 537 studies resulted. Of the 537 studies, 530 studies were excluded. The exclusion criteria included such studies: that did not mention an anxiety or depression scale, physical activity, knee OA was not specifically mentioned, pre/post-operative total knee replacement and somatic pain. Seven (7) studies were deemed appropriate for the present review and included a diverse population by race/ethnicity, age, sex/gender, geographic location and type of physical activity (Tai Chi, Yoga, Exergames, and Walking). Two studies only included women. One study included both men and women, and four studies did not mention sex/gender. Racial/ethnic diversity included African Americans, Hispanics, Asians and Caucasians.

Conclusion: Current published studies revealed a positive relationship between psychosocial variables, physical activity and knee OA pain. However, there is a dearth of literature investigating the effect of physical activity and psychosocial variables in this population.

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EVALUATION OF INTEGRATIVE PAIN MANAGEMENT ON MOOD, TREATMENT ENGAGEMENT, AND TRADITIONAL MEDICAL VISITS IN VETERANS

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Background: Innovative chronic pain management programs, such as the Veterans Integrative Pain (VIP) Center, are developing within Veterans Affairs' Medical Centers. This short-term outpatient program blends traditional medical, complementary, and alternative approaches. It emphasizes self-management training (e.g., cognitive behavioral therapy, mindfulness meditation, biofeedback, dietary change) supplemented with passive approaches (e.g., acupuncture) aiming to empower Veterans with non-pharmacologic options. At intake, Veterans select from 13 treatments and engage in multiple services. The program aims to improve Veterans' functional capacity, mood, anxiety, and quality of life. The current study is an exploratory analysis of these outcomes.

Methods: Participants were Veterans with chronic pain (*N*=38) who participated in the program for at least 3 months. Demographic characteristics, program engagement, and number of medical visits three months before and three months after intake were obtained via chart review. Measures of pain catastrophizing (PCS), pain interference (POQ), and mood/anxiety symptoms (BAI, PHQ-9) were obtained at intake. Descriptive statistics were performed to characterize all variables. T-tests were conducted to explore changes in number of medical visits before and during the program participation period.

Findings: Veterans were predominately African-American (58%) males (71%) with a mean age of 49 years (SD=15). On average, Veterans engaged in 3 services (SD=2; range = 0-7), predominately auricular acupuncture (68%), biofeedback (42%), full body acupuncture (39%), anti-inflammatory diet education (24%), and mindfulness meditation (21%). Veterans had 0-6 medical visits prior to program and this reduced to 0-3 visits post program. However, these differences were not statistically significant. At intake, they reported subclinical pain catastrophizing (M=26, SD=11), mild functional interference (M=91, SD=29), moderate depression (M=13, SD=6), and severe anxiety (M=19, SD=12). Veterans reporting higher anxiety were more likely to engage in auricular acupuncture, t(27) = 2.85, $p < .01$ and those reporting higher pain catastrophizing and anxiety were significantly more likely to engage in auricular acupuncture, t(23) = 3.42, $p < .05$ and qigong, t(23)=2.98, $p < .05$.

Conclusions: As anxiety and pain catastrophizing increased, engagement in integrative approaches did as well. The absence of a significant decrease in traditional medical office visits in conjunction with participation is not surprising given the medical-complexity of this sample. Future investigations should investigate this further and consider other variables including disease comorbidity and change in opioids use.

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PATTERNS AND PREDICTORS OF PAIN FOLLOWING LUNG TRANSPLANTATION

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Introduction: Lung transplantation, not unlike other major surgeries, is associated with significant acute pain for most patients. However, variability in pain levels during hospitalization and predictors of pain levels following hospital discharge have not been systematically evaluated.

Methods: We conducted a retrospective study of a series of 167 patients (39% female; 88% Caucasian) transplanted at Duke University Hospital between January 2015 and September 2016. Patients' subjective ratings of pain intensity using a 0-10 Numeric Rating Scale (NRS) were obtained daily during patients' hospitalization and 2 months after hospital discharge. Demographic variables (age, gender, and ethnicity), native lung disease (e.g., cystic fibrosis, chronic obstructive pulmonary disease, interstitial lung disease), history of alcohol, narcotic, or cocaine abuse, psychiatric conditions, and chronic pain, and co-morbid medical conditions were examined as predictors of pain after transplant surgery.

Results: Of 167 patients who were transplanted, 150 were discharged (median length of stay = 13 days [IQR = 15 days]), 10 died, and 7 remained hospitalized. In a mixed-effects, multiple regression model, pain ratings decreased over time ($P < .001$) and were higher among patients undergoing bilateral lung transplant ($P =.012$). Among pre-transplant predictors, history of depression was predictive of higher pain levels and slower resolution of postoperative pain ($P=0.021$). Two months after discharge, 18% of patients continued to report pain and a third remained on narcotic pain medications. Cystic fibrosis patients reported higher levels of pain at follow-up compared to patients with other native lung diseases ($P=.006$).

Conclusion: Although acute pain resolved following surgery for most lung recipients, nearly one in five patients continued to experience persistent pain 2 months following hospital discharge. Patients with cystic fibrosis or a history of depression appear especially vulnerable to chronic pain and may require more intensive efforts to help them manage pain once discharged.

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PREDICTING ABERRANT MEDICATION-RELATED BEHAVIOR IN ADOLESCENT CANDIDATES FOR OPIOID THERAPY: UPDATE ON SCREENER DEVELOPMENT

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Pediatric providers have voiced a need for a screening tool to assess risk of aberrant medication-related behavior (AMRB) in adolescents who may receive opioid therapy for chronic pain. Having previously identified indicators of ongoing AMRB in this population (Trudeau et. al., 2016), we interviewed clinicians as well as current/former patients and caregivers (CFP) to identify observable predictors (“red flags”) that suggest elevated risk of future AMRB in adolescents with chronic pain.

Thirteen pediatric clinicians (“experts”) and 29 CFP completed semi-structured interviews. Experts discussed “red flags” they associate with future AMRB risk; CFP described their experiences and/or difficulties related to opioid therapy. AMRB-predictive statements were extracted from interviews, coded by content, and consolidated. Fifteen clinicians used group concept mapping to sort the final 101 statements into thematic “piles” and rated on a 5-point Likert scale how confident they were (1=Not at all, 5=Extremely) that each statement was predictive of AMRB.

Concept maps with 5-9 clusters were generated; results supported an 8-cluster model. Clusters were: 1) Daily functioning, M=2.53; 2) Resistance in treatment context, M=2.78; 3) Pre-existing illicit substance use, M=3.67; 4) Psychological distress, M=2.66; 5) Maladaptive family dynamics, M=2.78; 6) Concerning opioid-specific patient behaviors, M=4.05; 7) Behaviors causing concern re: opioid use at home, M=3.92; 8) Caregiver not engaging appropriately, M=3.33. Clusters 6 and 7 were each rated significantly higher (i.e., more likely to predict AMRB) when compared individually to each of the other six clusters (all t’s < 13.2, all p’s < .005). Statements derived from CFP interviews were rated significantly higher than those originating from experts, t(99)=2.09, p=.04.

This study extends our previous findings: providers see risky behavior specifically related to substance (in this case, opioid) use as highly correlated with AMRB in adolescent pain patients. The psychosocial issues represented in Clusters 1, 2, and 4 seem to be more sensitive than specific as AMRB predictors; some (e.g., amotivation, social isolation) may be a natural, expected reaction to pediatric chronic illness. Lastly, CFP willing to discuss opioid use may provide information that is especially predictive of AMRB. These findings continue to inform our development of a risk assessment tool; a conceptually-derived checklist is currently under expert review.

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PRE-SURGICAL CORRELATES OF POST-SURGICAL PAIN ACCEPTANCE AMONG UTAH WORKER'S COMPENSATION PATIENTS UNDERGOING LUMBAR FUSION

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Lumbar fusion surgery is an increasingly prevalent and costly procedure in the U.S. Given outcomes following this surgery are quite variable, there is an effort to identify pre-surgical biopsychosocial variables that may predict lumbar fusion outcomes (e.g., litigation, depression, pre-surgical pain, and etc.). Pain acceptance is a more recently examined construct shown to correlate with multiple patient outcomes. Identifying pre-surgical predictors of pain acceptance is likely relevant for purposes of pre-surgical screening. The present study examines how pre-surgical demographic, health status, and compensation variables correlate with post-surgical measures of pain acceptance. Participants were 101 Utah workers' compensation patients (average age = 42.4 yrs., 75.2% male) who underwent lumbar fusion surgery from 1987-2007 and were at least two-years post-surgery at time of follow-up. A retrospective cohort design was utilized consisting of a review of pre-surgical records and a postsurgical telephone survey. Presurgical variables included: gender, age, educational level, smoking, BMI, prior history of depression, and litigation status. The outcome measure was the Chronic Pain Acceptance Questionnaire (CPAQ) that assessed patient willingness to experiences pain despite the associated negative cognitive and psychological consequences and to continue to engage valued life activities. This measure included a total summary scale as well as subscales of Pain Willingness (PW) and Activity Engagement (AE). Correlational analyses revealed that male gender, lower levels of education, active smoking, positive history of depression and presence of litigation were all statistically significant correlates of lower CPAQ total and subscale scores. Pre-surgical variables were used to predict CPAQ scores using regression analyses. Statistically significant amounts of variance were predicted in CPAQ Total (R^2 = 0.14), PW (R^2 = 0.17) and AE (R^2 = 0.12%) scales. The benefits of integrating pre-surgical predictors of pain acceptance into patient selection protocols are discussed.

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PSYCHOMETRIC PROPERTIES OF THE MINDFUL ATTENTION AWARENESS SCALE (MAAS) IN A GREEK-CYPRIOT SAMPLE OF CHRONIC PAIN PATIENTS

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Mindfulness as a concept has received great interest from the therapeutic community, especially in the area of chronic pain alleviation. However, well validated measures to assess changes in mindfulness especially in the Greek language are lacking. The purpose of this paper is to examine the factor structure and psychometric properties of the Mindful Attention Awareness Scale (MAAS) in Greek-Cypriot chronic pain patients. The sample (N = 133) was derived mainly from the Antirheumatoid Association of Cyprus and from various other health care centers. The forward-backward translation method was applied. Initially, and following the reported structure of the original English version, all 15 items were forced to a single-factor solution using exploratory factor analysis (EFA), which explained 32% of the total variance. EFA was then conducted without forcing factor extraction to investigate the existence of other factors explaining a larger percentage of the variance. Results supported a four-factor solution based on Kaiser's criterion, explaining 59.50% of the total variance. This finding was inconsistent with the sudden change on the scree plot chart emerging after the first factor. The clustering of items into the four factors does not appear to make sense conceptually. Parallel analysis was also performed, which corroborated the ambiguity of the scree plot, suggesting either two-factor or three-factor solutions. Therefore, items were forced into two-factor and three-factor solutions using EFA. Results indicated that the difference between the eigenvalues of the first factor and subsequent factors was large, with subsequent factors either showing negative or weak loadings and being comprised of a small number of items. Thus, consistent with previous empirical studies, a single-factor solution appears to be most suitable. G-MAAS exhibited good internal consistency (Cronbach's α = .83). G-MAAS showed relevant convergent validity with CAMS-R, a mindfulness measure and theoretically coherent significant negative correlations (discriminant validity) with measures of anxiety (HADS-anxiety), distress and non-acceptance (AAQ-II). G-MAAS appears to be a valid and reliable measure for assessing mindfulness in Greek-speaking chronic pain patients. The dimensionality of the G-MAAS, directions for future research and clinical implications are discussed.

Keywords: Mindfulness, MAAS-G, Reliability, Validity, Chronic Pain Patients

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AN IN-HOME VIRTUAL COACHING PROGRAM TO PROMOTE PHYSICAL ACTIVITY IN DIVERSE POPULATIONS: USER TESTING AND ACCEPTABILITY

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Background: Physical inactivity due to lack of access to gyms, personal trainers, fitness programs and other physical activity (PA) resources can lead to increased risk of chronic disease. To address this, researchers at Stanford University worked with a team from the Industrial Technology Research Institute of Taiwan (ITRI) to test a virtual PA coaching program (vCoach), with the aim of encouraging people to engage in PA in the comfort of their own homes. The purpose of this pilot was to learn if this type of technology is acceptable to US residents.

Setting: vCoach testing was conducted in an exercise laboratory at Stanford. The vCoach system, located in a device roughly the size of a cable box, was connected to a tabletop 40” HD TV, that was used to display exercise modules provided by ITRI to participants. A camera sensor and wearable smart watch were utilized to display information to participants on the TV screen, such as calories burned, heart-rate, and similarity rating of participant’s exercise movements to the v-coach model.

Method: Individuals, recruited via online ads, completed the PAR-Q to ensure that they could safely perform PA. Participants were categorized according to self-reported PA of either low, medium or high intensity. One-time testing was conducted at the exercise lab by trained staff and lasted 1-2 hours. All participants did warm up and cool down exercises and activity modules matched to their self-reported intensity levels. On completion, all participants provided feedback on the modules and vCoach software.

Results: Participants (n=15, mean age=44) included 7 women and 7 Latinos. 93% rated their health as good or better. They reported their usual PA as low (n=6), medium (4), or high (5). 93% reported that the vCoach was appropriate for them, and 93% said they would use it if they had access. 66% reported they preferred seeing a human coach rather than an avatar

coach, and 80% had no preference for gender, age, or ethnicity of the coach. Reported barriers to using the software included technical issues, lack of efficacy in using technology more generally, and a preference for increased visual and audio instruction.

Conclusion: While almost all participants expressed a strong interest and desire to use the vCoach system, some participants reported technical barriers and lack of ease of use as potential deterrents to using the software at home. Next steps include incorporating the feedback to enhance the system and further in-home user testing.

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ASSOCIATION OF SEDENTARY BEHAVIOR WITH SALIVARY ESTRADIOL LEVEL AMONG AFRICAN-AMERICAN WOMEN WHO ARE OVERWEIGHT

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Objective

Recent studies have reported that sedentary behavior may have multiple adverse health outcomes in adults, and is related to elevated levels of estradiol that are associated with breast cancer, ovarian cancer, and endometrial cancer. A growing body of research has assessed the association of sedentary behavior with estradiol levels, however few studies have been in African-American (AA) overweight women who are disproportionally diagnosed with cancer. The objective of this study was to assess the association of self-reported sedentary behavior of AA overweight women with salivary estradiol level.

Method

We recruited 263 AA overweight (BMI$\geq$25, mean BMI 36.8 (SD 8.5), mean age 49.4 (SD 11.6) years) women from a faith-based weight reduction program from 2014-2016 in Dallas, Texas. Approximately 4mL of saliva was collected over four consecutive weeks. Saliva was stored in a sub 80^0C freezer and sent to a lab to assay. Weekly sedentary behavior was collected with a valid and reliable survey for weekdays and weekends that included hours of sitting to watch television, working on the computer, riding in a car, bus, or train, and other sitting practices. We used Pearson's-correlation and linear models to estimate the unadjusted and adjusted association of sedentary behavior with estradiol level.

Results

Average weekly sedentary time was 40.6 hours (SD = 17.5). The range of estradiol level was 0.50 pg/mL to 3.50 pg/mL with mean 1.13 pg/mL (SD = 0.55). Sedentary time was positively associated with estradiol level (correlation coefficient = 0.18, $p < 0.01$). After adjusting for age, BMI, and menstrual status, we found a significant positive association between sedentary time and estradiol level ($R^2 = 8.4\%$, $p < 0.01$).

Conclusion

Self-reported sedentary hours for AA overweight women were less than the national average (5.8 hours vs. 7.7 hours per day). We found that sedentary time was a predictive factor for estradiol level, and higher sedentary time was associated with elevated estradiol levels. Future research should further explore how sedentary behavior and elevated estradiol levels influence cancer risk in AA women.

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CITATION AND MERITORIOUS AWARD WINNER

ASSOCIATIONS BETWEEN SEDENTARY AND STANDING BEHAVIORS WITH COGNITIVE FUNCTION AMONG BREAST CANCER SURVIVORS.

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Introduction: Many breast cancer survivors experience problems with cognitive functioning following cancer treatment. Based on research in older adults, a potential risk factor for cognitive impairments is time spent in sedentary behaviors. Since breast cancer survivors spend the majority of their day sedentary it is an important risk factor to assess. This pilot study examined associations between objectively measured sedentary behaviors and neuropsychological testing in breast cancer survivors (n=30).

Methods: For 7 days participants wore a hip accelerometer to measure total sedentary time and time in long sedentary bouts (≥20min) and a thigh inclinometer to measure sit-to-stand transitions and total standing time. Cognitive functioning was measured with the NIH Toolbox, which provided a composite score of fluid cognitive abilities and 5 domain scores (executive functioning, visual episodic memory, auditory episodic memory, working memory, and processing speed), all adjusted for age. Partially adjusted linear regression models controlled for measurement device wear time only, and fully adjusted models controlled for measurement device wear time plus education, employment status, and moderate to vigorous physical activity. There were no meaningful differences between the 2 models; therefore, the fully adjusted models are presented.

Results: Participants (n=30) were, on average 62 years of age (SD=8) and 2.6 years post-diagnosis (SD=1.1); 17 (56%) received chemotherapy. Visual episodic memory was positively associated with time (min/day) in sedentary bouts (b=0.11, p=0.004), indicating that each 30 min/day increase in sedentary bouts was associated with a 3.3-point increase on the visual episodic memory test. Processing speed was also positively associated with total standing time (b=0.09, p=0.031), indicating that each 30 min per day increase in standing time is

associated with a 2.7 point increase on the processing speed test. Executive function, working memory, and auditory episodic memory were not significantly associated with sedentary behaviors.

Conclusion: Longer standing time and greater time in sedentary bouts were positively associated with episodic memory and processing speed in breast cancer survivors, with or without controlling for education, employment status, and physical activity. Given the counterintuitive positive association between sedentary time and cognition future studies should examine what a person is doing while sedentary to aid in understanding this positive association.

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CAN AN EXERCISE PRESCRIPTION PROGRAM BE IMPLEMENTED IN FAITH BASED SETTINGS?

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Background: Improved opportunities for chronic disease prevention, risk reduction or management through community linkages have long been a public health priority, especially in relation to decreasing health disparities. One such strategy is increasing physical activity through exercise prescriptions and community referrals.

Objective: The main objective of exercise prescription programs are to nudge healthcare workers to include physical activity when developing treatment plans and referring patients to beneficial and nearby exercise programming. Traditionally, exercise prescription programs have been implemented in clinical settings, but this study explores the feasibility and effectiveness of an exercise prescription program in faith based settings with Faith Community Nurses (FCNs).

Methods: The exercise prescription program was implemented and evaluated in churches from January to December 2016 in a North Carolina county. Churches were eligible if they had a FCN and a predominately African American and/or Hispanic population. As a part of this exercise prescription program, the nurses provided exercise prescriptions as a part of their clinical encounters with church congregants. Additionally, referrals were given to local community resources to help patients “fill” their exercise prescription. Prescription data was collected in May with a 3 month follow up in September. Additionally, the public health effects of this exercise prescription program was assessed using the RE-AIM (Reach, Effectiveness, Adoption, Implementation and Maintenance) framework of program evaluation.

Results: Four Faith Community Nurses at four churches with predominately Black and Hispanic populations were trained and implemented exercise prescription programs within their congregations. Of those patients who received exercise prescriptions (n=72), 93% were overweight or obese, 75% had prehypertension or hypertension and more than half exercised moderately or vigorously 2 days/week or less. The average age of participants was 60 with the youngest participant being 21 and the oldest being 90. While there were no significant clinical changes in weight and blood pressure, the participants’ physical activity levels improved.

Conclusions and Implications: While exercise prescription programs are found to be feasible, it was not significantly effective on the health of participants and showed modest improvement in the physical activity of participants. This may be partly due to an older sample that have an assortment of health issues and significant barriers to physical activity. Thus, there are challenges in capturing clinical success. Additional research is needed and should include a larger and younger sample to explore exercise prescription programs feasibility and effectiveness in faith settings.

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F066 11:45 AM-12:45 PM

SELF-COMPASSION AND MOTIVATION FOR EXERCISE

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Background: In a previous study, which was accepted for a paper presentation at SBM (Self-Compassion and Mindfulness: Examining the Relationship with Disordered Eating, Appearance-Motivated Exercise, and Depression Among College Students), researchers found that self-compassion negatively predicted appearance-motivated exercise. Given this novel and significant finding, researchers ran a post hoc analysis to understand how self-compassion may predict other motivations for exercise in addition to appearance-motivated exercise.

Recent research has focused on compulsive exercise to influence body weight or shape (Greenleaf, Petrie, Carter, & Reel, 2009). While exercise has typically been associated with positive mental health outcomes (Stephens, 1988), this relationship may differ if one engages in disordered eating behavior. For example, in a study with college students, exercise was related to positive mental health outcomes for individuals who did not engage in disordered eating, but negative outcomes for those who did engage in disordered eating (De Young & Anderson, 2010). One explanation for this discrepancy may be embedded in the motivation for exercise. Past research suggests that individuals who engage in exercise for appearance management reasons may be more likely to develop eating pathology than individuals who exercise for more health and fitness oriented reasons (La Page & Crowther, 2010).

Participants were 732 college students, both male (46%) and female (54%), ages 18-25 (*M*=19). Regression analysis was conducted to test main effects of self-compassion on motivation for exercise.

Results: Self-compassion was a significant positive predictor of exercising for more positive health-related reasons including to improve strength, to improve endurance, to increase resistance to disease and illness, to maintain physical well-being, and to have fun. However, self-compassion was a significant negative predictor of exercising to change one's body, appear attractive to the opposite sex, to be sexually desirable, to cope with sadness, and to cope with anxiety,

Conclusion: Self-compassion may increase the desire to engage in self-nourishing behaviors and decrease the desire to exercise for externally validating reasons (i.e. to be sexually desirable). One possible explanation, which builds on previous research, is that self-compassion promotes a healthier relationship with one's body, which in turn may lead

individuals to engage in exercise for more internal, physical health related reasons. While research on self-compassion in the exercise domain is fairly limited, this study provides initial support for further research in this area.

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F067 11:45 AM-12:45 PM

THE ROLE OF EXERCISE AND SELF-ESTEEM ON BODY SELF PERCEPTION

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Introduction. Research has shown that low self-esteem is related to poor body image; however, whether exercise plays a role in this relationship is unclear. This study extends the literature by examining the moderating effect of exercise on the relation between self-esteem and body image. We hypothesized that self-esteem and BMI would be related to body image in both males and females. Moreover, we expected that after controlling for BMI, exercise frequency would moderate the relation between self-esteem and body image such that increased exercise frequency would be related to better body image as self-esteem increased.

Method. The participants were 201 undergraduates, [*M*(age)= 19.11, *N*(males)= 123]. Participants completed the body areas satisfaction subscale (BAS) of the Multidimensional Body Self Relations Questionnaire (MBSRQ; Brown, Cash, & Mikulka, 1990) and reported on self-esteem using the Rosenberg Self-Esteem Scale (Rosenberg, 1989). BMI was calculated based on self-reported height and weight, and participants reported the frequency of vigorous to moderate exercise they engaged in during an average week.

Results. T-tests revealed significant sex differences on several measures. Males (*M*=3.55, *SD*=.75) reported greater BAS than females (*M*=3.32, *SD*=.66, respectively) and higher self-esteem than females (*M*=32.39, *SD*=5.43; *M*=30.88, *SD*=5.15, respectively). Males (*M*=11.52, *SD*=4.41) also reported engaging in physical activity more frequently than females (*M*=9.67, *SD*=3.98). BMI was negatively correlated with BAS in males only (r(123)=-.27, $p < .01$). For males and females, BAS was positively correlated with self-esteem (r(123)=.55, $p < .01$; r(75)=.42, $p < .01$, respectively). Frequency of physical activity was not significantly correlated with any of the variables.

Hierarchical multiple regression analyses were used to examine the moderating effect of exercise on the relation between self-esteem and body image in men and women. BMI was included as a covariate on the first step of each regression. Both regressions were significant ($p < .05$). Self-esteem and exercise frequency accounted for a significant amount of variance in body image for both males and females ($R^2\Delta = .322$, $F(1, 121) = 31.76$, $p < .01$; $R^2\Delta = .223$, $F(1, 73) = 21.55$, $p < .01$, respectively). In the final step, the interaction term was significant only for males: $R^2\Delta = .025$, $F(1, 119) = 5.14$, $p < .05$. Examination of the interaction plot showed that as self-esteem increases, BAS increases for individuals who exercise more.

Discussion. For both males and females, greater overall self-esteem relates to positive body image, however, a moderating effect was found for exercise in males. The results indicate that for males, exercise can enhance how they positively perceive and evaluate their bodies. Research shows that having a positive body image has a significant positive impact on psychological well-being and willingness to participate in certain health behviors. Therefore these findings have widespread implications for intervention and research in behavioral medicine and mental health. Why exercise did not show a moderating effect for females requires further investigation.

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F068 11:45 AM-12:45 PM

THE SELF-EFFICACY FOR PHYSICAL ACTIVITY SCALE: VALIDITY AND PSYCHOMETRICS AMONG A SAMPLE OF LATINA WOMEN

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Even though Latinos have become a priority population for the promotion of physical activity (PA), several of the most widely used scales in PA promotion research have not been validated among this population. The objective of this study is to assess the validity and other psychometrics of the Self Efficacy for Physical Activity (SEPA) scale among a sample of Latino women who participated in the Pasos Hacia La Salud study. Data from 205 women were analyzed. Item Response Theory (IRT) methods were used to model response options for the SEPA scale. Internal consistency (Cronbach's alpha) and unidimensionality (factor analysis) were assessed for the original and a modified version of the scale, both with baseline and 6-month data. Concurrent and predictive validity of the original and modified SEPA scales were assessed against accelerometer-measured moderate to vigorous PA (MVPA), using correlations and linear regressions. Based on plots of Option Characteristic Curves (OCC), a modified version of the SEPA scale was created by collapsing the five response options into three. Internal consistency for this modified scale remained acceptable (.71 - .76), and factor loadings improved compared to the original scale (.54 - .81 compared to .40 - .86). Self-efficacy at 6-months, measured with both the original and modified scales, was significantly correlated with MVPA at 6 months ($r=.30$ and $r=.32$, respectively, $p < 0.001$). However, self-efficacy at baseline was not correlated with MVPA at baseline, possibly due to the narrow range and restricted values of baseline MVPA. There were no significant effects of baseline self-efficacy (measured with the original and modified scales) on MVPA at 6 months. In conclusion, this study confirmed the SEPA scale's reliability and unidimensionality, and revealed that the scale's accuracy improves when response items are collapsed, which is an important finding for future research among populations with low literacy levels. Additionally, the study provided some evidence of concurrent validity of the SEPA scale against MVPA, but no evidence of predictive validity, possibly due to the long period of time elapsed between baseline and follow-up measurements. Thus, further research to validate the SEPA scale among this population is warranted.

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F069 11:45 AM-12:45 PM

MONEY MATTERS: FINANCIAL STRESS AMONG YOUNGER ADULTS WITH CANCER

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Background: Younger adult survivors, like all cancer survivors, face life stressors that are a result the illness and its treatment, but they also face specific concerns that emerge because their illness is off-time in the normative life cycle. Little research has examined how these specific stressors affect quality of life for younger survivors.

Aim: This mixed-methods study identifies the unique types of financial stress experienced by younger survivors and examines the relationship between financial stress and psychological distress.

Methods: Sixty hematological cancer survivors aged 20-49, 65% female, diagnosed within the past 5 years, were interviewed about the age-related challenges of their cancer diagnosis. Transcripts were coded for four types of financial stressors: financial burden on family; issues with health insurance; spillover to other life domains, such as plans for employment and education; and emotional sequelae. Participants also completed a self-report measure of depressive symptoms (CESD; Radloff, 1977).

Results: Although not directly asked about their financial situation, over 2/3 of the sample described at least one type of financial stressor during the interview. In 70% of the cases, these financial stains were directly linked to the survivor's life stage, including not finishing school, becoming unemployed, or envisioning an uncertain financial future. Interesting, those who mentioned financial consequences had lower education ($p < 0.04$) and tended to be in the 30s and 40s vs. 20s ($p < .10$). Half of the sample raised issues with health insurance (52.5%), including the strains of no insurance or inadequate coverage. Nearly half the sample (45%) described their financial strains as creating a burden on family and friends, often a result of having to move back home or take a loan, which created feelings of inadequacy and threats to independence. Over half the sample (55%) met the criterion for clinical depression (CESD score > 16) although depressive symptoms were unrelated to reporting any type of financial stress. Surprisingly, some younger survivors construed benefits in the way their financial status affected their lives.

Conclusions: Financial strains are clearly a concern for younger adult cancer patients, often related to “interruptions” in school and work responsibilities as well creating constraints on dating and friendships. These are concerns that should be discussed in counseling or peer forums for young adult survivors.

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F070 11:45 AM-12:45 PM

THE ASSOCIAION BETWEEN FAMILY SES AND CHILDREN'S HEALTH-RELATED QUALITY OF LIFE: THE ROLE OF OBJECTIVE AND SUBJECTIVE SES

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Objective: To our knowledge, no study has compared the relationships that objective social status (OSS) and subjective social status (SSS) have with children's general health and health-related quality of life (HRQOL) across racial/ethnic groups. The present study tested the hypotheses that (a) OSS and SSS each have unique associations but (b) SSS mediates a portion of the association that OSS has with children's health outcomes; and (c) these associations are present across Black, Latino, and White children.

Method: Data were from the Healthy Passages^{TM} study, which enrolled 4,824 Black, Latino, and White 5th graders (ages 10-11) in three U.S. metropolitan areas. OSS was measured as a latent variable of parent reported educational attainment and total household income. SSS was measured also a latent variable of community and U.S. standing on the MacArthur Scale of Subjective Social Status. HRQOL was measured with the self-reported form of the PedsQL Physical and Psychosocial scales. Child's health status was measured by both child's self-report and parent's report of his or her health status on 5-point scale from *Poor* to *Excellent*.

Results: Structural equation modeling of path analysis was conducted using Mplus version 7. OSS had a stronger relationship to children's health outcomes compared to SSS. Because SSS did not have significant associations with the outcomes, there was little support for SSS mediating between OSS and health outcomes. The results of path analysis significantly differed across race/ethnicity, and only Black children's health status, when self-reported, was mediated by SSS.

Conclusion: Unlike emerging research on adults that SSS influences their health, the current study showed that parents' SSS did not play the same role for children's health. Rather, OSS was confirmed to have a stronger association with children's health status. Research is needed into the role of SSS for children's health, for example how and at what age children's *own* perception of socioeconomic status influences their health.

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F071 11:45 AM-12:45 PM

ETHNIC DIFFERENCES IN EARLY FAMILY ADVERSITY AND HPA AXIS FUNCTIONING AMONG LATINO AND EUROPEAN AMERICAN ADOLESCENTS

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Previous research indicates that early family adversity can lead to blunted responding of the hypothalamic-pituitary-adrenal (HPA) axis (i.e., primary biological stress response system), thereby increasing risk for poor health outcomes such as cardiovascular disease, anxiety, and depression. Latinos are known to strongly value familism and collectivism whereas European Americans promote independence. Thus, the enduring consequences of early family adversity may be different between the two ethnic groups. However, the role of ethnicity and culture has often been neglected in past studies. Furthermore, examination of adolescents has been relatively rare, despite the fact that numerous biological and psychosocial changes occur during the adolescent period. The current study investigated whether the association between early family adversity and HPA response (i.e., cortisol production) differ between Latino- and European-American late adolescents.

Participants (N = 91; M_{age} = 18.37 years, SD = .51; 57.14% female; 37.36% European and 62.64% Latino) completed the Risky Families Questionnaire (Taylor et al., 2006) and participated in the Trier Social Stress Task (TSST), a widely used laboratory-based stressor that activates the HPA axis. Six saliva samples were collected (baseline, and 0, 30, 45, 60, 75, and 90 minutes post-TSST) and assayed for cortisol. Total area of the curve with respect to ground was computed to index total cortisol output (Pruessner et al., 2003).

Hierarchical regression analyses controlling for age, gender, and parental education revealed that early family adversity was unrelated to cortisol output. However, a significant interaction between early family adversity ethnicity emerged (*b(SE)* = -.62.29 (17.28), p = .001). Tests of simple slopes indicated that early family adversity was associated with blunted cortisol output among Latinos (*b(SE)* = -.33.82 (7.53), p < .001) but not among European-Americans (*b(SE)* = 28.47 (15.56), p = .07). Results suggest that the impact of early family adversity on HPA axis functioning may be more pronounced in Latinos compared to European-Americans, which may be due to their culturally rooted values of familism. This study highlights the importance of considering the role of ethnicity and culture when examining the effects of family-related adversity.

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F072 11:45 AM-12:45 PM

THE IMPACT OF HEALTHCARE DISCRIMINATION ON BELIEFS ABOUT HEALTH PROFESSIONALS AND CANCER SCREENING EMOTIONS

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Ethnic minorities and lower socioeconomic status (SES) populations report more negative healthcare encounters and perceived discrimination. The aim of this research was to study the role of perceived healthcare discrimination as an antecedent of patients' negative beliefs about health professionals. These beliefs about health professionals have been associated with emotional reactions to clinical encounters that negatively impact continuity of cancer screening care (Betancourt, et al., 2011). It is proposed that negative beliefs about health professionals are the result of prior experiences of healthcare discrimination, which are expected to be associated with cancer screening emotions such as fear and anxiety about future clinical breast exams (CBE).

Participants were 171 Anglo American (Anglo) and 164 Latino American (Latino) women of varying SES levels from Southern California. They responded to a series of scales on perceived experiences of healthcare discrimination, negative beliefs about health professionals, and cancer screening emotions. Of the 335 participants, 73% of Anglo and 79% of Latino women reported prior experiences of healthcare discrimination, mainly based on insurance, SES, and ethnicity. Scores on negative beliefs about health professionals were higher for participants who experienced discrimination than those who did not (Latino: t = 3.86, p = .00; Anglo: t = 3.78, p = .00). In addition, compared to participants that did not report a prior experience of healthcare discrimination, those that did had higher levels of fear (Latino: t = 3.20, p = .00; Anglo: t = 3.01, p = .00) and anxiety (Latino: t = 2.60, p = .01; Anglo: t = 2.07, p = .04) in anticipation of a CBE.

Results are discussed in terms of implications for addressing health disparities and the translation of research into practice. This research demonstrates that prior experiences of healthcare discrimination elicit negative beliefs about health professionals and negative emotions associated with cancer screening, which according to previous research impact discontinuity of cancer screening care (Betancourt et al., 2011; Flynn et al., 2011). Training health professionals to use evidence-based bias reduction strategies to prevent the negative implications of their own biases about ethnic minorities and low SES patients could contribute to more positive clinical encounters and reduce perceptions of discrimination on the part of

patients. This, in turn, may improve cancer screening emotions and screening rates overall, but particularly among ethnic minorities and low SES groups.

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F073 11:45 AM-12:45 PM

THE ROLE OF ACCULTURATION AND STRESS IN RISK FOR OBESITY IN PREGNANT MEXICAN AMERICAN WOMEN

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Pregnancy is a vulnerable time period where any influence on maternal wellbeing affects the development and outcome of offspring. A common issue of concern is obesity, which greatly increases the risk for complications, with intergenerational effects extending well into the offspring's adult life. Nationwide, obesity disproportionately affects Mexican Americans, one of the fastest growing minorities. Acculturation, or the process of changes in beliefs and customs as the result of cultural contact, has been associated with obesity. As Mexican traditions clash with American mainstream culture, unhealthy behaviors, stress, and mental health symptoms increase. This population also experiences cultural-specific stressors, such as discrimination, or the negative treatment and attitudes towards an individual or group, which further augment perinatal health risks. Though we know acculturation is associated with disparate health outcomes, such as obesity, we have yet to discover the psychological or social mechanism by which it is occurring during te sensitive period of pregnancy. The purpose of this study is to investigate the roles of depression, stress, and perceived discrimination in the relationship between acculturation and obesity during pregnancy. It was hypothesized that these factors would moderate the acculturation and obesity relationship, where higher levels of each would strengthen the association during pregnancy. Data was gathered as part of an ongoing longitudinal study among 133 Mexican American women with singleton pregnancies who were administered self-report surveys for symptoms of depression, perceived stress and discrimination, and acculturation via adherence to Mexican vs. Anglo cultural values. Pre-pregnancy BMI was determined via medical records and categorized as per WHO guidelines (< BMI 25 as normal weight, >BMI >25 as overweight/obese). T-test analyses revealed that overweight/obese women were less acculturated, i.e. less likely to adhere to Anglo values (t=2.53, p=0.01), but BMI was not associated with stress, depressive symptoms or discrimination. Stress positively moderated the relationship between acculturative values and BMI (B=-0.105, SE=0.045, t, p=0.02), such that women who adhered to less acculturated values and had more perceived stress, had higher pre-pregnancy BMIs. These results suggest that the role of acculturation is complex in shaping the health outcomes of minorities, including obesity risk. Women may be struggling to hold onto Mexican cultural values in U.S. society, which may result in more perceived stress with consequences for gestational physiology and may place them at risk for obesity-related outcomes in pregnancy. Since weight control during this sensitive time period is paramount, our results

have implications for culturally sensitive interventions to minimize obesity prevalence in the fast-growing Mexican-American population.

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F074 11:45 AM-12:45 PM

RELIGIOSITY, SHAME DUE TO HETEROSEXISM & FORGIVENESS: CORRELATES OF SEXUAL ATTITUDES IN OLDER GAY MEN AND LESBIANS

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Religiosity, Shame due to Heterosexism & Forgiveness:

Correlates of Sexual Attitudes in Older Gay Men and Lesbians

Rikki Willingham, Tosha Griggs & Mark Vosvick Ph.D.

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Religion may influence older gay men's and lesbians' (LG) attitudes about sex (Bonds-Raacke, 2011). While attending religious services older LGs may experience negative messages about their sexual minority status (Lease et al., 2005). Older LGs may internalize these negative messages and feel ashamed of their sexuality (D'Augelli, 2001). High scores on aging sexual knowledge and attitudes scale indicate negative attitudes toward sexual activity in older adults (White, 1998). Forgiveness may help older LGs let go of shame and strengthen self-acceptance (Enright, 1996). Through a minority stress (Meyer, 2003) lens, we hypothesize religiosity and shame due to heterosexism (SDH) are positively associated with negative sexual attitudes. Forgiveness of self is negatively associated with negative sexual attitudes. Religiosity, SDH and forgiveness of self account for a significant proportion of variance in negative sexual attitudes. After IRB approval, we recruited 50 gay men and 50 lesbians from DFW, (M_{age} = 58.99, *SD*= 6.48). Participants were 68% European American, 17% African American and 15% other ethnicity. A hierarchical regression analysis (*F*[10, 89]= 4.17, pR^2=.24, p

Older LGs reported favorable attitudes toward sexual activity this, which suggests that even though sexual activity may decline with age, older LGs maintain a positive attitude towards sexual activity (Lindau, 2007). African Americans reported less favorable attitudes toward sexual activity; this may be due to minority stress associated with ethnicity and sexual minority status (Ramos, 2016). Also, older LGs that scored high on SDH reported less favorable sexual attitudes towards sexual activity in older adults this findin, which g supports that SDH is associated with negative mental health outcomes in some older gay men and lesbians

(Balsam, 2006). Therapeutic Iinterventions should encourage forgiveness of self and positive sexual attitudes towards sexual activity. aAs well as, address the unique challenges faced by African American older gay men and lesbians.

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F075 11:45 AM-12:45 PM

ASSOCIATION OF THE PITTSBURGH SLEEP QUALITY INDEX AND SLEEP MEASURED USING ACTIGRAPHY IN INDIVIDUALS WITH MULTIPLE SCLEROSIS

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Background: The Pittsburgh Sleep Quality Index (PSQI) is a commonly used measure of self-report sleep quality. Studies have found that the PSQI is not significantly associated with sleep measured objectively using actigraphy; however, this relationship has not been explored amongst individuals diagnosed with multiple sclerosis (MS). The purpose of this study was to examine the relationship between scores on the PSQI and sleep measured using actigraphy in this population.

Methods: Data were analyzed from a study investigating sleep in individuals diagnosed with MS. Participants wore actigraphs (GTX3+) for 7 consecutive days and completed the PSQI. Total score and subscale scores on the PSQI and average actigraphy time in bed (TIB), sleep onset latency (SOL), total sleep time (TST), wake after sleep onset (WASO), and number of awakenings (NWAK) were used for analyses. Correlation and multiple linear regressions were conducted to examine the relationship between scores on the PSQI and the sleep variables measured using actigraphy.

Results: A majority of participants (N=76; Mage= 48.4 years-old, SD= 11.3) were female (84%) and diagnosed with relapsing remitting MS (86%; 14% secondary progressive MS). PSQI total scores did not significantly predict any actigraphy measures. However, subscales of the PSQI that were selected based upon bivariate correlations did significantly predict sleep variables measured using actigraphy. PSQI sleep medication use significantly predicted SOL (β=-.26, $p < 0.05$). PSQI sleep duration significantly predicted both TIB (β=-.33, $p < 0.05$) and TST (β=-.36, $p < 0.05$). PSQI sleep disturbance significantly predicted NWAK (β=-.27, $p < 0.05$).

Conclusions: These data indicate that there is an inverse relationship between subscales of the PSQI and sleep measured using actigraphy. Results suggest these two forms of assessment may be assessing different constructs of sleep. Therefore, self-report and objective sleep data should be interpreted and used differently in clinical and research settings. Research should continue to investigate the relationship between self-reported and objectively measured

sleep in order to further characterize this relationship among individuals diagnosed with MS and other chronic conditions.

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F076 11:45 AM-12:45 PM

THE IMPACT OF A SUGARED BEVERAGE SALES BAN WITH VERSUS WITHOUT A BRIEF INTERVENTION ON SUGAR SWEETENED BEVERAGE CONSUMPTION

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The Impact of a Sugared Beverage Sales Ban With versus Without a Brief Intervention on Sugar Sweetened Beverage Consumption

Background: Heavy consumption of sugar-sweetened beverages (SSBs) is linked to chronic disease in large epidemiological studies. In response to this strong evidence base, academic campuses and other workplaces have begun to implement policies to reduce SSB consumption. One such example is the UCSF Healthy Beverage Initiative (HBI), which eliminated the sale of sugar-sweetened beverages at all UCSF campuses and hospitals. The outcomes of this policy, however, are unknown.

Research question: Does the addition of motivational interviewing counseling to an environmental intervention (i.e., banning sales of sugar-sweetened beverages) improve metabolic benefits to employees following a ban on sales of sugared beverages in the workplace.

Methods: We recruited 214 employees who self-reported consuming greater than 12 oz. per day of SSBs to participate in an evaluation of the UCSF HBI. In two in-person visits (pre-sales ban, and ~10 months later), we collected anthropomorphic measurements, a fasted blood draw for a metabolic panel, and self-reported reward-driven eating. We randomized half of the participants to a motivational interviewing-like counseling group (intervention) or a control group (no counseling). The intervention group had one 10-minute session with a health counselor covering psychoeducation about effects of sugar intake and realistic goal setting, and had two 5-10-minute follow-up phone calls discussing goals and overcoming obstacles.

Results: The intervention group (n=108) reduced their SSB consumption by an average of 23.7 oz/day, while the control group (n= 106) reduced their SSB consumption by an average of 4

oz/day. Specifically, the intervention group consumed significantly fewer ounces of SSBs than the control group both at work (*m* decrease=12 oz; *p*=.0001) and at home (*m* decrease=11.8 oz; *p*=.0007). Both groups trended toward non-significant improvements in waist circumference, sagittal diameter, and reward-driven eating from baseline to follow-up, and the intervention group also showed small changes in BMI (*m* BMI change=-1.68; *p* = .27).

Conclusions: After implementation of the UCSF HBI, both intervention and control groups showed significant decreases in SSB consumption both at work and at home, which suggests that a workplace sales ban on SSBs alone may reduce SSB consumption. Brief counseling may boost effectiveness of a sales ban on SSB consumption. Combining both an environmental change (sales ban) and a brief intervention may be a highly economical and effective public health intervention for institutions to reduce widespread SSB consumption.

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F077 11:45 AM-12:45 PM

FRESHMAN 15: THE PRESSURE TO BE THIN

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Body image affects both mental and physical aspects of women in their daily lives. The socially constructed “thin ideal” may lead normal weight individuals (BMI=18.5-24.9) to fall prey to the pressures of maintaining a certain weight. These concerns may become more distressing during college and freshman women may be especially vulnerable to these social pressures during emerging adulthood. Thus, it was predicted that among normal weight freshmen women, distress (measured by the Beck Depression Inventory, (BDI-II) and Perceived Stress Scale (PSS)) would be related with believing that one needed to lose weight. To test this hypothesis, data from a larger, longitudinal study were collected from a sample of primarily Caucasian (83 %) college freshmen women (N=48; mean age=18.2yrs). Consistent with this hypothesis, among normal weight women (n=33), those that reported they were trying to lose weight had significantly higher depression and perceived stress scores (BDI: M=9.12, SD =9.02; PSS: M=19.29, SD=5.90) compared to those who indicated they were not trying to lose weight (BDI: M=2.06, SD=2.02; PSS: M=11.38, SD=6.29), BDI: t(31)=3.06, $p < .01$, PSS: t(31) =3.73, $p < .01$. Interestingly, depression and perceived stress scores were also related to stage of change for weight loss. The highest indicators of distress were found among women who “have a plan to lose weight this semester” (BDI: M=12, PSS: M=20.5) and who have “recently lost weight and were trying to keep it off” (BDI: M=27, PSS: M=28). The lowest depression and perceived stress scores were found among women who were happy with their weight and have not tried to change it (BDI: M=1.6, PSS: M=9.8). Statistically significant group differences were found amongst women at different stages of weight loss for indicators of distress (BDI: F(5,27)=4.83, $p < .01$, PSS: F(5,27)=3.71, $p < .05$).

These preliminary results demonstrate that the desire to lose weight is significantly related to indicators of distress for female emerging adults. During a time of identity formation and transition to college, these body weight concerns may increase vulnerability to disordered eating behaviors and other maladaptive behavioral health patterns. Limitations of these pilot data include lack of racial diversity, small sample size, and limited age variation.

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F078 11:45 AM-12:45 PM

OPTIMIZATION OF MODERN TECHNOLOGY IN COPING WITH STRESS & DEPRESSION

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The majority of research concerning the modern use of technology, specifically cellphones, has focused on the degenerative effects it has on users. Previous research has also focused on its specific ties to depressive symptoms. However, few studies have examined the potential benefits that cellphone use can have in stressful social situations. Participants (n=143) underwent the Yale Interpersonal Stressor (YIPS), in which two confederates socially exclude one participant during a brief interaction. The experiment consisted of three cellphone-use conditions: 1) the ability to use a cellphone during the YIPS, 2) the presence of a cellphone, but use was restricted during the YIPS, and 3) the absence of a cellphone during the YIPS. Moreover, the level of subclinical depressive symptoms was considered a moderator, as depression and depressive symptoms have shown to alter stress-responses. Though self-reported data on feelings of stress did not support our stress-buffering hypothesis, participants whose phones were present during the YIPS, felt significantly less excluded. And lastly, the level of subclinical depressive symptoms had no serious moderating effect on the main effect. So, contrary to previous research, those with higher levels of depressive symptoms did not experience *more* exclusion than those with low levels of depressive symptoms. Thus, those with higher levels of depressive symptoms still benefited from cellphone presence. This implies that cellphones do have potential benefits in stressful social situations. However, future research needs to further explore physiological stress responses to gain a more comprehensive picture of how cellphone use can positively influence our physiological functioning, especially for those with higher levels of subclinical depressive symptoms; this allows for possible interventions that optimize the function of our modern technology in coping with stress.

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F079 11:45 AM-12:45 PM

THE EFFECT OF POSITIVE EMOTIONS ON CARDIOVASCULAR REACTIVITY AND RECOVERY FROM STRESS

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Despite the recent interest in the role of positive emotions on physical health, the mechanisms explaining this relation are not well understood. The undoing hypothesis, which proposes that positive emotions speed physiological recovery from stress (Fredrickson & Levenson, 1998), has emerged as a potential mechanism explaining this relation. However, the literature is mixed in demonstrating this effect. Therefore, the purpose of this study was to examine two methods of inducing positive emotions to determine how positive emotions affected cardiovascular reactivity and recovery from stress.

This study employed a 2 x 2 between-subjects design in which the two methods for inducing positive emotions included engagement in a Duchenne-smile manipulation and exposure to a photograph of a pleasant memory. Participants included 61 undergraduates who were randomized to one of four groups: Smile-Happy (Duchenne-smile + personally-relevant pleasant photograph), Smile-Neutral (Duchenne-smile + neutral photographs), No-Smile-Happy (Neutral expression + pleasant photographs), and No-Smile-Neutral (Neutral expression + neutral photographs). Participants engaged in these emotion induction tasks simultaneously while completing a mental arithmetic stressor task.

Cardiovascular reactivity to the stressor task was examined using Smile by Event ANCOVAs on systolic and diastolic blood pressure (SBP and DBP respectively). Results demonstrated a significant main effect of Event for SBP with the personally-relevant photograph groups demonstrating greater reactivity as compared to the neutral photograph groups, $F(1, 55) = 4.30$, $p = .04$. Additionally, results also demonstrated a significant main effect for Smile for DBP with greater reactivity in the Smile groups as compared to the No-Smile groups, $F(1, 55) = 7.56$, $p = .008$. It is possible that the elicitation of specific positive emotions results in increased cardiovascular reactivity (Yogo, Hama, Yogo, & Matsuyama, 1995). Finally, a series of between-subjects ANCOVAs were conducted on area under the curve for SBP and DBP. Results revealed no group differences in SBP and DBP recovery, suggesting that positive emotions did not improve cardiovascular recovery from stress as measured by SBP and DBP and thereby fails to support the undoing effect. Although there was no evidence supporting the undoing effect, the evidence of increased reactivity to the positive-emotion induction tasks suggests the importance of examining emotion specific effects on cardiovascular

reactivity and recovery. Future research should also consider conducting reproducibility studies of the original undoing effect and further explore the clinical utility of the undoing effect.

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F080 11:45 AM-12:45 PM

YOGA FOR TEACHERS

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Introduction:
Nearly 40% of elementary teachers leave their profession due to heavy workloads and stress. Although there is research that has focused on understanding educator stress and the associated consequences on their well-being, there is little research focused on the best way to mitigate stress and improve well-being. Contemplative practices (i.e., mindfulness) have been tested as a means to prevent and alleviate teacher stress with several studies demonstrating their effectiveness. The purpose of this study was to determine interest in using online yoga (Udaya.com) as a means to reduce stress and improve health. Findings from the survey will be used to design an online yoga intervention for teachers before, during, or afterschool.

Methods:
This study was approved by an Institutional Review Board. The 17-question online survey was administered via Qualtrics to preschool and elementary school teachers in a Southwestern state. Teachers were recruited using social media (i.e., Facebook), fliers at schools, and email list servs. Questions were related to teachers' interest in participating in online yoga and perceived principal support for yoga participation.

Results:
Of the 117 who completed the survey, most (78%; n=91/117) were not currently participating in yoga but 75% (n=68/91) had participated in yoga in the past, with, 57% (n=45/79) only ever participating in a few sessions. When asked about interest in participating in online yoga, 84% (n=90/108) were very interested/interested. Almost 90% of teachers (n=96/109) were interested in participating in online yoga in a common area amongst other teachers/staff. The top three reasons teachers were interested in yoga included: stress relief (91%; n=86/94), relaxation (82%; n=77/94), and general health (63%; n=59/94). Teachers perceived their principal would support online yoga participation if it was after school (24%; n=26/109) or before or after school (39%; n=43/109).

Conclusion:
Teachers were interested in having online yoga at their school to reduce stress, and improve their health and felt principals would support online yoga. Online yoga may be a reasonable solution to reducing time restraints, mitigating cost, and providing accessibility to yoga for teachers. Interventions to determine feasibility and initial effectiveness of online yoga for teachers in the school setting are warranted.

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F081 11:45 AM-12:45 PM

A GENOME-WIDE ASSOCIATION STUDY TO INVESTIGATE SHARED GENETIC VARIATION FOR BINGE EATING AND BINGE DRINKING IN COLLEGE STUDENTS

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Purpose: To investigate shared genetic variation between binge drinking and binge eating in a large, college-aged sample using a Genome-Wide Association Study (GWAS) approach.

Design: Researchers will perform a secondary analysis of data in a large, longitudinal database consisting of approximately 10,000 individuals, which aims to understand how genes and the environment come together to influence substance use and mental health. Fall and spring surveys from the 2011-2013 cohorts' first year of college were analysed (n~4100). Surveys queried mental and behavioural health outcomes as well as environmental variables. Saliva samples were collected and DNA isolated.

Results: Initial analyses showed that students who binge eat are 1.7 times more likely to report parental problem drinking than students who do not binge eat (95% CI= 1.5, 1.9); and students who binge drink are 1.5 times more likely to report parental problem drinking than students who do not binge drink (95% CI= 1.3, 1.7). The DNA samples were genotyped on the Affymetrix Biobank Version 2 Array, which contains both rare variation, as well as an imputation GWAS grid.

Conclusions: Results offer preliminary steps to determine if previous findings may be due to a genetic susceptibility to binge behaviours. Current GWAS analysis, with considerations of Linkage Disequilibrium and a gene-based analysis, are being conducted to study this hypothesis.

Clinical Relevance: The overall objective of this study is to advance understanding of shared genetic variation between binge eating and drinking, and to contribute to the long-term

objective of informing and designing effective and efficacious prevention and intervention strategies for binge behaviours for college age youth.

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F082 11:45 AM-12:45 PM

ASSESSING HETEROGENEITY IN THE ADOLESCENT PHYSICAL ACTIVITY-SMOKING RELATION: A SEQUENTIAL PROCESSES GROWTH MIXTURE MODEL

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Significance. Adolescence is a key period for the initiation of cigarette smoking (smoking) and progression to a regular habit. 9 of 10 adult smokers initiated smoking by age 18. One factor that may protect adolescents from smoking initiation and progressing to a regular habit is physical activity (PA). Yet, not all PA may be equally predictive. We sought to better understand the PA-smoking relation by testing for developmental heterogeneity.

Methods. Participants were 1361 high school students (50% female; 73% White) taking part in a prospective study (4 years, 8 waves) of the relation between adolescent PA and smoking. We employed Sequential Processes Growth Mixture Modeling (SPGMM) to analyze our data. SPGMM allows for identification of homogenous subpopulations (conjoint classes) on repeated measures of ≥ 2 variables (e.g., smoking and PA), and characterizing the classes on select covariates with multinomial logistic regression. We employed Bayesian Information Criterion (BIC), Adjusted BIC (aBIC), Bootstrap Likelihood Ratio Test (BLRT), average probability of correct classification, and substantive criteria to identify the correct number of conjoint classes.

Results. Four classes were identified: High PA/Low smoking (HPA/LS); Low PA/Consistently high smoking (LPA/CHS); Low PA/Increasing smoking (LPA/IS); moderate PA/Low smoking (MPA/LS). Having greater expectations of the benefits of smoking was associated with an increase in the odds of belonging to all other classes compared to HPA/LS. Participation in alternative PA (e.g., skateboarding) was associated with an increase in the odds of being in LPA/CHS and LPA/IS compared to HPA/LS. Using alternative tobacco products and having peers who smoke were associated with an increase in the odds of belonging to LPA/CHS and LPA/IS versus HPA/LS. By contrast, having PA support and positive expectations of the benefits of PA were associated with a decrease in the odds of belonging to LPA/CHS versus HPA/LS.

Conclusions. The findings of this study suggest the existence of multiple relations among smoking and PA, and that the best predictors of higher smoking and lower PA are smoking expectations and White race. Finally, not all PA is equally protective against smoking. Various physical activities (e.g., skateboarding) may actually increase the odds of smoking.

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F083 11:45 AM-12:45 PM

TEXT & MOBILE MEDIA SMOKING CESSATION SERVICE FOR YOUNG ADULTS IN SOUTH TEXAS

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Smoking among Latino young adults (18-29) in South Texas is high (23.2% to 25.7%), representing a serious public health problem. Yet few are reached by services to help them quit smoking. Young adults are heavy users of mobile devices for texting and access to mobile media. These have an extraordinary potential for assisting smoking cessation by providing peer modeling and eliciting social reinforcement for behavior change. We present preliminary results of Quitxt a bilingual text messaging and mobile media service to help young adults quit smoking.

Methods: We constructed a bilingual texting and mobile media system that was promoted in South Texas via social media advertising and other recruitment channels. The ads, which featured couples with different themes (disgust with cigarettes or confidence in quitting success) and styles (cowboy, metro/urban, geek, punk and graphic novel), asked potential participants who showed interest in quitting smoking to text a code to our system corresponding to the channel of recruitment. Text messages include links to web pages with additional content and YouTube videos with peer modeling of reasons and skills to quit smoking.

Preliminary Results: Preliminary results showed that enrollments were achieved for 798 participants with a mean age of 29.3 and 55% were below the age of 30. More men (57%) than women (43%) enrolled and 36% identified themselves as Hispanic or Latino. The mean number of cigarettes consumed per day was 11.5. Seven-month texted follow up found that 21% (171) of the enrollees reported abstinence at that point. This is consistent with high rates of success found in studies of telephone counseling for young adults and confirms that text and mobile media service specifically designed for young adults provide a feasible and cost-effective approach to promoting cessation.

Conclusion: Preliminary results provide evidence that young adult smokers in South Texas can be reached via mobile media service. The anticipated outcome is a scalable, culturally relevant, evidence-based and cost-effective service with broad national reach to help young adult Latinos stop smoking, with the potential to reduce health care costs, reduce chronic disease burden and improve quality of life among this young, fast-growing, at-risk population.

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F084 11:45 AM-12:45 PM

THE ADDITIVE ASSOCIATION OF INDOOR CIGARETTE AND MARIJUANA SMOKING ON POTENTIAL EXPOSURE TO FINE PARTICLES

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Introduction: Exposure to fine particles (<=2.5 microns) from any source can induce respiratory damage and exacerbate bronchitis and asthma. The substantial impact of cigarette smoking on indoor fine particle levels is well known, but the impact of marijuana smoking has not been described. That description is an essential first step toward understanding the public health implications of increasing marijuana use. Using data from 193 households, we examined associations of indoor marijuana and cigarette smoking with fine particle concentrations and tested whether the two particle generating events (PGEs) have a synergistic effect on fine particle levels.

Methods: As part of a larger trial, air particle monitors were placed in 298 homes of families with at least 1 cigarette smoker and 1 child under the age of 14. After monitors continuously measured fine particle counts (0.5 to 2.5 microns) for at least 7 days, participants were interviewed about past 7-day frequency of cigarette and marijuana smoking, other PGEs (e.g., burning candles, burning food) and ventilation activities such as use of exhaust fans. Dichotomized survey responses (any vs. none) from 193 homes that provided data for all relevant PGEs and ventilation activities were used along with mean air particle counts from the 7-day period. Unadjusted geometric means (GMs) were computed to summarize air particle concentrations. After log transformation of mean air particle counts, multivariable linear regression models were used to adjust for other factors associated with fine particle levels. Synergistic effects were then tested by including a multiplicative (cigarette smoking)*(marijuana smoking) interaction term in the regression model.

Results: Homes without indoor smoking had GM counts of 1985 particles/0.01 ft^3 while homes with marijuana smoking only, cigarette smoking only, and both cigarette and marijuana smoking had GM counts of 2869, 3019, and 5250. Regression models adjusted for

home size, other PGEs, and ventilation activities indicated that marijuana smoking was associated with a 68% increase in GM counts while indoor cigarette smoking was associated with a 57% increase (p's < 0.001). No synergistic effect was detected between marijuana and cigarette smoking (p=0.586).

Conclusion: Indoor marijuana and cigarette smoking were significantly associated with elevated fine particle concentrations; their relationship was additive (not synergistic).

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F085 11:45 AM-12:45 PM

TOBACCO USE AND PREFERENCES FOR WELLNESS PROGRAMS AMONG HEALTH AIDES AND OTHER EMPLOYEES OF AN ALASKA NATIVE HEALTH CORPORATION

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Objective: To assess health behaviors and preferences for health and wellness programs, among employees of an Alaska Native-serving health corporation in western Alaska. Village-based health aides were compared with other employees on health indicators and program preferences. **Methods:** An electronic cross-sectional survey was distributed to all 1290 staff employed at the Yukon Kuskokwim Delta Corporation (YKHC). The 30-item survey was developed using a community-based participatory approach. Items assessed demographics, tobacco use, physical activity level, body mass index (BMI), and included the Perceived Stress Scale and Brief Resilience Scale. Preferences for health and wellness topics and for program delivery formats were also assessed. **Results:** 467 employees responded (36%) with a final sample 429 of usable data; of which 77% were women and 57% were Alaska Native. The 7-day point prevalence of current tobacco use was 39%. Health aides (n=46) were more likely than other employees (n=383) to currently use tobacco (59% vs. 36%, p = 0.003) and more likely to use a homemade form of smokeless tobacco known as Iqmik (37% vs. 15%, p < 0.001). After adjusting for covariates, greater stress levels was associated (p=0.013) with increased likelihood of tobacco use. Overall, employees reported lower than recommended levels of physical activity and motivation for exercise, 74% had a BMI indicating overweight or obese, and no differences between health aides and other respondents. Top preferences for wellness topics were for eating healthy, physical activity, weight loss, reducing stress, and better sleep. Preferred program delivery formats were in-person, DVD, e-mails and posters. Health aides reported greater interest in tobacco cessation than did other employees (37% vs. 21%, p=0.016) and were less likely to prefer programs delivered by e-mail (28% vs. 50%, p=0.006). Health aides reported higher perceived stress (p=0.006) and lower resiliency (p < 0.001) than other employees. **Conclusions:** This study provides novel information about tobacco use and interest in worksite wellness programs among employees of an Alaska Native-serving health

corporation. These findings are helpful in developing tailored wellness promotion programs for YKHC employees. Promoting healthy lifestyles among health aides and other employees could ultimately have downstream effects on the health of Alaska Native patients and communities that YKHC serves.

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Panel Discussion 1 12:15 PM-1:15 PM

USING DISSEMINATION AND IMPLEMENTATION SCIENCE TO ADDRESS DISPARITIES IN OBESITY PREVENTION AND REDUCTION IN PRIMARY CARE

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Background: Provider counseling about lifestyle modification and health behavior change counseling is important for addressing obesity and excess weight, but rates of provider counseling is low. As such, implementation of evidence-based interventions for health behavior change counseling may be sub-optimal.

Objective: The purpose of this panel is to present the results of a demonstration project that was funded by the AHRQ to use the principles of community-based participatory research to disseminate and implement evidence-based strategies for health behavior change counseling into primary care. The following key issues will be addressed: (1) what lifestyle counseling and behavioral change interventions are effective in changing patient outcomes (diet, physical activity and weight loss and/or BMI) for all patients, especially those from racial and ethnic minority groups, in primary care practice settings; (2) what are patient and provider priorities for health behavior change in primary care; (3) what are patient motivations and barriers for health behavior change; (4) to what extent are primary care patients engaged in shared decision making about weight loss/management?

Results: Through an evidence synthesis review, we found that intensive group and individualized coaching combined with pharmacological therapy yielded the best weight loss results in primary care. But, few interventions have specifically targeted racial/ethnic groups and the differences observed between usual care and intervention groups were minimal in minority populations. We also found that interventions that address diet and physical activity are a priority among patients and providers for managing chronic conditions. Both patients and providers indicated that tailored interventions are most likely to be effective, but there was discordance about how the effects of these interventions should be monitored. Patients wanted to be held accountable to providers, but providers wanted patients to be accountable to themselves. These beliefs may explain why 57% of patients were very/completely confident about their ability to lose/manage weight and 62% were making weight loss efforts. Patient perceptions about shared decision-making about weight loss/management were also limited. Only about 25% of patients reported that they selected a weight management option together with their physician, their provider helped them understand weight management, or that their physician explained the advantages and disadvantages for weight managemt.

Conclusions: It is important to actively engage providers and patients in the development of implementation plans that are based on the evidence about the effects of interventions and their priorities and preferences for behavioral interventions to increase the adoption of evidence-based interventions for health behavior change counseling in primary care.

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Panel Discussion 2 12:15 PM-1:15 PM

ETHICAL USE OF MOBILE IMAGING, PERVASIVE SENSING, SOCIAL MEDIA, AND LOCATION TRACKING (MISST) TECHNOLOGIES IN RESEARCH

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Mobile **i**maging, pervasive **s**ensing, social media, and location **t**racking (MISST) technologies show promise in providing more efficient and accurate methods for measuring and intervening on health behaviors. Data from these devices can aid researchers to better understand participant behavior in real world settings and to provide feedback in real time. However, these ubiquitous technologies also present new challenges for human research protections that must be considered to ensure that public health research utilizing them is carried out in a manner that is socially and scientifically responsible. This panel will demonstrate current MISST devices, explain how they are used in public health research and the ethical challenges they entail, and suggested best practices for data collection, data management, and participant protection. The panel will present information on: the combined use of person worn cameras (SenseCam camera), accelerometry, and GPS and GIS (Presenter 1); combined sensors and consumer-level wearables (Presenter 2); social media and networks (Presenter 3); and ethical and regulatory challenges and solutions (Presenter 4). Examples will be drawn from several large interventional and observational studies (e.g., http://cwphs.ucsd.edu/miparc ; http://cwphs.ucsd.edu/smart ; http://abcdstudy.org/). Special emphasis will be placed on older adults, young adults, and adolescents, as sample populations range in age from 6 to 102 years.

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Panel Discussion 3 12:15 PM-1:15 PM

DEVELOPING AND IMPLEMENTING EVIDENCE-BASED CLINICAL PRACTICE GUIDELINES: DEPRESSION AND OBESITY

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When utilized in health care systems, high quality clinical practice guidelines have the potential to improve clinical practice and increase access to appropriate services. The development of such guidelines synthesizes research evidence in order to facilitate clinical decision-making and assist patients in making choices about treatment options. Although widely used in medicine, fewer practice guidelines address interventions specific to mental and behavioral health. The American Psychological Association (APA) and its partners are generating clinical practice guidelines for psychological and health disorders. The goal is to provide trustworthy, evidence-based guidelines the public can use to select among available treatment options. The APA charged an advisory steering committee, including SBM leadership and members, with the task of recommending transparent, best practices for guideline generation and identifying strategies to promote dissemination and implementation. The steering committee studied models adopted elsewhere such as the NICE guidelines and recommended adhering closely to the recent National Academy of Medicine (IOM) reports describing current best practices with regard to guideline generation. The APA has new, draft guidelines for depression and childhood obesity that will be presented and discussed by the panel. In each instance, every effort was made to deal with bias by ensuring that competing perspectives were represented on the guideline panels, a process known as adversarial collaboration. Similarly, both guidelines seek to integrate the best existing empirical evidence with the expertise of the provider and the preferences and values of the recipient of the intervention. This multi-organizational panel first describes the process of guideline development and steps taken to minimize bias and improve quality. Speakers will then briefly present near final findings from the guidelines in development. Strategies to effectively disseminate and implement clinical practice guidelines within health care systems and by individual providers and by patients will also be discussed. A final discussant will guide a conversation about the implications of this project and how to best improve quality of care for all.

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Panel Discussion 4 12:15 PM-1:15 PM

NEW TECHNOLOGIES AND ANALYTIC TECHNIQUES: TOWARDS INNOVATIONS IN MONITORING, MODELING, AND MODIFYING FOOD INTAKE

Donna Spruijt-Metz, MFA, PhD[1], Melanie D. Hingle, BS; MPH; PhD[2], Kayla de la Haye, Ph.D.[1], John Lach, PhD[3], Jack Stankovic, PhD[3], Stephen Kobourov, MSC, PhD[4], Mihai Surdeanu, PhD[4]

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Dietary behavior, including accurate assessment of intake and valid observations the influences on food-related behavior, continues to pose one of the wickedest problems in obesity research. This panel brings together experts in nutrition, dietary intake, mobile health and social networks to discuss the difficulties and opportunities in assessing and understanding food intake. The considerations in the fields of nutrition obesity that inform which characteristics of measures are considered necessary and sufficient will be revisited and challenged. Some of the solutions that new technologies might offer will then be reviewed. The use of 'digital breadcrumbs' scraped from the web, crowdsourcing and other app and web-based solutions will be compared and contrasted with photography + machine learning approaches. We will examine new work in cyber-physical systems to understand eating behaviors in real time, with a discussion on the kind of data that this technology can offer, and the challenges of modeling that data. The challenges of using it to intervene in real time will be examined. Finally, the very nature of the questions that we need to ask and the data that we need to understand eating behavior will be queried, with a particular emphasis on the real-time, socially networked nature of food consumption.

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Panel Discussion 5 12:15 PM-1:15 PM

USING HUMAN COACHES IN DIGITAL HEALTH INTERVENTIONS: A DISCUSSION OF METHODS AND MODELS

Emily Lattie, Ph.D.[1], Kathryn Noth Tomasino, PhD[2], Dori M. Steinberg, PhD, RD[3], Ruth Q. Wolever, PhD[4]

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The use of digital health interventions, such as those delivered online and via mobile phones, is an increasingly common strategy to extend the reach and availability of behavioral medicine services. A growing body of research suggests benefits of incorporating human coach support into the provision of these services in order to increase patient engagement and enhance outcomes of digital interventions. However, because including human support is costly, we need to develop a common understanding of effective coaching methods and models in order to best design and implement engaging and scalable digital health interventions. Further, it is important to understand and utilize practical assessment strategies for measuring patient engagement. During this panel, we will review heterogeneous definitions of “health coaching,” discuss various health coaching programs, digital delivery methods, and models of providing coach support. Panelists include behavioral scientists with expertise in developing health coaching programs for general clinical practice and for use in digital health intervention studies. Each panelist will provide a brief overview of the work they have conducted in this field. This panel will provide an opportunity for the panelists and attendees to discuss methods for enhancing patient engagement in digital health interventions in order to broaden the reach of behavioral medicine services in an efficient and effective manner. Attendees will be encouraged to think critically about digital health intervention design and a substantial portion of time will be dedicated to discussion.

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Panel Discussion 6 12:15 PM-1:15 PM

GOTTA CATCH EM ALL: HARNESSING VIRALITY OF TECHNOLOGY AND TRENDS TO CATAPULT OUR RESEARCH FORWARD

Carly M. Goldstein, PhD[1], Claudio R. Nigg, PhD, FSBM[2], Eric Hekler, PhD[3], Madeleine P. Ball, PhD[4], Alexander M. Biel, BA [5], Ernesto Ramirez, PhD, MS[6]

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Increased social media use has propagated videos, photographs, fundraisers, and challenges to a viral level. “Going viral” refers to rapid and wide electronic dissemination of material to many users so that it becomes popularized. The typical research timeline has historically been incompatible with studying viral trends, but some researchers have successfully harnessed virality to recruit participants, conduct studies on timely topics, and generate data for national policies. The purpose of this panel is to focus on targeting virality of technology and trends to benefit research and just-in-time studies that could add substantially to the literature. This panel will feature presentations and a moderated discussion with a team composed of: 1) Two behavioral researchers (one faculty, one graduate student) who created and oversaw two Pokemon, Go! studies shortly following the game’s creation and widespread popularity; 2) the creator of the Open Humans research platform designed to connect researchers with participants willing to gather and share their own data including through projects like the Personal Genome Project; 3) an industry-academic partner with Fitabase specializing in efficiently gathering health and behavioral data by integrating and working with consumer tools, apps, and products; and 4) a behavioral scientist framing this discussion in the context of taking advantage of emerging trends and early-and-often sharing as facets of agile science. This panel’s aim is to provide instruction and suggestions for researchers aiming to harness virality to recruit participants, gather data, or inform policy in a timely manner.

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Panel Discussion 7 12:15 PM-1:15 PM

EXPANDING HORIZONS OF RESEARCH IN INTEGRATED PRIMARY CARE: CHALLENGES, LESSONS LEARNED AND FUTURE DIRECTIONS

Kathryn E. Kanzler, PsyD, ABPP[1], Deepu George, PhD[2], Mario Nicolas, Ph.D.[3], Jeffrey Goodie, Ph.D., ABPP[4], William Isler, PhD[5]

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Integrating behavioral health clinicians in primary care settings has emerged as an essential component of patient centered medical homes. Research assessing the most effective methods for how to best address the needs of primary care populations is mounting. However, conducting clinical research in these settings can be quite challenging due to issues such as IRB hurdles, clinic workflow, time constraints, and limited resources. Our three panelists are currently conducting research in the Primary Care Behavioral Health (PCBH) model of service delivery and will share their unique experiences, to include all the ups and downs of this rewarding clinical research. Our first panelist will discuss challenges with conducting research in a large military healthcare system. They will describe difficulties encountered when attempting to implement a study on shared medical appointments, and how “lessons learned” from this experience were used to plan and execute a weight-loss intervention study. Our second panelist will discuss their grant-funded pilot study, involving examination of a clinical pathway for patients with persistent pain using Acceptance and Commitment Therapy techniques in a patient centered medical home. Our third panelist will describe their work doing a grant-funded multi-site quasi-experimental study of the PCBH model of service delivery in different primary care settings. Our final speaker has decades of experience in integrated primary care practice and research, and they will facilitate discussion and Q&A, as well as highlight the key challenges, lessons learned and future directions for research in integrated primary care.

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Panel Discussion 8 12:15 PM-1:15 PM

THE MULTIPLE FACES OF COMMUNITY OUTREACH: THE TULANE PREVENTION RESEARCH CENTER

Carolyn C. Johnson, PhD MS[1], Keelia O'Malley, MPH[2], Catherine Haywood, BSW[1], Naomi Englar, BA[3]

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Community outreach, engagement and partnership are the foundations upon which community behavior change programs are based. Without engaging community residents in health promotion efforts, little to no expectation of success can be achieved. Community engagement can provide strong and relevant input on such issues as methods, media messages, timing, priorities, and cultural sensitivity. A total of 26 Prevention Research Centers (PRCs), funded by the Centers for Disease Control and Prevention (CDC), provide tremendous outreach efforts across the nation to enhance health and decrease disease burden. The Tulane PRC, which has been working in the New Orleans community since 1998, has the mission of preventing or reducing overweight and obesity by addressing the physical and social environmental factors that influence diet and physical activity. The Tulane PRC strives to achieve its mission through community outreach, engagement and partnering. Experience has shown that only multiple methods at various levels can achieve specified goals and objectives; therefore, the purpose of this session is to demonstrate and discuss community outreach methods, focused on: 1) technology via social media; 2) social marketing; 3) grassroots engagement through the Tulane PRC Neighborhood Ambassador Program; 4) policy research; and 5) education of stakeholders and local government. The Tulane PRC community-based efforts have included the development and use of community coalitions for specific programs, evaluating and promoting new bike lanes, providing input on revised zoning around schools, facilitating joint-use agreements between schools and the city, and promoting farmers' and mobile markets. One example is the building of a walking path which provided initial impetus for a total neighborhood revitalization program. Various other examples of successes and challenges will be presented, along with group discussion. The lessons learned are very clear: engage community residents as your partners for any community-based programming through any combination of methods that work.

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Panel Discussion 9 12:15 PM-1:15 PM

ENHANCING THE EFFECTIVENESS OF PHYSICAL ACTIVITY INTERVENTIONS IN MILITARY VETERANS THROUGH CULTURAL TAILORING

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Military veterans represent almost one in ten adult Americans and yet represent a health population not widely understood by those who have not served this group. Veterans are also a medically complex and vulnerable population that has been exposed to a number of psychological, physical, and environmental stressors as part of their military service. These stressors, such as participation in combat, are often unique to the service member population and contribute to a disparate distribution of chronic disease and debilitating conditions among veterans. While active duty service members are healthier than nonveterans due to mandatory fitness standards, many veterans become insufficiently active and develop health problems soon after separation from the military. This critical life transition may be best characterized as a culture shock for some veterans who struggle to adapt without the sociocultural benefits and supports of military life, and constitutes a key time for behavioral health interventions.

This panel will help clinicians and researchers understand the importance of cultural tailoring to promote physical activity and identify innovative strategies for delivering targeted activity programs in veteran populations. Panelists will illustrate how tailoring can go beyond surface elements of culture such as veterans' preferred physical activities or known barriers to exercise, to deeper cultural structures of the warrior identity such as mission, values, and "military as family" that can enhance motivation. The first panelist will present salient characteristics of military culture that can be used to enhance program design and messaging and increase veteran engagement in physical activity programs. The second panelist will review current determinants of physical activity participation for veterans in the Veterans Health Administration and community settings, highlighting areas for improvement and examples where cultural tailoring in program development and implementation has been successful. These presentations will be followed by an interactive discussion with the audience moderated by an innovator in culturally-tailored health messaging and community-based interventions that will emphasize application to real world interventions.

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Panel Discussion 10 12:15 PM-1:15 PM

MINDFULNESS TRAINING AND CARDIOVASCULAR DISEASE PREVENTION: FACTS AND MYTHS.

Elena Salmoirago-Blotcher, M.D., Ph.D.[1], Eric B. Loucks, PhD[2], Judson A. Brewer, MD/PhD[3]

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Nearly half of the observed reduction in coronary heart disease deaths over the past several decades is attributable to improvements in coronary risk factors such as smoking, hypertension, and high cholesterol, with the other half due to progress in medical treatment and procedures. Despite these encouraging results, much remains to be done in the realm of cardiovascular disease prevention, as it remains the number one cause of death worldwide. First, adherence to lifesaving medications like statins and blood pressure lowering drugs is not optimal. Second, maintaining healthy lifestyle changes over the long term remains an elusive goal. Intense research efforts have been directed into finding novel and creative approaches to promote lasting changes in these important behavioral risk factors.

Recent, rigorous meta-analyses have shown that mindfulness training (MT) is effective in preventing depression relapse with moderate to large effect sizes. But can it impact the physical health realm, including cardiovascular health? This panel discussion will focus on a novel and controversial aspect, namely the possible role of MT in the promotion of cardiovascular health. Uniquely, we will examine this topic from an epidemiological, neurophysiological, and medical perspective.

We will first present the current evidence supporting the role of mindfulness in the promotion of cardiovascular health –i.e., through improvements in important cardiovascular risk factors such as hypertension, smoking, diet, obesity, and physical activity.

Next, we will offer an overview of the posited neurophysiological and psychological mechanisms by which MT can promote cardiovascular health – namely its effects on known psychological contributors as well as its effects in changing unhealthy habits.

Finally, we will present the cardiologist’s perspective –with a focus on challenges to the clinical application of this approach and barriers to implementation in a clinical setting. We will conclude with a panelist discussion and Q&A session to obtain panelists’ and audience’s feedback and input on this novel approach to cardiovascular prevention.

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Panel Discussion 11 12:15 PM-1:15 PM

BEHAVIORAL SLEEP MEDICINE: CAREER PATHS AND FUTURE CAREER OPPORUTNITIES

Michelle Drerup, PsyD[1], Kelly Glazer. Baron, PhD, MPH, CBSM[2], Christina McCrae, PhD[3], Stephanie A. Hooker, M.S., M.P.H.[2], Samantha Domingo, Psy.D.[1]

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Behavioral Sleep Medicine is an area of tremendous opportunities in behavioral medicine because common sleep disorders such as insomnia and obstructive sleep apnea lower quality of life and contribute to physical and mental health problems. Sleep disorders and lack of sleep are an often underdiagnosed and under treated threat to public health. Behavioral Sleep Medicine is a field of clinical practice and scientific inquiry that encompasses the study of behavioral, psychological, and physiological factors underlying normal and disordered sleep across the life span; and, the development and application of evidence-based behavioral and psychological approaches to the prevention and treatment of sleep disorders and co-existing conditions. The panel members will discuss the different settings that Behavioral Sleep Medicine (BSM) providers are embedded including academia, private practice and multidisciplinary sleep disorder centers housed in hospitals or medical centers. The panel members will offer their advice on a wide range of professional and career development issues in the area of BSM, including graduate and post-graduate training opportunities, interdisciplinary collaboration, and future growth opportunities in the field.

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Panel Discussion 12 12:15 PM-1:15 PM

MID-CAREER IN BEHAVIORAL MEDICINE: STAYING PRODUCTIVE AND CREATIVE AMIDST CAREER CHALLENGES, TRANSITIONS, AND ADVANCEMENTS

Karen Oliver, Ph.D.[1], Catherine Alfano, PhD[2], Tracey A. Revenson, PhD[3], Christine Rini, PhD[4]

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This panel discussion is geared toward professionals in behavioral medicine whose work includes combinations of research, teaching, clinical care, and/or administration, and who are navigating—or preparing to navigate—the challenges of mid-career. Professional paths in mid-career are often less well-defined than paths through early career, and the challenges of this career stage are often quite different. Challenges and opportunities in mid-career may involve issues surrounding promotion, giving and getting mentoring, leadership, funding, institutional or leadership transitions, balancing increasing demands on time or performance, and potential changes in work setting, position, or environment. Moreover, mentoring regarding decisions, goals, and challenges is often less available to mid-career professionals than to those just beginning their career in behavioral medicine. Questions regarding how to stay creative, generative, and motivated often arise, as do questions about career trajectories and goals, and how to learn about and prepare for them. Questions regarding practical issues to consider when preparing for career advancement are also common and answers are not always easy to find. This panel will discuss these issues across a variety of behavioral medicine careers. Panelists will share personal experiences and strategies for successfully coping with mid-career challenges while capitalizing on opportunities. Discussion will also include “lessons learned” and will provide strategies for audience members to consider when faced with their own unique mid-career challenges. This panel is designed to be interactive and there will be time for questions and discussion.

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Panel Discussion 13 12:15 PM-1:15 PM

NATUROPATHIC MEDICINE 101 - INTRODUCTION TO THEORY AND PRACTICE

Brad S. Lichtenstein, Doctorate of Naturopathic Medicine [1], Cyndi Hope, Doctorate of Naturopathic Medicine [2]

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When Engel proposed his bio-psycho-social model in the late 1970s to address the limits of biomedicine, the field of naturopathic medicine had only 2 medical schools, and small number of licensed providers spread out across the US and Canada. Currently, with seven naturopathic medical schools in North America and more in development, the past two decades has seen a growing interest in this comprehensive medical discipline that is grounded in a whole person, behavioral medicine approach to care. 17 states, DC and the US territories of Puerto Rico and the US Virgin Islands have licensing or regulation laws for naturopathic doctors (NDs), which include graduation from an accredited four-year residential naturopathic medical school and passing postdoctoral board examination (NPLEX).

As a distinct, integrative form of primary health care profession, naturopathic medicine emphasizes prevention, treatment, and optimal health through the use of therapeutic methods and substances that encourage individuals' inherent self-healing process, and acknowledges the importance of behavioral, socioculturalpolitical, cognitive, and emotional factors to treat the whole person. Naturopathic doctors diagnose, treat, and help prevent diseases using a system of practice that is based on the natural healing capacity of individuals. Trained in a wide-array of modalities and therapies, including physiological, psychological or mechanical methods,naturopathic physicians use natural medicines, prescription or legend drugs, foods, herbs, and other natural remedies to treat their patients.

Basic knowledge about naturopathic medicine can benefit patients and providers alike. This presentation will examine the theory, practice and scope of naturopathic medicine, and will introduce the guiding principles of discipline which include The Healing Power of Nature (*Vis Medicatrix Naturae*), Above all Else, Do No Harm (*Primum Non Nocere*), Treat the Cause (*Tolle Causum*), Treat the Whole (*Tolle Totum*), Doctor as Teacher (*Docere)*, and Prevention (*Preventare*). The naturopathic therapeutic order will be outlined and case examples will be used to illustrate the concepts.

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Symposium 19 1:30 PM-2:45 PM

UNPACKING RISK PERCEPTIONS: HOW, WHEN, AND FOR WHOM FEELINGS OF RISK MOTIVATE BEHAVIOR CHANGE

Erin M. Ellis, PhD, MPH[1], Rebecca A. Ferrer, PhD[1], Linda D. Cameron, Ph. D. [2], Noel T. Brewer, PhD[3]

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Many health decision-making theories center on perceived risk of health threats as a motivator of health behavior change. Recent work has explored the unique influences of cognitive and affective subcomponents of risk perceptions, often finding that affective risk perceptions such as worry can exceed, moderate, or mediate the effect of cognitively-based risk perceptions on behavior. It is therefore necessary to examine methodological, contextual, and person-level factors that may shape the strength of the associations between affective risk perceptions and behavior. The aim of this symposium is to highlight the role of affective risk perceptions as a key driver of health behavior, and to extend this work to examine how the cognitive-affective interplay varies across people or behaviors, key measurement and methodology decisions in understanding these different components of risk perceptions, and implications for health communication interventions. The first presentation reports on a multidimensional model of risk perceptions used to predict motivation to engage in 32 different health protective behaviors. Although affective risk perceptions were a consistently strong predictor of motivation to engage in health behavior, they were particularly predictive for threats perceived to be less severe and for people who habitually used specific emotion regulation techniques, suggesting a role for both contextual and person-level characteristics. In the second presentation, willingness to take a disease-preventive medication that caused side effects was associated with cognitive and affective risk perceptions, but only when these risk perceptions were conditioned on whether or not one takes the medication, highlighting the importance of conditionality. In the third study, theoretical work disentangling cognitive and affective risk perceptions is applied in a health communication intervention that utilized metaphoric messaging about skin cancer. The results suggest that affective risk perceptions are important as both a mediator and moderator of the intervention’s effect on sun protection motivation. A discussant whose expertise in risk perceptions spans descriptive, intervention, and meta-analytic research across numerous behavioral contexts will synthesize these studies, highlighting key themes and remaining questions. Together, these innovative

state-of-the-science presentations connect research in social psychology, health psychology, and public health to extend risk perception theory and intervention efforts by highlighting when and for whom affective risk perceptions motivate behavior change.

Symposium 19A

RISK PERCEPTIONS AND MEDICAL DECISIONS INVOLVING TRADE-OFFS

Dr. Erin M. Ellis, PhD, MPH

Background: Perceived risk of a health threat can motivate health-protective behaviors such as using medications that reduce disease risk. However, these medications are often accompanied by side effects, including elevated risks for other adverse health effects, and perceived risk of these side effects may also influence treatment decisions. Moreover, risk perceptions are complex, with deliberative and affective subcomponents whose relation to behavior can differ depending on whether they are queried as conditional or non-conditional on engaging in behaviors that may influence one's risk (e.g., smoking). This study explored the role of deliberative and affective risk perceptions in a medical trade-off decision involving a medication that lowered risk for one disease while increasing risk for another, and whether these associations differed when risk perceptions were queried as conditional on taking or not taking the medication.

Methods: Participants (*N* = 310) read about a hypothetical medication that reduced their risk for a target condition (e.g., cancer), but increased their risk for a side effect (e.g., heart disease). They provided their deliberative and affective risk perceptions about the target condition and side effect, both conditional and not conditional on whether they took the medication. Then they indicated their willingness to take the medication.

Results: When risk perceptions were not queried as conditional on whether the medication was taken, neither perceived risk of the target condition nor side effect was associated with willingness to take the medication, regardless of whether they were deliberative*, target condition*: b = 0.030, *p = .*82 95% CI (-0.23, 0.29); *side effect*: b = 0.032, *p = .*82, 95% CI (-0.23, 0.30), or affective in nature, *target condition*: b = 0.18, *p = .*13 95% CI (-0.056, 0.43); *side effect*: b = -0.10, *p = .*40, 95% CI (-0.34, 0.14). On the other hand, greater perceived risk of the target condition conditioned on *not* taking the medication was associated greater willingness to take it, *deliberative*: b = 0.30, *p = .*041; 95% CI (0.012, 0.58); *affective*: b = 0.23, *p = .*030, 95% CI (0.023, 0.44). For the side effect, greater perceptions of risk if one *did* take the medication were associated with *less* willingness to take it, *deliberative*: b = -0.35, *p = .*006, 95% CI (-0.60, -0.10); *affective*: b = -0.25, *p* = .026, 95% CI (-0.46, -0.030).

Conclusions: Thoughts and feelings of risk about a medication's targeted health condition if one did not take a medication were associated with greater willingness to take it, whereas

thoughts and feelings of risk about its side effects if one did take the medication reduced willingness to take it. These findings suggest conditioning both deliberative and affective risk perceptions on specific behavioral contexts may better capture risk perceptions' role in medical decisions that involve trade-offs.

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Symposium 19B

WHEN DO DELIBERATIVE, AFFECTIVE, AND EXPERIENTIAL RISK PERCEPTIONS PREDICT PROTECTION MOTIVATION FOR HEALTH THREATS?

Rebecca A. Ferrer, PhD

Although risk perception is a key concept in many health behavior theories, little research has explicitly tested *when* different types of risk perception (i.e., deliberative, affective, and experiential) predict motivation to take protective action against a health threat (protection motivation). The present study tackled this question by (a) adopting a multidimensional model of risk perception that comprises deliberative, affective, and experiential components (the TRIRISK model), and (b) taking a person-by-situation approach. We leveraged a highly intensive paradigm to test health threat features (i.e., perceived severity) and individual differences (e.g., emotion reappraisal) as moderators of the relationship between risk perception and protection motivation. Multi-level modeling of 2968 observations (32 health threats across 94 individuals) demonstrated that all three risk perceptions were associated with protection motivation, with affective risk perception being the most powerful predictor (B = 0.95, p < .001, *d* = 1.14), compared to deliberative (B = -0.40, p < .001, *d* = -0.41) and experiential (B = 0.11, p =.007, *d* = 0.10) risk perceptions. Analyses also showed interactions among the TRIRISK components and moderation both by person-level and situational factors. For instance, affective risk perception better predicted protection motivation when deliberative risk perception was high (*B* = 0.05, *p* < .001, *d* = 0.13), when the threat was less severe (*B* = -0.03, *p* < .001, *d* = -0.17), and among participants who engage less in emotional reappraisal (*B* = -0.06, *p* = .002, *d* = -0.11). Experiential risk perceptions were more strongly associated with protection motivation when deliberative risk perception was low (*B* = -0.04, *p* < .001, *d* = 0.10), and when cognitive reflection was low (*B* = -0.05, *p* = .009, *d* = -0.10). These findings support the TRIRISK model and offer new insights into when deliberative, affective, and experiential risk perceptions predict health protection motivation.

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Symposium 19C

METAPHOR USE IN SKIN CANCER PREVENTION MESSAGES: MEDIATING AND MODERATING ROLES OF AFFECTIVE RISK APPRAISALS

Dr. Linda D. Cameron, Ph. D.

Framing health messages with potent metaphors represents a promising communication strategy for motivating protection behavior, yet little is known about how, when, and for whom they do so. Guided by conceptual metaphor theory, we tested whether messages framing a health risk metaphorically as a familiar hazard (versus literally) increases worry and protection motivations, and whether these effects are specific to individuals with high (versus low) fear of that hazard. We also tested if messages combining matched (metaphoric/metaphoric) versus mismatched (metaphoric/literal; literal/metaphoric) framings of risk and protection actions increase worry and response engagement. In an intervention trial, we tested messages about sun exposure risk framed metaphorically as an enemy sun attacking the skin (versus framed literally) and sun-safe products as superheroes that protect users (versus framed literally). We predicted that an inherent fear of enemies would moderate (enhance) their effects on skin cancer worry, sunscreen intentions, and willingness to pay (WTP) for sunscreen; and that skin cancer worry (but not perceived risk) would mediate their effects on sunscreen intentions and WTP. Adults ($N = 174$) recruited at outdoor recreational areas during summer completed an enemy fear measure; read a flyer with one of the four sets of risk and response messages; and completed measures of worry, perceived risk, sunscreen intentions and WTP. Regression and Process model analyses supported predictions. When the message framed UV risk metaphorically as an enemy sun and sun protection metaphorically as superheroes, recipients high in enemy fear were more worried about skin cancer, more motivated to use sunscreen, and willing to pay higher prices for sunscreen (enemy fear X risk framing X response framing interaction t's > 2.16, *ps* < .03). For those low in enemy fear, the metaphoric messages did not affect worry, intentions, or WTP. Worry mediated the 3-way interaction effects on sunscreen intentions, 95% CI = [0.03, 0.33], and WTP, 95% CI = [0.04, 0.50]. Neither metaphoric message influenced perceived risk. Affective risk appraisals (metaphor-relevant fear and worry) can moderate and mediate metaphors' effects on protection motivations.

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Symposium 20 1:30 PM-2:45 PM

LA BUENA VISTA: TRANSLATING 40 YEARS OF CANCER INTERVENTION RESEARCH INTO POLICY AND PRACTICE TO IMPROVE HEALTH OUTCOMES

Shawna Ehlers, PhD, ABPP[1], Barbara L. Andersen, PhD[2], Qian Lu, MD, PhD[3]

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Cancer distress screening and referral for intervention are now required to maintain accreditation by the American College of Surgeons, thus providing "teeth" to longstanding cancer distress screening guidelines. National efforts to implement these guidelines have resulted in significant opportunities to advance implementation science via the creation of natural laboratories in cancer health care settings. This presentation will use the NIH-translational pathway to define the trajectory of 40 years of cancer intervention research. Dr. Ehlers will serve as Chair with introduction of speakers and the structure of the presentation. Dr. Andersen will review 40 years of research, inclusive of promising advancements, stalling points, and current opportunities to speed translation to "real world" health care settings. Dr. Lu will then focus in on the importance of broadening research efforts to reduce health disparities, presenting a contextual, ecologically derived, systems model to understand culture and thus to develop culturally sensitive interventions. Dr. Ehlers will serve as Discussant, including discussion of possible approaches to align stakeholders focused on late stage translational research, evidence-based practice, and the "Triple Aim" of health care delivery.

Symposium 20A

THE TRAJECTORY OF CANCER DISTRESS INTERVENTION RESEARCH: CELEBRATING ADVANCEMENTS AND NAVIGATING BARRIERS TO TRANSLATION

Dr. Barbara L. Andersen, PhD

We have 40 years of cancer intervention research. The milestones of this research body will be reviewed to establish our trajectory as a framework for the presentation, utilizing major meta-analytic and review papers. Highlights include progress in research designs, patient selection, intervention development, and broadening outcomes to a biobehavioral model.

Then a perspective will be offered on recent research efforts, including advancements in knowledge and the redundancy of small impact results. The presentation will conclude with a perspective designed to utilize these advancements and propel translation forward to dissemination in modern day oncology health care settings.

Symposium 20B

TRANSLATION OF CANCER INTERVENTION RESEARCH TO PROVIDE CULTURALLY SENSITIVE PSYCHOSOCIAL INTERVENTIONS THAT REDUCE CANCER HEALTH DISPARITIES

Qian Lu, MD, PhD

Considerable cancer health disparities still exist and persist in the U.S. Elimination of health disparities requires a theoretically guided, multidimensional, culturally sensitive approach to illness prevention and behavioral intervention. Culture is the core and fundamental system of life, designed to ensure the survival and well-being of its members. As a result, culture is part of a complex system that is challenging to define and study. Using a contextual, ecologically derived, systems model to understand culture and to develop culturally sensitive intervention may be the key to reduce and eliminate health disparities. By focusing on understudied and underserved populations, this presentation aims to illustrate that contextual models hold the promise to build cultural competence and move the science forward to understand and eliminate health disparity in cancer. The presenter will first review psychosocial interventions among minority cancer survivors for the past 40 years, and then provide examples of using a community based participatory approach to develop and implement culturally sensitive interventions among Asian American breast cancer survivors. An example of intervention development will be provided in examination of Chinese American breast cancer survivors post-treatment (N=19) who were randomly assigned to a usual care control group, or an intervention group designed to provide emotional and informational support through peer mentoring and education. Compared with control group, the intervention group reported improvements in health outcomes in medium-to-large effect sizes (including overall, emotional, functional and additional concerns quality of life) post-intervention. Future studies with other minority groups are warranted to better understand the efficacy and the mechanisms of social support interventions across culture.

Symposium 21 1:30 PM-2:45 PM

SOCIAL DETERMINANTS OF PHYSICAL ACTIVITY AMONG LATINOS: FROM OBSERVATIONAL RESEARCH TO TRANSLATIONAL INTERVENTIONS

Sandra Echeverria, PhD[1], Rosenda Murillo, PhD MPH[2], Elizabeth Vasquez, DrPH[3], Sandra Echeverria, PhD[1], Ana F. Abraido-Lanza, PhD [4]

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Latinos are the fastest growing population in the United States and are disproportionately affected by overweight/ obesity and participate in low levels of physical activity (PA). A well-documented body of evidence has indicated the social patterning of cardiovascular risk factors, including physical inactivity. However, limited research exists investigating social determinants of active living among Latinos. In this symposium, we present findings using nationally representative data (National Health Interview Survey) to examine associations between key social factors- nativity, occupational status, and neighborhood perceptions- and distinct measures of physical activity. Specifically, we examine how neighborhood perceptions are associated with mobility in older Latino adults, and then examine differences in walking for transport and walking for leisure by nativity status and U.S.-based census occupational categories in middle-aged adults. Building on the population-based observational studies presented, the symposium provides an example of a pilot study that takes into account complex cultural, social, and organizational factors in a communtiy-based PA intervention designed for Latinos. The discussant closes the session highlighting the importance of integrating observational and translational research to more effectively promote adoption of PA across the lifespan in this vulnerable population.

Symposium 21A

NATIVITY AND OCCUPATIONAL STATUS INFLUENCING WALKING BEHAVIORS AMONG LATINOS

Rosenda Murillo, PhD MPH

Walking has long been associated with numerous health benefits, including lower all-cause and cardiovascular mortality. Only select studies have investigated walking patterns among Latinos, and no study has investigated if walking purpose differs by key social determinants such as race/ ethnicity, nativity and occupational status. We analyzed the National Health Interview Survey (NHIS), a yearly nationally representative household survey of the non-institutionalized United States (US) population, which in 2010 collected data on walking for leisure and walking for transport. We classified Latinos (n=5,158) by nativity status and number of years in the US and compared them to non-Latino Whites (n=15,570). The prevalence of each walking behavior was calculated, and duration and frequency of walks in the past week were used to estimate if individuals met national physical activity (PA) recommendations of engaging in at least 150+ minutes of moderate physical activity per week. A clear gradient in walking for transport was observed, with 42% of immigrants living in the US less than 10 years walking for transport and dropping to 30% in US-born Latinos. In logistic regression models adjusted for age, sex, education, poverty level, and obesity, Latinos showed a significantly higher probability of being sufficiently active through transportation activity compared to non-Latino whites [Prevalence Ratio (PR)= 1.62, 95% Confidence Interval (CI)= 1.17, 2.22)]. For leisure walking, none of the models were statistically significant. Tests for interaction showed that occupational status modified observed associations between nativity status and walking for transport and leisure, showing more pronounced differences for lower status and physically demanding occupations. Walking initiatives need to be tailored to working poor and culturally diverse populations.

Symposium 21B

NEIGHBORHOOD SOCIAL COHESION AND MOBILITY LIMITATIONS AMONG OLDER RACIALLY/ ETHNICALLY ADULTS IN THE UNITED STATES

Elizabeth Vasquez, DrPH

Background: Unrestricted walking and climbing ability are markers of functional performance and health in older adults. Several studies have shown that neighborhood contexts can influence mobility in older populations, but little evidence exists on elderly Latinos. This study examines associations between neighborhood social cohesion and mobility limitations in a national sample of older adults and specifically tested if associations differed by race/ethnicity and present disparities faced by Latino older adults.

Methods: We combined the 2013 and 2014 years of the National Health Interview Survey (NHIS), a nationally representative survey of non-institutionalized adults of the United States, and selected adults 60 years and older. Mobility limitation with walking, climbing or both (total) were determined from NHIS questions asking if the participant “experienced difficulty walking or climbing steps.” Self-reported neighborhood social cohesion was evaluated with four questions about whether neighbors help one another, can be counted on, can be trusted, or are close-knit. All four questions answers were summed and divided into three categories representing high, medium and low neighborhood social cohesion. Prevalence of mobility limitations were calculated for each neighborhood category and adjusted for age, sex, education, and physical activity. Models were further stratified by race/ ethnicity and nativity status for Latinos.

Results: Non-Latino whites (NLW) had the highest proportion of individuals living in neighborhoods with high neighborhood social cohesion (42.5%), followed by Latinos (28.5%), and non-Latino blacks (28.4%).When compared with low neighborhood social cohesion living in a neighborhood with high social cohesion conferred a protective effect for total mobility limitation (OR: 0.70; 95% CI: 0.62, 0.78), walking (OR: 0.59; 95% CI: 0.53, 0.67) and climbing limitations (OR: 0.66; 95% CI: 0.59, 0.74) adjusting for race/ethnicity. The association remained statistically significant after further adjustment for sex, age, physical activity, and education. In stratified analyses, foreign-born Latinos living in socially cohesive neighborhoods had lower mobility limitation than the US born.

Conclusion: Neighborhood conditions may be modifiable targets for interventions to reduce socioeconomic and racial/ethnic disparities in mobility limitations and subsequent disability in older adults.

Symposium 21C

PROMOTING PHYSICAL ACTIVITY AMONG LATINOS WITH DIABETES: THE PHYSICAL ACTIVITY SYSTEM OF SUPPORT (PASOS)

Sandra Echeverria, PhD

Latinos are less likely to be physically active than their non-Latino White peers and have a disproportionate burden of Type II diabetes. They are also at increased risk of diabetes-related health complications and mortality. Randomized clinical trials have shown that increasing physical activity (PA) for patients with diabetes can improve glucose and lipid levels, insulin resistance, and weight reduction goals. Nonetheless, there is limited evidence on the effectiveness of physical activity interventions targeting underserved groups, particularly Latinos with low income and limited English proficiency who may face greater challenges in adopting physical activity behavior change. We developed the Physical Activity System of Support (PASOS) program, a community-based intervention designed to increase physical activity among Latinos living with diabetes. The intervention consisted of a culturally-tailored physical activity intervention consisting of scheduled exercises offered twice per week over an 8 week period. We undertook a collaborative process to develop the intervention and describe the multi-level nature of the intervention which incorporates community, organizational, and group-based behavior change approaches. The feasibility of the design and implementation arepresented. A total of 30 participants were enrolled in the study and nearly all participants were poor, had limited English proficiency and had no or limited health insurance coverage. There was over a 70% participation rate and pre-post intervention measures showed significant increases in self-reported PA. A 'systems' model is proposed to support long-term adoption of PA among Latinos.

Symposium 22 1:30 PM-2:45 PM

ADVANCING BEHAVIORAL MEDICINE RESEARCH USING DIGITAL TOOLS TO IMPROVE HEALTH

E. Amy Janke, PhD[1], Danielle E. Jake-Schoffman, PhD[2], Claudio R. Nigg, PhD, FSBM[3], Kassandra I. Alcaraz, PhD, MPH[4], Jeffrey Haibach, PhD, MPH[5], Beth Lewis, PhD[6], Jennifer Duffecy, Ph.D.[7]

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The Society of Behavioral Medicine is uniquely positioned to lead the way in underscoring the dynamic nature of behavioral medicine to advance the nation’s health and provide direction for the next generation of leaders in the field. At the forefront of these efforts are SBM’s Special Interest Groups (SIGs) that allow members to connect with others who share common interests. During the past year, SBM’s SIG membership has been working on outlining a call to action from the perspective of each of their unique topic areas to promote research advancing behavioral science to inform policy and practice. Many of these forward-thinking papers will be highlighted in an upcoming SIG-focused special issue on Advancing Behavioral Medicine Research: A Call to Action to be published in the Journal of Behavioral Medicine. However, despite the great variety in our SIGs, some common themes emerged across all special issue papers, and one salient theme was the important role of digital tools to improve health. This symposium will highlight the importance of technology to the future of behavioral medicine research and practice as outlined by 4 different SIGs: Ethnic Minority and Multicultural Health (EMMH), Military and Veteran’s Health, Physical Activity, and Evidence Based Behavioral Medicine (EBBM). The EMMH SIG will present their ConNECT Framework as a model for linking the sciences of health equity and behavioral medicine and discuss the ConNECT core principle of Harnessing Communication Technology as a means to assess, understand, document/track, and intervene to advance health equity. The Military and Veteran’s Health SIG will discuss the current landscape of mobile health and other technologies being implemented with military servicemembers, veterans, and their families, and review the unique opportunities and potential barriers to research and practice using such technology in these populations. The PA SIG will review emerging areas of PA intervention research, including the important role technology plays in innovation. Finally, the EBBM SIG will discuss how innovative intervention designs and data collection approaches integrate technology to increase the public health impact of behavioral medicine.

Symposium 22A

HARNESSING COMMUNICATION TECHNOLOGY TO ADVANCE HEALTH EQUITY: PROMISE, POTENTIAL AND POSSIBILITIES FOR THE 21ST CENTURY

Dr. Kassandra I. Alcaraz, PhD, MPH

Colleagues from SBM's Ethnic Minority and Multicultural Health SIG recently introduced the ConNECT Framework as an actionable model for linking the sciences of health equity and behavioral medicine with the goal of achieving equitable health and outcomes in the 21st century. One of ConNECT's core principles, Harnessing Communication Technology, recognizes the potential of technology in assessing, understanding, documenting/tracking, and intervening to advance health equity. Although utilization of emerging technology in behavioral medicine is becoming commonplace, critical gaps remain in employing these innovations to address health disparities, especially among ethnic minority and understudied populations. Using the ConNECT Framework as a guide, this presentation covers four topics: (1) the need for culturally, contextually, and linguistically/literacy relevant content and approaches in communication technology interventions; (2) the promise of Connected Health for broad dissemination of health information and interventions to reduce health disparities; (3) ethical, cultural, and infrastructure considerations for ensuring equitable access, functionality, and usability of technology for multicultural and multilingual groups; and (4) specific recommendations for leveraging emerging communication technologies to enhance reach and dissemination. Communication technology has altered—and continues to revolutionize—the landscape of behavioral medicine. Focused efforts to engage and benefit medically vulnerable populations in this technological era are vital for advancing not only health equity but behavioral medicine as a whole.

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Symposium 22B

MOBILE HEALTH AND OTHER TECHNOLOGIES FOR MILITARY AND VETERAN HEALTH BEHAVIOR CHANGE

Jeffrey Haibach, PhD, MPH

Mobile health and other electronic health technologies provide opportunities to link DoD’s 2.1 million servicemembers, VA’s 8.9 million enrolled veterans, and millions more veterans and family members to online resources for health behavior change. Primary areas in current research and practice include nutrition counseling, physical activity promotion, smoking cessation, reducing alcohol and other substance misuse, and broader health promotion and coaching. E-health interventions provide opportunities to promote health through health risk appraisals, monitoring changes in health status, social support, self-management, and behavior change with motivational messages, problem-solving, and goal setting with feedback. These technologies provide benefits to help servicemembers and veterans overcome access barriers and stigmas related to treatment for obesity, substance abuse, and mental health disorders such as depression or PTSD. There are further opportunities to support continuity among transitioning servicemembers, augment clinical care, and reach more of the population VA and DoD serve such as deployed servicemembers and veterans in rural locations. While there are many potential benefits of using mobile technologies in research and practice, there are also unique considerations for protection of DoD/VA patient information and emerging performance enhancing technologies with unknown implications. Additionally, some servicemembers and veterans do not have access to these technologies, respectfully do not want not use them, and, more generally, excess screen time and technology misuse are associated with negative health consequences. Overall and with caveats in mind, there is an immense opportunity through research and practice with mobile health and other e-health technologies to promote positive health behavior change for the health of military servicemembers, veterans, and their families.

Symposium 22C

THE FUTURE OF PHYSICAL ACTIVITY INTERVENTION RESEARCH: EXPANDING FOCUS TO SEDENTARY BEHAVIOR, TECHNOLOGY, AND DISSEMINATION

Beth Lewis, PhD

Despite the increased health risks of a sedentary lifestyle, only 49% of American adults participate in physical activity (PA) at the recommended levels based on self-report data. Objective data indicates that only 10% of Americans meet the PA recommended levels. In an effort to move the PA field forward, we briefly review three emerging areas of PA intervention research. First, new intervention research has focused on not only increasing PA but also on decreasing sedentary behavior. Americans sit on average 7.5 hours per day as measured by an accelerometer, which has significant implications for disease risk. Researchers should utilize randomized controlled trials, common terminology, investigate which behaviors should replace sedentary behaviors, evaluate long-term outcomes, and examine interventions across the lifespan. Second, technology has contributed to an increase in sedentary behavior but has also led to innovative PA interventions. With the prevailing reach of technology, future research is needed to better understand which technological components can contribute to

PA behavior change. PA technology research should focus on large randomized trials with evidence-based components, explore social networking and innovative apps, improve PA monitoring, consider the lifespan, and be grounded in theory. Finally, recently there has been an increased emphasis on disseminating evidence-based physical activity and other health interventions. In an effort to maximize public health impact, dissemination efforts should include dissemination and implementation models, health disparities, and assessments of intervention costs. As PA researchers, we need to challenge the status quo and explore new ideas as strategies to improve PA interventions.

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Symposium 22D

USING TECHNOLOGY TO INCREASE THE PUBLIC HEALTH IMPACT OF EVIDENCE-BASED INTERVENTIONS IN BEHAVIORAL MEDICINE

Dr. Jennifer Duffecy, Ph.D.

The dissemination and implementation of evidence-based behavioral medicine interventions into real world practice has been limited. Specific limitations of current behavioral medicine research will be discussed within the context of the RE-AIM framework. Potential opportunities to increase public health by focusing on novel intervention designs and data collection approaches are key. Novel intervention designs include the MOST framework, which aims to optimize multicomponent behavioral and bio-behavioral interventions, and SMART designs, imbedded within the MOST framework, to optimize adaptive interventions. Novel data collection approaches also have the potential to improve the public health dissemination. This presentation will focus on how these innovative methods can use technology to increase the public health impact of behavioral medicine. An example of an effective technology delivered MOST trial will be covered as well as a discussion of technology to improve data collection and dissemination, including technology based strategies to increase retention in trials, increase adherence to healthcare recommendations, decrease patient burden and improve fidelity of interventions delivered. Innovative methods, notably using technology, may have the ability to increase the public health impact of evidence-based behavioral interventions to promote health.

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Symposium 23 1:30 PM-2:45 PM

EXAMINING ROOT CONTRIBUTORS TO WEIGHT CONTROL: APPLYING SOCIAL PSYCHOLOGICAL THEORIES IN WEIGHT MANAGEMENT PROGRAMS

Corrine Voils, PhD[1], Danielle Arigo, Ph.D., Licensed Psychologist[2], Tricia M. Leahey, PhD[3], Amy A. Gorin, Ph.D.[4], Shannon S. Taylor, Ph.D.[5], Kathryn I. Pollak, PhD[6]

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Accumulating evidence demonstrates that the social environment and one’s social perceptions influence weight management behaviors (e.g., food choice, physical activity), and thus, weight loss and maintenance. However, most research efforts focus on the individual in isolation and do not take into account social processes or perceptions. As a result, none has identified the best method(s) for optimizing social processes for weight control. Social psychological theories help to identify relevant social processes to guide assessment and intervention efforts in behavioral weight loss treatment to improve obesity outcomes. The goal of this symposium is to describe three types of social influences on weight control: intrapersonal processes (i.e., perceptions of the self, relative to others), interpersonal processes (i.e., dyadic interactions), and group dynamics. Speakers in this session will present empirical evidence from their weight management trials from each of these perspectives. At the intrapersonal level, Dr. Arigo will report on the frequency of distinct social comparisons (with respect to occurrence, direction, and dimension), and prospective relations between comparisons and session attendance/weight loss/physical activity, from a daily diary study of participants in a weight loss trial. With respect to dyadic interaction, Dr. Leahey will present evidence for Social Accountability Theory, demonstrating that “social accountability” (i.e., from professional and peer coaches) is indeed an important construct within the context of an e-health weight loss maintenance intervention. Dr. Gorin will then discuss the relationship between autonomy support from a spouse/partner and weight loss in two different behavioral programs. Finally, at the level of group dynamics, Dr. Taylor will describe the role of group cohesion in predicting weight loss in a group-based intervention. The discussant, Dr. Kathryn Pollak, will integrate these findings and discuss their implications for understanding and improving behavioral weight control interventions.

Symposium 23A

DAILY SOCIAL COMPARISONS, WEIGHT LOSS, AND PHYSICAL ACTIVITY CONSISTENCY IN A BEHAVIORAL WEIGHT LOSS PROGRAM

Dr. Danielle Arigo, Ph.D., Licensed Psychologist

Social comparisons (i.e., self-appraisals relative to others) made in daily life may influence weight control outcomes such as treatment attendance, total weight loss, and physical activity. However, the types of comparisons that may be *beneficial* for weight control are unclear. The goals of this daily diary study were to (1) characterize the types of comparisons made by weight loss treatment participants in daily life, and (2) to examine both between- and within-person relations between daily comparisons and weight control outcomes. Participants were adults seeking behavioral weight loss treatment (n=186, M_{Age}=52, M_{BMI}=36.9 kg/m^2). For 7 days at the start, middle, and end of a 1-year weight loss program, participants responded to nightly prompts via mobile application; participants categorized comparisons made each day in terms of domain (appearance, financial/work status, other) and direction (comparisons to others deemed superior/upward, inferior/downward, or similar/lateral to the self). Participants wore tri-axial waistband accelerometers to capture minutes in bouts of moderate-to-vigorous physical activity (MVPA). Overall, comparisons were reported on 17% of days and the majority of participants (63%) reported at least one comparison (M=3.11); comparisons were more frequent at baseline (vs. mid- and end-of-treatment; χ^2=15.49, $p$ps>0.10). The overall number of comparisons reported was positively associated with treatment session attendance (r=.20), though greater frequency of upward comparisons was *negatively* associated with percent weight loss at 1 year (r=-0.20, ps<.01). At the day level, upward comparisons were associated with greater between-day variability in MVPA, relative to downward and lateral comparisons (χ^2=9.50, p<.01). A significant interaction between reports of skipping planned MVPA and upward appearance comparisons showed that participants who skipped and made (vs. did not make) upward appearance comparisons engaged in 15 additional minutes of MVPA the following day (F=13.34, p<.01). Findings suggest that daily comparisons predict critical weight control outcomes. Additional work is necessary to determine the mechanisms of these relationships, as well as best practices for harnessing the benefits of comparisons in weight loss treatment programs.

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Symposium 23B

SUPPORTIVE ACCOUNTABILITY THEORY: EVIDENCE FROM AN E-HEALTH WEIGHT LOSS MAINTENANCE TRIAL

Dr. Tricia M. Leahey, PhD

Supportive Accountability Theory asserts that e-health interventions with human involvement enhance patient support and accountability, which consequently yields better treatment outcomes. However, this theory is not well tested, and, to our knowledge, no one has examined whether the construct of "supportive accountability" is indeed associated with e-health treatment outcomes. The purpose of this study was to test Supportive Accountability Theory. We examined whether the inclusion of human support in an e-health intervention for weight loss maintenance does in fact enhance participant reported supportive accountability. Further, we tested whether supportive accountability is associated with weight maintenance outcomes. Participants (N= 72, 85% female, 48.5 years, 31.5 BMI) with a recent 5% weight loss were randomized to 1 of 3, 10-month, weight loss maintenance interventions: (1) electronically delivered maintenance strategies plus weekly professional e-coaching (Pro e-coach), electronically delivered maintenance strategies plus weekly Peer e-coaching (Peer e-coach), or maintenance strategies alone (No e-coach). At the start and end of the 10 month maintenance program weight was objectively assessed and supportive accountability was measured via self-report. Participants in Pro e-coach and Peer e-coach reported significantly higher levels of supportive accountability (5.7±2.2, 6.8±2.2, p's≤.05) compared to No e-coach (4.7±1.8) and did not differ from one another (p=.16). Weight regain showed a similar pattern. Pro and Peer arms lost an additional 1.8±7.0kg and 0.5±6.4kg during the maintenance intervention (p=.47) whereas No e-coach regained 3.5±5.7kg (p's<.05). Moreover, higher levels of supportive accountability were associated with less weight regain during treatment (r=-.28, p=.018). This study is the first to provide evidence for Supportive Accountability Theory. In addition, results suggest that peer e-coaching may be an effective and perhaps cost-effective method for providing support and accountability and promoting weight loss maintenance.

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Symposium 23C

HELPING AND HINDERING: EXPLORING DIFFERENT TYPES OF SPOUSE/PARTNER SUPPORT IN WEIGHT LOSS

Dr. Amy A. Gorin, Ph.D.

Background: Social support is often cited as a critical ingredient for successful weight management; however, weight loss interventions designed to enhance support among spouses and romantic partners have had mixed effects. Theory-based examinations that pinpoint the specific types of support related to weight loss outcomes can guide the development of more effective couples weight loss programs. This study explored associations between spouse/partner support and weight loss outcomes through the lens of Self Determination Theory (SDT). SDT posits that autonomy support (e.g., providing choices, valuing another's perspective) creates an environment conducive to health behavior change whereas more controlling forms of support (e.g., reminding, criticizing) can hinder goal progress.

Methods: Participants (N=130, M_{AGE}=53.40, M_{BMI}=33.93, 68.5% female) in a larger weight loss trial were randomized to 6 months of Weight Watchers (WW) or a self-guided control group (SG) and assessed at baseline, 3, and 6 months. Measures included the modified Important Others Questionnaire (Autonomy Support) and the two subscales of the Sallis Social Support for Eating Questionnaire (Encouragement of Healthy Eating: reminding about healthy choices, commenting on relapses; Discouragement of Healthy Eating: getting angry about slips, sabotaging). A series of regressions were tested for each predictor and percent weight change. Interactions with intervention group were also examined.

Results:Consistent with SDT, if autonomy support increased from baseline to 3 months, participants experienced a larger percent weight loss at 6 months, B=-.18, p=.01. A similar pattern was found for encouragement of healthy eating, B=-.29, p=.01. Increases in discouragement of healthy eating predicted less weight loss, B=.27, p=.03. This finding was qualified by an interaction with condition, p=.02, which indicated that this effect was significant only in WW.

Discussion: These results suggest that autonomy support from one's spouse/partner can facilitate weight loss success. Interventions that foster autonomy support in couples while decreasing negative remarks and sabotaging behaviors have the potential to bolster goal progress. Rigorous designs are now needed to develop and test SDT-informed weight management programs.

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Symposium 23D

COHESION IN GROUP-BASED BEHAVIORAL WEIGHT LOSS INTERVENTIONS

Shannon S. Taylor, Ph.D.

Behavioral weight loss interventions are often delivered in a group format, and it is believed that group cohesion enhances treatment adherence and, thereby, weight loss. However, group social dynamics are rarely measured. The goals of these secondary analyses were to:

1a) assess whether group cohesion measured in the 3rd group session of a behavioral weight loss intervention predicts program attendance and weight loss outcomes, and if so, 1b) explore whether attendance mediates the link between group cohesion and weight loss; 2) assess whether cohesion late in the intervention is associated with weight loss; and 3) characterize the association between change in group cohesion and weight loss over the course of the intervention. 504 Veterans (48.6% Caucasian, 47% African-American; 79.2% Male; *M* age = 58.9, *SD* = 10.1; *M* BMI = 35.9, *SD* = 5.6) initiated a 16-week, group-based behavioral weight loss program involving in-person group visits every two weeks. Group cohesion was measured during the 3rd and 8th group visits. In linear regression models, early group cohesion was not related to group attendance (R^2 = 0.008, *F* (1,323) = 2.54, *p* = .11) or weight loss (R^2 = 0.001, *F* (1,323) = 0.27, *p* = .60). Late group cohesion was also unrelated to weight loss (R^2 = 0.001, *F* (1,236) = 0.28, *p* = .60). Although there was a significant increase in group cohesion during the intervention ($M_{3rd\ group}$= 3.16, *SD* = 0.48; $M_{8th\ group}$ = 3.33; *SD* = 0.44; *t* (190) = 7.59, *p* < .001), change in group cohesion was not associated with weight loss (R^2 = 0.007, *F* (1,190) = 1.43, *p* = .23). These findings are consistent with the limited literature; however, they are inconsistent with theoretical assertions and clinical observations of the influence of group factors on outcomes. Thoughtful consideration to measurement of group dynamics including timing, level of analysis, and psychometric quality of scales is advised for future studies.

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Symposium 24 1:30 PM-2:45 PM

INNOVATIVE APPROACHES TO IMPROVING ENGAGEMENT AND EFFECTIVENESS OF INTERVENTIONS IN INTEGRATED PRIMARY CARE

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Due to the high rates of patients presenting with mental and behavioral health concerns in primary care, primary care is increasingly viewed as an ideal setting for delivering behavioral interventions. As such, the integration of behavioral health providers into primary care to provide these interventions is becoming more common as primary care shifts towards team-based service delivery models. However, the literature on the types of evidence-based interventions that behavioral health providers can employ in the unique primary care setting is still in its infancy. This symposium will present three research studies that have explored ways to improve the engagement and effectiveness of brief interventions in integrated care in an effort to promote future research on innovative approaches to intervention in primary care. The first presentation will share results from a study that examined the impact of various treatment factors, such as treatment duration, modality, and focus, on treatment preferences among primary care patients. The second presentation will summarize the results from a pilot RCT examining the impact of peer support specialists as an augment to a Web-based CBT intervention for primary care Veterans with PTSD. The third presentation will share acceptability data from a group medical visit for patients with hypertension and depressive symptoms to illustrate an innovative approach to engaging patients in care. The discussant will summarize common themes to directly inform and/or stimulate new clinical intervention work to help continue the development of a strong evidence base for interventions that can be implemented in this setting.

Symposium 24A

WHICH TREATMENT FACTORS PREDICT TREATMENT PREFERENCE FOR BEHAVIORAL INTERVENTIONS: A CONJOINT ANALYSIS

Dr. Jennifer S. Funderburk, PhD

Patient treatment preferences may dramatically impact engagement in, and adherence to, behavioral treatment. Thus, examining treatment preferences is a vital initial step toward developing effective behavioral interventions suitable for primary care. Although previous research has examined several treatment attributes separately and their impact on treatment preference, no research has looked at these attributes simultaneously to understand how they are evaluated as a whole by patients. This type of decision making is more characteristic of real-life, where specific trade-offs are evaluated among multiple attributes to determine the patient's preference. There are several attributes characteristic of behavioral treatments offered to primary care patients including: the setting (e.g., primary care, behavioral health clinic), treatment duration (e.g., single, less than 6 sessions), treatment modality (e.g., individual, group), and treatment method (e.g., telephone, in-person). In addition, no research to date has examined an important treatment attribute: focus of treatment (e.g., the presenting problem the patient is interested in changing). This attribute is important as most primary care patients present with multiple concerns, so the focus of treatment may be an important attribute impacting patient preference. The objective of this study was to better understand how these attributes were evaluated as a whole by patients and examine the use of conjoint analysis to help provide a more refined picture of treatment preferences within primary care. Using a random sample of primary care patients who were not engaged in specialty mental healthcare, a total of 216 (76% male, 91% White) primary care patients completed a mailed survey (28% response rate). A majority of participants when ranking attributes independently, rated a preference for individual (86%) and in-person (80%) appointments. For treatment focus, participants identified weight, pain, and sleep as their most preferred treatment foci as compared to other foci (e.g., sadness, anxiety, alcohol, tobacco use, etc). Of those who returned the survey, results of a conjoint analysis will be presented using data from the 173 participants who completed rating their preferences for all 27 scenarios depicting treatment options that varied based on the five attributes to help understand how patients made decisions when all attributes were evaluated together. We will discuss the implications to future research and clinical practices within primary care.

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Symposium 24B

COMBINING PEER SUPPORT AND WEB-BASED TREATMENT TO BOOST ENGAGEMENT IN PRIMARY CARE- MENTAL HEALTH SERVICES

Dr. Kyle Possemato, Ph.D.

Veterans who served in Iraq and Afghanistan have high rates of co-morbid PTSD symptoms and hazardous alcohol use. Evidence-based treatments for these problems are available, but multiple barriers lead to low utilization of these treatments. Innovative treatment approaches are needed. Previous research supports that 1) primary care-mental health integration services are associated with increased treatment engagement, 2) technology-based interventions are well accepted by Veterans and are more effective when delivered with professional support, and 3) veteran peer services are associated with improved treatment engagement and overall functioning. We added Peer-Support to an existing Web-based Cognitive Behavioral Treatment, called Thinking Forward, for PTSD and alcohol misuse in response to our previous data that indicated that Veterans wanted interpersonal interaction while receiving Thinking Forward and needed help engaging in the treatment more fully. A pilot randomized controlled trial compared Self-Managed Thinking Forward to Peer-Supported Thinking Forward. Thinking Forward consisted of 24 brief self-guided modules that taught cognitive and behavioral skills to manage trauma-related thoughts and reduce alcohol use. Peer Support services involved meeting with a Veteran peer support specialist as needed over 12 weeks. Peer support specialists discussed the content of Moving Forward modules to help participants process the material and apply it to their own life. Preliminary results indicated that Peer-supported participants averaged a 12-point decrease on the PTSD Checklist at a mid-treatment assessment compared to a 5-point decrease in Self-Managed participants. Peer-support participants also completed 42% more Thinking Forward modules than self-managed participants. Preliminary data indicates that among primary care patients with PTSD and alcohol misuse, combining peer support services with web-based treatment may lead to better treatment engagement and clinical outcomes than web-based treatment alone. Final results will be presented in March.

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Symposium 24C

PATIENT AND PROVIDER ACCEPTABILITY OF GROUP MEDICAL VISITS FOR DEPRESSION AND UNCONTROLLED HYPERTENSION

Dr. Robyn L. Shepardson, PhD

Within the team-based environment of integrated primary care, group medical visits offer an innovative way for the primary care team to collaborate in providing both medical and behavioral health interventions to take advantage of the interdisciplinary skillset. Including a physical health condition (e.g., hypertension) as a focus of groups targeting a behavioral health concern (e.g., depression) can reduce stigma to increase engagement and acceptability of treatment. This presentation summarizes feasibility and acceptability pilot data from an 8-session group medical visit for Veterans (*N*=12, *M* age=64.1, *SD*=13.1) with uncontrolled hypertension and depression. The integrated behavioral health provider led the visits (50-90 minutes) and implemented behavioral activation, but was joined at each visit by a member of the primary care team (primary care provider, nurse, physical therapist, or clinical pharmacist), who discussed medications and/or the role of physical activity in managing hypertension. Participants reported high levels of satisfaction (*M*=27.1, *SD*=3.6) with the group on the Client Satisfaction Questionnaire, and 66% attended all 8 visits. Qualitative interviews revealed participants felt the group decreased stigma associated with seeking help, provided camaraderie and accountability, and served as a source of new ideas to try to improve their symptoms. Participants shared their likes and dislikes as well as suggestions for how to engage reluctant patients in group medical visits. All providers reported overall positive feelings about the group medical visit and their willingness to do it again. Providers suggested minor modifications to improve flow within and across visits. We will discuss implications for future research as well as how group medical visits may be used to help increase engagement with behavioral health interventions in primary care.

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Symposium 25 1:30 PM-2:45 PM

WOMEN AND CARDIOVASCULAR DISEASE: CURRENT APPROACHES AND FUTURE OPPORTUNITIES FOR INTERDISCIPLINARY COLLABORATION

Valerie Hoover, PhD[1], Elizabeth Jackson, MD MPH[2], Elena Salmoirago-Blotcher, M.D., Ph.D.[3], Katharine S. Edwards, Ph.D.[4], Linda Hudson, ScD ScM MSPH[5]

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Cardiovascular disease (CVD) is the leading cause of death globally and women bear a significant proportion of the disease burden. While CVD mortality in the U.S. has decreased in both men and women in the past couple decades, the rate of decline has been slower in women than men. Research suggests the presence of important sex differences in cardiovascular risk and biopsychosocial factors, symptom presentation, diagnosis and treatment. Appropriate management of women with CVD requires an interdisciplinary approach that incorporates an understanding of these factors. This symposium will provide a multidisciplinary perspective on key sex differences in CVD risk factors and conditions, areas that would particularly benefit from an interdisciplinary approach, and presentation of new qualitative data from focus groups and interventions designed to identify and meet the unique needs of this population. The first talk will provide an overview of the current research on sex differences in CVD and areas for interdisciplinary collaboration. The second talk will present data from a pilot study examining the acceptability and feasibility of a CBT-based intervention to address the psychosocial needs of women with Spontaneous Coronary Artery Dissection, a condition that occurs most often in women. The third and fourth talks will present and discuss qualitative data from focus groups on, respectively, Tai Chi as an alternative exercise option for female survivors of acute coronary events, and the development of a culturally tailored heart disease prevention program for African American women. Together, these talks will present qualitative data on tailored interventions for the prevention and treatment of CVD in women; education on sex differences in biopsychosocial factors related to the prevention, diagnosis and management of CVD; and discussion of opportunities for interdisciplinary collaboration.

Symposium 25A

WOMEN'S CARDIOVASCULAR HEALTH: THE UNIQUE NEEDS OF WOMEN

Dr. Elizabeth Jackson, MD MPH

Women's Cardiovascular Health: the Unique Needs of Women

Women comprise a significant percentage of patients living with cardiovascular disease. Women experience cardiovascular risk factors and related events such as coronary artery disease in different ways than man. More women than men experience angina and myocardial infarction without significant coronary artery disease. More women than men experience heart failure with preserved ejection fraction (HFpEF) which carries significant disability and mortality risk. Women with atrial fibrillation can differ from men in terms of symptom burden and risk for stroke. For cardiovascular disease conditions, the presentation, diagnosis and management frequently differs for women compared to men. These differences frequently increase the psychological burden of CVD among women. Adequate management of CVD must include management of health behaviors and emotional health for both men and women; however an improved understanding of the unique aspects of women living with CVD is required in order to improve quality of care.

This lecture will outline the key cardiovascular risk factors and conditions in which important gender-related differences exist. A discussion of the epidemiology of these risk factors and conditions will be followed by a discussion of the symptom presentations and management strategies unique to women. Finally, a summary of the related critical areas in which collaboratory research is needed will be discussed. The goal of the lecture will be improve the audience's understanding of clinical cardiovascular medicine specifically related to women and to promote a discussion of multidisciplinary research in the area of cardiovascular health for women.

Symposium 25B

TAI CHI AS AN EXERCISE OPTION FOR FEMALE SURVIVORS OF ACUTE CORONARY EVENTS: QUALITATIVE FINDINGS FROM THE GENTLE REHAB STUDY

Elena Salmoirago-Blotcher, M.D., Ph.D.

Background. Cardiac rehabilitation (CR) reduces cardiovascular mortality in survivors of acute coronary events (ACE), but referrals are low especially among women. Tai Chi – a practice based on light/moderate aerobic exercise accompanied by meditative components – could be an alternative exercise option after an ACE.

Methods. To garner patients' perspectives regarding the usefulness of Tai Chi we conducted 3 focus groups among participants enrolled in the Gentle Rehab Study – a pilot RCT study assessing the feasibility and adequate dose of Tai Chi for ACE survivors who did not attend CR. All participants in the parent study were invited to participate and provided informed consent. A semi-structured agenda allowed for the discovery of emergent themes as well as barriers and benefits to use of the tai chi program. LC led the focus groups with input from co-facilitators ES and JK. Interviews were transcribed and analysis was directed primarily by a grounded theory approach.

Results. Of the original cohort, 21/29 (72.4 %) agreed to participate(16M, 5F; age range 44-82 years). Overall, participants reported that Tai chi was enjoyable and easy to practice, while such aspects are missing from traditional CR. Most subjects reported they would like to continue with Tai chi and they appreciated the social support provided by the Tai Chi group. Women uniquely appreciated the meditative components of Tai Chi, and reported reduced stress and anxiety. Women reported that Tai chi allowed them to build strength in a safe and comfortable manner. Women also mentioned that their balance improved, reducing their fear of completing physically challenging activities of daily living. As well, women appreciated how Tai chi exercises are easy to fit into everyday life. Direct quotes and measures of agreement on specific themes will be presented.

Conclusions. Tai Chi offers benefits that might not be directly attainable from CR, with women reporting benefits from the meditative aspect of the practice. The gentleness of the exercises appeals to women in particular, who may not have experience or interest in more vigorous exercise such as that offered in CR.

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Symposium 25C

PSYCHOSOCIAL TREATMENT FOR PATIENTS WITH SPONTANEOUS CORONARY ARTERY DISSECTION

Dr. Katharine S. Edwards, Ph.D.

Background: Symptoms of psychological distress are common following myocardial infarction (MI) and depression is highest among young women (Mallik et al., 2006). Spontaneous Coronary Artery Dissection (SCAD) is a rare vascular condition that occurs in patients without traditional cardiac risk factors, disproportionately affects young women (mean age 42, 80% female), and can lead to MI or sudden death (Hayes, 2014; Giacoppo et al., 2014). There is no known treatment for SCAD and recurrence rates are high. Preliminary studies suggest that SCAD patients experience higher levels of psychological distress after MI than patients with coronary artery disease (Liang et al., 2013; Silber et al., 2015; Starovoytov et al., 2016). The aim of the current pilot study was to develop an acceptable and feasible CBT-based intervention to target the unique psychosocial needs of SCAD patients. **Method:** Pre-post questionnaire data were collected from a small sample of SCAD patients (n=8) who completed an eight-week CBT-based psychosocial group intervention. Measures included the Seattle Angina Questionnaire, SF-12, Multidimensional Health Locus of Control scale, STAI, PSS, ISI, PHQ-9, and IES-R as well as between-session feedback forms and post-treatment acceptability interviews. Patients met once per week for two hours for a structured intervention that included mindfulness practice, education about the existing evidence on SCAD, group discussion, training in CBT skills, acceptance and values work, and reviewing homework assignments. **Results:** Qualitative, post-treatment data from this pilot study indicate that women found the social support aspect of the group particularly helpful. Four women reported clinically significant decreases in symptoms of depression, anxiety and trauma, and sleep at 3-month follow up. Perceived stress did not change significantly from pre- to posttreatment or follow-up. **Conclusion:** Results from this pilot study suggest that participants found the group to be both acceptable and feasible and experienced reductions in psychological distress. Additional findings, feedback from participants, and implications for expanding psychosocial group offerings to female cardiac patients through the use of online and mobile technology will be discussed.

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Symposium 25D

CULTURAL ADAPTATION OF THE STRONGWOMEN – HEALTHY HEARTS PROGRAM FOR AFRICAN AMERICAN WOMEN

Linda Hudson, ScD ScM MSPH

Purpose: The *StrongWomen – Healthy Hearts Program* is a 12-week community-based program designed to improve heart health among women. Evaluation of national dissemination revealed differential outcomes for African American women leading the authors to explore a cultural adaptation. The purpose of this study was to conduct qualitative research to understand “deep structure” factors and to incorporate these into a culturally adapted curriculum.

Methods: The African American Obesity Research Network (AACORN) paradigm served as a basis for qualitative inquiry of "deep structure" factors. Five focus groups were conducted with a total of 22 participants (3-7 participants per group). Women were eligible if they self-identified as Black or African American, were over the age of 18, not currently engaged in regular physical activity, and had a BMI ≥25. Recruitment was conducted via flyers, announcements to the Boston NAACP membership and local churches, and word of mouth. A $25 gift card was given to participants. Groups were audio-recorded and transcribed. An initial codebook was developed based on the discussion guide and then refined through an iterative and collaborative process with the study team. Data were coded using NVivo (QSR International) and interpreted with the aim of uncovering the values, attitudes, and beliefs of participants and to better understand their worldview, experiences, and cultural perspectives.

Results: Major themes included the perceived severity of CVD, the impact of stress, the role of inequitable access to resources and structural barriers of racism influencing ability to make positive decisions about health, the role of family and friends as both supports for and barriers to engaging in health behaviors, mid-to-high confidence in being able to change behavior, and a desire for more knowledge and resources.

Discussion: The adapted curriculum, *Healthy Hearts for an Abundant Life*, incorporates themes related to the AACORN expanded knowledge domains. It includes stress-reducing activities, tools for self-care, metaphorical language that is based in spirituality, acknowledgement of the role of racism, and strategies and tools consistent with available resources.

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Symposium 26 1:30 PM-2:45 PM

WHAT DOES “LIVING WELL” WITH ILLNESS LOOK LIKE?: EXAMINATIONS IN CHRONIC AND LIFE-THREATENING CONDITIONS

Kevin E. Vowles, PhD[1], Donald McGeary, PhD[2], Laurie E. Steffen, PhD[3]

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Over the past few decades, increasing interest has focused upon a model of positive or healthy adaptation to illness, as opposed to previous models which tended to prioritize the elimination of an illness state or minimization of a certain set of symptoms. This interest has grown out of multiple domains, including positive psychology, the patient activation movement, therapeutic model developments focusing on constructs such as acceptance and resilience, as well as a pragmatic clinical need to help individuals in successfully adapting to chronic illness. Yet, in many areas, the characteristics of healthy adaptation to, or “living well” with, chronic illness remain unclear. For example, when one experiences chronic symptoms and when treatments have failed to reduce them, is living well even a possibility and, if so, what are its characteristics? The data presented in this symposium will detail the qualities of living well with illness in two significant healthcare conditions, chronic pain and late stage cancer. Dr McGeary will describe cross-sectional findings in 160 active duty service members with chronic pain, which found evidence of two participant clusters. The first reported high levels of pain acceptance and low levels pain catastrophizing and the second reported the opposite. Cluster membership was a strong and significant predictor of depression, PTSD, suicide risk, and healthcare utilization. Dr Steffen will present a daily assessment study of patients with late stage lung cancer, which examined how daily goal setting, including identification and monitoring of progress, related to daily symptoms, treatment engagement, and quality of life. Results, drawn from over 1000 days of data, indicated that those who set goals and worked towards them had higher daily quality of life, less time in bed, better social interactions, more engagement with important activities, and fewer negative side effects from treatment. Dr Vowles will present cross-sectional and longitudinal data collected from approximately 500 community-dwelling individuals with chronic pain, who were clustered according to time spent engaging in struggles for pain control and engagement in valued activities. Findings indicated that individuals who spent the least amount of time struggling for pain control and who were engaged in an adequate level of valued activities were functioning significantly better than those who were not. In combination, the presented data provide guidance on characteristics of “living well” with chronic illness – they include greater

acceptance, more frequent goal setting and monitoring of progress, less time struggling for symptom control, and more time engaging in meaningful activity.

Symposium 26A

PROVIDING A REFERENT FOR ANALYSES OF CLINICALLY SIGNIFICANT CHANGE: WHAT DOES “LIVING WELL” WITH CHRONIC PAIN LOOK LIKE?

Dr. Kevin E. Vowles, PhD

In 1984, Jacobson, Follette, & Revenstrof provided a two-part definition of *clinically significant change* as it pertained to behavioral interventions. The first, *reliable change*, referred to an assessment of whether amount of change on a specific measure, observed in a single individual, exceeded change that could be accounted for by measurement error alone. Thus, reliable change is readily calculated using indices of temporal stability and score dispersion. The second, *clinical significance,* required that, by the end of treatment, an individual’s score had moved outside the range of the “dysfunctional” (Jacobson et al.’s terminology) population and within a "functional" population range. For example, fulfillment of this criterion would occur when the post-treatment depression score in a previously depressed individual was indistinguishable from a never-depressed individual's score. In chronic pain, Jacobsen et al.'s first criterion has been successfully evaluated, but the second has not, as there are no data appropriate for comparison. Pain-free individuals are not an adequate comparison group for those with ongoing pain and there are no data available representing a “high functioning” group of individuals with chronic pain. The present analyses provide initial normative information for such a high functioning group, defined here as the presence of chronic pain in the absence of significant functional disruption. Cross sectional and longitudinal data were collected from approximately 500 community dwelling individuals with chronic pain (data collection is ongoing; current *N* = 437), each of whom completed a battery of assessments, including a measure of self-rated membership in a “dysfunctional” or “functional” population with four response options, assessing the degree to which pain was adversely impacting functioning (e.g., “not at all”, “a little”). This screening measure has previously been used to categorize individuals in this way with group membership having significant associations with current depression and disability. Ratings on this assessment were used to categorize individuals into a functional, dysfunctional, or intermediate cluster and between cluster differences were examined across a number of measures of adaptive (e.g., pain acceptance, values, self-compassion) and maladaptive (e.g., disability, depression, substance misuse) functioning. Significant between-group differences were indicated across these same measures and were particularly pronounced for adaptive functioning. They were also present in both cross-sectional and longitudinal analyses. These results provide a reference point for the second criterion of clinically significant change and may provide a benchmark for assessing it in individuals with chronic pain.

Symposium 26B

THE CONTRIBUTION OF ACCEPTANCE TO CHRONIC PAIN RESILIENCY: A SECONDARY ANALYSIS OF THE ESCAPE STUDY

Dr. Donald McGeary, PhD

There is plentiful evidence showing the long-term negative outcomes associated with poor pain coping and treatment failure (McGeary et al., 2006). Ameliorating variables widely believed to be implicated in poor pain coping may not be enough to improve outcomes (Nicholas et al., 2012), but studies of Acceptance and Commitment Therapy for pain management are starting demonstrate that the promotion of healthy pain coping strategies may prove effective (Vowles et al., 2014). The present study explored the potential of healthy coping interventions in the uniquely complicated population of military service members and veterans with chronic pain (cf. McGeary et al., 2011). Using a similar cluster analysis to that published by Vowles et al. (2008), this study examined how service members differ in how they cope with pain (based on measures of pain acceptance/catastrophizing) and how these differences reflect on pain and psychosocial outcomes using a secondary analysis of the Evaluation of Suicidality Cognitions and Pain Experience (ESCAPE) study (Kanzler et al., 2012). The ESCAPE study included 160 active duty military members and veterans treated for chronic pain through a large military treatment facility in the Southern U.S. who were asked to complete a one-time comprehensive assessment of pain and psychosocial coping. Details can be found in Kanzler and colleagues (2012). A two-step cluster analysis was used to identify coping clusters using data from 99 ESCAPE participants who completed measures of both pain acceptance (CPAQ) and pain catastrophizing (PCS). Cluster analysis revealed two distinct clusters (labelled “Living Well” and “Living Ill”) with good cluster quality based on fit indices and silhouettes. The Living Well [LW; n=75] cluster was characterized by high levels of chronic pain acceptance (high CPAQ Willingness and Activity scores) and low levels of pain catastrophizing (low PCS Helplessness, Magnification, and Rumination scores). The Living Ill [LI; n=36] cluster was comprised of a diametric opposite score pattern. The two clusters were compared on a number of pain and psychosocial variables. Participants in the LW cluster reported significantly lower levels of depression, PTSD, suicide cognitions, and burdensomeness to others (all at p<.001) compared to LI cluster. The LW cluster also reported significantly lower levels of disability (p<.001), pain intensity (p<.001), and 40% fewer healthcare visits in the past year than the LI cluster. Results of this secondary analysis showed a similar pattern of healthy coping as that found by Vowles et al. (2008). These findings suggest that military pain management programs targeting increased pain acceptance have the potential to improve pain-related outcomes and to ameliorate common psychosocial comorbidities of military pain like depression, PTSD, and suicidality.

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Symposium 26C

THE IMPACT OF HOPE ON DAILY QUALITY OF LIFE IN LUNG CANCER PATIENTS

Laurie E. Steffen, PhD

Goal-setting, problem-solving, and values-based action are common components of quality of life interventions for cancer (Graves, 2003). These components are sometimes referred to as “hope,” which has been associated with quality of life across multiple types of cancer. The utility of hope has not, however, been tested longitudinally in lung cancer where quality of life is a key treatment outcome given low survival rates and high symptom and treatment burden. The goal of this study was to study relations between hope and quality of life (e.g., social functioning, palliative wellbeing) in lung cancer patients undergoing treatment. Patients with higher hope were expected to report better quality of life and daily levels of hope were hypothesized to predict daily quality of life. Fifty lung cancer patients (58% female, 78% non-small cell, 66% metastatic disease, average age = 68.66, SD = 8.78) completed a baseline questionnaire and 21 daily assessments (M = 20.3 days, SD = 1.3; 1,042 days of data). Multilevel modeling was used to analyze same-day and next-day relationships. Pre-specified models controlled for disease (e.g., time since diagnosis, treatment type, daily disease symptoms) and psychological (e.g., depression, daily affect) factors. Intra-class correlations ranged from 0.64 to 0.75. Patients with higher levels of hope reported higher social and role functioning (estimate = 3.37, SE = 0.90, 95% CI = 1.60, 5.14) and higher palliative wellbeing (estimate = 0.88, SE = 0.24, 95% CI = 0.40, 1.35). On days where patients reported higher hope, they reported higher social and role functioning (estimate = 2.36, SE = 0.70, 95% CI = 1.00, 3.73), better physical functioning (estimate = 2.27, SE = 0.81, 95% CI = 0.68, 3.87), and higher palliative wellbeing (estimate = 0.91, SE = 0.13, 95% CI = 0.66, 1.16). Daily hope appeared to attenuate the negative impact of treatment days on functioning (estimate = 3.33, SE = 1.25, 95% CI = 0.88, 5.77). Daily hope did not, however, predict quality of life in any next-day models. Daily hope was not predicted by cancer symptoms, which suggests that hope may support quality of life regardless of symptom burden.

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Symposium 27 1:30 PM-2:45 PM

PEER SUPPORT TO PROMOTE HEALTH BEHAVIOR CHANGE AMONG VETERANS

Katherine D. Hoerster, PhD, MPH[1], Karin Nelson, MD, MSHS[2], Michele Heisler, MD MPA[3], Amy N. Cohen, PhD[4], Edwin Fisher, PhD[5]

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Veterans often have multiple comorbid medical problems, including high rates of obesity and diabetes, which can be effectively managed with activity and diet. It is therefore important for Veteran-serving organizations to identify effective ways to improve Veterans' lifestyle behaviors. Peer support counselors--individuals with lived experience shared with a particular target population--have been utilized effectively in healthcare delivery to address lifestyle behaviors and help patients manage a host of medical conditions. As such, the Veterans Health Administration (VHA) has begun to invest considerable resources in the delivery of peer-delivered and peer-supported services. For example, VHA's Office of Mental Health recently hired over 1000 peer support counselors who are in recovery from mental illness to address well-being among Veterans with psychiatric conditions. VHA is also beginning to expand peer support services to target conditions such as diabetes and obesity in primary care. While research from the general population suggests peer support services may be beneficial in the management of Veteran health and health behaviors, research is limited and thus requires further investigation. Moreover, given that Veterans often have multiple comorbidities, the application of peer support services among Veterans has relevance to addressing lifestyle health behaviors among medically complex non-Veteran patient populations.

This symposium presents a range of perspectives related to peer support services targeting Veterans' health behaviors with implications for Veteran and non-Veteran populations. KH will present preliminary pilot data from a peer support-delivered behavioral weight management program for Veterans with PTSD, and will discuss approaches to intervention development such as iterative refinement and partnered research. KH also will highlight insights into "real world" health promotion treatment complexities, given the medical-psychiatric condition comorbidity being addressed. KN will discuss a novel community-based peer counselor recruitment strategy for a large trial, highlighting issues related to peer support counselor employment, training, and supervision. MH and AC will present data from two large trials of technology- and peer-based behavioral diabetes and weight management interventions among Veterans. Lastly, EF, leader of Peers for Progress, which promotes peer support worldwide, will discuss how the papers exemplify important themes in disseminating peer support services, and healthcare/policy implications for varied settings. This symposium will highlight benefits and challenges of peer support care, and will yield insights regarding ways to optimize patient-centered care to promote healthy lifestyle behaviors using peer-based services.

Symposium 27A

DEVELOPING A PEER SUPPORT WEIGHT LOSS PROGRAM: A MODEL FOR ITERATIVE REFINEMENT AND PARTNERED RESEARCH

Dr. Katherine D. Hoerster, PhD, MPH

PTSD is common in Veterans and associated with increased obesity risk, in part due to unique activity and healthy diet barriers. VA’s 16-week MOVE! weight management program is less effective for Veterans with PTSD. We developed and piloted a 16-week peer-led weight management program tailored for Veterans with PTSD called MOVE!+UP (Improving MOVE! for Veterans with PTSD Using Peer Support). MOVE!+UP was delivered in 4 group sessions by a paid peer support counselor who addressed PTSD-specific weight loss barriers and led Veterans in community walks, followed by six biweekly phone sessions. Three cohorts initiated participation (12/2015-4/2016; N=23). Baseline, 4-week, 16-week, and 6-month quantitative and qualitative data were collected. We obtained input from numerous stakeholders (e.g., peer support counselor, investigative team, clinical stakeholders, national VA leadership). All MOVE!+UP components (e.g., facilitator and participant manuals; fidelity, safety, training, and supervision procedures) were modified after each cohort to better address weight, physical activity, and mediator targets. Veterans reported strong benefits from the support received from other group members and the peer support counselor. Group walks were cited as a particularly helpful aspect. Stakeholders made numerous suggestions for changes, many of which were integrated during iterative refinement. Weight did not significantly decrease from baseline to 4 weeks. However, diet quality, mental health quality of life, and PTSD symptom severity improved (*ps <.05).* Several mediators improved significantly (e.g., diet and activity change strategies). Most 4-week findings were sustained at subsequent timepoints. Although not significant, average weekly physical activity minutes increased from 122 to 186, p=.19. A modified MOVE!+UP will be tested in an uncontrolled pilot and subsequent large-scale trial. This study provides data on a peer-led weight loss intervention addressing mental and physical health of Veterans with PTSD, and a model for iterative refinement and partnered research. This approach may facilitate readiness for future implementation and dissemination.

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Symposium 27B

DEVELOPING A PEER SUPPORT PROGRAM TO TARGET HIGH RISK PATIENTS IN PRIMARY CARE

Karin Nelson, MD, MSHS

Cardiovascular disease (CVD) is the leading cause of mortality among veterans, and CVD risk factors remain sub-optimally controlled. The goal of the Vet-Coach ("Veteran peer Coaches Optimizing and Advancing Cardiac Health") study is to test the effectiveness of a home-visit, peer health coach intervention to promote health behavior change among veterans with multiple CVD risk factors. Veteran peer coaches ("Vet-Coaches") will provide social support, health education, and link veterans to clinic and community resources.

The presentation will describe a novel strategy to recruit Vet-Coaches who live in targeted high risk areas. Using geo-coded patient addresses, we generated spatial distributions of hypertension rates by census tract within a 5-mile radius of our clinic and selected areas with the highest rates of poorly controlled hypertension, which comprised 60 census tracts. Each primary care clinic team was given a list of patients living in the target areas with a diagnosis of hypertension. During a staff meeting, we asked providers to review these lists and nominate veterans based on the following criteria: successful use of VA services, successful management of hypertension or other chronic conditions, and experience utilizing community resources. We sent the nominated patients (n=72) an introductory letter prior to conducting follow-up calls to assess interest in becoming a Vet-Coach, which provides reimbursement based on an hourly rate. Vet-Coach interviews are ongoing. To date, we have interviewed n=9 veterans. Results of the Vet-Coach recruitment will be discussed along with ideas and lessons learned, with a specific focus on working in primary care clinics and developing a peer support program that is integrated into primary care clinic work flow.

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Symposium 27C

TECHNOLOGICALLY ENHANCED COACHING (TEC): A PEER SUPPORT MODEL TO IMPROVE DIABETES OUTCOMES

Dr. Michele Heisler, MD MPA

This presentation will describe several approaches we have tested to enhance peer coach interventions with interactive, e-Health tools. In several completed VA and non-VA RCTs we have found that both mutual peer support and peer coaching models are more effective than usual care, financial incentives, and nurse care management in improving glycemic control and other clinical and patient-centered outcomes in high-risk adults with diabetes. While peers can be trained in effective approaches to support other patients’ self-management behaviors, such coaches necessarily lack the diabetes and diabetes medications content expertise to help patients better share in treatment decisions and goal-setting with their health care providers. Accordingly, in a prior study we developed and tested in an inner-city, predominantly ethnic minority population a tailored, interactive diabetes and diabetes medication information tool that outreach workers and peers could use to facilitate discussions with patients. Such tools can enhance the sustainability and effectiveness of coaching programs to better prepare adults to set self-management goals and action plans, and to discuss treatment options with their providers. We then adapted this tool for the VA and VA patients and are using mixed methods to evaluate over 6 and 12 months peer coaching supported with this tool, peer coaching alone, and usual care among 312 predominantly African American Veterans with diabetes and poor glycemic control at the Detroit VA. Recruitment has been completed and we will have final results in January, 2017 to report. In this presentation, we will describe the e-Health tool, present results of in-depth qualitative interviews with peer coaches and patients on experiences with the intervention, and present the final results of this comparative effectiveness pragmatic clinical trial.

Symposium 27D

ONLINE WEIGHT MANAGEMENT WITH PEER SUPPORTS FOR PEOPLE WITH SERIOUS MENTAL ILLNESS

Dr. Amy N. Cohen, PhD

People with serious mental illness are at high risk for obesity, related cardiovascular illness, and premature death. In-person weight management programs result in lower weight, and are found in treatment guidelines. However, these programs are often not provided, and patient enrollment and retention is low. Programs require substantial clinician time and frequent clinic visits. Barriers could be addressed using computerized provision of diet and exercise services, combined with motivation and support from peer coaches. 276 overweight patients were recruited from a Veterans Affairs mental health clinic, and assigned to 1) online weight management with peer coaching, 2) in-person clinician-led services, or 3) treatment as usual. At 6 months, patient outcomes were assessed and interviews conducted. There was a significant group by time interaction (F=4.02, p=.02). In the online plus peer coaching group, the model estimated an average change in body mass index (BMI) from baseline to six months of 34.9±.4 to 34.1±.4 . This change corresponds to a 2.8 kg (6.2 lbs) weight loss (t=3.2, p=.001). No significant change in BMI was seen in either the in-person (t=.10, p=.92), or treatment as usual (t=-.25, p=.80) group. There was a significant difference in how many participants completed the intervention with 31% of the online group but none of the in-person group completing the intervention ($\chi2=24.2$; p<.0001). Those in the online group received, on average, 7.9 (SD=6.8) peer coaching calls.

Addressing physical health in mental health clinics has been a challenge. Online weight management with peer supports is feasible, and well received. An online program with peer support produces weight loss, and may have greater effectiveness than clinician-led services. With this program, there is little burden on clinicians, costs are low, and service provision is patient-centered.

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Symposium 28 1:30 PM-2:45 PM

LESSONS LEARNED FROM THE DEVELOPMENT AND DISSEMINATION OF THREE HEALTH POLICY BRIEFS

Joanna Buscemi, Ph.D.[1], Caryn E. Peterson, PhD, MS[2], Karriem S. Watson, DHSc, MS, MPH[3], E. Amy Janke, PhD[4]

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The Society of Behavioral Medicine's (SBM's) Health Policy Committee (HPC) provides structured and guided opportunities for SBM members and SBM special interest groups (SIGs) to increase the impact of their work through the development and dissemination of health policy briefs. The purpose of this symposium is to 1) present three of the health policy briefs that have been developed in the past year and 2) provide members with “lessons learned” and tips for writing and disseminating the briefs. First, Dr. Karriem Watson will discuss a health policy brief highlighting the importance of supporting lung cancer screening among high-risk populations. Dr. Watson will discuss the process of engaging academic and like-minded organizations and partners in the development and dissemination of the brief. Next, Dr. Caryn Peterson will describe a brief in support of efforts to reduce barriers to Human Papillomavirus (HPV) vaccination services in order to increase vaccine coverage. Dr. Peterson will discuss how to develop recommendations to address the most pressing areas in need of change and how to describe the epidemiologic, clinical, and public health features of the problem in a manner appropriate to a policy brief. Third, Dr. Amy Janke will present a brief on improving psychological care for pain to reduce risk for opioid misuse. Dr. Janke will discuss how to collaborate across disciples to reach consensus on the framing of the brief and the recommendations, and the process of using an initial brief as a springboard for future related briefs, papers, presentations and outreach. The discussant and Chair of the Health Policy Committee, Dr. Joanna Buscemi, will close with remarks on key strategies for developing authorship teams, engaging organizational partners, and increasing the reach of briefs through broad dissemination.

Symposium 28A

THE DEVELOPMENT OF SBM’S POLICY BRIEF: “INCREASING HPV VACCINATION UPTAKE: AN URGENT OPPORTUNITY FOR CANCER PREVENTION”

Dr. Caryn E. Peterson, PhD, MS

HPV infection is common in the U.S. and globally, and affects both males and females through its association with oral cancer, anal cancer, genital warts, and cervical cancer. HPV vaccination is a safe and effective primary prevention strategy to reduce the infections that can lead to these cancers. However, vaccination coverage remains low and subject to barriers at multiple levels.

SBM supports the goals outlined by Healthy People 2020, the President's Cancer Panel, and the National Vaccine Advisory Committee to increase vaccination coverage among both males and females. The purpose of this brief was to present a set of recommendations for legislators, policymakers, healthcare providers, and health systems in order to address critical barriers to HPV vaccination.

Recommendations for legislators and policymakers focus on ensuring adequate resources to achieve the nation's HPV vaccination goals. Recommendations for healthcare providers and systems center on strengthening the quality and consistency of HPV vaccination recommendations for all eligible patients.

This presentation will first describe the critical need for increased HPV vaccination among males and females, outline barriers to vaccine uptake, and present SBM recommendations. Then it will describe the process of developing the brief. Key aspects of this process include: gathering a multidisciplinary team of co-authors in order to describe the issue in its most current form; developing recommendations to address the most pressing areas in need of change; and describing the epidemiologic, clinical, and public health features of the problem in a manner appropriate to a policy brief.

Symposium 28B

ENCOURAGING LUNG CANCER SCREENING IN HIGH RISK POPULATIONS: LESSONS LEARNED FROM THE DEVELOPMENT OF A HEALTH POLICY BRIEF

Dr. Karriem S. Watson, DHSc, MS, MPH

Informing key stakeholders of policy implications that impact health outcomes is vital to advocacy, research and interventions aimed to mitigate health inequities. Collaborations with multi-stakeholders including community, academic and advocacy partners to develop policy briefs is an essential tool to support dissemination of policy recommendations. Several academic stakeholders along with policy and advocacy partners aligned with the Society of Behavioral Medicine (SBM) to address United States Preventive Services Task Force (USPSTF) recommendation of low-dose computed tomography (LDCT) screening of the chest for eligible populations to reduce lung cancer mortality. This group assembled to support efforts that further advances the translation of research findings into practical applications for health care providers and healthcare systems. Lung cancer mortality exceeds that of breast, colorectal and prostate cancer mortality combined. The assembly of academic, advocacy and policy stakeholders resulted in policy recommendations for both healthcare providers and healthcare systems as well as policy makers. The primary lessons learned from this collaborative development of a policy brief included: 1) the importance of identifying academic partners who value a multi-disciplinary approach to examining healthcare policy implications; 2) the benefit of including the expertise of recognized thought leaders as part of the collaboration; 3) the advantage of leveraging existing partnerships to identify common alignments such as multi-institutional grant projects; and 4) the incorporation of principles of shared governance to ensure that each stakeholder has an active voice in the process.

Symposium 28C

IMPROVING ACCESS TO PSYCHOLOGICAL CARE FOR INDIVIDUALS WITH PERSISTENT PAIN

E. Amy Janke, PhD

Objective: Present SBM’s first policy brief addressing psychological care for chronic pain and provide an overview of lessons learned from writing this brief.

Background: Growing concerns regarding prescription opioid misuse, abuse and opioid-related fatalities have initiated a re-evaluation of the long-term efficacy and potential risks of this class of medications in the management of pain, and are part of a larger dialogue on the way pain is managed in U.S. Policy makers have articulated a need for clear, evidence-based guidance to help inform pain policy. Persistent pain is common, expensive, and debilitating, and requires comprehensive assessment and treatment planning. Recently released opioid prescribing guidelines by the CDC (2015) emphasize the importance of using non-opioid therapies before considering opioid treatment for those without a malignant illness. The favorable risk-benefit ratio of psychological approaches suggests these be considered early on, prior to other treatments that carry more risks. Unfortunately, despite persuasive evidence supporting the efficacy of many non-opioid therapies, access to these interventions is severely limited. Access to psychological care including pain assessment, intervention, and prevention approaches needs to be available in all clinical contexts, for all populations, at all points during the entire trajectory of the illness. To achieve this, we must prioritize reimbursement of evidence-based psychological approaches for pain management and improve provider training and competencies to implement these approaches

Approach: This presentation will provide an overview of the pain policy brief and discuss how the core team of authors was cultivated from the SBM membership. The authorship team identified many needs to address with regards to pain policy, and the presentation will review the process of conceptualizing ideas and narrowing the brief’s focus to develop a specific, targeted message. The process of writing the brief and engaging stakeholders—from within SBM and other organizations—will be discussed as will ensuring the brief's synergy within the larger landscape of emerging pain policy. Opportunities identified by the authorship team to use the brief as a foundation for ongoing activities in the area of pain policy (outreach, briefs, presentations, papers) will be discussed.

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Symposium 29 1:30 PM-2:45 PM

STIGMA AS A PATHWAY TO OBESITY AND NEGATIVE HEALTH OUTCOMES IN UNDERSERVED POPULATIONS

Emily Panza, MS[1], Lisa Shank, M.S.[2], Janet Tomiyama, Ph.D. [3], Mary S. Himmelstein, PhD[4], Kristina M. Decker, M.A.[5]

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Obesity is associated with serious negative health consequences, ranging from cardiovascular disease to early mortality, and is disproportionately prevalent among gender, racial, ethnic, and sexual minority groups. Given the wide prevalence and multi-determined nature of obesity, it is necessary to examine how multiple aspects of identity (e.g. race, sexual orientation) intersect with social contextual factors, emotional experiences, and behaviors to heighten risk for obesity.

The research presented here examines how one social contextual factor, societal stigmatization, cuts across multiple aspects of identity and serves as a pathway to the development and exacerbation of obesity in a variety of underserved groups. This is highlighted in the first symposium presentation, which identifies weight stigma as a risk factor for the development of physical health problems and medical conditions in a group of overweight active duty military, a specialized population with a cultural emphasis on fitness. The second presentation builds on these findings by examining how multiple sources of stigma contribute to the weight disparity among a triply oppressed group, overweight and obese sexual minority women. This study uses EMA methods to examine whether lifetime and daily exposure to stigma based on sexual orientation, gender and weight increases risk for overeating and binge eating. These findings are extended in the next presentation, which examines strategies for coping with weight stigma across racial and gender minority groups. Using population-based data, this presentation reveals how race and gender interact to promote either effective or harmful coping, displaying how strategies for coping with stigma impact obesity. The final presentation will explore the relation between stigma and health outcomes in emerging adults, demonstrating that greater stigma and higher BMI are associated with more exercise avoidance, depression, and poorer physical health in young adults with low self-reported resilience.

The symposium discussant, an expert on stress, weight stigma and obesity, will tie together these diverse presentations, which employ a variety of methods to explore obesity-related outcomes in multiple underserved groups, collectively highlighting the relevance of social stigmatization as a pathway to the development and worsening of obesity in marginalized populations. This has important clinical implications, suggesting that efforts to reduce stigma and to teach effective strategies for coping with stigma may enhance the effectiveness of obesity interventions and improve health in all populations.

Symposium 29A

MINORITY STRESS AND EATING BEHAVIOR AMONG OVERWEIGHT AND OBESE SEXUAL MINORITY WOMEN

Emily Panza, MS

Background. Sexual minority women are nearly three times more likely to be overweight or obese than their heterosexual counterparts, but little research has investigated potential mechanisms that underlie this disparity. One such mechanism may be minority stress. Sexual minority women are members of multiple socially stigmatized groups: being non-heterosexual, being female, and for 60% of sexual minority women, being overweight. As a result, they are chronically exposed to minority stressors like social stigmatization (i.e. being treated unfairly or differently). In an effort to reduce distress, sexual minority women may use overeating and binge eating to cope, behaviors that, over time, promote weight gain and confer risk for obesity.

Methods. The current study used cross-sectional and Ecological Momentary Assessment (EMA) methods to examine whether lifetime and acute experiences of stigmatization heighten risk for overeating and binge eating in overweight and obese sexual minority women. 30 overweight and obese (BMI>25) sexual minority (e.g. lesbian, bisexual, queer) women were recruited from the local community. Participants completed baseline assessments of eating behavior and minority stress related to sexual orientation, weight and gender, and for five days, used a smartphone application to report instances of perceived stigmatization, overeating, binge eating, stress, and negative emotion five times daily.

Results. Using hierarchical linear modeling,we expect to find significant links between stigmatization, overeating and binge eating behaviors, such that greater lifetime stigmatization, as well as daily acute stigmatization, will be associated with greater rates of overeating and binge eating behaviors among overweight and obese sexual minority women. We also expect that daily episodes of stigmatization will increase risk for concurrent and future elevations in stress, negative emotion, overeating and binge eating.

Conclusion. This is the first study to examine the intersecting effects of sexual orientation, gender, and weight-based minority stress on eating behavior among overweight and obese sexual minority women. Given the lack of research investigating the origins of the weight disparity among sexual minority women, findings will facilitate obesity prevention efforts and improve our ability to develop effective and culturally tailored obesity interventions for this multiply marginalized group.

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Symposium 29B

THE RELATIONSHIP BETWEEN WEIGHT STIGMA AND PHYSICAL HEALTH IN MILITARY PERSONNEL WITH OR AT HIGH-RISK OF OVERWEIGHT/OBESITY

Ms. Lisa Shank, M.S.

Perceived weight stigma and discrimination are associated with adverse health indices, such as elevated cortisol and inflammation, lipid/glucose dysregulation, and poorer self-rated health. The relationship between weight stigma and physical health may be particularly relevant for military personnel, given the increasing prevalence of overweight/obesity (OW/OB), a cultural emphasis on fitness and weight/shape, and a high rate of reported weight stigma. Therefore, we investigated the relationship between weight stigma and physical health in 117 active duty service personnel (66.7% male; 35.0% Non-White; age: 30.8±7.4y; BMI: 29.5±2.5 kg/m^2) prior to enrollment in an obesity prevention program. All had OW/OB and/or a family history of OW/OB (family history only: n = 7). Participants completed an adapted Experiences and Sources of Weight Stigma Questionnaire which produced a total score (WS) and a military-specific subscale (WS-M), and the Weight Bias Internalization Scale-Modified (WBIS). Participants reported the presence of medical conditions (e.g., type 2 diabetes, hypertension, asthma) and responses were dichotomized to indicate presence (≥ 1; n = 57) or absence (n = 60). After adjusting for age (y), sex, height (cm), and body fat (%), WS and WS-M were significantly associated with the presence of a medical condition (*OR*s = 2.63, 2.76, respectively, *p*s = .04). WBIS did not moderate the relationship between WS or WS-M and physical health (*p*s > .05). Similar patterns were observed when BMI was used as a covariate instead of height and body fat. Findings suggest that weight stigma may contribute to the development or maintenance of medical conditions, perhaps due to associated biochemical stress. Alternatively, active duty personnel with a medical condition might experience more frequent weight stigma; for example, when visiting healthcare providers. Longitudinal studies should prospectively examine the relationship between weight stigma and physical health among service members, who may be a particularly high-risk subgroup.

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Symposium 29C

MEET ME AT THE CROSSROADS: WEIGHT-STIGMA AT THE INTERSECTIONS OF RACE AND GENDER

Dr. Mary S. Himmelstein, PhD

A large literature demonstrates the harmful psychological, behavioral, and physical health outcomes associated with weight-stigma, but few studies have systematically examined intersectionality in weight-stigma. Studies have disproportionately focused on White women, with little attention given to weight-stigma in Asian, Black, or Hispanic women or stigma in men. Examining weight-stigma in non-White women and men is essential because the prevalence of obesity varies along racial lines with greater prevalence of obesity in Black and Hispanic populations. This study examined intersectionality (race, gender) using a diverse national sample of 2,378 individuals matching demographics from the US census. Participants identifying as Asian, Black, Hispanic, and White responded to questions about their experiences with weight-stigma and strategies employed to cope with weight-stigma. Women reported experiencing more weight-stigma than men, but no differences in stigma emerged as a function of race. In coping with weight-stigma, Black women were less likely to cope with stigma using negative affect and disordered eating strategies, while Hispanic women were more likely to cope with weight-stigma via disordered eating strategies. Black men were more likely to cope with stigma via increased eating. No coping differences emerged for Asian women or Hispanic men. These results suggest potential protective factors against poor health outcomes associated with weight-stigma for Black women, but potentially exacerbating factors for Hispanic women and Black men. This study represents the first systematic exploration of weight-stigma and coping in non-White men and women. Given we found no differences in experienced weight-stigma as a function of race, it is imperative that more research be focused on weight-stigma in underserved populations in order to understand the unique stigma processes these populations face.

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Symposium 29D

PROFILES OF WEIGHT STIGMA AND MENTAL HEALTH: ASSOCIATION WITH HEALTH OUTCOMES AMONG EMERGING ADULTS WITH OVERWEIGHT/OBESITY

Kristina M. Decker, M.A.

Objective. Rates of obesity continue to soar among emerging adults. Weight-based stigma and poor mental health are associated with negative physical health outcomes among young people with obesity. We aimed to examine how varying patterns of risk (stigma, mental health, stress) and protective (resilience) factors relate to health outcomes.

Method. 196 emerging adults (61% White, 16% Black, 12% Hispanic; 60% female) enrolled in our study via Amazon Turk and a university subject pool in the U.S. MidSouth. These 18-25-year-olds (M_{age}=22.38, *SD*=2.01) completed measures of Weight Self-Stigma, Stigmatizing Situations, Depression, Anxiety, Perceived Stress, Resilience, and Exercise Avoidance. Body Mass Index (BMI) was calculated from self-reported height and weight. Participants reported perceived health status (‘How would you rate your overall physical health?’) from *poor* to *excellent*. In Mplus 7.4, Latent Profile Analysis (LPA) was used to generate profiles of stigma, mental health, stress, and resilience and examine how the resulting profiles were associated with exercise avoidance, BMI, and perceived health.

Results. Based on standard fit statistics, the following 3 classes emerged: 1) low stigma, low risk, high resilience (LLH; N=58); 2) high stigma, high risk, low resilience (HHL; N=50); 3) moderate stigma, moderate risk, moderate resilience (MMM; N=88). Exercise avoidance significantly differed across classes with LLH class members reporting the least exercise avoidance (*M*=11.31, *SE*=1.07) and HHL members reporting the most avoidance (*M*=32.54, *SE*=1.89). Individuals in HHL (*M*=31.43, *SE*=.78) and MMM (*M*=31.61, *SE*= .86) reported significantly higher BMIs than those in LLH (*M*=28.10, *SE*=.66). Individuals in LLH reported significantly better physical health (*M*=3.60, *SE*=.14) than those in HHL (*M*=2.65, *SE*=.14) and MMM (*M*=2.91, *SE*=.11).

Conclusions. Person-centered findings reveal significant health disparities among young people with overweight/obesity with those most at risk (i.e., have higher BMI, poorer physical health, greater exercise avoidance) reporting higher depression, anxiety, stress and lower

resilience (i.e., ability to bounce back from distress). Such health disparities should be prioritized in obesity intervention development.

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Symposium 30 1:30 PM-2:45 PM

FERTILITY, PREGNANCY, AND BIRTH IN THE AGE OF REPRODUCTIVE TECHNOLOGIES: CHALLENGES AND OPPORTUNITIES FOR BEHAVIORAL MEDICINE

Marci Lobel, Ph.D.[1], Lauri Pasch, PhD[2], Lisa Rubin, Ph.D. [3], Jennifer Nicoloro SantaBarbara, MSW, MA[4], Marci Lobel, Ph.D.[1]

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The extraordinary evolution of reproductive technologies in recent years has included methods to help infertile couples conceive and bear children, and to reduce the likelihood that offspring will suffer from heritable diseases for which their parents are at-risk. Although such technologies offer great promise to improve human health and well-being, they also pose potent moral, emotional, behavioral, and tangible challenges for people considering their use. The increased availability of reproductive technologies and their impact on individuals, families, and society make it imperative to understand the psychosocial milieu of these technologies. For example, what are the emotional consequences of using assisted reproductive technologies such as in-vitro fertilization and pre-implantation genetic diagnosis (PGD)? Conversely, do emotional factors including decisional conflict or distress affect the success of these technologies? What mental health services might be needed by individuals using assisted reproductive technologies? This symposium will feature cutting-edge behavioral medicine research on assisted reproductive technologies to further scientific investigation and to inform the development of appropriate clinical services. The first presenter will describe results from a large longitudinal study of individuals undergoing fertility treatment, focusing on identification of clinically-significant distress and use of mental health services. The second presenter will discuss findings from in-depth interviews focused on decisional distress surrounding PGD in individuals of reproductive age who carry a heritable genetic marker for breast cancer. The third presenter will describe a meta-analytic review of studies to evaluate the association of emotional distress with outcomes of assisted reproductive technologies. The Discussant will highlight points of agreement and disagreement from the findings presented, offer a conceptual overview to integrate the three presentations and ground them in research and theory on stress, and highlight how this work can be used to advance research and treatment for people using assisted reproductive technologies.

Symposium 30A

PSYCHOLOGICAL DISTRESS AND ASSISTED REPRODUCTIVE TECHNOLOGY USE

Lauri Pasch, PhD

Although there is no doubt that the use of fertility treatments offer the opportunity to conceive for many couples who would not otherwise have been able to, they are clearly a mixed blessing. Despite significant advances in success rates, treatment cycles still fail more often than they succeed and many couples endure multiple failures. We present data from a large prospective cohort study of couples seeking fertility treatment funded by the NIH to address three main research goals. First, we describe the psychological consequences of treatment failure. Second, we investigate risk factors for greater distress. Third, we examine the use of mental health services for fertility patients and the extent to which they target those at greatest psychological risk. From five fertility practices in Northern California, we recruited 352 women and 274 men at the start of treatment for infertility and followed them over the subsequent 18 months. Depression, anxiety, fertility treatment outcome, and mental health service use were assessed over the course of the research. Major results include: 1) rates of psychological distress following fertility treatment failure are extremely high, 2) psychological distress does not predict the outcome of fertility treatment, but the outcome of fertility treatment predicts subsequent increases in psychological distress, 3) the most important predictor of whether someone will experience a major depressive episode during fertility treatment is not how distressed they are at the beginning, but instead their lifetime history of major depression, 4) most patients report that they are not offered and do not use mental health services during fertility treatment, and high risk patients are not targeted for mental health service referrals. We conclude that clinically significant psychological distress is very common during fertility treatment and after failure, and that those are particular risk can be readily identified. However, most patients and partners do not receive and are not referred for help, even those at high risk for serious psychological distress. Strategies for addressing these findings will be discussed.

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Symposium 30B

“IS IT WORTH IT?”: DECISIONAL CONFLICT IN CONSIDERING PRE-IMPLANTATION GENETIC DIAGNOSIS FOR HEREDITARY CANCER RISK

Dr. Lisa Rubin, Ph.D.

Background: *BRCA1* and *BRCA2* gene variants are associated with increased susceptibility of breast and ovarian cancer ranging from 20-76%, contingent on other genetic and environmental factors. Further, individuals with *BRCA1/2* gene variants face a 50% chance that their gene variants will be transmitted to their genetic offspring. To address this risk of transmission, reproductive options, such as preimplantation genetic diagnosis (PGD), a technology in which *in vitro* fertilized (IVF) embryos are tested before implantation (with only unaffected embryos transferred to the uterus), are increasingly being offered to *BRCA1/2* gene variant carriers. However, for many individuals and couples, deciding whether to use PGD and, if unsuccessful, when to stop, are fraught decisions, where costs and benefits are uncertain and difficult to weigh.

Methods: Qualitative interviews were conducted with 39 reproductive-age *BRCA1/2* gene variant carriers about their views of PGD. Participants were predominantly female-identified (89%) and partnered (76%); 42% had children, with 21% reporting that they had completed their plans for childbearing. Data were analyzed using inductive thematic analysis.

Results: Among the 15 (38%) participants who had considered PGD, decisional conflict was a key theme. This report emphasizes the types of conflicts reported by participants, and the contexts in which these conflicts occur. Conflicts emerged in the contexts of participants' (1) reproductive goals, experiences, and pressures; (2) *BRCA*-related risk perceptions; (3) perceptions of assisted reproductive technologies (ARTs); (4) financial resources; and (5) personal cancer risk management strategies. Particularly for those choosing PGD, conflicts were iterative and dynamic, as participants faced unexpected difficulties and ethical dilemmas.

Conclusions: The rapid expansion of ARTs, including the use of PGD for inherited disease susceptibility markers, threatens to outpace clinical and scientific understanding of the associated decisional tasks and dilemmas. Qualitative studies highlighting the content and contexts of decisional conflicts in PGD can inform research at the intersection of decision science and ARTs, as well as clinical interventions to reduce patient conflict and increase decision satisfaction.

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Symposium 30C

DOES MATERNAL DISTRESS PREDICT ASSISTED REPRODUCTIVE TECHNOLOGY OUTCOMES? A META-ANALYTIC INVESTIGATION

Jennifer Nicoloro SantaBarbara, MSW, MA

Nearly 1.5 million (6%) married women in the U.S. between the ages of 15-44 are infertile. Infertility can leave a woman feeling defective, angry, out of step with her peers, and lonely (Benyamini, Gozlan & Kokia, 2009; Frederiksen, Farver-Vestergaard, Skovgard, Ingersiev, & Zacharia, 2015). In the U.S., half of infertile women seek treatment via assisted reproductive technology (ART), which for many is physically and emotionally taxing (Demyttenaere, Nijs, Evers-Kiebooms, & Koninckx, 1991; Klonoff-Cohen 2008). Stress and related negative emotions have the potential to reduce ART success through both biological and behavioral mechanisms that affect the likelihood of pregnancy. However, systematic analysis of this topic is lacking. This review evaluated the association of women's emotional distress with likelihood of treatment success via ART. Meta-analysis using a random-effects model was conducted on prospective studies (*k* = 21) that examined levels of anxiety, depressive symptoms, or perceived stress before and during treatment in women undergoing ART who achieved successful outcomes versus women who did not (total *N* = 4,801). This is the first known meta-analysis to examine depressive symptoms and the first to distinguish pre-treatment from procedural distress in evaluating their association with ART outcomes. Results indicate that women who experienced greater anxiety, depressive symptoms, or perceived stress before treatment were less likely to have favorable outcomes. Effect sizes were small but statistically significant. Emotional distress during treatment did not predict outcomes. Fail-safe *N* values provided little evidence of publication bias. ART is considered a last resort for infertile couples who seek to have a biological child and its use is becoming increasingly common. Thus, there is a need for rigorous research to elucidate factors that affect and are affected by ART outcomes and to identify the mechanisms responsible for these effects. Based on our review of existing research, this presentation will offer recommendations for the design of future studies. Improving our understanding of the experience and outcomes of ART is a critical first step to reduce the considerable personal, familial, and societal costs associated with infertility and its treatment.

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Symposium 31 1:30 PM-2:45 PM

THE SOCIAL SIDE OF HEALTH: COMMUNAL COPING WITH ILLNESS CAN IMPROVE HEALTH BEHAVIOR AND OUTCOMES

Kelly Rentscher, MA[1], Vicki Helgeson, PhD[2], Caitlin Kelly, M.A.[3], Tracey A. Revenson, PhD[4]

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This symposium brings together innovative research on communal coping—a relationship process in which family members view a health problem as shared and engage in collaborative action to address it. These presentations showcase family research across laboratory and real world settings with a diverse set of methods (observation, self-report, text analysis) and health samples (diabetes, alcohol use, smoking-related heart and lung disease) to suggest that a communal approach to addressing health problems can impact chronic illness management and intervention outcomes. Rentscher presents data on how increases in patient and spouse communal coping behaviors and language use during couple-focused interventions for health-compromised smoking and alcohol use predict successful treatment outcomes. Helgeson presents data on how patient and spouse communal illness appraisals are associated with patient self-care behavior, perceived support, and illness-related distress among couples coping with type 1 diabetes. Kelly presents data on how collaboration with parents matters for the daily management of diabetes among emerging adults that live within and outside of the parental home. Finally, Revenson will provide commentary and discussion. Together, these presentations and commentary highlight communal coping as an important potential mechanism through which relationships influence health behavior and outcomes.

Symposium 31A

PARTNER COMMUNAL COPING IN THE CONTEXT OF COUPLE-FOCUSED INTERVENTIONS FOR HEALTH PROBLEMS

Kelly Rentscher, MA

Communal coping – a relational process in which partners view a problem interdependently as *ours* rather than *yours* or *mine*, and take collaborative action to address it (Lyons et al., 1998) – has emerged as an important correlate of relationship quality and predictor of partner health. Several studies also link couples' first-person plural pronoun use (*we*-talk), a linguistic marker of communal coping, to change processes in couple-focused interventions for health problems and addictions (Hallgren & McCrady, 2015; Rentscher et al., 2015; Rohrbaugh et al., 2012). Here we present findings from two intervention studies with a combined sample of 56 couples, in which one partner either abused alcohol or continued to smoke cigarettes despite having heart or lung disease. Specifically, this study involved a process analysis of specific interview techniques designed to activate communal coping, where the objective was to identify session-level changes in *we*-talk and observed couple behavior from before to after the therapist's intervention. Pronoun measures for each partner were obtained via computerized text analysis from transcripts of partner speech during the target therapy sessions. Teams of trained raters also observed the target sessions and made independent ratings of couple communal coping behaviors. Patient and spouse *we*-talk and communal coping scores were significantly correlated (rs = .44 to .82, ps < .05). Both patients and spouses showed increases in *we*-talk (F = 43.00, p < .001) and communal coping behavior (F = 61.94, p < .001) from a "baseline" problem-focused therapy block to the "active" solution-focused therapy block. Partner increases in *we*-talk were of similar magnitude, whereas patients showed greater increases in communal coping behavior than spouses (F = 6.26, p = .02). Preliminary findings also suggest that within-session increases in spouse communal coping behaviors (accounting for baseline levels) predict successful patient treatment outcomes (B = 1.09, p = .02). Results highlight communal coping as a potential mechanism of action in couple-focused interventions for health problems.

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Symposium 31B

LINKS OF PATIENT AND SPOUSE COMMUNAL APPRAISALS TO RELATIONAL AND HEALTH OUTCOMES

Vicki Helgeson, PhD

We investigated diabetes appraisals by asking patients with type 1 diabetes and their spouses (n = 143 couples) separately whether they perceived diabetes to be the patient's problem or a shared problem (i.e., communal). Patients were 61% female, average age 46 (range 25-75 yrs), and 95% Non-Hispanic White. Patients completed online questionnaires that assessed diabetes distress, self-care behavior, and reports of supportive and unsupportive behavior from spouses. Whereas 71% of spouses said that diabetes was a shared problem, only 26% of patients said diabetes was shared. Those who scored high on independence centrality (i.e., preferences for independence in handling illness) were less likely to report communal appraisals (p < .01). Although patient communal appraisal was unrelated to self-care behavior, spouse communal appraisal was marginally related to better patient self-care behavior (p = .10). Patient communal appraisals were related to lower diabetes distress ($p < .05$) and overall higher marital quality ($p < .05$). Patient communal appraisals also were related to greater receipt of emotional support, instrumental support, and collaboration with spouses (all p's < .05). Spouse communal appraisals were related to lower patient regimen distress, and patient receipt of greater emotional support, instrumental support, and collaboration (all p's < .05). We also investigated whether patient appraisals altered the relation of support to outcomes, focusing on self-care behavior and diabetes distress. There was some evidence of stronger associations among patients who held communal versus noncommunal appraisals. For example, emotional support was related to better self-care when patients perceived diabetes as shared ($r = .48$, $p < .05$) but unrelated to self-care when they did not ($r = .11$, n.s.), z = 2.09, $p < .05$. Instrumental support was related to reduced diabetes distress when patients appraised the illness as shared ($r = .35$, $p < .05$) but unrelated to distress when they did not ($r = .06$, n.s.), z = 2.15, $p < .05$. These results suggest that communal illness appraisals might enhance patient outcomes and optimize the support process.

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Symposium 31C

PARENTAL INVOLVEMENT IN EMERGING ADULTS' DAILY DIABETES MANAGEMENT

Caitlin Kelly, M.A.

Little is known about parental involvement with type 1 diabetes (T1D) management during emerging adulthood. In late adolescence, parental involvement with T1D occurs via diabetes information-sharing (disclosure to parents, parental solicitation). Parents may be less involved in daily diabetes management as emerging adults move out of the parental home, but diabetes care may still benefit from parents' involvement. The goal of this study was to examine the daily frequency of emerging adults' disclosure and parental solicitation of diabetes-related information, the link between parental involvement and T1D management, and whether these processes differed among participants who lived in the parental home versus those who did not. Emerging adults with T1D ($N = 212$; $M_{\text{age}} = 18.81$; 64.5% female) reported daily for 14 days on parents' involvement with diabetes care (disclosure to parents, parents' solicitation of information, parents' knowledge of T1D management, frequency and type of parental contact) one year after their senior year of high school. Across the 14 days, 63.8% of participants reported contact with their mothers and 46.3% reported contact with their fathers. Participants reported their parents knew only "a little bit" about their daily management on average (M_{mother} = 2.03; M_{father} = 1.70 on a 5-point scale). Participants who lived outside of the parental home reported lower levels of parental contact (M_{diff} mother = -2.64; M_{diff} father = -1.44), solicitation (M_{diff} mother = -.11; M_{diff} father = -.09), knowledge (M_{diff} mother = -.63; M_{diff} father = -.49), and mothers', but not fathers', helpfulness (M_{diff} = -.63) (all *p's* < .05). No differences emerged for disclosure of diabetes-related information. Notably, when parental involvement did occur, it was associated with improved management, regardless of whether or not participants lived in the parental home. When mothers solicited information and emerging adults disclosed diabetes-related information, adherence increased ($p < .05$). This suggests that, although the frequency of parental involvement may decrease in emerging adulthood, especially after leaving the parental home, parents are still an important source of support for diabetes management.

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Symposium 32 1:30 PM-2:45 PM

IDENTIFYING AND PREVENTING EATING DISORDERS AS A WAY TO DECREASE OBESITY IN PRIMARY CARE

Jessica Y. Breland, PhD[1], Rebecca K. Blais, PhD[2], Shira Maguen, Associate Professor/Ph.D.[3], Niloofar Afari, PhD[4]

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Disordered eating is fairly common in military and veteran populations, but eating disorder identification and prevention in this population is hampered by the lack of screening tools regularly utilized in primary care, as well as a dearth of information on how different military stressors impact eating disorder risk. To address this gap, the first presentation used cross-sectional data from 407 women veterans to determine the associations between combat exposure, military sexual trauma (MST), and eating disorders. The authors found that MST, but not combat exposure, was significantly associated with eating disorders (OR: 2.03; CI: 1.03-3.98). Asian race was also associated with increased risk (OR: 3.36; CI: 1.26-8.97), suggesting these factors are important prevention/intervention moderators. The second presentation examined the longitudinal association between MST and eating disorders among 595,525 Iraq/Afghanistan veterans enrolled in VA care, and whether this association varied by sex. At one and five years, administrative data demonstrated that risk for eating disorders was nearly two times higher among those with a positive screen for MST (1-year adjusted odds ratio [AOR]: 1.99; CI: 1.57-2.40 and 5-year AOR: 1.86; CI: 1.49-2.32). Male veterans with a history of MST were at differentially greater risk for eating disorders than women with a history of MST in the 1-year cohort only (AOR: 2.13; CI: 1.01-4.50). The third presentation reviewed the utility of two existing and one newly proposed eating disorder screens in primary care. Data were examined in a cohort of 407 women veterans, and positive and negative predictive values for binge eating disorder, bulimia, and anorexia were determined for each screen. The authors determined that one new and one existing screen outperformed a primary-care specific eating disorder screen. Efforts to identify and treat eating disorders among male and female veterans should focus on veterans who report MST, including men with MST. Having a strong screening tool in primary care can help identify veterans who report eating disorder symptoms, thereby assisting with early intervention and prevention of obesity as well as other weight-related health problems.

Symposium 32A

MILITARY SEXUAL TRAUMA: A UNIQUE EATING DISORDER RISK FACTOR

Jessica Y. Breland, PhD

Background. Eating disorders are more common among veterans than other populations, suggesting that military service affects eating habits. However, efforts to prevent or reduce eating disorders and obesity are hampered by a lack of information on how different military stressors affect eating disorder risk.

Objective. To determine whether military sexual trauma and combat exposure are independent predictors of eating disorders among a high-risk group: women veterans.

Methods. Women veterans (N=407) who used VA care completed self-report questionnaires assessing demographics, presence of current eating disorders (using the Eating Disorder Examination Questionnaire and SCOFF), history of military sexual trauma, history of combat exposure, depression (using the PHQ-9), and post-traumatic stress disorder (using the PCL-5). We used logistic regression to predict the presence of any eating disorder (anorexia or bulimia nervosa, or binge eating disorder) as a function of military sexual trauma and combat exposure, adjusting for demographic variables. As in past, published work we did not use mental health conditions as predictors, given overlap in symptoms and unknown times of onset.

Results. Sixty-three women (15%) met eating disorder criteria, mostly for binge eating disorder (N=47), 270 women (66%) reported military sexual trauma, and 130 women (32%) reported combat exposure. Mean age was 49 years (SD=13); 40% of women were veterans of color. Women who reported military sexual trauma had twice the odds of having an eating disorder compared to women who did not (OR: 2.03; CI: 1.03-3.98). Combat exposure was not associated with eating disorders. Of all demographics, only Asian race was associated with eating disorders. Asian women had much higher odds of having an eating disorder than white women (OR: 3.36; CI: 1.26-8.97).

Conclusion. Women in this study reported high rates of eating disorders and military sexual trauma compared to past research, highlighting the importance of screening. For efficient implementation, screening programs could focus on women reporting military sexual trauma and, possibly, race. Given associations among eating disorders, obesity, and mortality, such efforts could greatly improve veteran health.

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Symposium 32B

MILITARY SEXUAL TRAUMA IS ASSOCIATED WITH INCREASED RISK FOR EATING DISORDERS AMONG AFGHANISTAN AND IRAQ VETERANS

Dr. Rebecca K. Blais, PhD

Military sexual trauma (MST) and eating disorders (ED) are underestimated public health concerns in Veterans, particularly in males. The association between MST and ED, and whether this association varies by sex, is not well understood. The current study evaluated whether MST screen status was associated with increased risk for ED in 595,525 Iraq/Afghanistan Veterans within 1- and 5-years after initiating Veterans Health Administration (VHA) care, and whether the association between MST and ED varied by sex. Three percent (*n*=18,488) screened positive for MST. At 1- and 5-year follow up, 0.1% (*n*= 513, 74% female), and 0.2% (*n*= 504, 71% female) were diagnosed with ED. In regression models adjusted for demographic, military service and psychiatric comorbidities, risk for ED was nearly 2 times higher among those with a positive screen for MST in the 1-year (adjusted odds ratio [AOR]=1.94, 95% confidence interval [CI]=1.57-2.40) and 5-year (AOR=1.86, 95% CI=1.49-2.32) cohorts. Male Veterans with a history of MST were at differentially greater risk for ED than women with a history of MST in the 1-year cohort only (AOR=2.13, 95%CI=1.01-4.50). A positive screen for MST, particularly in male Veterans, is independently associated with nearly a 2-fold increased risk for ED. Both MST and ED are historically considered problems that mainly impact women; however, current results suggest that it is critical to screen for ED in both men and women Veterans, especially in those who report MST. Early detection and intervention may reduce the negative sequelae of both MST and ED thereby resulting in more positive post-deployment adjustment.

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Symposium 32C

DISCRIMINATIVE ACCURACY OF A NEW SCREENING INSTRUMENT FOR EATING DISORDERS IN VETERANS

Dr. Shira Maguen, Associate Professor/Ph.D.

Although there is evidence that eating disorders are more prevalent in veterans than in the general population, veterans are not routinely screened for eating disorders in primary care. The goal of this study was to develop an eating disorders screening instrument for veterans in primary care and compare it to existing screening instruments. Existing instruments were developed prior to Binge Eating Disorder (BED) becoming a formal diagnosis and have not been validated with veteran populations. Prevalence rates of BED, Bulimia Nervosa (BN), Anorexia Nervosa (AN) and Any Eating Disorder (AED) were obtained in a sample of 407 females who completed the Eating Disorder Examination Questionnaire (EDE-Q), the self-report version of the Eating Disorder Examination, considered the gold-standard for diagnosing eating disorders. To assess the discriminative accuracy of the new screening instrument, participants completed the new screener, as well as two existing screeners, the Eating Disorders Screen for Primary Care (EDS-PC), and the SCOFF screen. EDE-Q prevalence rates of probable eating disorders in our sample were 12% for BED, 2.2% for BN, 2% for AN, and 16% for AED. The sensitivity, specificity, receiver operating characteristic curve (ROC), and positive and negative predictive values of the new screener for BED, BN, AN, and AED were compared to those of the EDS-PC and the SCOFF. The new screener correctly classified 87.2% (CI: 74.3%-95.2%) of BED cases, all cases of BN and AN, and 90.5% (CI: 80.4%-96.4%) of cases with AED. This discriminative power was higher than that of the SCOFF, which correctly identified 69.6% (CI: 54.2%-82.3%) of BED, 77.8% (CI: 40.0%-97.2%) of BN, 37.5% (CI: 8.52%-75.5%) of AN, and 66.1% (CI: 53%-77.7%) of AED. While the EDS-PC had slightly higher sensitivity than the new instrument, the new screener had much better specificity. ROC results showed that the new instrument was better able to distinguish cases from non-cases than the EDS-PC (e.g., 0.740; CI: 0.695-0.785 vs. 0.684; CI: 0.649-0.72 for AED). The new screener outperformed the SCOFF in classifying true cases, outperformed the EDS-PC in classifying true non-cases, and outperformed the EDS-PC in distinguishing cases from non-cases of BED, BN, AN and AED. The new screener can be used in primary care to help detect BED and other eating disorders among veterans, supporting early intervention efforts as well as the prevention of obesity and other weight-related health issues.

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Symposium 33 1:30 PM-2:45 PM

STIGMA AND SUBSTANCE USE: IMPLICATIONS FOR RESEARCH, PRACTICE, AND POLICY

Valerie A. Earnshaw, PhD[1], Kristi E. Gamarel, PhD, EdM[2], H. Jonathon Rendina, PhD, MPH[3], John F. Kelly, PhD[4], Laramie R. Smith, PhD[5]

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Researchers, clinicians, and policy makers are increasingly recognizing the role of stigma (social devaluation and discrediting) in substance use epidemics. Stigma can lead to substance use and misuse among people living with a range of socially devalued characteristics (e.g., sexual minority orientation, chronic illnesses including HIV), and undermine the treatment and wellbeing of people living with substance use disorders. To date, efforts to address the role of stigma in substance use have met limited success. This symposium brings together cutting-edge research to foster greater understanding of associations between stigma and substance use across the lifespan, and discuss ways that this research could be translated to impact practice and policy aimed at improving the wellbeing of people at risk of or living with substance use disorders. The first two talks will present studies exploring ways in which stigma leads to greater substance use, including greater cigarette susceptibility among sexual minority youth, and greater use of alcohol, marijuana, and other drugs among people living with HIV. The third talk will present a study exploring ways in which stigma associated with substance use undermines the wellbeing of people living with HIV. Together, these talks advance research on stigma and substance use by drawing on advanced methodologies (e.g., ecological momentary assessment, moderation and mediation analyses), addressing stigma associated with a range of characteristics (i.e., sexual minority status, HIV, substance use), investigating different experiences of stigma (i.e., enacted and internalized stigma), examining several types of substance use (i.e., cigarette, alcohol, marijuana, and other drug use), and exploring different stages of the lifespan (i.e., youth, adulthood). The final talk will present a systematic review of the empirical literature on stigma and substance use and introduce a theoretical framework linking stigma with substance use. Discussion will be led by a researcher and clinician in the field of addiction medicine, and will focus on future directions for research, practice, and policy related to stigma and substance use.

Symposium 33A

SUBSTANCE USE STIGMA AMONG PEOPLE LIVING WITH HIV

Dr. Valerie A. Earnshaw, PhD

People with substance use disorders (SUDs) experience pronounced stigma from others. Although research has largely focused on experiences of SUD stigma from healthcare workers, recent qualitative work suggests that enacted SUD stigma (i.e., experiences of discrimination associated with SUDs in the past or present) from family members is particularly distressing. The current study builds on this work by quantitatively examining enacted SUD stigma from family members and healthcare providers using the Substance Use Stigma Mechanisms Scale. Eighty-five people living with HIV who reported current substance use or a history of problematic substance use were recruited from a community clinic. Participants reported histories of alcohol (87.1%), marijuana (72.9%), cocaine (62.4%), crack (42.4%), and opiate (43.5%) use. Approximately one-third (35.1%) reported a history of opioid replacement therapy. Participants reported more frequent experiences of enacted SUD stigma from family members than from healthcare providers [t(83)=12.81, p<0.001]. Regression-based analyses conducted with the PROCESS macro demonstrate that enacted SUD stigma from family members [B(SE)=0.43(0.21), p=0.04], but not healthcare providers [B(SE)=-0.12(0.38), p=0.77], is associated with greater depressive symptoms even after controlling for internalized SUD stigma and socio-demographic characteristics related to depressive symptoms. Moreover, enacted SUD stigma from family members is associated with decreased motivation to engage in HIV care via the mediator of greater depressive symptoms [indirect effect (SE)=-0.79(0.42), CI=-0.12, -1.99]. Findings lend support to previous qualitative work suggesting that enacted SUD stigma from family members may be more detrimental than enacted SUD stigma from healthcare providers, and further suggest that enacted SUD stigma from family members may impact motivation to engage in health behaviors, including those associated with HIV.

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Symposium 33B

THE ROLE OF DISCRIMINATION IN CIGARETTE SUSCEPTIBILITY AMONG SEXUAL MINORITY YOUTH

Dr. Kristi E. Gamarel, PhD, EdM

Background: Sexual minority youth are more likely to smoke cigarettes compared to their heterosexual counterparts. However, less is known about sexual orientation differences in smoking susceptibility (i.e., willingness to use cigarettes if offered by friends), which in an important precursors to initiation that is necessary to guide prevention programs.

Discrimination has been consistently associated with substance use and may serve as contributing factor in understanding disparities in cigarette susceptibility among sexual minority youth. The purpose of this study was to examine the potential role of perceived discrimination on the association between sexual orientation and cigarette susceptibility.

Methods: The sample was 443 youth (26.6% sexual minority, 59.5% female, 72.0% White, M_{age} = 16.7 years) enrolled in a prospective study of substance use initiation and progression. Participants self-reported their sexual identity and attraction, everyday discrimination experiences, cigarette susceptibility (i.e., willingness to use if offered by a group of friends), and whether they had ever smoked.

Results: Accounting for sociodemographic variables, multivariate linear regression models revealed that sexual minority youth were significantly more likely to report cigarette susceptibility compared to their heterosexual counterparts (B=0.11, SE=0.06, $p<0.05$), but discrimination was not associated with sexual minority status or cigarette susceptibility. Discrimination moderated associations between sexual orientation and susceptibility (B=0.01, SE=0.00, $p<0.05$), such that discrimination was associated with greater cigarette susceptibility for sexual minority youth, but not among their heterosexual counterparts.

Conclusions: Peers may play a critical role in decisions about cigarette use for sexual minority youth, and discrimination may be a contributing factor in explaining cigarette susceptibility among sexual minority adolescents. Future research and prevention programs which target stigma and peer contexts will be discussed to guide effective tobacco control and prevention for sexual minority adolescents.

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Symposium 33C

THE CRITICAL INFLUENCE OF DAILY EXPERIENCES OF INTERNALIZED HIV STIGMA ON SUBSTANCE USE AMONG HIV-POSITIVE GAY AND BISEXUAL MEN

Dr. H. Jonathon Rendina, PhD, MPH

Background: Research has shown associations between levels of HIV stigma and substance use outcomes such as overall frequency of use. However, the co-occurrence of event-level HIV stigma and substance use has rarely, if ever, been examined.

Method: We analyzed 666 daily reports of 47 HIV-positive gay and bisexual men (GBM) collected as part of a three-week prospective online diary study. We utilized multilevel logistic models to predict daily use of stimulants, marijuana, and heavy drinking (separate models). Models were fit with an AR(1) covariance structure and random intercept, and adjusted for day of diary cycle, whether the report was on a weekend, time since HIV diagnosis, race, relationship status, and age. Measures of HIV-related forms of internalized stigma (e.g., guilt, shame) and anticipated/social stigma (e.g., wanting to hide, worry about judgement) were given daily. These daily measures were disaggregated into individual-level averages and situational fluctuations around those averages and used to predict daily ART non-adherence.

Results: The sample was diverse with regard to race/ethnicity (75% men of color), employment status (58% unemployed), and educational background (68% less than college). Mean age was 38 years (*Mdn*=33.5) and mean years since diagnosis was 10 (*Mdn*=9). Overall, stimulant use was reported on 13.2% of days, marijuana on 23.7%. and heavy drinking on 9.0%. Daily increases in internalized HIV stigma were associated with substantially increased odds of both stimulant use (AOR = 7.67, $p < 0.001$) and heavy drinking (AOR = 3.89, $p = 0.01$), but was not significantly associated with marijuana use (AOR = 1.34, $p = 0.49$); daily fluctuations in anticipated/social stigma were not significantly associated with stimulant use (AOR = 0.76, $p = 0.47$), heavy drinking (AOR = 0.64, $p = 0.27$), or marijuana use (AOR = 0.89, $p = 0.74$).

Conclusions: Fluctuating levels of internalized HIV stigma (e.g., guilt, shame) from day-to-day were associated with significantly higher odds of stimulant use and heavy (i.e., binge) drinking, even after adjusting for daily fluctuations in social stigma as well as individual-level measures of both forms of stigma (i.e., average tendencies to experience each form of stigma). Mobile interventions that can be designed to recognize and intervene upon increases in internalized HIV stigma may provide meaningful improvements in substance use outcomes for HIV-positive GBM.

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Symposium 33D

STIGMA AND SUBSTANCE USE: A SYSTEMATIC REVIEW AND THEORY-BUILDING PROCESS MODEL

Dr. Laramie R. Smith, PhD

The deleterious health effects of stigma and substance use are well documented; however, the process by which stigma and substance use work to undermine health and well-being is understudied. Stigma may both lead to increased substance use and risk for developing substance use disorders (SUDs), as well as undermine the health and treatment of those living with SUDs. We conducted a systematic review of the extant literature on stigma and substance use to assess the evidence for a process by which social stigma influences both substance use and substance use-related health outcomes. Through this review, we evaluate the ways in which various social stigmas (e.g., sexual orientation, race/ethnicity, mental illness, incarceration history) place members of these stigmatized groups at increased risk of developing a SUD. We further evaluate how stigma associated with SUDs, once acquired, undermine the health of people living with SUDs including their engagement in the SUD diagnosis, treatment, and recovery process. In this theory-building process, we examine ways stigma associated with SUDs and other stigmatized characteristics manifest at the structural (e.g., criminalization laws), interpersonal (i.e., persons who stigmatize), and intrapersonal (i.e., persons who are stigmatized) levels. We also examine how intrapersonal manifestations of stigma (e.g., enacted, anticipated, internalized) affect substance use and treatment behaviors, and ways such relationships may be mediated by internalizing (e.g., depression, anxiety) or externalizing (e.g., aggression, sensation seeking) psychosocial mechanisms. We further assess the available research examining resilience resources (e.g., housing policies, social support, positive coping strategies) that may moderate the relationship between stigma and negative substance use outcomes. Discussion will focus on evaluating the depth and quality of available research on policies and translational practices that serve to reinforce or buffer against the effects of stigma on substance use-related outcomes.

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Symposium 34 1:30 PM-2:45 PM

BREAST DENSITY AND MANDATED DENSITY NOTIFICATIONS: RACIAL DIFFERENCES AND OPPORTUNITIES FOR INTERVENTION

Mark A. Manning, PhD[1], Suzanne O'Neill, PhD[2], Kristen S. Purrington, PhD, MPH[3], Sara J. Knight, PhD[4]

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Breast density (i.e., ratio of fibroglandular to fatty breast tissue) is one of the strongest risk factors for breast cancer. Over half of US states have implemented mandatory breast density notification laws to inform women of their density status. Millions of women receive density notifications each year, even as specific follow-up guidelines remain elusive and as the medical/epidemiological evidence base regarding breast density as a cancer risk factor continues to develop. Much remains to be clarified when it comes to breast density-attributed breast cancer risk, particularly regarding racial differences in the magnitude of risk. Further, we know little regarding women's reactions to receiving breast density notifications, particularly regarding racial differences in psychological and behavioral responses to receiving the notifications, or regarding potential interventions that utilize breast density notifications to reach women in need of guideline-informed care. We present data from three separate breast density studies to address these questions. The first speaker will present data showing between-race differences in the distribution of breast density and corresponding breast cancer risk for African American and European American women. The second speaker will present data elucidating between-race differences in psychological responses and decision making processes following receipt of breast density notifications. The third speaker will present data on the acceptability and efficacy of a web-based decision support intervention for women with clinically elevated breast cancer risk due to breast density and other risk factors, such as family history. The transdisciplinary session will conclude with a panel discussion led by our discussant, identifying unifying themes related to the state of breast density research, dissemination of breast density information and decision-making following receipt of notifications.

Symposium 34A

BETWEEN-RACE DIFFERENCES IN DECISION MAKING RELATED TO PHYSICIAN COMMUNICATION FOLLOWING BREAST DENSITY NOTIFICATION

Dr. Mark A. Manning, PhD

Background: A number of states have enacted laws mandating disclosure of dense breasts to women via their mammogram reports; however, no studies have examined women's psychological and behavioral responses to receiving notifications. Additionally, no one has examined how between-race (African American vs. European American) differences in relevant cognition and emotion are related to psychological and behavioral responses to receiving BD notifications. Guided by the theory of planned behavior, we examined how women's knowledge, emotions and perceptions of discrimination influence their intentions and behaviors related to discussing recently received density notifications with their physicians.

Methods: We sent survey invitations to screen negative African American and European American women within two weeks of their screening mammograms. Consenting women completed measures assessing demographic variables (e.g., age, income, education, and marital status), breast density and breast cancer risk knowledge, breast density anxiety, breast cancer worry, perceptions of group-based medical mistrust, perceptions of discrimination, and attitudes, norm, control perceptions and intentions towards talking to physicians about their breast density notification. Three months later, we sent women a follow-up survey assessing whether they talked to their physicians about the breast density notifications. We used path models to examine the influence of cognition, emotion and perceptions of discrimination on women's behavior, mediated by the cognitive processes implied by the theory of planned behavior.

Results: African American women had stronger intentions to discuss their breast density notifications with their physicians; however, there were no between-race differences in actual behaviors. Nonetheless, there were significant between-race differences in the processes that lead to behavior. Intentions predicted behaviors for European American women, but not for African American women. Rather, cognition, emotion and perceptions of discrimination had significant direct effects on behaviors for African American women.

Conclusion: These data suggest that there are significant between-race differences in the cognitive processes related to physician communication among women who receive breast density notification.

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Symposium 34B

PRELIMINARY FINDINGS OF A DECISION SUPPORT TOOL FOR WOMEN WITH DENSE BREASTS

Suzanne O'Neill, PhD

Background: Mammographic breast density is one of the strongest risk factors for breast cancer. Mandatory density disclosure policies are increasing nationally without established best practices or evidence of clinical benefit. Density disclosure could serve as an opportunity to communicate with women with clinically elevated risk for breast cancer. Guided by Protection Motivation Theory and the RE-AIM framework, we are testing a personalized, web-based breast cancer risk communication and decision support tool for women with dense breasts whose elevated cancer risk makes them eligible to consider guideline-informed risk management (chemoprevention, breast MRI).

Methods: We have engaged multiple stakeholders within an integrated healthcare system throughout the tool development and trial planning process (patient focus groups and usability pre-testing; health care provider and delivery system leader interviews). We are currently pilot testing the tool with 20 women in our target population prior to trial launch in January 2017. Pilot outcomes will include knowledge, perceived breast cancer risk and severity, cancer worry, intentions for screening and chemoprevention and the response cost and response efficacy of these risk management options.

Results: Focus group results suggested that most women were aware of breast density, but unfamiliar with its role as a breast cancer risk factor. Participants in usability pre-testing rated the tool highly on acceptability and ease of use. Health care providers and clinical leaders highlighted key areas for provider engagement prior to the trial's launch, such as clarifying pathways for referral and monitoring of clinical impact within the health system. Results of pretesting and preliminary experiences with the larger trial will be shared in the symposium.

Conclusions: Preliminary results suggest acceptability of our web-based tool by patients and providers within an integrated healthcare system.

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Symposium 34C

RACIAL DIFFERENCES IN BREAST DENSITY DISTRIBUTION AND CANCER RISK IN AN URBAN HOSPITAL-BASED COHORT

Kristen S. Purrington, PhD, MPH

Breast density (BD) is a strong risk factor for BC (BC). Women with the highest density (≥75%) are at a 4.6-fold increase in risk of BC compared to women with the lowest density (≤5%). BD and associated BC risk has not been well studied for African American (AA) women. Among studies that reported data for AA women, results are conflicting on whether AA women tend to have higher or lower BD than white women or whether the BC risks associated with BD are the same these two groups. We conducted a retrospective study to explore racial differences BD patterns and resulting cancer risk at the Karmanos Cancer Center Imaging Department. We have currently abstracted BI-RADS BD (a: almost entirely fatty, b: scattered fibroglandular density, c: heterogeneous fibroglandular density, d: extremely dense) from radiology reports for 16,167 out of 20,699 women (82% AA; 18% white) who underwent routine mammographic screening from 2012-2014. Subsequent BCs as well as previous history of BC were determined by linkage with the Metropolitan Detroit Cancer Surveillance System database as well as radiology records. BI-RADS BD and volumetric BD estimates from Volpara Research software were also obtained for an additional 5,484 women for whom raw mammogram images were available. The overall distribution of BD was significantly different for white and AA women, where AA women were less likely than white women to have scattered [Odds ratio (OR)=0.79, 95% confidence interval (CI) 0.71-0.89], heterogeneous [OR=0.73, 95% CI 0.62-0.86], or entirely dense breasts [OR=0.62, 95% CI 0.47-0.82] compared to fatty breasts, adjusted for age and body mass index (BMI). Similarly, although increasing BD is associated with an increase in BC risk for both AA and white women, the effects of BD adjusted for age were stronger for AA [Scattered vs fatty: OR=2.23; Heterogeneous/dense vs fatty: OR=3.65] compared to white women [Scattered vs fatty: OR=1.14; Heterogeneous/dense vs fatty: OR=1.58]. Data were sparse for white BC cases and for women with entirely dense breasts. We also explored changes in BI-RADS BD over time and the agreement between BI-RADS and volumetric BD. Among 1,884 women who had 2 mammograms within 2 years, 521 (27.6%) were assigned a different BI-RADS classification at each time point and 185 (9.8%) of these women were assigned a category that would shift them from being considered to have dense vs. non-dense breasts. Similarly, 46.4% of women were assigned to a different BI-RADS classification using volumetric breast density vs subjective assessment, and 12.1% were assigned a category that would shift them from being considered to have dense vs. non-dense breasts. These data confirm that BD definitions are subjective and dependent on the measurement tool, which has implications for recently implemented BD notification laws across the United States.

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Symposium 35 1:30 PM-2:45 PM

RELIGIOUSNESS/SPIRITUALITY AND HEALTH BEHAVIORS ACROSS THE CANCER CONTINUUM

Crystal L. Park, PhD[1], John M. Salsman, PhD[2], Crystal L. Park, PhD[1], Melinda Stolley, MA, PhD[3], Cheryl L. Holt, PhD[4], Sarah D. Mills, MS, MPH[5]

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Spirituality has been shown in many studies to be fairly consistently related to mental and physical health (see Koenig, 2012 for a review), but the mechanisms explaining these linkages are not well-understood. Many different pathways of influence have been proposed, but few have been tested. Adding complexity, spirituality comprises many different dimensions, including beliefs, behaviors, motivation, emotions, and relationships, and each may relate differently to health. One important but understudied pathway is that of health behaviors. This symposium focuses on how different dimensions of spirituality may link with health behaviors across the cancer continuum, from healthy populations to those at higher risk of certain cancers to cancer survivors. Sarah Mills will describe relationships between beliefs about religious influences on health and health behaviors in a sample of churchgoing Latina women. Cheryl Holt will present results of a national longitudinal study of African American adults examining whether religious social support mediates relationships between multiple aspects of religious involvement and cancer control behaviors in African Americans. Melinda Stolley will present results of a study of relationships between religiosity/spirituality and health behaviors in minority adult childhood cancer survivors compared to White childhood cancer survivors and to non-cancer controls. Crystal Park will discuss relationships between multiple dimensions of spirituality and health behaviors in survivors of breast cancer, focusing on potential negative as well as positive links. Our discussant, John Salsman, an expert in spirituality and health, will draw out common themes across the presentations, focusing on the mechanisms that may account for these linkages.

Symposium 35A

DIMENSIONS OF SPIRITUALITY ARE DIFFERENTIALLY ASSOCIATED WITH DIET AND PHYSICAL ACTIVITY IN BREAST CANCER SURVIVORS

Dr. Crystal L. Park, PhD

Health behaviors, while important for everyone in terms of morbidity and mortality risks, are especially important for cancer survivors, who are at heightened risk not only for recurrence and additional primary cancers, but also for other conditions such as metabolic syndrome and cardiovascular disease. Some psychosocial factors, such as social support and self-efficacy, have been identified as promoting healthful lifestyles, but much remains to be learned. One potentially important factor, spirituality, has been suggested as promoting better health, but few studies have examined these associations. The present study investigated links between three dimensions of spirituality (behaviors, beliefs, and identity) and health behaviors in a sample of 172 recent survivors of breast cancer enrolled in a lifestyle change intervention. Present analyses are from baseline surveys completed prior to randomization. Participants were primarily white (93%), married (73%), and well-educated (74% had a college degree or higher); mean age was 54 (SD = 10). Results of hierarchical multiple regression analyses controlling for age and education indicated that frequency of service attendance was related to less moderate/vigorous physical activity while frequency of private prayer was related to consumption of more fruits and vegetables (but not total calories consumed). Degree of identity as religious was negatively related to moderate/vigorous activity and higher BMI but also with lower total calorie consumption. Beliefs in God were unrelated to health behaviors, but belief in an afterlife was related to less moderate/vigorous physical activity and higher BMI. These results suggest that spirituality has some complex but potentially important associations with health behaviors in breast cancer survivors. Further, different dimensions have different effects and many of these effects are in an unexpectedly adverse direction. More research is needed to understand these relationships and to determine how spiritual dimensions may play a useful role in lifestyle change interventions.

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Symposium 35B

SPIRITUALITY AND HEALTH BEHAVIORS IN ADULT MINORITY CHILDHOOD CANCER SURVIVORS

Melinda Stolley, MA, PhD

Background. Over 75% of childhood cancer patients survive long-term yet over 60% of survivors will experience adverse late effects including cardiovascular disease (CVD), osteoporosis and secondary cancers. Practicing healthy lifestyles is important and may be particularly salient for African-American and Hispanic survivors given increased risk for chronic disease. Few studies have examined health behaviors in minority childhood cancer survivors (CCS) and fewer still have examined correlates of health promoting behaviors outside of demographic factors. This presentation examines spirituality and health behaviors in a diverse cohort of adult CCS and non-cancer controls.

Methods. The Chicago Healthy Living Study was a cross sectional study with 450 adult CCS (n=150 African-American, 152 Hispanic, 150 white) recruited via Chicago area hospital cancer registries and 375 racial/ethnic matched controls recruited via targeted digit dial. Participants completed a one-time 2-hour interview with validated measures of body mass index (BMI), health behaviors (diet, physical activity, smoking, alcohol use) and the brief Systems of Belief Inventory (SBI-15). Analyses adjusted for age, sex and SES examined differences in health behaviors and spirituality within racial/ethnic groups between CCS and controls and between racial/ethnic groups within CCS. We also explored associations between spirituality and obesity, current smoking and adherence to dietary (percent calories from fat and saturated fat, sodium, calcium) and physical activity recommendations (150 weekly mins of moderate activity).

Results. Overall BMI and health behaviors were similar between CCS and controls across racial/ethnic groups. Within CCS, minority survivors were more likely to be obese and not adhere to dietary recommendations. Spirituality was similar between CCS and controls among African-Americans and whites, but Hispanic CCS' SBI scores were higher than controls (p<.005). Within survivors, spirituality was highest among African-Americans followed by Hispanics and then whites (p<.001). Initial analyses show no association between spirituality and health behaviors among CCS, but sub-group analyses may reveal more.

Discussion. Spirituality was highest among minority survivors, yet there were no associations with adherence to healthy lifestyle behaviors. Other factors such as knowledge, perceived risk or engagement in long-term follow-up care may be more relevan to health behaviors, whereas spirituality may be more tied to quality of life in this populaiton. Understanding correlates of health behaviors among this high risk group will help to inform the development of relevant interventions.

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Symposium 35C

DOES RELIGIOUS SOCIAL SUPPORT MEDIATE THE RELATIONSHIP BETWEEN RELIGIOSITY AND CANCER CONTROL BEHAVIORS IN AFRICAN AMERICANS?

Dr. Cheryl L. Holt, PhD

Abundant research has examined the association between religious involvement and health-related outcomes. Additional research has examined reasons for this “religion-health connection”, including studies testing theoretical models that cover a variety of potential explanatory mechanisms. However, most of this research has been cross-sectional in nature. Given the relatively high levels of religious involvement among African Americans and research suggesting that faith communities provide a unique form of religious social support that may impact health, the present study aimed to test a model of religious social support as a mediator of religious involvement and a variety of cancer control behaviors in a national sample of African Americans. The RHIAA (Religion and Health In African Americans) study conducted three waves of telephone interviews with N=3173 African Americans over a 5-year period. N=766 participants provided data at all three waves. Measurement models were fit to the data followed by longitudinal structural models. Religious *beliefs* were not associated with a change in religious social support over time. However, religious *behaviors* (e.g., church attendance) were associated with a significant increase in religious social support over time. Religious social support was associated with decreased binge drinking and vegetable consumption, and increased reports among men of receiving prostate cancer screening. There was no evidence of a mediation effect of religious social support in the association between religious *beliefs* and health-related outcomes. However, the relationship between religious *behaviors* and decreased binge drinking over time was mediated by increases in religious social support. Implications for theory and practice are discussed.

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Symposium 35D

THE PERCEIVED RELIGIOUS INFLUENCE ON HEALTH BEHAVIOR SCALE AND THE ILLNESS AS PUNISHMENT FOR SIN SCALE AMONG CHURCHGOING LATINAS

Ms. Sarah D. Mills, MS, MPH

The present study 1) evaluated the psychometric properties of the Spanish versions of the Perceived Religious Influence on Health Behavior scale, a measure of the extent to which an individual’s health behaviors are affected by his or her religion, and the Illness as Punishment for Sin scale, a measure of the extent to which illness is believed to be an act of retribution, and 2) examined how these measures relate to health behaviors (i.e., physical activity, food/beverage consumption, mammography screening, sleep), in a sample of churchgoing Latina women (*N* = 404). For the Perceived Religious Influence on Health Behavior scale, confirmatory factor analysis provided support for the expected one-factor model, internal consistency reliability was good, and there was evidence of convergent validity. For the Illness as Punishment for Sin scale, confirmatory factor analysis provided support for the expected one-factor model, but on a revised, seven-item version of the measure. Internal consistency reliability for this revised version was good, but evidence of convergent validity was mixed. For the second aim, no significant relationships ($p > .05$) were found between the measures and the health behaviors examined. It is recommended that future studies use the Perceived Religious Influence on Health Behavior scale and the revised Illness as Punishment for Sin scale when examining these constructs among Latina women. Additional research is needed to clarify why no significant relationships were found between these measures and the health behaviors examined.

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Symposium 36 1:30 PM-2:45 PM

BASIC HEALTH DECISION RESEARCH IN DIVERSE POPULATIONS: ONGOING WORK AND FUTURE DIRECTIONS

Jennifer Hay, PhD[1], Austin S. Baldwin, PhD[2], Kimberly Kaphingst, ScD[3], Amber Emanuel, Ph.D.[4], Betina Yanez, Ph.D.[5]

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The science of decision making has important implications for behavioral medicine. Problems such as how, when, and among whom health protective behaviors are adopted and maintained, and how risk behaviors can be best eliminated have been informed by a thriving body of work. One example is the finding that people make different health decisions based on whether the consequences of a behavior are framed as gaining something positive or avoiding something negative. However, much of the work regarding the basic science of decision making has been conducted in academic samples of convenience, where decisional experiments can be easily mounted, or using on-line survey panels, where large samples can be collected with modest resources. Such samples tend to be highly educated and are not racially or ethnically diverse enough to be representative of the US population. Measures, findings, and interventions developed in these ways are often adapted and applied across more diverse settings, yet a growing body of evidence indicates that basic decisional principles may differ in profound ways across different population subgroups. Consequently, there is untapped potential to develop novel theory and decision principles based on data from more diverse samples and to thereby increase the likelihood that subsequent interventions are effective in underserved populations. In this Symposium, jointly sponsored by Health Decision Making and Ethnic Minority and Multicultural Health Special Interest Groups, we will provide three examples of basic health decision research in diverse populations. Austin Baldwin will present research regarding self-persuasion principles in a safety-net population with lower education and literacy levels. Amber Emanuel will present findings regarding the use and limits of self-affirmation interventions in a community sample. Kim Kaphingst will present work examining the complex influences of decisional conflict, trust, and race on intentions to donate to a cancer biobank in a diverse population. Finally, Betina Yanez, an expert in racial/ethnic minority populations, will provide discussion regarding the use of basic decision research to enhance health across diverse populations. This Symposium will encourage applied and basic researchers to conduct basic decision research in diverse community and clinic settings, and with US subpopulations that vary across socioeconomic status as well as racial and ethnic subgroups. Such work will enhance basic science and lead to new opportunities for health promotion.

Symposium 36A

DEVELOPING AND TESTING A SELF-PERSUASION INTERVENTION IN A SAFETY-NET CLINIC POPULATION

Prof. Austin S. Baldwin, PhD

Objective: Self-persuasion is an effective behavior change strategy (Stice et al., 2008). However, self-persuasion interventions have typically been used among well-educated populations (Baldwin et al., 2013) and have not been developed for lower income and diverse populations or to promote human papillomavirus (HPV) vaccination. We developed a tablet-based application with voiceover narration (in English and Spanish) to elicit parental self-persuasion for adolescent HPV vaccination. We then evaluated the feasibility of the self-persuasion tasks (generate and verbally articulate one's own arguments for HPV vaccination) and their effect on parents' decision-making in a racially and ethnically diverse safety-net population with lower education and literacy levels.

Methods: Parents (N=45) of age-eligible adolescents used the self-persuasion application. Then, during cognitive interviews, staff gathered quantitative and qualitative feedback on the self-persuasion tasks and on parental decision stage.

Results: The self-persuasion tasks were rated as easy to complete (*M* range 1.00 to 2.32 on a 5-point difficulty scale) and helpful (*M* range 4.33 to 4.98 on a 5-point helpfulness scale). Among the 33 parents who had not previously thought about or were undecided about getting the vaccine for their adolescent, 27 (81.8%; $\chi^2(1) = 13.36$, $p < .001$, $\varphi = .64$) reported deciding to get their adolescent vaccinated after completing the self-persuasion tasks, a significant and large effect. No results differed between Spanish- and English-speakers.

Conclusions: The self-persuasion application was feasible and facilitated parents verbalizing their own reasons for HPV vaccination in a low literacy, diverse safety-net population. Its use also resulted in a change in parents' decision stage. In a current randomized controlled trial (RCT) conducted in this lower income and diverse population, we are testing (1) the efficacy of the tablet-based application on HPV vaccine series initiation and completion, and (2) whether basic cognitive and motivational mechanisms (i.e., deep cognitive processing, autonomous motivation) hypothesized to underlie self-persuasion mediate its effect.

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Symposium 36B

IMPACT OF RACE, DECISIONAL CONFLICT, AND TRUST ON BIOBANK INTENTIONS IN AN UNDERSERVED POPULATION

Kimberly Kaphingst, ScD

Introduction. Biobanks are an essential resource for research in the era of precision medicine. Participation of all population subgroups is critical so that findings reflect the needs of diverse communities and address disparities. Research is needed to examine factors that impact decisions to participate in a biobank among underserved populations.

Methods. We conducted a randomized experiment to examine how model of consent for secondary use of biospecimens affected intentions to donate to a cancer-related biobank. We recruited 356 women aged 40 and older stratified by race; 56% were Black and 44% were White. Participants reviewed three informed consent documents in a randomized order based on different models of consent: notice (informs that samples will be used in future research); broad (asks permission once for multiple future studies); and study-specific (asks permission before each future study). After each document, we assessed intention to donate with a four-point scale from “definitely not” to “definitely.” We also assessed trust in medical research and decisional conflict as factors that might affect intention. We used multivariable logistic regression to examine predictors of intention for each consent model.

Results. 47% of participants had an annual household income less than $20,000; 31% had no education beyond high school. The proportion who “definitely” intended to donate was 58% for study-specific; 44% for broad; and 41% for notice. In multivariable analyses, Black women were significantly less likely to intend to donate for each consent model than White women ($p<.05$). Those with higher decisional conflict were significantly less likely to intend to donate for each consent model ($p<.05$). After adding trust, race was no longer a significant predictor of intention for the notice and broad consent models.

Discussion. Intentions to donate to a cancer biobank differed by race; this association was partly mediated by trust. Decisional conflict also lowered intentions to donate. These findings suggest that strategies to assist informed decision making are essential for underserved populations and that trust may be critical to decisions about donating to biobanks.

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Symposium 36C

USING SELF-AFFIRMATION IN A COMMUNITY SAMPLE TO INCREASE ORAL CANCER SCREENINGS

Amber Emanuel, Ph.D.

Objective: Self-affirmations, when an individual affirms a valued aspect of his or her self, allow individuals to accept threatening health information. Accepting this threatening health information may then allow individuals to decide to take action related to their health. In a study of low-income men a self-affirmation manipulation was conducted to examine if after being self-affirmed, high-risk men would be more accepting of health information related to their risk of oral cancer.

Methods: Participants (*n* = 152) were Black or White men over the age of 40 who had smoked at least 100 cigarettes in their lifetime. Participants were recruited by word of mouth and interviews were conducted in community settings, such as churches or classrooms at local colleges. Participants answered questions about their health behaviors, completed a standard self-affirmation manipulation, watched a video that explained the risks of oral cancer and detailed the process of an oral cancer examination, and then answered questions related to their attitudes and intentions. Participants could then schedule a free oral cancer screening.

Results: The majority of participants were low-income (49% of participants reported income of less than $20,000) and of lower education (61% of participants had a High School degree or less). Approximately half of participants completed a self-affirmation condition or a control condition. However, the self-affirmation manipulation failed to increase self-affirmative thoughts and feelings. Participants in the self-affirmation condition, following the self-affirmation manipulation, did not rate themselves as being more affirmed (M = 4.56, SD = .97) than those participants in the control condition (M = 4.46, SD = 1.19), t (176) = .62, p = .54. Across both conditions, participants reported low defensive avoidance of information related to oral cancers (M = 1.12 (out of 5), SD = .49). However, men who did report high information avoidance were more likely to make risky health-related decisions. Specifically, defensive avoidance was related to lower intentions to schedule a free oral cancer screening (r = -.18, p = .02).

Conclusions: Since self-affirmation usually dampens the defensive response against threatening health information, the finding that defensive avoidance of information led to lower intentions highlights the need for successful implementations of self-affirmations in this population. In the current study, self-affirmations did not predict lower defensive information avoidance, but the manipulation used for self-affirmations in the current study may not be as ideal for community populations as they are for the college undergraduate populations. Suggestions for how to successfully implement self-affirmations in low-income or low-literacy populations so individuals can make better health related decisions will be discussed.

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Symposium 37 1:30 PM-2:45 PM

LUNG CANCER SURVIVORS: A GROWING POPULATION WITH UNIQUE PSYCHOLOGICAL AND BEHAVIORAL NEEDS

Jamie Ostroff, PhD[1], Heidi Hamann, PhD[2], Elyse R. Park, PhD, MPH[3], Jamie L. Studts, PhD[4], Maureen Rigney, MSW[5]

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Introduction: Lung cancer is the leading cancer killer for both women and men. However, recent advances in low dose CT screening, multimodality management, targeted chemotherapy, and immunotherapy are responsible for an estimated 384,000 survivors of lung cancers. Although only a small proportion of cases are diagnosed at an early stage each year, of the 225,000 people diagnosed annually with lung cancers, more than 32,000 will survive for at least five years. Lung cancer survivors face unique challenges, including stigma (the perception and internalization of negative appraisal and devaluation from others), risk of persistent smoking, and a dearth of specialized survivorship resources.

Methods: Here, we report on data from lung cancer survivors that address these concerns and provide guidance for future research and service. Each presentation addresses unique, yet interconnected themes, related to lung cancer survivorship.

Results: The first presentation describes a patient-focused process of developing a measure of lung cancer stigma. The next presentation focuses on both short- and long-term smoking and cessation data from a national cohort of lung cancer survivors and public responses to these data. Presentations conclude with an introduction to a novel survivorship program aimed at the unique needs of individuals with lung cancer. Our discussant offers future directions for research, clinical practice, and advocacy to address the unmet needs of lung cancer survivors.

Discussion: Lung cancer survivors are a growing proportion of the overall cancer survivorship population with unique psychosocial and behavioral challenges. Increasing our focus on stigma, smoking cessation, and survivorship interventions represents crucial steps in addressing the needs of lung cancer survivors.

Symposium 37A

DEVELOPMENT AND PRELIMINARY PSYCHOMETRIC EVALUATION OF A PATIENT-REPORTED OUTCOME MEASURE FOR LUNG CANCER STIGMA

Dr. Heidi Hamann, PhD

Introduction: The robust causal connection between smoking and lung cancer underscores the relevance of smoking prevention and cessation interventions. However, it may also inadvertently result in stigma (negative appraisal and devaluation) toward lung cancer patients and survivors. Internalization of this stigma can have negative psychosocial consequences, including depressive symptoms, lower quality of life, and reduced satisfaction with provider communication. Increased recognition of lung cancer stigma calls for attention to identifying valid and reliable measurement tools that incorporate significant patient and expert input.

Method: We report on the multiphase process of measure development to assess patient-reported stigma. Our earlier work described the process of patient and survivor interviews and development of a conceptual framework for lung cancer stigma. Here, we describe the process of item generation/refinement, and initial psychometric scale evaluation for the Lung Cancer Stigma Inventory (LCSI).

Results: We started with a pool of 240 items culled from existing stigma scales and new items based on our conceptual framework. Item refinement (to 49 items) was achieved through a multistep process including: a) expert input on item relevance and clarity, and b) cognitive interviews with 20 lung cancer patients and survivors. A multi-site sample of 231 lung cancer patients and survivors completed the 49-item survey. Exploratory factor analysis (EFA) was used to identify a 25-item scale with three primary factors: Internalized Stigma (alpha=.90), Perceived Stigma (alpha=.74), and Constrained Disclosure (alpha=.82). Two-week test-retest correlation was high (r = .90), suggesting strong stability of measurement over time.

Conclusions: Based on current measurement guidelines that emphasize significant patient input and our conceptual model, we have developed a reliable new measure of lung cancer stigma, the Lung Cancer Stigma Inventory (LCSI). Two factors reflected our concept elicitation work identifying relevant themes of negative appraisal and devaluation from others (Perceived Stigma), as well as self-blame, guilt, and regret (Internalized Stigma). A third factor, Constrained Disclosure, reflects information withholding and avoidance that may suggest interpersonal intervention pathways. Subsequent psychometric work is needed to establish further evidence of validity and clinically meaningful change.

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Symposium 37B

SMOKING RATES AMONG LUNG CANCER SURVIVORS AND CORRESPONDING PUBLIC RESPONSE

Dr. Elyse R. Park, PhD, MPH

Background: Smoking is the leading risk factor for lung cancer; continued smoking after diagnosis may adversely affect treatment outcomes, subsequent cancers, and QOL. We assessed short and long term smoking rates among a population-based cohort of lung cancer survivors (LCS) and explored public opinion to better understand stigmatization toward them.

Methods: We examined smoking rates, at 5-months and 6 years post-diagnosis (n=2455 and 198, respectively; median age=65; 69% White; 45% Stage I/II), among LCS from the Cancer Care Outcomes Research and Surveillance cohort. Short-term results were published online, and 432 comments were posted on a public discussion board. We used qualitative content analysis to establish a theoretical framework to explain public attitudes about LCS' smoking.

Results: 38% of LCS were current smokers during the year diagnosis; 14% were smokers at 5 months post-diagnosis. 6 post-diagnosis, 16.2% of LCS reported tobacco use, but only 6.4% participated in a smoking cessation program, in the past year. Public responses to LCS' smoking were divided into sympathetic vs. stigmatizing attitudes. Attitudes were shaped by personal experiences with smoking and familiarity with lung cancer. Personal experiences influenced beliefs about cancer (e.g., causes and fatalistic outcomes) and smoking (e.g., ability to quit, benefits of quitting after cancer). Stigmatizing beliefs toward LCS who smoked were expressed by individuals less familiar with smoking and lung cancer; these individuals tended to endorse the inevitability of smoking causing cancer, were pessimistic about the benefits of quitting post diagnosis, and emphasized personal choice over nicotine addiction

Conclusions/Implications: A sizable minority of LCS did not quit smoking and, at long-term follow-up, continued to use tobacco; few sought support. LCS may be vulnerable to public stigma, particularly from individuals unfamiliar with the struggles of quitting and its benefits. This work provides insight into challenges LCS might face in their attempts to quit.

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Symposium 37C

DEVELOPMENT OF THE KENTUCKY LEADS COLLABORATIVE LUNG CANCER SURVIVORSHIP CARE PROGRAM

Dr. Jamie L. Studts, PhD

Introduction: Individuals diagnosed with lung cancer commonly suffer numerous threats to preserving quality of life, including substantial symptom burden, clinically significant distress, and considerable stigma/bias secondary to their tobacco-related malignancy. Despite these survivorship challenges, relatively little effort has been allocated to developing interventions that address the unique experience of lung cancer survivors and their caregivers.

Method: To expand lung cancer survivorship care, the investigative team developed a targeted and tailored psychosocial intervention to address the diverse needs of lung cancer survivors and the challenges faced by caregivers. Principles of motivational interviewing and shared decision making guided development of the Kentucky LEADS Collaborative Lung Cancer Survivorship Care program.

Results: Selection of intervention content was based on a review of the literature, input from lung cancer survivorship experts, and feedback from an engaged community advisory board. During the development phase, the investigative team confronted the challenge of designing a psychosocial intervention that is feasible to deliver in diverse cancer care settings and would be acceptable to this underserved and difficult to reach population. To promote implementation feasibility, the investigative team “designed for dissemination,” creating an intervention that was discipline, delivery mode, and setting neutral. To enhance program acceptability, design focused on common unmet needs, but also incorporated a content menu that allows lung cancer survivors to select modules aligned with their personal concerns. After conducting online and in-person interventionist training, program feasibility, acceptability, and preliminary efficacy are being evaluated in a single-arm trial in 10 Kentucky cancer care facilities. Approximately 300 lung cancer survivors and caregivers will complete validated patient-reported outcome measures, including program acceptability assessments.

Conclusion/Implications: Based on results, the investigative team plans to modify the intervention and training program and then conduct a group randomized trial in collaboration with the Kentucky Clinical Trials Network.

Paper Session 8: Neighborhood and Environmental Influences on Physical Activity 3:00 PM-3:15 PM

MODERATORS OF OBJECTIVELY MEASURED NEIGHBORHOOD SAFETY AND PHYSICAL ACTIVITY AMONG ADOLESCENTS

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Objective: The relation between neighborhood safety and physical activity (PA) and the factors that moderate this relation are unclear. The current study examined this among adolescents. **Methods:** Participants were aged 12-17 years (n=725) from the Baltimore, MD and Seattle, WA regions, with 50% male and 33% non-white. Moderate-to-vigorous PA (MVPA) in the neighborhood was determined through accelerometers and GPS. Objective neighborhood safety data were collected using a validated observational measure of streetscapes (MAPS). Survey-reported (from parent and adolescents) moderators at multiple ecological levels were examined: individual (e.g. gender, BMI), psychosocial (e.g. self-efficacy, social support), home environment (e.g. electronics ownership, home PA equipment) and perceived neighborhood safety (e.g., traffic safety, safety from crime). A final multilevel generalized linear regression model identified main and cross-level moderator effects. **Results:** There were 7 main effects (pConclusions: Main effects or moderators were identified from all tested levels of the ecological model, supporting the ecological approach and implying that multi-level interventions are promising. Findings suggest that living in an objectively safer neighborhood may benefit White non-Hispanics and help those with low social support or moderate perceived environmental barriers overcome these limitations and engage in PA in the neighborhood.

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Paper Session 8: Neighborhood and Environmental Influences on Physical Activity 3:16 PM-3:30 PM

FIVE-YEAR POST-INTERVENTION FOLLOW-UP OF PHYSICAL ACTIVITY AND ASSOCIATIONS WITH THE BUILT ENVIRONMENT

Heather J. Leach, PhD[1], Daniel P. O'Connor, PhD[2], Richard J. Simpson, PhD[3], Hanadi Rifai, PhD[3], Scherezade K. Mama, DrPH[4], Rebecca E. Lee, PhD[5]

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Background: Few studies have examined long-term maintenance of physical activity (PA) after completion of a PA intervention. Ecologic models of PA posit that extra-individual factors, such as the built environment, have a direct influence on PA, potentially extending the success of behavioral interventions. This study examined PA five-years after completion of a community-based, randomized controlled trial (RCT) and the association of built environment characteristics with PA changes. *Method:* African American women who completed the RCT were eligible to participate. The International PA Questionnaire (IPAQ) measured PA at baseline, post-intervention and five-year follow up. Built environment characteristics included the presence and quality of PA resources, neighborhood walkability, and traffic and crime safety. Paired t-tests examined changes in PA. Stepwise linear regression models examined associations between built environment variables and PA change scores (five-year follow-up minus post-intervention PA). *Results:* Of the 140 women who completed the RCT, 21.4% (N=30) participated in the follow-up study. The majority (39%, N=55) were lost due to outdated contact information. From post-intervention to five-year follow-up, walking (p=.008, Δ=-461.9 MET-min/week) and leisure-time (p=.015, Δ=-154.4 MET-min/week) PA decreased. There were no significant changes in moderate, vigorous or total PA, but trends showed that moderate PA increased, vigorous PA decreased and total PA remained the same. When built environment variables were added to regression models, they explained a greater proportion of the variance in PA change, (R^2 increase range = 002-.478, all p>.05). *Conclusions:* Long-term maintenance of PA following an intervention may depend on the domain or type of activity. Future studies should include objective measures of PA and plan a priori for long-term follow-up by ensuring up-to-date participant contact information is maintained. Further research on PA maintenance is needed, and should utilize more advanced statistical techniques to explore individual and psychosocial factors as mediators or moderators of built environment influence on long-term PA.

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Paper Session 8: Neighborhood and Environmental Influences on Physical Activity 3:46 PM-4:00 PM

TAILORED INTERVENTION CHANGES WALKING BEHAVIOR AND PERCEIVED LOCAL NEIGHBORHOOD SIZE

Katie M. Heinrich, PhD[1], Joseph Lightner, MPH[2], Kara Saiki, MPH[3], Cheryl Albright, PhD, MPH[4]

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Various neighborhood sizes have been studied for health outcomes. Perceived local (close to home) neighborhoods are affected by physical, social, and personal characteristics including daily activities like walking. It is unknown how a perceived neighborhood area might change over time. This study examined changes in perceived neighborhood size before and after a moderate-to-vigorous physical activity (MVPA) intervention for new mothers.

In the Na Mikimiki study, conducted 2008-2012 in Honolulu, HI, healthy but underactive new mothers (N = 278; mean age = 32 ± 6 years, 84% ethnic minority) with infants 2-12 months at entry were randomized to either a “standard, information only” (comparison) condition that included MVPA print/website materials or a tailored (intervention) telephone counseling and eHealth technology condition, to promote MVPA, largely walking. Baseline and 12-month measures included sociodemographics and the Active Australia survey (with specific walking questions). Participants drew an enclosed boundary around their home address to indicate their neighborhood at each time point. If they reported walking in their neighborhood, they also drew in their walking route. ArcGIS 10.4 and SAS 9.3 were used for analysis.

Complete data were available from 124 women (comparison = 68, intervention = 56). Minutes walked/week significantly increased from baseline to 12-months in the comparison group (57 ± 71-min to 88 ± 134-min; t = 6.28, $p < 0.001$), and the intervention group (54 ± 66-min to 141 ± 150-min; t = 3.43, p = 0.001). Average neighborhood size decreased significantly from 1,057-km^2 to 1,025-km^2 in the comparison group (t = 6.49, $p < 0.001$) and increased significantly from 557-km^2 to 573-km^2 in the intervention group (t = 6.05, $p < 0.001$). Neighborhood walking route distance did not change in the comparison group (p = 0.80) but significantly increased from 2.5-km^2 to 4.3-km^2 in the intervention group (t = 5.09, $p < 0.001$). Intervention main effects were significant for change in neighborhood size (t = 1.93, p = 0.05).

Walking increased for all participants, but 107% more for the tailored intervention group. Accordingly, average neighborhood size and the neighborhood walking route distance significantly increased in the intervention group. Researchers should consider that perceived neighborhood size increases for women when they walk more in their neighborhoods.

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Paper Session 8: Neighborhood and Environmental Influences on Physical Activity 4:01 PM-4:15 PM

MEDIATORS OF A TWO-YEAR PHYSICAL ACTIVITY INTERVENTION FOR CHURCHGOING LATINAS PARTICIPATING IN FE EN ACCIóN/FAITH IN ACTION

Elva M. Arredondo, PhD[1], Jessica Haughton, MPH, MA[2], Guadalupe X. Ayala, Ph.D. MPH[1], Donald J. Slymen, PhD[1], James Sallis, PhD[3], Lilian Perez, MPH[4], Natalicio Serrano, MPH[5], John Elder, PhD, MPH[1]

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Objectives: Hispanic/Latina women are less likely to engage in leisure time physical activity than women from other ethnic/racial backgrounds. Faith-based organizations are a promising setting for promoting preventive health behaviors among Latinas. This cluster randomized controlled trial evaluates an intervention involving community health workers (CHWs) targeting different levels of the ecological model to promote physical activity.

Design: Sixteen churches were randomly assigned to a physical activity intervention or cancer screening comparison condition and about 27 women per church were recruited to serve on an evaluation cohort.

Measurements: We enrolled 436 Latinas (aged 18-65 years) who engaged in less than 250 min/wk of moderate to vigorous physical activity (MVPA) at baseline as assessed by accelerometer. At baseline, 12- and 24-months follow-up, we collected accelerometer assessed MVPA, socio-demographic data, self-reported leisure time MVPA, and potential mediator variables like strategies for engaging in physical activity and social support for physical activity.

Results: After adjusting for socio-demographic factors, findings of the mixed effects analyses suggested significant increases in self-reported leisure time MVPA (p

Summary: Encouraging participants to buy exercise equipment, seek social support, and set goals for physical activity may be key areas to target in future physical activity programs. Current study findings suggest that a faith-based intervention led by CHWs can be a culturally sensitive approach to promoting physical activity and other health behaviors among Latinas.

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Paper Session 8: Neighborhood and Environmental Influences on Physical Activity 4:16 PM-4:30 PM

CITATION AWARD WINNER

ENVIRONMENTAL AND INDIVIDUAL INFLUENCES ON CHANGE IN ACTIVITY AMONG NON-ATHLETIC MIDDLE-SCHOOL STUDENTS; GENDER DIFFERENCES

Margaret Schneider, Ph.D.

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Background: Adolescence is characterized by a general trend toward declining physical activity. By the time adolescents enter high school, approximately 57% of females and 38% of males do not meet current recommended levels of moderate-to-vigorous physical activity (MVPA). Factors at multiple levels (i.e., physical environment, motivations to exercise, and physiological characteristics) are related to MVPA, but little is known about the relative influence of these different factors on change in MVPA over time among middle-school students.

Methods: Middle-school students (N = 127, 49% male, 48% Latino) who reported not engaging in organized sport at the time of recruitment completed assessments of motivations to exercise (MPAM-R), body mass index and cardiorespiratory fitness (VO2peak; graded cycle ergometer) in the fall of their 6th-grade year. Parent/guardians reported their perceptions of neighborhood safety in the fall. MVPA (ActiGraph) was assessed in the fall and again in the spring. Hierarchical regression analysis examined the independent associations of each influencing factor on change in MVPA over time for males and females separately.

Results: At baseline, mean daily minutes of MPVA were 51.83 (SD = 20.76) for boys and 38.66 (SD = 14.80) for girls. The mean change in MVPA from fall to spring was 2.69 (SD=18.67) for boys and -.38 (SD = 10.94) for girls. Controlling for baseline MVPA, neighborhood safety predicted spring MVPA among boys only (B = -4.19, p< .05). Greater perceptions of neighborhood threats (e.g., gangs, traffic, danger) were associated with decreased MVPA from fall to spring. Among females, none of the influencing factors significantly predicted change in MVPA.

Conclusions: At baseline, boys were engaging in greater MVPA than girls, and this difference persisted into the spring. However, the change in activity from fall to spring was more variable among boys than among girls. Moreover, neighborhood safety predicted change in activity among boys and none of the individual-level factors predicted change in activity

among either boys or girls. Among middle-school boys who do not participate in organized sports, neighborhood safety has a stronger influence on activity levels over the school year than intrinsic motivation to exercise, body composition, or cardiorespiratory fitness.

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Paper Session 9: Understanding Obesity: Cells to Society 3:00 PM-3:18 PM

CITATION AND MERITORIOUS AWARD WINNER

ROLE OF METABOLIC HORMONES IN THE OBESITY-DEPRESSION-INFLAMMATION LINK

Yesenia Cabrera, B.S.[1], Tiefu Cheng, M.S.[2], Nicholas Guay-Ross, B.S.[2], Suzi Hong, Ph.D.[2]

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Obesity is marked by a state of chronic inflammation as well as metabolic dysregulation. Knowledge in the underlying mechanisms of obesity-related chronic inflammation is incomplete, perpetuating limited options for efficacious therapeutics, including behavioral interventions. With up to 50% of overweight or obese individuals reporting clinically relevant depressive symptoms, challenges in implementing health behavior interventions are only compounded. Depression and obesity both present with elevated inflammation. Adipose tissue acts as an endocrine organ by secreting inflammatory cytokines and adipokines such as leptin. We previously reported that dysregulation of inflammatory processes mediated by glucocorticoid receptors (GRs) underlies both obesity and elevated depressive symptoms. In the current study we investigated the role of leptin and insulin resistance in the obesity-depression-inflammation link among 129 asymptomatic men (49.6%) and women (50.4%) of 18 – 65 years of age. Depressive symptoms were measured using Beck Depression Inventory (BDI). Fasting leptin and insulin levels in plasma were measured using a multiplexed immunoassay. Homeostatic model assessment was calculated to indicate insulin resistance ("HOMA-IR"). Thirty-one, 40% and 30% of the participants were lean, overweight and obese, respectively. The average total BDI score was 5.7 (± 6.2) with a range of 0 - 31. Levels of leptin and insulin were 19.06 (± 24.04) ng/mL and 342.7 (± 346.4) pg/mL. Mean HOMA-IR was 1.78 (± 1.96), indicating normal insulin resistance on average, while 8% and 6% of the sample showing HOMA-IR > 3 and > 5 exhibited moderate and severe IR, respectively. BDI total and somatic scores were correlated with BMI (r= .30 for total; .35 for somatic), leptin levels (r= .28, .34), HOMA-IR (r= .27, .32), and GR-mediated cellular inflammation regulation (r= .45, .56) (p's .05 to .001). In multivariate models HOMA-IR (β= .24, p< .05) remained a significant predictor for BDI somatic scores even after adjusting for covariates (age, gender, ethnicity, mean blood pressure) and BMI. However, leptin no longer predicted depression once BMI was entered into the model. We found that even subclinical insulin resistance is associated with depressive mood and underlying inflammation, with or without obesity in consideration. The insulin pathway may be a promising target in scrutinizing the depression-inflammation link in metabolic and endocrine disorders.

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Paper Session 9: Understanding Obesity: Cells to Society 3:19 PM-3:36 PM

FEASIBILITY, ACCEPTABILITY, AND INITIAL OUTCOMES OF A NETWORKED BEHAVIORAL WEIGHT LOSS PROGRAM

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There is a critical need to enhance the efficacy of behavioral weight loss (BWL) for obesity. Enrolling individuals in BWL with members of their social networks (e.g., friends, family members) may improve adherence to weight control efforts by increasing positive social influence and decreasing negative social influence related to eating and physical activity. BWL delivered to social networks (“networked BWL”) has not been evaluated using a randomized controlled design, and it is unclear if individuals will be willing to enroll in a networked BWL research trial knowing that there is a 50% chance that they will be treated without their social network. The current study examined the feasibility and acceptability of a randomized networked BWL trial and explored initial outcomes. Overweight or obese adults interested in a 4-session BWL program were required to recruit two or more overweight or obese network members who also wanted to lose weight. Index participants (i.e., the individual first contacting the study) were randomized to receive treatment with or without their recruited network members. Seventeen index participants and 41 network members enrolled. Nine index participants were assigned to BWL with their 24 network members. Eight index participants were assigned to BWL without their network; their 17 network members received a delayed intervention. Recruitment rates were consistent with other weight loss studies, demonstrating that index members were willing to recruit network members despite the possibility of being treated separately. Attendance and retention across groups was high (>90%), supporting the feasibility of a randomized networked design. Qualitative interviews and focus groups revealed high treatment acceptability. Ninety-three percent of participants in networked BWL reported being “satisfied” or “very satisfied” with treatment and 92.6% reported that networked treatment “very much” or “somewhat” helped them lose weight. Weight losses from session 1 to 4 were as follows: index participants in networked BWL=3.5%, index participants in standard BWL=2.9%, network members in networked BWL=2.4%. Future research is warranted to determine if weight losses differ across conditions with a larger sample and greater dose of treatment.

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Paper Session 9: Understanding Obesity: Cells to Society 3:37 PM-3:54 PM

ASSOCIATIONS BETWEEN HEALTHFUL FOOD PURCHASING AND BMI CHANGE VARY BY AGE

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Household food purchases represent a potentially important source of information about individuals' food preferences and diet quality, and less healthful food purchasing patterns may be predictive of weight gain. Associations between the overall diet quality of household food purchases and 12-month change in body mass were examined in a diverse sample of 112 primary household food shoppers [81% female; mean age=43.9 (SD=12.9); 36% African-American, 35% non-Hispanic white, 16% Hispanic, 13% "other/multiracial"). Participants collected and annotated receipts for all household food and beverage purchases (16,087 total) over 14 days. Research staff photographed purchased foods during four visits to participants' homes. The Healthy Eating Index-2010 (HEI-2010) scoring system was applied to summarize the overall diet quality of food purchases. Body mass index (BMI) was calculated from height and weight measured during the 14-day food purchase assessment period, and after 12 months of follow-up (98% retention). Over 12 months, average change in BMI was 0.36 (SD=1.81) kg/m^2, with 27% of participants exhibiting clinically meaningful 12-month BMI change of ≥1.0 kg/m^2 or more. Age was inversely related to observed weight change (r=-.18, p < .05) such that younger participants demonstrated greater BMI increases. HEI-2010 scores for food purchases varied widely (M= 60.3, SD=16.2 on a 0-100 scale), but did not differ by age (r=.04, p=.65). The odds of a BMI gain ≥1.0 kg/m^2 was predicted by an interaction between HEI-2010 scores and age (p=.03) in logistic regression models adjusting for baseline BMI, demographic variables, and the presence of children in the household. Every 10-point increase in HEI-2010 score was associated with reduced odds of demonstrating BMI gain ≥1.0 kg/m^2 among subjects ages 21-34 y (n=37; OR=0.18, 95%CI: 0.04, 0.85), but not in subjects ages 35-49 y (n=36; p=.80) or age ≥50 y (n=39; p=.99). The interaction between age and food purchasing was also observed when BMI change was modeled as a continuous outcome (p=.003). Food purchasing patterns may be an important intervention target for obesity prevention in younger adults. Funded by R01HL117804. ClinicalTrials.gov: NCT02073643.

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Paper Session 9: Understanding Obesity: Cells to Society 3:55 PM-4:12 PM

BEHAVIORAL WEIGHT LOSS VS STEPPED MULTI-MODAL TREATMENT FOR BINGE EATING DISORDER: ACUTE AND LONGER-TERM 18-MONTH OUTCOMES

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Objective: Randomized controlled trial tested the effectiveness of a stepped-care multi-modal approach versus behavioral weight loss (BWL) for patients with obesity and binge eating disorder (BED).

Methods: 191 patients (mean age 48, 71% female, 79% white) with BED and co-morbid obesity (mean BMI 39) were randomly assigned to 6 months of BWL (N=39) or stepped-care (N=152). Within stepped-care, patients started with BWL for one month; treatment-responders continued BWL while non-responders switched to specialist treatment (CBT) and all stepped-care patients were additionally randomized (double-blind) to anti-obesity medication or placebo for the remaining five months. Independent assessments were performed at baseline, during treatment, post-treatment (6 months), and 6- and 12-month follow-ups after completing treatments (through 18 months) with reliably-administered structured interviews and measures.

Results: ITT analyses of abstinence rates (zero binges/month) revealed BWL and stepped-care did not differ significantly overall at post-treatment (74% vs 64%) or 12-month follow-up (45% vs 41%). Mixed-models regression analyses of binge-eating frequency through post-treatment revealed significant time effects but BWL and stepped-care did not differ overall; within stepped-care, however, medication was significantly superior to placebo overall and among initial non-responders switched to CBT. Mixed-models of binge-eating frequency during the 12-months after treatment revealed good maintenance that did not differ across treatments. Mixed models revealed significant % weight loss through post-treatment but BWL and stepped-care did not differ overall; within stepped-care, however, medication was significantly superior to placebo overall and among initial responders continued on BWL and non-responders switched to CBT. Mixed-models during follow-up revealed significant time effects with % weight change larger at 6 than 12 months; % weight loss at 12-month follow-up was 4% (BWL), 6% (BWL+placebo), and 7.5% (BWL+medication).

Conclusions: BWL and stepped-care treatments produced significant improvements in binge-eating and weight loss that were maintained through 18 months in obese patients with BED. Anti-obesity medication enhanced outcomes with behavioral treatments within stepped-care.

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Paper Session 9: Understanding Obesity: Cells to Society 4:13 PM-4:30 PM

SODIUM, POTASSIUM, AND MARKERS OF OBESITY AMONG DIVERSE US HISPANIC/LATINOS: RESULTS FROM HCHS/SOL.

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Introduction: Emerging evidence suggests sodium and potassium are associated with obesity independent of energy intake. This relationship has been underexplored, especially among immigrant minority populations with evolving dietary practices exhibited with longer duration of US residence.

Objectives: We evaluated the independent associations of sodium and potassium with measures of obesity among US Hispanics/Latinos and tested whether nativity/duration of US residence moderated these associations.

Methods: The Hispanic Community Health Study/Study of Latinos is a population-based study of 16,415 diverse Hispanics/Latinos aged 18-74 years from four US communities. Dietary sodium, potassium, and energy intake were assessed from two interviewer- administered 24-hour diet recalls in the full sample. Twenty-four hour urine served as the biomarker for sodium and potassium intake and doubly labeled water for energy intake in the ancillary sub-study: Study of Latinos Nutrition & Physical Activity Assessment Study (SOLNAS), n=447. Obesity markers included: measured body mass index (BMI), waist circumference, and body fat measured using doubly labled water. Nativity/duration of US residence was classified as: US born, foreign born with ≥10 years in the US, or foreign born with < 10 years in the US. Linear regression models adjusted for covariates which included energy intake were used to determine the associations among sodium, potassium, with markers of obesity.

Results: In the full sample, mean age was 41 years (SE: 0.02); with 53% female (SE: 0.05). From fully-adjusted linear regression models, a 500 mg/day higher dietary sodium intake was

associated with a higher BMI (0.07 kg/m^2; 95% CI: 0.00, 0.15). Nativity/duration of US residence moderated the association between dietary potassium and BMI ($P < 0.05$), so that higher dietary potassium intake by 500 mg/day was associated with lower BMI among US born participants (-0.62kg/m^2; 95% CI: -0.92, -0.31), lower BMI among those foreign-born living in the US for ≥ 10 years (-0.13 kg/m^2; 95% CI: -0.25, -0.00), and with no significant association among those foreign-born living in the US for < 10 years. Similar associations were observed for waist circumference. Using biomarkers among SOLNAS participants, a 500 mg/day higher urinary sodium was associated with higher BMI (0.27 kg/m^2; 95%CI: 0.09, 0.43) and more body fat (0.53 kg; 95% CI: 0.16, 0.91). Urinary potassium was not associated with BMI or body fat.

Conclusions: Among diverse Hispanics/Latinos, sodium intake was positively associated with BMI, waist circumference, and body fat, independent of energy intake, suggesting a direct assocation between sodium intake and markers of obesity. The inverse relationships between dietary potassium and obesity markers were stronger with longer duration of US residence.

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Paper Session 10: mHealth Strategies in Women 3:00 PM-3:18 PM

PROMOTING PHYSICAL ACTIVITY IN DYADS OF AFRICAN AMERICAN AND HISPANIC WOMEN THROUGH SOCIAL NETWORKING AND MOBILE TECHNOLOGY

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Racial/ethnic minority adults have lower rates of physical activity (PA) than non-Hispanic Whites, and women are less active than men. Given the strong influence of family and friends, intervening upon women's existing social networks may represent an important strategy for PA promotion. Here we describe preliminary findings from a pilot randomized trial to test the effect of an intervention designed to build social support and behavioral skills to increase PA in dyads of women. Dyads were randomly assigned to the 16-week intervention, which consisted of dyad-based telephone counseling, an activity monitor with social networking, and health education e-newsletters. Dyads assigned to the control condition received e-newsletters during the study and the activity monitor upon study completion. Participants were assessed in-person at baseline and 16 weeks, and completed an online assessment at 8 weeks. Both objective and self-report measures of PA were collected. Participants included 62 African American (58%) and Hispanic (37%) women (n=31 dyads) aged 25-60 years (mean=44 years). At baseline, 79% of women were obese, 76% were not meeting PA recommendations, 53% reported less than a college education, and 38% reported an annual household income less than $50,000. From baseline to the 16-week follow up, intervention and control participants reported an increase in average weekly minutes of moderate-to-vigorous PA (MVPA) of 116 and 64 minutes, respectively. Preliminary analyses involved mixed effects models to account for clustering within dyads and within participants over time and controlled for age, race/ethnicity, education, and baseline body mass index. Analyses showed that all participants increased their minutes of self-reported MVPA over the 16 weeks (β=21.3, se=6.0, $p < 0.001$), and that MVPA was higher on average among intervention participants than controls (β=104.2, se=48.4, p=0.04). The group by time interaction, however, did not reach statistical significance (β=11.6, se=12.2, p=0.34). Analyses assessing intervention effects on objective PA are ongoing. Findings provide preliminary support for an intervention that builds upon women's existing social networks and uses mobile technology to enhance social support and behavior change skills for increased PA.

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Paper Session 10: mHealth Strategies in Women 3:19 PM-3:36 PM

COST EFFECTIVENESS OF A WEB-BASED PHYSICAL ACTIVITY INTERVENTION FOR SPANISH SPEAKING LATINAS: PASOS HACIA LA SALUD

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Background: Latinas report greater rates of lifestyle-related conditions such as obesity and diabetes, and concordantly report particularly low levels of physical activity (PA). There is a need for interventions that can increase PA in this growing population in a broad-scale, cost-effective manner. Given the scalability of web-based programs and the marked increase in Internet use in Latinos, web-delivered interventions have great potential as a cost-effective way to improve health in Latinas. The objective of this study was to examine the costs and cost-effectiveness of a web-based Spanish language PA intervention for Latinas compared to a contact control. **Methods**: Healthy adult Latinas (N=205) were recruited from the community and randomly assigned to receive a Spanish language web-based individually-tailored PA intervention (Intervention), or were given access to a website with content on wellness topics other than PA (Control). PA was measured by 7-Day Physical Activity Recall Interview and ActiGraph accelerometer at baseline, 6 months (post-intervention) and 12 months (maintenance phase). Costs were estimated from a payer perspective and included all features necessary to implement the intervention in a community setting, including staff time (wage, benefits and overhead), materials, hardware, website hosting, and routine website maintenance. **Results**: At 6 months, the cost of the Intervention and Control groups were \$17/month and \$8/month, respectively. These fell to \$12 and \$6 at 12 months. Linear interpolation showed Intervention participants increased their PA by 1362 total minutes at six months (523 by accelerometer) compared to 715 minutes in Controls (186 by accelerometer). At six months, each minute increase in PA for the Intervention cost \$0.08 (\$0.20 by accelerometer), compared to \$0.07 in Controls (\$0.26 by accelerometer). Incremental costs per minute increase associated with the intervention were \$0.08 at six months and \$0.04 at 12 months (\$0.16 and \$0.08 by accelerometer, respectively). Sensitivity analyses showed variations in staffing costs or intervention effectiveness yielded only modest changes in incremental costs. **Conclusions:** While the web-based PA intervention was more expensive than the wellness control, both were quite low cost compared to face-to-face or mail-delivered interventions. Cost-effectiveness ranged markedly based on physical activity measure, and was similar between the two conditions. Overall, the web-based intervention

was effective and low cost, suggesting a promising channel for increasing PA on a large scale in this at-risk population.

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Paper Session 10: mHealth Strategies in Women 3:37 PM-3:54 PM

ASSOCIATION BETWEEN PHYSICAL ACTIVITY (PA) INTERVENTION WEBSITE USE AND PA LEVELS AMONG SPANISH-SPEAKING LATINAS

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The Internet’s low cost and potential for high reach makes web-based channels prime for delivering evidence-based physical activity (PA) interventions. Despite the well-studied success of Internet-based PA interventions in primarily non-Hispanic white populations, evidence about Spanish-speaking Latinas’ use of such interventions is lacking. The recent rise in technology use among Latinas in the US, a population at heightened risk for low PA levels and related conditions, suggests that they may benefit from web-based PA interventions tailored to their cultural and language preferences. Pasos Hacia la Salud tested a Spanish-language, culturally adapted, individually tailored, Internet-based PA intervention vs. a Spanish-lanugage Internet-based Wellness Contact Control condition for under-active Latinas (N=205, M_{age}=39.2 ±10.5, 84% Mexican-American). These analyses examined engagement with the website and explored how use was associated with adoption and maintenance of PA behavior change. Overall, participants logged on to the website an average of 22 times (SD=28) over 12 months, with Intervention participants logging on significantly more than Controls (29 vs. 14.7, $p < .001$). On average, participants spent more time on the website at months 1, 4, and 6 compared to all other months, with max use at month 4. Both logins and time spent on the website were significantly related to intervention success (achieving higher mean minutes of MVPA/week at follow-up: b=.48, SE=.20, p=.02 for objectively measured MVPA and b=.74, SE=.34, p=.03 for self-reported MVPA at 12 months, controlling for baseline). Furthermore, those meeting ACSM guidelines for PA at 12 months (>=150 min/week of MVPA) logged on significantly more than those not meeting guidelines (35 vs 20 over 12 months, p=.002). Among participants in the intervention arm, goal setting features, personal PA reports, and PA tips were the most utilized portions of the website. Higher use of these features was associated with greater success in the program (more minutes of self-reported MVPA at 12 months controlling for baseline, p’s < .05). Specifically, one additional use of these features/month over 12 months translated into an additional 34 min/week of

MVPA (goals feature), 12 min/week (PA tips), and 42 min/week (PA reports). These results demonstrate that greater use of a tailored, web-based PA intervention, particularly certain features on the site, was significantly related to increased PA levels in Latinas.

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Paper Session 10: mHealth Strategies in Women 3:55 PM-4:12 PM

CAMINEMOS JUNTAS: A LOCATION-BASED SMARTPHONE APP FOR LATINAS TO CONNECT WITH NEARBY WALKING PARTNERS

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Health disparities for Latinas are high. They are more likely than their non-Hispanic White counterparts to be overweight, have diabetes, and be physically inactive. Community-focused walking interventions produce improvements in physical activity (PA) and are well-received by Latinas when they are socioculturally sensitive. New technology has the ability to provide Latinas with innovative ways to connect socially and increase PA. Location-based services (LBS) are a popular technology that uses geographical positioning to allow individuals to use their smartphones to connect to their surrounding environment. *Caminemos Juntas* is an NIH-study developing a prototype smartphone app for use with 18-45 year old Latinas that uses LBS to connect women within geographically proximal neighborhoods as a way to provide social support for increased walking behaviors. The initial phase of the study used multi-method formative research to guide app design and content prior to conducting field usability testing. To guide prototype development, a national sample of Latinas (n=98; mean age 32.7 +/- 7.8 years; 45% primary Spanish speaking; 28.6% with annual income < $15,000) were surveyed to better understand their preferences, usage, needs, and obstacles of current apps in relation to health and PA. Latinas' current PA behaviors and smartphone use, opinions on health-related apps using LBS, and how often they access social networking sites on their phone and their likelihood of using a social networking app to connect to others with intentions to be physically active were also examined. Results revealed that 22.5% never/rarely exercised, 73.5% accessed social networking sites daily with an average of 8 times a day, and 43.9% used LBS every day. Ease of use (82%), informationally accurate (79.2%), and reliability (84.7%) were app features rated as highly important. Over 63% reported high likelihood of using a social networking app to connect to others with the intentions of being physically active, and 67.4% reported that this type of app would be very helpful. Focus groups showed that the app was appealing. A month-long field usability study (n=60) to accurately identify user location and return information to the user to facilitate real-time decision making for partnered walking is currently underway. Survey and formative research results as well as the quantitative outcomes from the completed pilot study will be presented.

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Paper Session 10: mHealth Strategies in Women 4:13 PM-4:30 PM

ENGAGING BREAST CANCER SURVIVORS IN DEVELOPING A TECHNOLOGY-SUPPORTED PHYSICAL ACTIVITY INTERVENTION: THE FIT2THRIVE STUDY

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Most physical activity (PA) interventions for breast cancer survivors (BCS) are intense, on-site and simultaneously test multiple intervention components (i.e. exercise class, coach) designed by research teams with very limited BCS input. Thus, these interventions have limited patient-centeredness and scalability. To address this, the present study used a mixed-methods, patient-centered approach to develop five remotely-delivered, technology-supported PA intervention components. Following this formative phase, we will examine these components in conjunction with a “core” intervention for feasibility, acceptability and preliminary effects on PA using the Multiphase Optimization Strategy (MOST) in the Fit2Thrive trial. MOST uses a highly efficient experimental design to evaluate individual and combined effects of intervention components to determine which ones are, or are not, effective. A nationwide sample of BCS [n=96; M_{age}=56 (SD=10.4] completed an online needs assessment. A subsample was randomly selected to participate in audio-recorded, semi-structured interviews (n=28) and a subsample of these BCS (n=15) participated in a consensus-building conference call. Needs assessment data were analyzed using descriptive statistics. Transcribed interviews and discussions were evaluated by the coding team using a thematic content analysis approach and consensus review. Several key characteristics of intervention components emerged including: being user-friendly, accessible, and encouraging; integrating the Fitbit with other intervention components; providing a progressive PA prescription with measurable progress; allowing interaction with other users and a clear linkage to evidence-based BCS information. Based on consensus with BCS, the “core” Fit2Thrive intervention will consist of a Fitbit, educational materials and a basic PA tracking mobile application (app). The five key components identified for testing in the MOST trial are: a “deluxe” app including BCS specific content and enhanced feedback, an online gym membership, assignment to a supportive “team” of BCS; behavioral coaching calls and motivational text messages. Engaging BCS in the development of Fit2Thrive intervention components has the potential to result in more effective components with greater patient acceptance. Having elicited these key intervention

themes from BCS, we will now test the comparative, interactive, and optimal dose of these five components in the Fit2Thrive trial using MOST.

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Paper Session 11: Approaches to Increase Cancer Screening 3:00 PM-3:18 PM

ACADEMIC-COMMUNITY PARTNERSHIP TO TEST STRATEGIES TO PROMOTE COLORECTAL CANCER SCREENING AMONG PRIMARY CARE LATINO PATIENTS

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Background: Colorectal cancer (CRC) is the second leading cause of cancer-related death in the US. Screening for CRC can reduce incidence and mortality, but participation rates remain low among low-income, unacculturated Latino adults.

Methods: This academic-community clinic partnership conducted two distinct pilot studies testing the implementation of evidence-based interventions to promote fecal immunochemical test (FIT) screening among Latino patients aged 50-75 years who were not up-to-date with CRC screening (n=200) at a large Federally-Qualified Health Center (FQHC) in the US-Mexico border region of San Diego, CA. One pilot focused on an inreach intervention including a 30 educational minute session with a patient navigator, review of a “flip-chart”, and a take-home FIT kit with instructions. The second pilot was an outreach intervention consisting of mailed print materials (i.e., FIT kit, culturally and linguistically tailored instructions, and a pre-paid return envelope). Both groups received patient navigator-based follow-up to promote FIT completion and referrals for additional diagnostic follow-up and treatment if needed. The primary outcome was measured by return of FIT kit within three months follow-up and was assessed using electronic medical records (EMR).

Results: The in-reach pilot consisted of mostly insured (85%), women (82%) and Spanish-speaking (88%) patients. The outreach pilot consisted of mostly insured (50%), women (64%) and Spanish-speaking (73%) patients. At three months follow-up, screening completion was 76% for in-reach, and 19% for outreach. The median time for in-reach to have FIT results in the EMR was 16 days as compared to 46 days for outreach.

Conclusion: These data demonstrate that evidence-based strategies to promote CRC screening can be implemented successfully within FQHCs, but implementation may require setting and population-specific optimization. Patient-, provider- and healthcare system related implementation issues and lessons learned from this study will be discussed.

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Paper Session 11: Approaches to Increase Cancer Screening 3:19 PM-3:36 PM

AFFECTIVE COMPONENTS OF RISK MEDIATE THE RELATION BETWEEN COGNITIVELY-BASED PERCEIVED RISK AND COLONOSCOPY INTENTIONS

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Early detection through routine colonoscopy has been linked to reduced mortality from colorectal cancer (CRC), but uptake remains low, especially for African Americans as compared to non-Hispanic whites. Cancer risk processing involves both affective components (fear, worry) and cognitive components (beliefs about the chances of getting cancer). Previous work has shown that colonoscopy uptake is related to perceived risk, but less is known about how these risk components work together to impact decision-making. Guided by the Behavioral Affective Associations Model (BAAM), this study examines how both affective and cognitive components of risk influence colonoscopy intentions. 605 African American participants, ages 50 and older and eligible for colonoscopy screening in the next year completed surveys assessing affective (cancer worry and fear) and cognitively-based (absolute and comparative) perceived risk of CRC, future screening intentions, and demographic characteristics. Regression analysis was used to model both components of risk as predictors of screening intentions, controlling for demographic variables. Bootstrap estimates for modeling the indirect effects of affective perceived risk as a mediator of the relation between cognitive perceived risk and screening intentions were conducted. Both affective and cognitively-based perceived risk predicted screening intentions when controlling for sociodemographic variables (all bs>0.14, all ps < 0.05). Cancer fear fully mediated the absolute risk to intentions relation and both fear and cancer worry mediated the comparative risk to intentions relation (all indirect effects>0.05, all ps < 0.05). These findings suggest that affective components of risk play an important role in determining CRC screening intentions for age-eligible African Americans. Given the potential impact of colonoscopy, educational strategies highlighting the effectiveness of screening and the risks associated with non-compliance are necessary to increase health equity. While cognitive risk appraisals also influence decision-making, this study reaffirms findings of the BAAM that affectively-based perceived risk influences decision-making by mediating cognitions and should be incorporated in cancer screening interventions.

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Paper Session 11: Approaches to Increase Cancer Screening 3:37 PM-3:54 PM

ACCEPTABILITY OF A VIRTUAL PATIENT EDUCATOR TABLET APPLICATION TO INCREASE CERVICAL CANCER SCREENING KNOWLEDGE AMONG LATINAS

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Latinas experience higher cervical cancer (CC) incidence and mortality compared to the U.S. general population. Many Latinas lack access to health care and experience literacy, communication, and knowledge barriers to CC screening. The current study developed a Virtual Patient Educator (VPE), a Spanish-language, interactive multimedia application in which an embodied conversational agent provides CC and human papillomavirus education. Developed using user-centered design, the VPE includes 15 content segments presented by an animated virtual human using oral explanations accompanied by diagrams. The VPE also includes 4 segments assessing understanding of the VPE content. Participants not up to date with recommended CC screening used the VPE and completed a Spanish-language adaptation of the Unified Theory of Acceptance and Use of Technology questionnaire (UTAUT) and a demographic survey. The UTAUT measures technology acceptability in the following areas (scores range from 1 to 5): anxiety, attitude towards technology, perceived enjoyment, perceived ease of use, perceived sociability, perceived usefulness, and trust. Exploratory analyses evaluated associations of VPE acceptability with age, education, and employment status. Patients (N = 32; mean age: 41.3; mean education: 5.4 years; 50% employed) demonstrated high overall VPE acceptance (M = 3.96), as well as perceived enjoyment (M = 4.34), perceived sociability (M = 4.30), perceived usefulness (M = 4.25), and trust (M = 4.25). Older patients had less positive attitudes about the VPE and were more anxious about using it (ps < .05). Education was negatively associated with anxiety and positively associated with all other subscales (ps < .05). Women who were currently employed rated the VPE as more enjoyable and more trustworthy compared to unemployed women (ps < .05). In conclusion, the VPE is accepted by patients and may be used to augment health education, especially among younger, more educated, and employed Latinas.

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Paper Session 11: Approaches to Increase Cancer Screening 3:55 PM-4:12 PM

RESULTS OF THE VIRGINIA COOPERATIVE EXTENSION 80% BY 2018 INITIATIVE: PROMOTING COLORECTAL CANCER SCREENING AND RISK REDUCTION

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Background: Colorectal cancer (CRC) is the third leading cause of cancer-related death in the U.S, yet is highly preventable and detectable through healthy lifestyles and screening. Virginia Cooperative Extension (VCE) provides community education in all 107 counties in Virginia. VCE joined the national 80% by 2018 CRC screening initiative in 2016, and implemented an internal web-based CRC screening and risk reduction program.

Methods: An online survey informed by the Health Belief Model (HBM) was distributed to all VCE personnel and the results were used to develop the organization-wide program. A communications plan was developed to address screening barriers identified in the survey. Four web-based programs were adapted from an existing "Colorectal Cancer Free Zone (CCFZ)" intervention and addressed: 1) screening and insurance coverage, 2) diet, 3) physical activity and weight management, and 4) personnel testimonials. Sessions were facilitated by an Extension Specialist and topic expert. "VCE CRC champions" were recruited from each of 4 state VCE districts to encourage personnel engagement. A program website and Twitter account with scheduled tweets were created to facilitate communication. Personal action was encouraged, including signing a CCFZ pledge.

Results: The initial survey had a 33% response rate (288/ 872) and indicated positive responses to HBM questions. Respondents expressed negative health beliefs, however, about barriers to screening (22%) and perceived severity of CRC (26%). Communication efforts targeted these two areas. The 4 web-based programs were viewed live by 139 participants, representing 42 out of 107 Virginia counties. An additional 47 individuals viewed program recordings available on the website. 122 (87.8%) viewers completed post-session assessments. Of these, 50% signed the CCFZ pledge, 42% took action to get screened, and 65% spoke with someone about colorectal cancer. Actions taken after viewing the sessions included increased fruit and vegetable intake (52%), decreased red and processed meats (32%), increased fiber intake (32%), and increased exercise (35%).

Conclusions: A web-based colorectal cancer screening and prevention initiative implemented within Virginia Cooperative Extension and informed by responses to a survey based on the Health Beliefs Model resulted in a significant percentage of participants taking actions to get screened, reduce risk, and tell others about colorectal cancer. Personal action toward screening and healthy lifestyle change by Extension Agents is essential for effective community education about colorectal cancer. A program toolkit of the initiative is being developed for use by Extension Agents to promote colorectal cancer screening and risk reduction in the communities they serve.

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Paper Session 11: Approaches to Increase Cancer Screening 4:13 PM-4:30 PM

USABILITY AND ACCEPTABILITY OF LUCAS CHOICES: A DECISION AID TO SUPPORT INFORMED DECISION MAKING ABOUT LUNG CANCER SCREENING

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Purpose: Decision support tools (DST) have been advocated as a vital component of implementing high quality lung cancer screening (LCS), and patient decision aids (PtDA) have been integrated as an essential component of federal lung cancer screening policy. Further use of PtDAs during shared decision making consultations prior to screening constitute a reimbursable health service. However, there are currently no targeted LCS available in the literature that have been rigorously evaluated and determined to be evidence-based with regard to their ability to improve knowledge, clarify values, and facilitate shared decision making. This study assessed the usability and acceptability of LuCaS CHOICES, a web-based LCS PtDA/DST to facilitate high quality lung cancer screening decisions, in comparison against the NCI LCS website.

Methods: This study involved a randomized controlled feasibility and acceptability trial comparing the LuCaS Lung Cancer Screening (LuCaS) CHOICES decision aid and the NCI website for LCS. Outcomes addressed several aspects of usability and user acceptability and were assessed at 2 weeks and 4 months after baseline. Participants (n=50) were recruited from the Miami, Florida area and from rural areas in eastern Kentucky (Appalachia). Survey measures administered at 2 week follow up included user ratings of PtDA usability and acceptability as well as satisfaction ratings for individual components of LuCaS CHOICES.

Results: Fifty participants at increased risk for lung cancer were recruited from Miami (n=25) and rural Kentucky (n=25). All completed baseline surveys, and 44 individuals completed the 2 week follow up (88% retention rate). Average age of participants was 52.6 years (SD 5.1), and 77% of participants were female. The sample was moderately diverse: 63% White, 34% Black, and 16% Hispanic or Latino. Ratings of intervention usability, satisfaction and acceptability were favorable for both websites, but there were no statistically significant differences between the two PtDA conditions. The LuCaS CHOICES participants trended toward higher decision facilitation (*p*=.09). Acceptability ratings for the LuCaS CHOICES risk calculator,

question prompt list, and conjoint exercise were also favorable (means ~ 5.0/7.0).

Conclusions: Overall, there was a high level of usability and user satisfaction for both PtDAs. Participant ratings suggested that both websites provided valuable information to facilitate informed LCS decision making. Ongoing research will evaluate a range of decision efficacy outcomes as well as the behavioral impact of these tools on patient-provider communication and LCS uptake. There is a need for rapid development and rigorous testing of PtDAs to fulfill the promise of lung cancer screening as a strategy to reduce lung cancer mortality.

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Paper Session 12: Innovative Health Communication Methods 3:00 PM-3:18 PM

PROVISION OF TECHNOLOGY TO FACILITATE POST-ARRIVAL MONITORING FOR EBOLA AMONG TRAVELERS TO THE U.S.

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Although technology can facilitate symptom monitoring and self-reporting during infectious disease outbreaks, relevant participants may not have access to such tools. We investigated that possibility during the 2014-2016 Ebola epidemic after the Centers for Disease Control and Prevention (CDC) recommended post-arrival monitoring for travelers arriving in the United States from countries with Ebola outbreaks, including health checks and daily reporting to public health authorities. To facilitate monitoring, CDC began the CARE+ (Check and Report Ebola Plus) program to provide travelers with information, a cellular phone, and digital thermometer. We analyzed three waves of interviews with travelers arriving to John F. Kennedy and Washington Dulles International Airports in 2015: an airport intercept (n=1,195), a first telephone follow-up (TFU1) 3-5 days post arrival (n=654), and a second follow-up (TFU2) 1-2 days before the end of monitoring (n=319).

Approximately 51% of travelers indicated not having access to a thermometer upon arrival. Travelers with passports from Sierra Leone, Liberia, and Guinea, compared to U.S. passport holders, were significantly less likely to have a thermometer ($p < .001$). At TFU1, 98% of travelers reported having used the CARE+ thermometer.

Roughly 36% of travelers reported not having a working cell phone other than the CARE+ phone provided. Travelers with passports from countries with Ebola outbreaks were less likely to have a cell phone than U.S. passport holders ($p < .001$). Travelers reported high use of the CARE+ phone. At TFU1, 81% of respondents had been contacted by a public health authority via CARE+ phone; 67% of travelers at TFU1 and 77% of travelers at TFU2 used the CARE+ phone to report daily to the health department. U.S. passport holders reported less CARE+ phone usage compared to those with passports from countries with Ebola outbreaks ($p < .001$).

Providing cell phones and thermometers met travelers’ reported needs and facilitated monitoring behavior.

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Paper Session 12: Innovative Health Communication Methods 3:19 PM-3:36 PM

USER CENTERED DESIGN OF A REAL-TIME PATIENT SAFETY DASHBOARD

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Background: Nearly one third of patients are harmed in U.S. hospitals annually. Currently, healthcare organizations are seeking to use Health Information Technology to reduce patient harm through the early detection of safety problems and alerting of healthcare providers. One existing initiative is a provider-facing patient safety dashboard that presents a list of safety events and a related global safety risk score for each patient in a panel. The goal of this project was to design a patient-facing real-time safety dashboard (My Safety Advisor) that aims to educate and motivate patients to engage with their care team.

Methods: An interdisciplinary team of a health psychologist, an informaticist and a clinician, conducted four user-centered design sessions with 32 recently hospitalized patients and their caregivers between February and June 2016. Each semi-structured, moderated session began with individuals sharing personal stories of recent hospitalizations and any safety events that occurred. We then solicited input on the contemporaneous iteration of the interface design. Design sessions were audio-recorded and transcribed. Transcriptions were loaded into ATLAS.ti and analyzed for themes relevant to design and functionality of My Safety Advisor.

Results: Themes derived from the user-centered design sessions drove the iterative design of the patient-facing My Safety Advisor dashboard. For example, it was observed that patients fail to associate specific safety events with appropriate follow-up questions or corrective actions (as providers do). To meet this need, the patient-facing dashboard design was modified to include a table that connects each safety issue with links for “Questions you should ask” and “Things you can do,” instantiating the theme “show me the links.” Similarly, the detailed display of an individual’s risk over time, originally designed for high numeracy providers, was simplified to an icon-centric display intended for lower numeracy lay people,

thus instantiating the theme “keep it simple.” Other themes included “provide an analogy” and “use simple language.”

Conclusion: We present the user-centered design of a real-time patient safety dashboard. We will discuss how this qualitative work led to an experiment of the effect of design features of the dashboard on anxiety and risk perception and whether the themes derived from this work may generalize to other presentations of risk-related information to patients.

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Paper Session 12: Innovative Health Communication Methods 3:55 PM-4:12 PM

USING SOCIAL MEDIA TO TARGET NICHE POPULATIONS: THE SEARCH FOR CONSUMERS OF ONLINE DNA INTERPRETATION SERVICES

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In order to study users of online third party raw DNA interpretation services— a ‘niche’ population estimated to include only a fraction of a percent of the US population— this study explored recruitment via social media platforms. Multiple social media platforms were compared to investigate the viability of distributing surveys via social media. Using a 2x2 factorial design, a survey was distributed on two of the most prominent social media platforms, Facebook and Twitter, using two different types of advertising structures. Advertisements were either “cost-per-click” (CPC) which allowed researchers to target those who liked or commented about relevant topics such as *genetics,* or “cost-per-conversion” (CPV) which began from the same targeting criteria used in cost-per-click methods but iteratively re-targeted the survey based on the characteristics of users who submitted completed questionnaires. Payment occurred either each time an advertisement link was clicked (CPC) or for each completed survey (CPV). Researchers also distributed the same survey for free on Reddit, by identifying and posting a link to the survey on relevant sub-communities (subreddits). A total of 545 surveys were completed over a two-week distribution period, 100 ($2.50/each) from Facebook CPC, 120 ($2.08/each) from Facebook CPV, 35 ($7.04/each) from Twitter CPC, 155 ($1.61/each) from Twitter CPV and 135 ($0/each) from Reddit, making Twitter CPV the most cost-effective paid method. Although Reddit distribution was free, this organic distribution could not easily be achieved on other platforms due to systemic features, and there is reason to conclude that this number was relatively close to saturation while the same cannot be said for advertisement. Platforms differed on

participant demographics, yet no significant differences were found within methods using the same platform. Most notably, 83% of respondents on Facebook and Twitter were female (17% male), in contrast to 39% respondents from Reddit (61% male). The average age of Reddit respondents (35 years) was lower than that of respondents from Twitter (53 years) or Facebook (49 years). Researchers interested in conducting surveys on otherwise hard to identify populations may want to consider various social media platforms as an effective means of surveying attitudes and behaviors, mindful of the potential limits and non-representativeness of the respondents.

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Paper Session 12: Innovative Health Communication Methods 4:13 PM-4:30 PM

EFFECTIVENESS OF DVD VS. GROUP-INITIATED DIABETES PREVENTION ON INFORMATION UPTAKE FOR HIGH & LOW HEALTH LITERACY PARTICIPANTS

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Purpose: To evaluate DVD versus group-initiated diabetes prevention to enhance patient comprehension of educational objectives between high (HHL) & low health literacy (LHL) patients.

Methods: Participants received evidence-based diabetes prevention content through either a DVD or in-person group class. The intervention included physical activity, nutrition, and behavioral components to facilitate a 5 to 10% body weight loss. The content was consistent between conditions, only delivery channel differed. After baseline assessment & watching a DVD or attending a class both focused on diabetes prevention, all participants (n=442; BMI=37.0±6.7; 52.3±12.1 years; 68% women, 17% African American) completed teach-back strategies used to reinforce intervention content. Approximately 51.0% (n=225) and 49.0% (n=217) were assigned to a DVD & class, respectively. Comprehension was operationalized as the proportion of participants correctly answering all the questions in each round. More rounds would reflect lower initial comprehension post-DVD or class. Health literacy was assessed by the Newest Vital Sign test at baseline. Descriptive & chi-square analyses were completed for all comparisons.

Results: The proportion of HHL (n=361) and LHL (n=81) participants was similar between DVD (n=187 HHL; n=38 LHL) and class (n=174-HHL; n=43 LHL) conditions. Overall, the proportion of HHL participants that answered round 1 of the teach back questions correctly was 23% compared to 9% of LHL participants ($p < 0.01$). This pattern of results was consistent for both DVD participants (24% HHL and 11% LHL; $p < .05$) and class participants (23% HHL and 7% LHL; $p < .05$). In the second round of teach-back questions, for participants who answered round 1 incorrectly, 82% of both HHL and LHL participants answered correctly, these numbers increased to 100% and 86%, respectively for round 3. Only 2 LHL participants did not answer all of the questions correctly by round 3.

Conclusion: DVD and class delivery of diabetes prevention materials do not appear to lead to differential uptake of information. However, LHL participants demonstrated a higher need for teach-back, yet, even participants with HHL benefited from the strategy. The use of teach-back as a strategy among diabetes prevention patients may improve knowledge

reinforcement. Thus, teach-back may be a valuable component to any health education intervention.

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Paper Session 13: Diabetes Across the Lifespan 3:00 PM-3:18 PM

BENEFITS OF COMMUNAL COPING IN COUPLES WITH TYPE 2 DIABETES LIMITED BY SPOUSE UNMITIGATED COMMUNION

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When one person in a couple faces a chronic illness, both members of the couple are likely to be affected. Increasingly, research has taken into consideration the social context of coping with chronic disease. Communal coping is one such approach and consists of a shared illness appraisal (i.e., it is “our” problem instead of “my” or “his/her” problem) and collaboration to manage the illness (i.e., joint problem solving). Research has linked communal coping to better patient outcomes. The present study aimed to examine whether a personality trait in spouses, unmitigated communion, moderated those relations. Unmitigated communion refers to over-involvement in others’ problems leading to self-neglect. It is characterized by being overly nurturant, intrusive, and easily exploitable. The extent to which spouse unmitigated communion moderated the relation of spouse communal coping to patient outcomes was examined in a study of 125 couples in which one person was recently diagnosed with type 2 diabetes (mean age = 54 years, 59% white/41% black, 55% male). The study consisted of separate patient and spouse interviews and a behavioral observation task in which couples discussed difficulties managing diabetes. Two independent raters coded spouse communal coping from the behavioral observation task. Results showed that observer ratings of spouse communal coping were associated with higher patient ratings of marital quality, higher patient self-efficacy, higher patient medication adherence, and reduced patient distress. The majority of these relations were moderated by spouse unmitigated communion, such that relations were reduced or eliminated when spouses were high in unmitigated communion. Spouses who were high in unmitigated communion also had higher levels of distress, and their own communal coping was related to fewer benefits in terms of relationship and psychological health if they scored high on unmitigated communion. These results suggest that spouse involvement in illness is not beneficial for patients or spouses when spouses score high on a dispositional variable that reflects intrusion and immersion in relationships.

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Paper Session 13: Diabetes Across the Lifespan 3:19 PM-3:36 PM

DAILY STRESS AND SLEEP SATISFACTION IN COUPLES WITH TYPE 1 DIABETES: EVIDENCE OF BIDIRECTIONAL EFFECTS

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Sleep and stress play pivotal roles in living a healthy life and are especially important as individuals cope with a chronic illness. When individuals experience a chronic illness such as type 1 diabetes in the context of an intimate relationship, the relation between sleep and stress may be interdependent and experienced as a dyad. We investigated the bidirectional relations of both daily variation in and average levels of diabetes stress, general stress, and sleep satisfaction across 14 days among couples in which one member had type 1 diabetes (*n* = 122 couples M age=45.48). Patients and spouses completed a diabetes stressor checklist indicating whether patients experienced diabetes stressors, whether they experienced general stressors, and rated their own sleep satisfaction. Multilevel modeling using the actor partner interdependence model indicated that when patients reported having higher than their average sleep satisfaction, patients' diabetes stress and spouses' report of patients' diabetes stress were lower the next day. In regards to the effect of sleep satisfaction on general stress, both actor and partner effects were found at the average and daily level. For instance, when patients and spouses reported higher sleep satisfaction than their average level, both their own and their spouse's general stress was lower the next day. Further, when spouses reported patients' diabetes stress was greater than their average, patients' levels of sleep satisfaction were higher, yet their own levels of sleep satisfaction were lower. There may be benefits to patients when their spouses are aware of their diabetes stress. Patients' and spouses' higher average levels of daily general stress predicted lower levels of their own sleep satisfaction. These results suggest the relation between daily stress and sleep satisfaction is bidirectional, and supports the link between stress and sleep as a dyadic process among couples coping with type 1 diabetes.

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Paper Session 13: Diabetes Across the Lifespan 3:37 PM-3:54 PM

MERITORIOUS AWARD WINNER

DIABETES RISK PERCEPTION AMONG RACIAL/ETHNIC MINORITY AND IMMIGRANT GROUPS: DATA FROM THE NATIONAL HEALTH AND NUTRITION SURVEY

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Individuals from racial/ethnic minority groups are at an increased risk of developing diabetes. Emerging research shows that immigrant (foreign-born) individuals are also at an increased diabetes risk, but less is understood about risk perception in this vulnerable group. Our aim was to examine associations of immigrant status and racial/ethnic minority status with risk perception for developing diabetes among a nationally representative sample of people without diabetes.

Respondents were the 7,983 adults (mean age=47 years, 52% female) from NHANES 2011-2014 who reported no history of diabetes. We coded immigrant status as foreign-born (*n*=2,246, 28%) or U.S.-born (*n*=5,737, 72%). We used the following six NHANES racial/ethnic categories: non-Hispanic White (*n*=3,413, 43%), non-Hispanic Black (*n*=1,722, 22%), Mexican American (*n*=864, 11%), other Hispanic (*n*=731, 9%), non-Hispanic Asian (*n*=1,015, 13%), and other/multi-racial (3%). Diabetes risk perception (yes/no) was assessed by the question: “Do you feel you could be at risk for diabetes or prediabetes?” Immigrant status and five dummy-coded variables comparing each racial/ethnic group to the non-Hispanic White group were simultaneously entered as predictor variables into logistic regression models with diabetes risk perception as the outcome. Models were adjusted for demographic factors (age, gender, education, income) and health risk factors, including diabetes risk factors (HbA1c, self-reported prediabetes diagnosis, family history of diabetes, BMI, CVD, hypertension, hypercholesterolemia, smoking).

A total of 2,360 (30%) reported perceiving that they were at risk for diabetes. Both immigrant status and racial/ethnic minority status were associated with diabetes risk perception. Being foreign-born, versus U.S.-born, was associated with *decreased* odds (*OR*=0.72, 95% *CI*: 0.58-0.91, *p*=0.005) of perceiving a risk for diabetes, while being Mexican American (*OR*=1.80, 95% *CI*: 1.36-2.37), non-Hispanic Asian (*OR*=1.47, 95% *CI*: 1.12-1.94), and other/multi-racial (*OR*=2.17, 95% *CI*: 1.62-2.90), versus non-Hispanic White, were associated with *increased* odds

of perceiving a risk for diabetes *(*all *p*s < 0.05). Our findings suggest that, after controlling for actual diabetes risk status, foreign-born adults are less likely to perceive that they are at risk for diabetes than U.S.-born adults. Importantly, lower diabetes risk perception among foreign-born individuals could result in later detection and poorer management of diabetes, thus contributing to immigrant diabetes disparities. Finally, further research is needed to examine the mechanisms underlying the unexpected finding of higher diabetes risk perception among Mexican American and Asian persons without diabetes.

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Paper Session 13: Diabetes Across the Lifespan 3:55 PM-4:12 PM

FAMILY BARRIERS TO DIABETES MEDICATION ADHERENCE

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Family members and close friends (FF) perform harmful diabetes-specific actions which interfere with adults' self-management of type 2 diabetes (T2D). Experiencing more diabetes-specific harmful actions from FF has been consistently linked to less diabetes medication adherence. However, most identified harmful FF behaviors pertain to diet, exercise, and self-monitoring of blood glucose. Therefore, we sought to identify medication adherence-specific harmful FF actions experienced by adults with T2D.

We recruited adults with T2D (n=102) who were receiving care from Federally Qualified Health Centers (FQHCs) in Nashville, TN to complete a survey and a lab drawn A1c test. We identified six ways FF may interfere with patients' diabetes medication adherence and participants indicated which they had experienced within the past 30 days. We examined bivariate associations between the number of harmful FF actions endorsed by participants and age, gender, race/ethnicity, marital status, depressive symptoms (Patient Health Questionnaire-2), diabetes duration, insulin status, medication adherence (Adherence to Refills and Medications Scale for Diabetes) and A1c using non-parametric tests (Spearman's ρ/Mann-Whitney U). Last, we regressed medication adherence and, separately, A1c on to the number of harmful FF actions endorsed, adjusted for a priori covariates (age, gender, race/ethnicity, marital status, depressive symptoms, diabetes duration, insulin status).

Participants reported family priorities made it difficult to take medication regularly (27%), FF gave annoying medication reminders (21%), FF attempts to help with patient adherence led to conflict (20%), and FF judged patients for taking diabetes medications (17%). Less frequently, participants reported FF gave inaccurate information about (6%) or disapproved of (6%) medications. Fifty-seven percent endorsed at least one diabetes medication-specific harmful FF action and endorsing more of these actions was associated with younger age ($\rho=-.23$, $p < .05$), higher depressive symptoms ($\rho=.22$, $p < .05$), less medication adherence ($\rho=-.35$, $p < .001$), and worse A1c ($\rho=.28$, $p < .01$). In adjusted regression models, more FF harmful actions remained significantly associated with worse medication adherence ($\beta=-.58$, $p < .01$) but not with A1c.

Over half of our patient sample reported recently experiencing one or more harmful FF actions specific to diabetes medication adherence. Experiencing more harmful FF actions was associated with more depressive symptoms and worse A1c and independently associated with worse medication adherence. Family interventions for adults with T2D should attend to these medication-specific harmful FF actions to support improved patient adherence.

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Paper Session 13: Diabetes Across the Lifespan 4:13 PM-4:30 PM

DEPRESSIVE SYMPTOMS MODERATE LINKS BETWEEN SELF-REGULATION AND TYPE 1 DIABETES MANAGEMENT IN LATE ADOLESCENTS

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Late adolescents and emerging adults have poorer management of type 1 diabetes compared to younger adolescents and adults. This may be because they have high levels of depressive symptoms (DS) that undermine the self-regulatory skills and processes necessary to manage diabetes. Prior research demonstrated that those with lower self-regulatory capacity (i.e., problems with executive functions; EF) have poorer management, but that even those with good EF display daily self-regulation failures (e.g., forgetting to test blood glucose) that disrupt diabetes adherence on a daily basis. Such regulatory disruptions may be more common and more damaging for those with DS. The present study used survey and daily diary methods to examine whether DS: a) are associated with poorer self-regulation (i.e., EF skills and daily self-regulation) and b) moderate associations between self-regulation and diabetes outcomes (adherence, blood glucose control). Late adolescents with type 1 diabetes > 1 year were recruited during their senior year of high school (N=247; 60% female; M = 17.8 yrs old). Participants completed cognitive testing to obtain objective measures of EF, and surveys to measure DS and adherence; a blood sample was provided to assay HbA1c as a measure of glycemic control. Subsequently, participants completed a 14-day diary protocol, reporting on daily self-regulation failures and adherence through brief surveys at the end of each day. DS were correlated with poorer EF skills, r= -.22, adherence, r= -.33, and HbA1c, r=.24, *p*s < .001. Interactions revealed higher DS were particularly problematic for adherence and glycemic control among those with lower EF skills, ps < .05. Multilevel modeling of diary data indicated those with higher DS had, on average, more daily self-regulation failures and poorer daily adherence over the subsequent 2 weeks, *p*s < .001. On days participants had higher self-regulation failures, they also reported poorer adherence, and this association was present even after the effect of DS on average levels of self-regulation failures was covaried. Further, DS moderated the daily association of self-regulation failures with poorer adherence, indicating a stronger association among those with higher DS, t = -2.39, p < .05. Findings

identify those who are more at risk for poor diabetes management (high DS, poor EF), and the potential processes (disrupted daily self-regulation) that may be targeted for intervention.

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Paper Session 14: Life After Diagnosis: Planning for Recurrence and End of Life 3:00 PM-3:18 PM

ACCEPTANCE AND COMMITMENT THERAPY FOR CANCER SURVIVORS WITH FEAR OF RECURRENCE: RESULTS OF A 3-ARM RANDOMIZED CONTROLLED PILOT

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Fear of cancer recurrence (FCR) is one of the most prevalent, persistent, and disruptive sources of distress for adult cancer survivors. After completing treatment, 44-56% of survivors continue to report clinically significant FCR well into disease-free survivorship. FCR is associated with maladaptive coping and reduced quality of life. Despite being the most frequently identified unmet supportive care need reported by survivors, few empirically supported treatments exist for FCR.

The primary objective of this 3-arm randomized controlled pilot was to assess feasibility and preliminary efficacy of Acceptance and Commitment Therapy (ACT) in reducing FCR and cancer-related avoidant coping compared to a survivorship education (SE) intervention and to enhanced usual care (EUC). The ACT and SE interventions were delivered in a group format 2 hours weekly for 6 weeks. EUC was largely self-administered with a packet of readings on coping with FCR and other common sources of distress during post-treatment survivorship. Breast cancer survivors (BCS; n=91) diagnosed at an early stage (0-III) who had completed curative treatment and who reported clinically-significant FCR (Fear of Cancer Recurrence Inventory-Short Form score ≥ 13) were randomized to 1 of the 3 arms in a 1:1:1 ratio. Feasibility was assessed descriptively with percentage of eligible BCS who enrolled in the trial, attendance across 6 weekly group sessions (ACT and SE arms), and trial retention (all arms). Intent-to-treat ANCOVA was used to calculate pair-wise Cohen *d* effect sizes between the 3 arms on FCR and cancer-related avoidant coping at post-intervention (T2) and 1-month follow-up (T3), controlling for baseline (T1) scores and covariates.

The majority of participants were White (83.5%) and college educated (64.8%) with an average age of 58.7 years ($SD = 10.7$). Of eligible BCS, 61.7% enrolled in the trial. Retention was 94.5% through T3, and attendance across 6 sessions was 4.95 sessions for ACT and 5.16 sessions for SE with no significant difference between groups ($p = 0.47$). At T2, ACT was superior to SE in reducing FCR (d=0.69, p=0.035) and cancer-related avoidant coping ($d = 0.66$, $p = 0.037$). Similarly at T3, ACT was superior to SE in reducing FCR ($d = 0.66$, $p = 0.023$) and

cancer-related avoidant coping (*d* = 0.83, *p* = 0.002). The only significant difference favoring ACT over EUC was on decreased cancer-related avoidant coping at T2 (*d* = 0.68, *p* = 0.046), with marginal superiority of ACT over EUC on decreased cancer-related avoidant coping at T3 (*d* = 0.59, *p* = 0.078). No significant differences between SE and EUC emerged at any time point.

Findings suggest that ACT is a promising intervention for BCS with clinically-significant FCR and warrants a fully powered efficacy trial.

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Paper Session 14: Life After Diagnosis: Planning for Recurrence and End of Life 3:19 PM-3:36 PM

PERFECTIONISM AND PSYCHOLOGICAL COMORBIDITY AMONG CANCER PATIENTS: A LONGITUDINAL ANALYSIS

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Background: Symptoms experienced by cancer patients (e.g., anxiety, depression, insomnia) frequently occur in comorbidity, suggesting a shared etiology. Data from the general population suggests that perfectionism constitutes a possible psychological transdiagnostic process underlying many cancer-related symptoms. The goal of this study was to investigate whether perfectionist patients experience psychological symptoms to a greater extent during the cancer trajectory. **Methods:** A total of 962 cancer patients (mixed sites) completed self-report measures at the peri-operative phase (T1), as well as 2 (T2), 6 (T3) 10 (T4), 14 (T5) and 18 (T6) months after. Measures included the Multidimensional Perfectionism Scale (MPS; baseline only), the Hospital Anxiety and Depression Scale (HADS), the Fear of Cancer Recurrence Inventory (FCRI), the Multidimensional Fatigue Symptom Inventory (MFI), the Cognitive Failures Questionnaire (CFQ) and the Insomnia Severity Index (ISI). **Results:** 24.6% of the participants showed a clinical level of perfectionism (i.e. score ≥ 25 on the MPS Concern over mistakes subscale) at baseline. This subset of patients consistently reported more severe symptoms (depression, anxiety, fear of cancer recurrence, fatigue, cognitive disturbances and insomnia) throughout the 18-month period. Moreover, perfectionist patients were at least twice as likely as non-perfectionists to report clinical levels of 3 or 4 symptoms concurrently. **Conclusions.** These results suggest that perfectionism is a risk factor of multiple cancer-related psychological symptoms. Perfectionism may represent a critical common underlying process that could be addressed in psychological interventions to reduce symptom comorbidity and the overall burden of cancer on patients and society.

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Paper Session 14: Life After Diagnosis: Planning for Recurrence and End of Life 3:37 PM-3:54 PM

EARLY INTEGRATED PALLIATIVE CARE FOR PATIENTS WITH ADVANCED LUNG AND GASTROINTESTINAL CANCER: WHAT ARE THE KEY ELEMENTS?

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Background: Early integrated palliative care (PC) has been shown to improve quality of life and mood in patients with advanced cancer. Yet, a barrier to dissemination is insufficient data about the essential components of the care model. The goal of this study was to identify core elements of integrated PC across the illness trajectory and examine whether variation in the focus of PC visits was associated with changes in quality of life and mood at follow-up.

Methods: Participants (n = 175) were patients with incurable lung or non-colorectal gastrointestinal cancer who were randomized to receive early integrated PC in the intervention arm of an NIH-funded RCT. Patients completed psychosocial surveys at baseline, 12 weeks, and 24 weeks assessing quality of life (Functional Assessment of Cancer Therapy – General, FACT-G), depression (Hospital Anxiety and Depression Scale, HADS; Patient Health Questionnaire – 9, PHQ-9), and anxiety (HADS). Clinicians completed post-visit surveys identifying the elements they focused on in each palliative care visit. Analyses examined the proportion of visits with particular areas of focus (overall, initial 3 visits, middle visits, final 3 visits) and whether the proportion of visits-to-date at 12 and 24 weeks with a given focus was associated with changes in quality of life and mood.

Results: Throughout the illness trajectory, PC visits focused predominantly on two core elements: coping (64.7%) and symptom management (74.7%). Key coping processes were counseling, behavioral strategies, and redirecting hope. Symptom management focused most on pain and fatigue. Palliative care clinicians focused on building rapport in the initial 3 visits, decision making and advanced care planning in the final 3 visits, and illness understanding throughout. At 24 weeks, patients who had a higher percentage of their visits focused on coping experienced more favorable changes in quality of life on the FACT-G (total score: $\beta = .23$, $p = .006$; social well-being: $\beta = .21$, $p = .02$; functional well-being: $\beta = .17$, $p = .03$) and

symptoms of depression on the HADS (β = -.27, p = .002) and PHQ-9 (PHQ-9: β = -.24, p = .002).

Conclusions: Focusing on coping and symptom management are two key hallmarks of early integrated palliative care for patients with advanced cancer. The role of coping in the care model warrants further attention, as focusing on coping was associated with favorable changes in quality of life and mood.

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Paper Session 14: Life After Diagnosis: Planning for Recurrence and End of Life 3:55 PM-4:12 PM

ADVANCED CANCER PATIENT-CAREGIVER ACCURACY OF AND AGREEMENT ON LIFE EXPECTANCY AND ASSOCIATIONS WITH ADVANCE CARE PLANNING

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Background. Many advanced cancer patients have an inaccurate understanding of their prognosis, which is associated with less engagement in advance care planning (ACP). This study examined patient-caregiver dyads' accuracy of and agreement on estimates of patients' life expectancy (LE) and the relationship between agreement and accuracy and rates of ACP.

Method. Data were collected as part of a multi-site longitudinal study of terminally-ill cancer patients (LE≤6 months) and their informal caregivers. Patients and caregivers (n=178 dyads) completed an interviewer-administered survey (median 3.05 months before patient's death) assessing their estimates of patients' LE. ACP was assessed through patient-report. Accuracy was defined as a LE estimate for the patient of ≤6 months. Concordance was defined as patient-caregiver dyads agreeing on LE estimates (≤6 months or >6 months). Logistic regression analyses were conducted.

Results. Across all dyads, 14.6% of patients and 28.1% of caregivers reported accurate LE estimates. A majority of the dyads (76.4%) reported concordant LE estimates. Only 9.6% of dyads reported concordant and accurate LE estimates. Over two-thirds of dyads (66.9%) reported concordant but inaccurate estimates. Approximately one-fifth (18.5%) of dyads were discordant with an accurate caregiver estimate; 5.1% were discordant with an accurate patient estimate. Patients were more likely to have a completed DNR order in concordant-accurate (OR=10.80, p < .01) and discordant dyads (patient accurate: OR=16.20, p=.01; caregiver accurate: OR=2.47, p=.03) than in concordant-inaccurate dyads. Patients were more likely to have a HCP in concordant-accurate (OR=10.74, p=.02) and discordant dyads in which the caregiver was accurate (OR=2.49, p=.050) than concordant-inaccurate dyads. Patients were more likely to have a living will in concordant-accurate (OR=6.00, p=.02) and discordant dyads in which the caregiver was accurate (OR=2.50, p=.04) than concordant-inaccurate dyads.

Discussion. The majority of dyads share an inaccurate view of LE. Patients are more likely to engage in ACP when they and their caregiver are concordant and accurate in their LE estimates than concordant-inaccurate dyads. In discordant dyads, patient accuracy may promote DNR order completion; caregiver accuracy may support HCP identification and living

will completion. Results suggest interventions targeting patient and caregiver accuracy of and agreement on LE may improve ACP rates.

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Paper Session 14: Life After Diagnosis: Planning for Recurrence and End of Life 4:13 PM-4:30 PM

FEAR OF CANCER RECURRENCE IN PROSTATE CANCER: EXAMINING PATIENT-SPOUSE DYADS FROM PRE-TREATMENT TO 12 MONTHS POST

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Background: Fear of cancer recurrence (FCR) in both cancer survivors and their family caregivers is associated with reduced quality of life and increased psychological morbidity. Furthermore, patients and caregivers may influence each other, potentially exacerbating these problems. Currently, little is known about FCR and its trajectory among prostate cancer patients and their spouses. This study aimed to investigate: i) the trajectory of FCR over time from pre-treatment to post-treatment; ii) the influence of partner FCR over time in patient–spouse dyads; and iii) the possible moderating effect of treatment type upon later FCR.
Methods: A total of 71 men diagnosed with early-stage prostate cancer (PC) and their spouses were followed at baseline prior to treatment (T1), and at two time points after treatment – 6 months (T2) and 12 months after baseline (T3). Participants completed a 2-item measure evaluating FCR on a 5-point Likert scale at each time point. Repeated measures ANOVA examined differences within the dyads over time comparing longitudinal patterns for patients and spouses. Separate actor-partner interdependence models (APIMs) were conducted to examine actor and partner effects on subsequent FCR from T1-T2 and T2-T3, including the effect of treatment type on later FCR.
Results: On average, both members of the dyads reported mild to moderate levels of FCR across all 3 time points. Spouses demonstrated a trend for greater FCR at T1 (p = .06) and reported significantly greater FCR than patients at T2 and T3 (ps > .01). Patient and spouse FCR were moderately correlated over time (r = .36 at T1; r = .35 at T2; r = .19 at T3). Both members of the dyads had significant decline in FCR over time (p < .001), with a trend for patient FCR to decrease at a faster rate compared to spouses (p = .12). APIMs demonstrated significant actor, but not partner effects for T1-T2 and T2-T3 models. Receiving surgery was significantly related to less FCR in spouses at T2 (p = .01); surgery was unrelated to FCR at T3 for either member of the dyad.
Conclusions: FCR is common in patient-spouse dyads and gradually declines over the first year following treatment for early-stage PC. Spouses report greater FCR than patients and tend to exhibit slower decline in fear over time. Patient and spouse FCR, while moderately correlated, does not appear to impact one another over time. The impact of surgical intervention appears

to reduce FCR for spouses more than for the patients. Future research should examine how FCR relates to other types of distress and quality of life in dyads over time.

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Paper Session 15: Food Access and Availability 3:00 PM-3:18 PM

WORKING UPSTREAM TO IMPACT DIETARY BEHAVIOR CHANGE: CHARACTERIZING RURAL FOOD ACCESS IN REMOTE AREAS

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Introduction: Diet-related environmental and policy interventions are advantageous at a population level since individual change is more likely to be facilitated and sustained if the environment supports healthful food options. The current study characterized rural food retail and healthy food access in the rural northeast region of Michigan to provide more information on specific needs within this predominately rural region.

Methods: A 15 county region of rural northeast Michigan was assessed through triangulating a combination of three secondary data sources, store observations using a customized tool, and key informant interviews.

Results: Secondary data yielded over 800 retail food establishments, which were categorized into 15 food retail types (e.g., large chain supermarkets, limited assortment food marts, dollar stores). In-person observations were conducted at 20 stores, which included small grocers/convenience stores without gas (n=7), small or mid-sized grocers with gas (n=6), mid-sized independent retailers (n=5), and limited assortment/food mart/gas stations (n=2). Ready-to-eat items (e.g., sandwiches available in 90% of the stores) were readily available across all store types. Across food categories, we found that the larger stores had a greater variety and higher quality of produce, lean meats and dairy, and whole grains. In addition, small grocers with gas had slightly more availability of processed snack foods (e.g., chips, sugary drinks). Key informant interviews (N=10) emphasized the challenges that these communities faced in terms of healthy food access, such as the drain of the large regional supercenter and related economic challenges. Interviewees described that many of these communities have an aging and dwindling population, however, they also have an interest in supporting locally grown and healthier foods, but conveyed that this may be cost prohibitive for local families. The need for community-driven solutions and for further engaging and tailoring nutrition and health education for rural and remote communities was also highlighted.

Conclusions: This study provides insights into how the rural food environment may shape dietary behaviors and inform healthy food access strategies, but also describes the development of methodology and tools relevant for the unique challenges that rural communities face.

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Paper Session 15: Food Access and Availability 3:19 PM-3:36 PM

MERITORIOUS AWARD WINNER

SMARTPHONE-BASED ASSESSMENT OF FOOD ENVIRONMENT ASSOCIATIONS WITH SUGAR-SWEETENED BEVERAGE (SSB) INTAKE IN SHANGHAI, CHINA

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The rising obesity epidemic in China occurs at a time of fast economic development and built environment changes is characterized by increasing availabilities of energy-dense foods with added sugars, such as sugar-sweetened beverages (SSBs). As few studies have systematically quantified and addressed the nutrition transition and changes in the built environment in China, and how these shifts relate to changes in food environment, diet, physical activity and obesity, the objective of this paper is to use smartphone-assisted diet and physical activity assessments and mobility tracking to examine the relationships between food environment exposures and SSB consumption in rural and urban Shanghai.

120 healthy adults aged 25-40 years with roughly 1:1 rural to urban and male to female ratios. Participants’ SSB consumptions were assessed using smartphone-assisted 24-hour recalls on three consecutive days, and physical activities were assessed via a custom app called CalFit, which recorded date, time, latitude, longitude, and accelerometry counts at 10-second intervals. Participants’ food environment exposures were assessed by extracting food environment data along participants’ GPS tracks using a “Staypoint” algorithm and Google Places, and three measures were generated including overall number of food establishments, richness and Shannon Diversity Index. Other covariates were obtained via demographic surveys and anthropometric measurements. Logistic regression models were used in examining the relationships between food environment and SSB consumption. Multiplicative interactions between food environment exposure variables and the several covariates (age, sex, urbanicity, BMI, smoking, employment and parent status) were also explored in separate models.

23% of participants were overweight or obese; 33% were smokers; 44% had children, 54% had college or university degrees, and 52% reported SSB consumption. In general, participants had approximately 1814 Kcal of physical activities. They were exposed to 186 food establishments per day, and had an average richness score of 14.5 and Shannon Diversity Index of 2.86. Individuals' food environment exposures were found to influence their consumption of SSBs. Urban, older (aged 27-40), more educated, male gender and overweight participants had higher odds of consuming SSBs. Moderation effects were observed depending on participants' weight status, as well as in participants who have children versus without children.

As this is the first and only study utilizing smartphones to assess the associations between food environment and SSB consumption, more research is needed to replicate current study findings. Due to the sample size and cross-sectional nature of the current study, future longitudinal study with larger sample size would improve current study results.

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Paper Session 15: Food Access and Availability 3:37 PM-3:54 PM

ECONOMIC FACTORS ASSOCIATED WITH DIETARY QUALITY AND MEETING DIETARY GUIDELINES IN UNDERSERVED NEIGHBORHOODS IN THE SOUTHEAST

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Background: Geography and economics can influence availability of healthy food, but it is unclear how these factors influence dietary intake in underserved, financially disadvantaged neighborhoods. This study examined whether dietary quality and the proportion meeting dietary guidelines differed by food security, education, and SNAP benefits in a predominantly African American sample from underserved neighborhoods..

Methods: Participants were recruited from seven census tracts in two South Carolina cities. Six met the USDA definition of an urban food desert. In-person interviews collected sociodemographic and food security information (using the 18-item USDA Household Food Security questionnaire). One unannounced 24-hour dietary recall was conducted by telephone using Minnesota's NDSR protocols and software. Healthy Eating Index 2010 (HEI-2010) total scores characterized dietary quality and conformance with federal dietary guidelines. Participants were also classified as meeting vs. not meeting 2010 Dietary Guidelines for major foods and macronutrients. Differences in mean dietary quality and percent meeting dietary guidelines according to food security (low/very low or high/marginal), education (less than high school, high school, or some college or greater), and receipt of SNAP benefits (yes or no) were tested with Fisher's exact test and ANOVA.

Results: Participants with dietary data (n=465) averaged 52.3±14.2 years; 92% were African American, 79% overweight or obese, 37% high school graduates, 32% at least some college, and 64% received SNAP benefits. HEI-2010 scores averaged 48.8±13.08 (max possible score=100). Fewer than 50% of the sample met dietary guidelines for total fat, saturated fat, carbohydrates, and grains. Fewer than 20% met guidelines for fiber, fruits, vegetables, transfat, and 50% whole grains. Dietary quality was lower among those in SNAP households (p=.06), those reporting high school or less education (p=.05), and among those in food insecure households (p=.04). Fewer food insecure participants met guidelines for 50% of grains being whole grains (8% vs. 15%, p=.03), but no other significant ($p < .05$) differences were found for meeting dietary guidelines by food security, those in SNAP households, or education.

Conclusion: Within southeastern underserved neighborhoods, economic variables were related to dietary quality but not meeting dietary guidelines. The lack of association with meeting dietary guidelines might be attributed to low percentages meeting guidelines overall.

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Paper Session 15: Food Access and Availability 3:55 PM-4:12 PM

IS THERE A ROLE FOR SMALL FOOD RETAIL OUTLETS IN HEALTHY FOOD ACCESS?

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Introduction: One contributing factor to poor diet is an environment in which foods high in sugar and fats are ubiquitous, coupled with a lower availability of more nutritious foods such as fruits and vegetables. This study explored the role that smaller food retail outlets (e.g., corner stores) can play in healthy food access.

Methods: Qualitative interviews were guided by the Social Ecological Model and were conducted with experts in the area of nutrition and public health (N=18) as well as with store-owners at small food retail outlets (N=20) on current practices, challenges, and strategies implemented. Interviews with content experts from across the United States (U.S.) were conducted by phone, while store-owner interviews were conducted in-person across the state of Nebraska. Interviews were recorded and transcribed verbatim, then coded for themes.

Results: Rural storeowners reported key challenges, including a dwindling population and competition with larger chains in neighboring towns set in a sparsely populated landscape. Urban storeowners reported challenges, including gang presence and safety concerns in their communities, which deterred even local customers. Both urban and rural storeowners described the constraints that manufacturer/distributor agreements place on their businesses. Content experts described the focus of their work and unique settings in which they implement interventions. Further, experts conveyed the opportunity small stores provide to address food access concerns in low resource communities, specifically to “meet consumers where they are.” Measurement gaps included difficulty in gaining access to and working with sales data, limited sensitivity of observation tools (e.g., NEMS), inadequate validity of secondary data and need for resource intensive primary data collection, and lack of understanding of shopping behaviors.

Conclusions: This study adds to the growing body of literature about the role that small food retail outlets can play in healthy food access, in particular the challenges and barriers that must be addressed. The triangulation of qualitative data from store-owners in Nebraska and content experts from across the U.S. provides a rich source of information to inform discussion of best practices and future directions.

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Paper Session 15: Food Access and Availability 4:13 PM-4:30 PM

DOES THE ADOPTION OF THE HEALTHY EATING STANDARDS IMPACT SNACK QUALITY IN LOCAL AFTER-SCHOOL PROGRAMS?

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Background. More than 8 million children participate in after-school programs (ASPs). In 2011, the National Afterschool Association adopted the evidence-based Healthy Eating and Physical Activity Quality Standards (HEPAQS) to address snack quality & physical activity in ASPs. Although research has indicated promise in the adoption of these policies, little is known about local adoption, implementation, and effectiveness of HEPAQS. This study occurs under an ongoing CBPR initiative, as such, community partners responsible for local ASPs approached researchers to evaluate the planned adoption of HEPAQS in local ASPs. This allowed the partnership to take advantage of a natural experiment to 1) compare the quality of snacks served at ASPs sites before & after the HEPAQS policies were implemented, 2) determine the nutrient quality of snacks being offered, and 3) the impact of non-program snacks brought in by children or purchased at onsite vending machines. Methods. An interrupted time series design was used to measure children's snack observations across all sites during a pre-policy adoption period (n=531) & a post-policy adoption period (n=412) and included 3 policy adopting sites and 2 non-policy adopting sites as comparison control. Trained research staff collected snack type, brand, and amount consumed using the HAAND tool and a modified quarter-waste method. Analysis on nutrient content was completed in NDS-R software. Results. Adoption of the HEPAQS among the policy-adoption sites did not result in better snack quality based on adherence to the standards. Policy-adoption sites were only meeting 4 of the 9 adopted Healthy Eating standards post-policy, almost all of which were already being met pre-policy. Although no significant changes were expected among comparison sites, there was a significant increase in 100% fruit juice consumption and a decrease in grams of trans-fat from pre- to post-policy data collection. Across all 5 sites, program snacks were generally healthier than non-program snacks, as program snacks contained less SSBs, sweets, and snack chips. Conclusions. The adoption of the HEPAQS did not result in better snack quality thus pursuing additional HEPAQS of implementation, staff training, and social and program support may be necessary to impact snack quality. ASPs may improve non-program snack quality by addressing HEPAQS provided for ASPs or onsite vending machines and guidelines provided to parents regarding non-program snacks.

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Paper Session 16: Leveraging Communities to Advance Health Promotion 3:00 PM-3:18 PM

HARNESSING COMMUNITY-ENGAGED CITIZEN SCIENCE TO PROMOTE SAFE ROUTES TO SCHOOL IN RURAL PARTS OF SANTA CLARA COUNTY, CA

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Background: Community-engaged citizen science can promote sustainable local change to address health disparities and improve population health. By leveraging multi-sectoral partnerships, this cost-efficient model builds capacity for tailored behavioral health interventions. Through a partnership between Stanford School of Medicine and the Santa Clara County Public Health Department (SCCPHD), citizen science has been incorporated into local Safe Routes to School (SRTS) programs. This community-engaged process has been employed to unite residents, public and private organizations, non-government agencies, and researchers in driving the sustainable development of healthier communities. Methods: Stanford researchers partnered with the SCCPHD and relevant local organizations to develop a citizen science-engaged SRTS program in two rural schools in Gilroy, CA. The project involved 15 students at a middle school and 7 parents at an elementary school. Participants gathered qualitative information about neighborhood barriers and facilitators to health and wellbeing using an electronic tablet. Collectively, participants and partners prioritized neighborhood issues to address, possible solutions and potential allies. Results: Projects resulted in increased involvement of community residents in community health advocacy. Measurable effects include 6 school parent task force meetings, 5 monthly walking Wednesdays, 9 walking/biking encouragement events, 2 meetings with local stakeholders, and 4 community discussion meetings. In contrast, a neighboring school that did not involve the citizen science process in their SRTS program resulted in less overall community involvement without task forces and community discussion meetings, as well as fewer engagement events, with 2 walking/biking events and 2 walking school bus days. Conclusion: Incorporating citizen science into school-based public health investigations has helped launch community-based programs, task forces, and resident initiatives to improve walkability and bikeability in school settings. Citizen science has been shown to be an effective strategy for translating research into practice through advocacy and policy.

Learning objectives: Design projects that incorporate citizen science into school-based public health interventions. Develop effective community engagement strategies to involve community residents in health advocacy.

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Paper Session 16: Leveraging Communities to Advance Health Promotion 3:19 PM-3:36 PM

RESULTS OF A COMMUNITY-BASED APPROACH TO DECREASE GENDER-BASED PHYSICAL ACTIVITY DISPARITIES

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The Healthy By Design Coalition sought to accommodate gender norms to increase leisure-time physical activity for women and girls in Yellowstone County, Montana. Baseline data from the 2010/2011 Community Health Needs Assessment (CHNA) indicated a statistically significant disparity with 27.2% of women versus 17.2% of men reporting no leisure-time physical activity in the past month. To address this disparity, the Coalition developed a community-based approach including community-based participatory research, social marketing, and policy development.

A gender-tailored intervention with quasi-experimental cluster-randomized intervention trial was conducted. Groups were randomized to receive the standard, evidence-based Active Living Every Day program, a 12-week lifestyle approach class designed to increase physical activity in previously sedentary healthy adults, or the Gender-Tailored Active Living Every Day class, the standard class with additional focus on the role gender plays on physical activity, including specific strategies to overcome gender-based barriers to physical activity.

A social marketing campaign was developed to focus on gender-based activities in which women engaged, but did not consider physical activity. The campaign theme, “It all adds up” was designed to focus on accumulated activity. By accommodating existing gender-based caregiving roles and activities, physical activity could be accumulated without challenging existing societal expectations for women as caregivers.

Understanding gender was also influential in the development of worksite physical activity policies. Barriers to activity such as appearance expectations and discomfort sweating in front of others were taken into account as policies were drafted. The workplace physical activity policies emphasized incorporating short 5-10 minute physical activity breaks into meetings such as stretch breaks, icebreakers or other activities which would not require heavy sweating or special clothing.

In the fall of 2016, a follow-up survey was conducted using the same methodology as the 2010/2011 CHNA. Results from the 2016/2017 CHNA reveal a significant decrease in gender-

based physical activity disparities with only 19.8% of women and 15.04% of men reporting no leisure-time physical activity as compared to 27.2% of women and 17.2% of men in 2011. These results indicate a collaborative community-based approach may lead to a decrease in gender-based physical activity disparities.

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Paper Session 16: Leveraging Communities to Advance Health Promotion 3:37 PM-3:54 PM

CULTURALLY-RELEVANT ONLINE EDUCATION EMPOWERS COMMUNITY HEALTH WORKERS TO REDUCE CANCER RISK AND DISSEMINATE INFORMATION

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INTRODUCTION

Alaska’s community-based primary care providers requested information about cancer for themselves and their communities that would overcome geographic and economic barriers by being accessible via the Internet. In response, a research team at the Alaska Native Tribal Health Consortium developed a successful application to the National Cancer Institute to create a culturally-respectful distance-delivered cancer education course with, and for, Alaska’s Community Health Aides and Community Health Practitioners (CHA/Ps).

THEORETICAL FRAMEWORK

This intervention is framed by Community-Based Participatory Action Research that honors Indigenous Ways of Knowing, and is grounded in Empowerment Theory. Empowerment Theory includes three components of empowerment outcomes: intrapersonal (a change in the way an individual thinks of themself), interactional (shifts in understanding about a given concern), and behavioral (actions taken to directly influence outcomes).

APPROACH

Nine interactive online cancer education modules were created on topics including Women’s Health, Colorectal Cancer, Men's Health, Cancer and Our Genes, Tobacco, and Cancer Basics. Each of these modules was reviewed by content experts and a community advisory board of CHA/Ps and partners. The revised versions were published online through the Alaska Community Health Aide Program Training Center as CHA/P continuing education. While evaluation is iterative and ongoing, 338 module evaluations were collected between March 2015 and July 2016.

RESULTS

Similar to employed CHA/P demographics, individuals who provided evaluations were mostly female (85%) and Alaska Native/American Indian (76%). Evaluation measured the three components of Empowerment Theory; changes in comfort and confidence in talking about cancer (intrapersonal), changes in knowledge (interactional), and intent to disseminate cancer information and reduce cancer risk (behavioral). Preliminary findings include respondents sharing they would use the information they learned in the cancer education modules with their patients (85%) and their communities (61%); and that most respondents (80%) reported the cancer education modules had made a difference in the ways they took care of themselves, including motivating CHA/Ps to reduce or quit tobacco use, eat healthier, exercise more, and schedule cancer screening exams.

DISCUSSION

CHA/Ps, and other community health workers, are optimal people to empower individual and community-level behavior change due to their embeddedness within existing social networks, and their centrality in each community's health network. The impact of interventions with community health workers can change actual, or perceived, social norms, and disseminates those norms through social networks to promote community-wide health behavior change.

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Paper Session 16: Leveraging Communities to Advance Health Promotion 3:55 PM-4:12 PM

IT'S TIME TO ACT: ASSESSING STUDY DESIGN OF A HEALTH PROMOTION PILOT INTERVENTION TO IMPACT CRC SCREENING AMONG AFRICAN AMERICANS

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Background: Colorectal cancer (CRC) incidence and morbidity disparities among African Americans may be addressed through innovative health communication and health promotion programs co-designed and co-delivered by the community. This study details the feasibility of design, intervention and baseline characteristics of a Community-Based Participatory Research (CBPR) faith-based pilot intervention to increase CRC screening among African Americans. **Method**: A cluster randomized design was employed to assign 4 churches to an intervention group where they received tailored materials through a socially marketed communications campaign within the church (“*It’s Time to ACT*”) and 4 churches to a control group (non-tailored and non-socially marketed). Church members and community members who were 45 years or older; not up-to-date with screening and who did not have a family history of CRC were recruited for the study. All 8 churches were within a bi-state area in the Midwest and were predominately African American congregations. Participant baseline characteristics were measured to assess attitude toward screening, attitude toward the tailored CRC screening communication materials within the campaign, attitude toward the church co-sponsoring the tailored materials, CRC beliefs and also behavior intention. Primary outcome was screening completion of an iFOBT (immunochemical fecal occult blood test). **Results**: Church members and also community members affiliated with the study churches were enrolled (N=175). At baseline 77% of the intervention group participants indicated that they had intentions to complete CRC screening with an iFOBT. Based on 7-point semantic scales, a majority of this group had a positive attitude toward their church as the co-sponsor of a tailored CRC post card advertisement and rated it as credible (M=1.3). More than half of the participants in the intervention (78%) and comparison groups (83%) also had a positive attitude toward screening for CRC with a fecal occult blood test. **Conclusions**: Preliminary results of baseline data show that church members recruited to participate in a CPBR health communication pilot-intervention study focused on increasing CRC screening behavior among African Americans is feasible. Employing faith-based organizations to co-develop and co-

deliver health communications programs within faith-based settings aimed at improving CRC screening shows promise.

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Paper Session 16: Leveraging Communities to Advance Health Promotion 4:13 PM-4:30 PM

CITATION AWARD WINNER

INTEGRATING CIVIC ENGAGEMENT INTO A BEHAVIOR CHANGE INTERVENTION TO REDUCE CARDIOVASCULAR DISEASE IN RURAL WOMEN

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Introduction: Rural women experience poorer health outcomes as compared to their urban counterparts. These disparities are partly attributable to environmental conditions, including limited access to healthy foods, opportunities for physical activity, and medical care. Civic engagement is a potential strategy for improving community environments; however, research on the effectiveness of this approach in rural contexts is limited. The present study aimed to evaluate the implementation of a novel civic engagement curriculum (HEART Club) designed to catalyze positive environmental change in rural communities.

Methods: The HEART Club curriculum was integrated into a six-month community-based lifestyle modification intervention trial to reduce heart disease risk factors among overweight/obese rural women in medically underserved communities. HEART Clubs were implemented with the support of the local health educators running the intervention program in eight rural towns in Montana and New York. At each site, participants worked to collectively address an issue related to their local food or physical activity environment and establish benchmarks for self-monitoring of progress.To assess HEART Club progress, focus groups (n=8) and interviews (n=8) were conducted with participants and leaders post-intervention. Leaders also completed an online evaluation survey three months post-intervention.

Results: The majority of HEART Club groups in the eight towns documented satisfactory progress and had accomplished two or more benchmarks post-intervention. Among the most successful groups, facilitators of progress included support from local stakeholders, effective leadership, and high group morale. Resource constraints, uncertain expectations, and unfeasible timelines were cited as barriers to HEART Club implementation. Results also indicate that participants felt overwhelmed by the prospect of community change while simultaneously trying to make personal health improvements and their initial resistance likely stalled progress.

Conclusions: These findings highlight both the potential and challenges associated with rural civic engagement initiatives within the context of a lifestyle intervention program among at risk, underserved women. Findings can help guide improvements to ensure future success of this approach.

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Paper Session 17: Mental and Physical Health of Veterans 3:00 PM-3:18 PM

ASSESSING DEPRESSION IN MILITARY MENTAL HEALTH: A COMPARISON OF THE PHQ-9 AND PHQ-8

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The World Health Organization (WHO) recognizes depression as a global public health concern (WHO, 2012) and one of the most burdensome diseases in the world (WHO, 2002). It is one of the leading causes of disability and reduced work productivity. Due to the high prevalence and impact of this disease, valid scales for the screening and diagnosis of depression are essential in healthcare. The Patient Health Questionnaire nine item (PHQ-9) scale is commonly used to assess depression and is valid as both a diagnostic and severity measure. However, the ninth item of the scale, which asks about suicide, has caused some concerns. Specifically, there is sometimes apprehension to ask this question in a self-report fashion without immediate opportunity to assess any positive endorsement. In the military population where increased attention is being placed on suicide, institutional review boards are especially critical of the ninth item (Wells, Horton, LeardMann, Jacobson & Boyko, 2013). Some studies have adopted the PHQ-8, which excludes the ninth item and found it to be valid for assessing depression in general (Kroenke, Strine, Spitzer, Williams, Berry & Mokdad, 2009) and military (Wells et al., 2013) populations. The depression screening capabilities of the PHQ-8 versus PHQ-9 have yet to be examined in a military mental health population.

In order to compare the PHQ-8 with the PHQ-9 and understand their ability to screen for depression we conducted a retrospective analysis of self-report data from 2854 active-duty service members (SMs) who completed the PHQ-9 as part of a standardized assessment program, Psychological Health Pathways (PHP), in military mental health clinics from 2009 to 2012. Univariate analyses determined how often SMs screened positive or negative on both measures, and how often they screened positive on PHQ-9 but negative on PHQ-8. Kappa statistics at T1 (entry into PHP) and T2 (10 weeks post-PHP entry) established the degree of non-random agreement and provided a cross-sectional comparison of performance at both time points. Kappa statistics also determined level of agreement between PHQ-8 and PHQ-9 to detect clinically significant improvement (a 5-point or greater decrease in score from T1 to T2). Only 49 (1.7%) of the 2854 SMs screened discordantly (PHQ-9 positive and PHQ-8 negative) when using the PHQ-8 compared with the PHQ-9. At baseline, 1524 (53.4%) SMs screened positive for depression on the PHQ-9, and of those, 1475 (96.8%) screened positive

using the PHQ-8. The PHQ-8 had greater than substantial agreement with the PHQ-9 (k=.97), and it also compared well when assessing a 5-point or greater increase (k=.91) or decrease (k=.95) in score from T1 to T2. Our results indicate that the PHQ-8 performs similarly to the PHQ-9 when assessing depression in military mental health.

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Paper Session 17: Mental and Physical Health of Veterans 3:19 PM-3:36 PM

VETERANS GROUP EXERCISE: INTEGRATING EXERCISE AND MINDFULNESS TO REDUCE POST-TRAUMATIC STRESS

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Posttraumatic stress disorder (PTSD) is prevalent among military veterans (Ramchand et al., 2010; Schlenger et al., 1992) and is associated with a number of negative physical health outcomes, including cardiovascular disease (Ahmadi et al., 2001) and obesity (Bartoli et al., 2015). Although empirically supported psychotherapies for PTSD have been disseminated in the Veterans Health Administration (Karlin et al., 2010), only about 10% of veterans attend a minimally adequate number of mental health appointments in the first year following PTSD diagnosis (Seal et al., 2010). Veterans with mental health disorders endorse significant barriers to traditional mental health treatment, including stigma (Hoge et al., 2004), necessitating the development of alternative treatment options for PTSD. We developed an integrative exercise (IE) program combining aerobic and resistance exercise, which is familiar to veterans, with mindfulness-based practices, which are increasingly utilized in military programs (Crawford et al., 2013). Veterans (*N* = 47) were randomized to either IE or waitlist control (WL). The sample was 81% male and 47% racial/ethnic minority. Average duration of PTSD was 18 years, and 40% of participants were concurrently taking psychiatric medication. IE was offered in group format at a local YMCA for 3 1-hour sessions weekly for 12 weeks. Exercise sessions emphasized aerobic exercise, strength training (weights and resistance bands), and yoga within the context of mindfulness-based principles, such as nonjudgmental attitude and acceptance. Seventy-six percent of veterans randomized to IE completed the program and demonstrated an average reduction of 31 points on the Clinician Administered PTSD Scale, significantly greater than WL (*M* = 15), *d* = .90, *p* = .038. In particular, symptoms of hyperarousal improved substantially more in the IE group compared with WL, *d* = .80, *p* = .044. There was also greater improvement in quality of life in the psychological domain, (*d* =

.53, $p = .005$) but no relative improvement in quality of life in the physical domain ($d = .33$, $p = .183$), both as measured by the World Health Organization Quality of Life (WHOQOL-BREF) subscales. This initial study suggests that IE is a novel approach to treating veterans with PTSD that reduces symptoms of posttraumatic stress and improves psychological quality of life. This approach to recovery may expand the reach of PTSD treatment into less-stigmatized activities and settings.

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Paper Session 17: Mental and Physical Health of Veterans 3:55 PM-4:12 PM

FIVE-YEAR DIABETES COMPLICATION PROGRESSION LESS SEVERE IN VETERANS WITH MENTAL HEALTH CONDITIONS

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Mental health conditions (MHCs) are associated with higher risk for diabetes complications, but their association with progression of diabetes complications over time is understudied. Administrative data from the Veterans Health Administration (VHA) was used to identify patients with new-onset diabetes in 2008 who were alive through 2013. Patients were included (N = 91,687) if aged 18-75 years at the time of their first recorded diabetes diagnosis, and if they used any VHA medical care in 2013. The Diabetes Complication Severity Index (DCSI, score range 0-13) was calculated for two periods of time: (1) two years before diabetes onset (“baseline”), and (2) the one-year period starting five years after the date of the patient’s first diabetes diagnosis. Change in DCSI score from baseline to five years after diabetes onset was regressed on baseline socio-demographics, comorbidities, and medical and mental health care utilization. Having or not having a MHC at baseline was the main comparison of interest. On average, DCSI scores increased by 0.63 (SD = 1.49) after five years. Patients with MHCs at baseline (27.3%) were 2.8 years younger, more likely to be female, unmarried, homeless, and had more medical comorbidities ($p < .001$ for all). Patients with MHCs had higher DCSI scores at baseline (mean = 0.76, SD = 1.18) but lower scores five years later (mean = 1.00, SD = 1.34) than did patients without MHCs (means = 0.37 and 1.15, SDs = 0.88 and 1.48, respectively). Contrary to our hypotheses, having a MHC was independently associated with less progression of diabetes complications ($b = -.39$, $SE = .02$, $p < .001$) after controlling for baseline socio-demographics, comorbidities, and health care utilization. More outpatient visits to a mental health provider before a patient’s first diabetes diagnosis was further associated with less of an increase in DCSI score after five years ($b = -.005$ per visit, $SE = .001$, $p < .001$). Unique aspects of VHA health care delivered to people with MHCs may be protective against diabetes complications, compared to care delivered to people without MHCs. Future studies should use longitudinal designs with greater power to model moderators and mediators of diabetes progression while investigating unique aspects of care received by Veterans with MHCs and diabetes.

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Paper Session 17: Mental and Physical Health of Veterans 4:13 PM-4:30 PM

PERSISTENT POSTTRAUMATIC STRESS DISORDER AMONG U.S. MILITARY SERVICE MEMBERS AND VETERANS

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Objective: Chronic posttraumatic stress disorder (PTSD) can have long-term and far-reaching impacts on health, social, and occupational functioning. This study examined factors associated with persistent PTSD among U.S. service members and veterans.

Method: Using baseline and follow-up (2001–2013) questionnaire data from the Millennium Cohort Study, multivariable logistic regression was used to determine factors associated with persistent PTSD. Participants included those who screened positive for PTSD using the PTSD Checklist–Civilian Version at baseline (*n*=2409). Participants were classified as having remitted or persistent PTSD based on screening negative or positive, respectively, at follow-up.

Results: Almost half of the participants (47%) met criteria for persistent PTSD at the first follow-up; among those, 71% also screened positive for PTSD at the second follow-up. Multiple factors were independently associated with persistent PTSD in an adjusted model at the first follow-up, including older age, deployment with high-combat exposure, enlisted rank, initial PTSD severity, depression, history of physical assault, disabling injury/illness, and somatic symptoms. Among those with persistent PTSD at the first follow-up, additional factors of less sleep, separation from the military, and lack of social support were associated with persistent PTSD at the second follow-up.

Conclusions: Combat experiences and PTSD severity were the most salient risk factors for persistent PTSD. Comorbid conditions, including injury/illness, somatic symptoms, and sleep problems, also played a significant role and should be addressed during treatment. The high percentage of participants with persistent PTSD supports the need for more comprehensive and accessible treatment, especially after separation from the military.

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Paper Session 18: Innovative Studies on Discrimination and Stress 3:00 PM-3:18 PM

CITATION AWARD WINNER

PERCEIVED WEIGHT, RACIAL, AND SEX DISCRIMINATION AND CARDIOVASCULAR DISEASE IN UNITED STATES ADULTS

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Objective: Psychosocial stress has received increased attention as a potential modifiable risk factor for cardiovascular disease (CVD). Perceived discrimination is increasingly recognized as a psychosocial stressor with a profound impact on physical and mental health. To date, much of the research on discrimination in relation to CVD has focused on racial discrimination. The current study investigated the relationship between three common forms of discrimination (weight, race, and gender) and 3-year incidence of CVD in a large national sample of U.S. adults.

Methods: 26,992 adults (55.5% women) who participated in the 2001-2002 and 2004-2005 National Epidemiologic Survey of Alcohol and Related Conditions (NESARC) were included in this study. Multiple logistic regression analyses were used to calculate odds ratios (OR) and 95% confidence intervals (CI) for three forms of perceived discrimination (simultaneously included in equations after adjusting for relevant confounds) for predicting CVD incidence at Wave 2.

Results: Adjusting for sociodemographic variables and other confounders, perceived weight and racial discriminations were associated with significantly greater likelihood of reporting myocardial infarction (OR=2.56 [95% CI=1.31-4.98], OR=1.84 [95% CI=1.19-2.84], respectively) and minor heart conditions (OR=1.48 [95% CI=1.11-1.98], OR=1.41 [95% CI=1.18-1.70], respectively). Perceived racial discrimination was also significantly associated with greater likelihood of reporting arteriosclerosis (OR=1.61 [95% CI=1.11-2.34]). Odds of diagnoses for arteriosclerosis, myocardial infarction, and other minor heart disease were the largest for individuals reporting multiple forms of discrimination.

Conclusion: Our findings suggest that adults who experience weight and racial discrimination, and especially multiple forms of discrimination, may be at heightened risk for CVD. Our findings add to the emerging literature on the detrimental effects of obesity stigma. Perceived discrimination may be important to consider during assessment of life stressors by health providers. Future research should address mechanisms linking discrimination and CVD and

especially on public health and policy efforts to reduce discrimination which may contribute to improved health outcomes.

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Paper Session 18: Innovative Studies on Discrimination and Stress 3:19 PM-3:36 PM

MINORITY STRESS, PSYCHOSOCIAL RESOURCES, AND PSYCHOLOGICAL DISTRESS AMONG SEXUAL MINORITY BREAST CANCER SURVIVORS

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Background: Few studies have examined unique factors associated with psychological distress among sexual minority (i.e., lesbian and bisexual) women following breast cancer diagnosis. The minority stress model posits that heterosexist discrimination increases distress in sexual minority persons, and that the effect of discrimination could be mediated by positive and negative psychological factors. The present study assessed the associations between minority stress, adaptive psychosocial resources, and distress (depression and anxiety) among sexual minority breast cancer survivors.

Methods: 201 sexual minority women who had ductal carcinoma in situ (DCIS) or stage I-IV breast cancer participated in this study through the Love/Avon Army of Women (AOW). Self-report questionnaires were used to assess demographic and clinical factors, depression, anxiety, minority stress factors (discrimination, minority identity development, outness), and psychosocial resources (resilience, social support). These factors were included in a structural equation model testing psychosocial resources as mediators between minority stress and psychological distress (a latent variable derived from depression/anxiety).

Results: Over half (50.2%) of women in the sample had experienced heterosexist discrimination; 15% reported elevated depression, and 29% reported elevated anxiety. Discrimination, negative minority identity, resilience, and social support were correlated with

depression and anxiety. While outness and negative minority identity remained positively associated and social support remained negatively associated with distress in the final structural equation model, resilience fully mediated the association between discrimination and psychological distress. The final model predicted 56% of the variance in the latent variable of psychological distress and demonstrated acceptable fit across all sexual minority women, $\chi2 = 24.50$, $p > 0.05$; confirmatory fit index = 0.99, root-mean-square error of approximation = 0.02.

Conclusions: Minority stress factors are associated with higher rates of psychological distress among sexual minority women who are breast cancer survivors, while psychosocial resources are associated with reduced distress. Exposure to discrimination is common in this population; however, development of resilience mediates the relationship between discrimination and distress. Enhancement of resilience could be a promising aim of interventions to improve psychological well-being among sexual minority cancer survivors.

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Paper Session 18: Innovative Studies on Discrimination and Stress 3:37 PM-3:54 PM

RACIAL DISCRIMINATION & ALLOSTATIC LOAD AMONG AFRICAN AMERICAN WOMEN: ROUTINE VS. NON-ROUTINE EXPERIENCES OF DISCRIMINATION

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Objective: To examine the association between racial discrimination and allostatic load (AL), an index of physiologic functioning across biological systems, among midlife African American women, and to assess potential variation in routine vs. non-routine experiences of discrimination.

Methods: Data are from the African American Women's Heart & Health Study, which recruited a community sample of 208 African American women ages 30-50 residing in the San Francisco Bay Area. The Experiences of Discrimination scale was used to measure non-routine racial discrimination (e.g., in housing, medical care, criminal justice contexts). Routine racial discrimination was assessed using the 10-item Everyday Discrimination Scale (e.g., being treated with less courtesy or respect due to race). AL was measured as a composite score consisting of 15 biomarkers representing cardiovascular, inflammatory, neuroendocrine, and metabolic function. Multivariate analyses were adjusted for socioeconomic indicators and other known confounders.

Results: Compared to those reporting very high levels of discrimination (reference), there was a significant positive association between non-routine racial discrimination (EOD) and AL among those reporting no experiences of discrimination (β=1.45, SE=.64, p

Conclusion: Findings raise methodological questions about how racial discrimination is conceptualized and measured. Results suggest that reporting non-routine, major life experiences of racial discrimination, is associated with AL but not in the expected direction. Conversely, routine everyday experiences show no effect. Being able to recognize and report racial discrimination in more major, domain-specific life situations may have self-protective properties. This may be the case particularly in light of the more ambiguous and subtle ways in which contemporary forms of racial discrimination manifest in institutional contexts. These results call attention to the need to understand how different types of racial discrimination impact health, and to revisit presumptive associations. Using stress theory, we discuss potential explanations for these findings and make recommendations for future direction in research.

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Paper Session 18: Innovative Studies on Discrimination and Stress 3:55 PM-4:12 PM

THE PROTECTIVE ROLE OF MINDFULNESS IN THE RELATIONSHIP BETWEEN PERCEIVED DISCRIMINATION AND DEPRESSION

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Background: Perceived discrimination has substantial negative effects on well-being and is associated with severe psychological outcomes, including depression. Similar to other types of life stress, the consequences of discrimination may depend on an individual's ability to cope with negative emotions triggered by a distressing event. Widespread evidence indicates that mindfulness, deliberate attentiveness to internal and external experiences, is an effective coping strategy that is associated with salutary outcomes in the face of stressful experiences, including discrimination. Few studies, however, have examined the role of mindfulness in minority samples. Thus, it is unknown whether the protective effects of mindfulness extend to racial/ethnic minorities, who are most likely to experience discrimination.

Objective: The goal of the current analysis is to test whether trait mindfulness moderates the relationship between perceived discrimination and depressive symptoms in a minority sample.

Method: A heterogeneous sample of healthy adults (n=163) living in New York City were recruited as a part of a larger study on stress, rumination, and blood pressure. A subset (n=100) of exclusively minority participants (54% female; 48% Black/non-Hispanic, 35% Hispanic, 14% Asian, 3% mixed race/ethnicity; 34 years=Mean age) was used for the current analysis. Standardized inventories of trait mindfulness, perceived discrimination, and depressive symptoms were assessed cross-sectionally.

Results: Regression analyses indicated a significant interaction between perceived discrimination and trait mindfulness predicting depressive symptoms ($\beta = -1.3$, $p = .04$). Simple slopes analyses revealed that participants lower in mindfulness exhibited increased depressive symptoms with higher levels of discrimination ($\beta = 2.3$, $p < .001$). Discrimination

was not associated with increased depressive symptoms among individuals higher in mindfulness (β = -.05, *p* =.96).

***Conclusions**:* This study is one of the first empirical studies of trait mindfulness in an exclusively minority sample. Results suggest that mindfulness may mitigate the deleterious effects of discrimination on depressive symptoms in racial/ethnic minority individuals. The high prevalence and severity of discrimination among minorities, in particular, underscores the importance of these findings. The use of mindfulness-based interventions may be a promising approach to reduce the harmful psychological effects of discrimination.

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Paper Session 18: Innovative Studies on Discrimination and Stress 4:13 PM-4:30 PM

SOCIO-ENVIRONMENTAL STRESS EXPOSURES AND OBESITY: RESULTS FROM THE HCHS/SOL SOCIOCULTURAL ANCILLARY STUDY

Adolfo Cuevas, PhD[1], Cheryl Clark, MD, ScD[2], Carmela Alcantara, PhD[3], Sheila F. Castaneda, PhD[4], Martha Daviglus, MD, PhD[5], Donglin Zeng, Samantha Reina, Mercedes Carnethon, Ph.D.[6], Linda C. Gallo, PhD[7], Carmen R. Isasi, MD, PhD[8], Robert Kaplan, William Arguelles

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Introduction: Hispanics/Latinos have a higher rate of obesity compared to non-Hispanic Whites.[1,2] Few studies have examined the obesogenic effects of three socio-environmental stressors (ethnic discrimination, acculturative stress, neighborhood stress), and the combined effect of the individual stressors.

Methods: Data derived from the Sociocultural Ancillary Study, which assessed sociocultural and psychosocial influences in cardiovascular risks in a subset (n= 5,313) of the larger Hispanic Community Health Study/Study of Latinos. BMI was used to define weight categories as underweight/normal weight, overweight, and obese. The three socio-environmental stress variables were each standardized to facilitate comparison across stress domains. A cumulative stress variable was created by summing together each of the standardized socio-environmental stressors. Multinomial logistic regression was used to model the effects of each stressor, adjusting for sociodemographics, physical activity, and dietary behavior.

Results: Greater ethnic discrimination and greater acculturative stress were each associated with a higher odds of being obese (OR=1.14, 95% CI=1.01-1.29 and OR=1.17, 95% CI=1.04-1.31, respectively). Compared with no stress, those experiencing stress in a single domain had a 1.84 times higher odds of being obese (95%CI=0.73-4.61), while those experiencing stress in two or three domains had 1.94 (95%CI=0.78-4.83) and 2.29 (95%CI=0.94-5.61) times greater odds of being obese, respectively.

Conclusion: Ethnic discrimination and acculturative stress may be important contributors to obesity among Latinos/Hispanics. Stress management techniques may serve as complementary methods to lifestyle modification interventions to prevent or treat obesity in Hispanics/Latinos.

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Paper Session 19: Substance Use: Patterns and Treatments 3:00 PM-3:18 PM

SUBSTANCE USE PATTERNS IN HOMELESS YOUTH: RESULTS OF AN ECOLOGICAL MOMENTARY ASSESSMENT

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Introduction: Homeless youth have high rates of substance use. While housing instability and homelessness has been associated with higher rates of risky behaviors such as substance use, there is limited literature assessing how substance use rates vary depending on day level housing type. Yet, most studies exploring this association have been limited to cross-sectional data.

To address this gap, we explored if the relation between shelter type and substance use using Ecological Momentary Assessment (EMA) data from homeless youth in Houston.

Methods: We recruited 71 homeless youth aged 18–24 from a drop-in center in Houston, TX, between September 2015 and March 2016. We conducted daily EMAs for up to 3 weeks, which measured substance use and shelter status. To determine the relation between substance use and shelter status, we conducted chi-squared testing on daily EMAs (n = 71, EMAs =2232).

Results: We collected a total of 861 daily assessments using EMA. Daily EMAs indicate that 221 (24.4%) were substance use days and 44 (5.1%) were alcohol use days. Days of substance use per participants ranged from 0-18 days out of 21 possible days. In response to the question regarding shelter status, youth most frequently reported unstable housing (i.e. staying with friends, acquaintances, or relatives) (44% of days), staying on the streets (15%), and in shelters (12%). Using chi-squared tests, we found a significant difference ($p > 0.00$) in daily substance use by current shelter status. Days in which youth stayed with a friend or acquaintance had the highest rates of substance use (35.6%) followed by street dwelling days (34.4%) and days staying in the home of a romantic or sexual partner (33.7%). Shelter days had the lowest rates of substance use (7.8%). We also found a significant difference ($p > 0.00$) in daily alcohol use by shelter status. Days when youth stayed in a car had the highest rates of alcohol use (11.11%) followed by days staying in a hotel or motel (10.7%) and on the streets (9.4%). Shelter days had the lowest rates of alcohol use (1.9%) followed by days staying with relatives (2.8%).

Conclusion: We found that shelter type is associated with higher rates of substance and alcohol use. This data suggests that sheltering type may reduce the risk of substance use and

that days when youth stay with others may be high risk substance use days. The social network surrounding unstable housing circumstances and substance use warrants further exploration.

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Paper Session 19: Substance Use: Patterns and Treatments 3:19 PM-3:36 PM

FACTORS CONTRIBUTING TO SUCCESSFUL INDUCTION IN MEDICATION ASSISTED TREATMENT

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Factors Contributing to Successful Induction in Medication Assisted Treatment

Emily Zhang, Naomi Newman, Emily Loscalzo, & Robert Sterling

Thomas Jefferson University

While ASAM's expert panel suggests that it should take 4-6 weeks to achieve an effective blocking dose for those in medication assisted treatment-MAT (Baxter et al., 2013), little research is available on latency to abstinence in this treatment population. To address the gap in the literature, this study examined latency to abstinence and possible predictors. Abstinence was defined as four consecutive negative urine tests. Subjects were a subsample of 132 consecutive admissions to a university sponsored, community based, outpatient, MAT facility. Participants were individuals admitted between 7/1/2014-6/30/2015. Average age at time of admission was 41.75 ±10.54; 72% were male; 68.9% were white. Mean age of first drug use was 23.52±8.15; mean years of opiate use were 18.3±11.62; mean number of prior drug treatment episodes was 3.37±2.88. For latency to secondary substance abstinence, only 20.7% of the 121 identified at admission as using a second drug were abstinent within one year, indicating that individuals struggled to suspend secondary drug use. A series of discriminant analyses were conducted to identify whether key demographic, life skill, addiction, social support, and mental health variables were predictive of latency to opioid abstinence. Analyses conducted on the entire sample failed to identify a set of predictor variables. Thus, two discreet groups were identified – those who achieved abstinence in accord with the ASAM criteria (n=24) and those unable to achieve abstinence in the first year of enrollment (n=24). A significant discriminant function (Wilks' Lambda = .50, p=.02), which correctly re-classified 79.2% of the initial cases, was identified. Examination of the discriminant function coefficients suggest that a younger, more educated, later heroin use onset, more resource laden individual with a sense of efficacy to achieve abstinence was less likely to obtain abstinence. These results differentiate between who engages in and profits more rapidly from treatments vs. who engages in bad outcomes. Data suggest that efforts to increase the likelihood of profiting from treatment should focus on issues related to age, education, financial resources, over-confidence, and opioid abuse history. Such individuals are at risk for continued illicit substance use despite MAT enrollment.

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Paper Session 19: Substance Use: Patterns and Treatments 3:37 PM-3:54 PM

MERITORIOUS AWARD WINNER

PERCEPTIONS AND BELIEFS MOTIVATING PARENTAL DISCUSSIONS OF MARIJUANA USE WITH CHILDREN

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Adolescent marijuana use remains a significant issue in the United States. Recent legalization of marijuana use could lead parents to perceive marijuana use as less harmful and possibly decrease concerns of marijuana use by their children. Parents play an important role in adolescent substance use prevention and reduction, and their engagement in discussions of substance use with their children can significantly influence their experimentation and use. Little is known about what beliefs and motivations influence parents' decisions to discuss marijuana use with their children. Guided by the Prototype Willingness Model, we tested hypotheses that higher parental perceived risk of harms, negative prototypes of youth who use marijuana, and worry about the health and social harms of their child using marijuana would predict higher intentions and willingness to have marijuana use discussions with children and that, in turn, intentions and willingness would positively predict having these discussions and behavior. We administered a national, longitudinal survey to American parents of children ages 10 to 17 years old (N = 499) assessing risk perceptions, negative and positive prototypes of youth marijuana users, worry, intentions, and willingness. Participants (N = 409) completed a survey one month later assessing whether they had talked with their child about marijuana use. Overall, 40% of the parents reported having marijuana use discussions over the prior month. Structural equation modeling revealed that higher perceived risks of use (β = .59, p < .001) and less positive prototypes (β = -.34, p < .001) predicted higher worry of harms of marijuana use. Higher worry predicted greater intentions (β = .71, p < .001) and willingness (β = .27, p < .001) to discuss marijuana use with their children. Higher intentions (β= .26, p < .001) and higher willingness (β= .19, p < .001) positively predicted marijuana use discussions one month later. These findings contribute to our understanding of how risk perceptions, prototypes, and worry might shape parent intentions and willingness to discuss marijuana use with their children, with intentions and willingness independently contributing to discussion behavior. Further research can explore how communications targeting these measures might increase parent-child discussions of substance use.

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Paper Session 19: Substance Use: Patterns and Treatments 3:55 PM-4:12 PM

MEDICAL CANNABIS USE AND ALCOHOL USE DISORDER AMONG PATIENTS PRESCRIBED LONG-TERM OPIOID THERAPY

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Purpose:

Debate exists about the effectiveness and safety of simultaneous medical cannabis (MC) use and prescription long term opioid therapy (LTOT) among chronic pain patients. Yet, among patients with simultaneous use, little is known about clinical characteristics that may impact safety or suggest a need for additional services. We present baseline data from an ongoing longitudinal study of patients prescribed LTOT to (1) compare clinical characteristics between patients who endorsed using MC for pain and those who did not; and (2) examine associations between alcohol use disorder (AUD) and use of MC.

Methods:

Three hundred seventy-one patients prescribed LTOT were recruited from two large integrated health care systems. Data about opioid status were collected from participants' medical records and data about substance use (including MC), mental health conditions, and pain were assessed with validated self-report measures.

Results:

Mean age was 60.0 (*SD*=11.0), 54% were male, 19% met criteria for a current AUD, and 18% endorsed using MC for pain. Among those using MC, 66% rated it as at least moderately helpful in reducing pain. Bivariate analyses comparing patients who do and do not use MC for pain showed that compared to non-users, MC users had statistically significant higher rates of nicotine use (42% vs 26%), higher mean scores of risk for prescription opioid misuse (16.8, *SD* = 7.5 vs 12.5, *SD* = 7.3), and higher rates of AUD (34% vs 15%). No significant group differences were detected on pain intensity or disability, depression, opioid dose, or anxiety scores. Logistic regression analysis adjusting for clinical and demographic variables revealed that MC

use was associated with an increased likelihood of a current AUD, *OR*=2.21, 95% CI=1.14-4.31, *p*=.02.

Conclusion:

While the majority who used MC reported it to be helpful, MC using patients also had significantly higher rates of AUD. These findings highlight the need to screen for MC use among patients prescribed LTOT and to screen for, and address AUD among patients using MC. Future research could examine the long-term impact of MC use on pain-related outcomes among patients prescribed LTOT.

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Paper Session 19: Substance Use: Patterns and Treatments 4:13 PM-4:30 PM

PREDICTING OPIATE CRAVING WITH GPS DATA: COMPARISON OF MACHINE LEARNING TECHNIQUES ON QUALITY AND USABILITY

William Kowalczyk, PhD, Matthew Tyburski, PhD, Karran Phillips, MD, David Epstein, PhD, Kenzie Preston, PhD

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Some behaviors (e.g. manic episodes, suicide) are better to prevent than to treat in their aftermath. In addiction we want to prevent relapse, a problem that is separate from persistent ongoing drug use. Prior attempts to predict imminent lapse have focused on time scales of weeks, which is problematic when attempting to intervene in a behavior that occurs in a moment. Our goal is to predict behavior in real time, to open up a world of live, just-in-time (JIT) mHealth interventions for drug lapses and other behaviors. The present study takes a step towards that goal by comparing methods for making ambulatory predictions of craving.

In opiate-using, methadone-maintained outpatients (n = 81), we collected GPS data and ratings of opiate craving over 16 weeks. We mapped participants' GPS tracks for the 6.5 hours before each assessment, coding each set of tracks with an independently obtained observer rating of visible neighborhood disorder (NIfETy). We dropped the 90 minutes of NIfETy data immediately preceding an assessment and used the remaining 5 hours to train randomForest (rF) or Support Vector Machine (SVM) models to predict opiate craving (with and without demographic factors, reserving 50% or 10% of the data for testing). We then applied the models in a "24/7" manner, using all the GPS data to examine the utility of the posterior probability scores for possible use in a JIT intervention.

In models without demographic input, the rF approach was clearly better, as SVM failed to predict craving (kappa: rF = 0.59, SVM = 0.0). Models with demographic input predicted opiate craving at levels of excellent agreement using either type of machine learning (kappa for either SVM or rF = 0.63). However, the patterns of prediction differed. In 24/7 models, the scores from rF models tended to form a jittery pattern around a horizontal centroid. In contrast, the scores from SVM models showed very prominent spikes, indicating much more clearly when an intervention should be delivered. This pattern was present for most participants.

Our goal is to harness advances in environmental data to reduce the burdens of behavioral disorders. Both models were able to predict a patient's future state using GPS data, using algorithms that could ultimately run on a smartphone. The SVM predictions had a more desirable pattern with which to use in a JIT mHealth intervention to predict drug lapses. The step represented here may be extended to other behavioral disorders.

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Paper Session 20: Tobacco: An Ongoing Behavioral Medicine Challenge 3:00 PM-3:18 PM

CITATION AWARD WINNER

CROWDSOURCING DATA COLLECTION FOR PUBLIC HEALTH: A COMPARISON WITH NATIONALLY REPRESENTATIVE TOBACCO DATA

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Online crowdsourcing platforms such are increasingly used for behavioral research in public health. Crowdsourcing platforms are advantageous because they provide accessibility to existing online populations to gather data efficiently and at relatively low cost. However, the representativeness of crowdsourced samples and generalizability are unclear. This study sought to compare crowdsourced data on tobacco use to publicly available, nationally-representative U.S. survey data, the 2012-2013 National Adult Tobacco Survey (NATS). A sample of 3,999 U.S. young adults ages 18 to 30 years recruited through Amazon Mechanical Turk completed measures taken from NATS assessing demographics, tobacco use behaviors and perceptions, and exposure to tobacco warning labels. Post-hoc sample weights were created for crowdsourced data using procedures similar to the NATS. Weighted analyses compared the crowdsourced and NATS data on demographics, tobacco use behavior, and other measures administered. The crowdsourced sample was comparable to the NATS on variables used to create sample weights (gender, race/ethnicity, cigarette smoking status). Those in the crowdsourced sample were less likely than young adults in the NATS to report a household income of $50,000 per year or higher (25.1% vs. 45.4%, 95% CI diff. -23.0%, -17.7%), and more likely to be married/living with a partner (20.9% vs. 14.8%, 95% CI diff. 3.9%, 8.4%). The prevalence of current use of e-cigarettes (13.9% vs. 2.6%, 95% CI diff. 9.7%, 13.1%), hookah (6.4% vs. 1.9%, 95% CI diff. 3.1%, 5.8%), and cigars (8.4% vs. 3.2%, 95% CI diff. 3.7%, 6.7%) was greater in the crowdsourced sample versus the NATS. High proportions of both samples (ranging from 71.9% to 88.8%) endorsed responses indicating cigarette smoking is very harmful and very addictive. Comparisons of the proportions of non-smokers and smokers in the crowdsourced and NATS data showed similar patterns with respect to the frequency of cigarette warning label exposure. However, the likelihood of reporting that smoking is very harmful by frequency of warning label exposure was lower among smokers in the crowdsourced sample. This study provides some of the first empirical insights into the

ways in which a large, crowdsourced sample compares to national data. Crowdsourced data collection has important applications in public health research (e.g., correlational, experimental studies) but the applicability to answer population-level questions may be limited.

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Paper Session 20: Tobacco: An Ongoing Behavioral Medicine Challenge 3:19 PM-3:36 PM

DISPARITIES IN SMOKING AND E-CIGARETTE USE AMONG YOUNG SEXUAL MINORITY MEN

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Background: Because sexual minorities (gay, lesbian, and bisexual individuals) are significantly more likely to use tobacco than their heterosexual counterparts, identifying predictors of tobacco use in these groups is essential. Little is known about which subgroups of men who have sex with men (MSM) are more likely to smoke, and even less is known about MSM's use of new and rapidly changing products like electronic cigarettes (e-cigarettes). This study examined rates and predictors of smoking (combustible cigarette use) and e-cigarette use among 16-29 year-old MSM.

Methods: Participants (N=773) were drawn from the baseline visit of an ongoing longitudinal cohort study of young MSM aimed at identifying multilevel influences on HIV risk and substance use. Sociodemographic correlates (e.g., age, race/ethnicity, education, gender identity, sexual orientation, physical attraction) of smoking and e-cigarette use were examined using logistic regression.

Results: Although only 21% identified as current cigarette smokers, 39% had smoked within the past 30 days. Nearly 40% had ever tried an e-cigarette, but only 4% reported regular current or past e-cigarette use. E-cigarette use was significantly more common among current and former (vs. never) smokers. Predictors of smoking were largely consistent with those observed in the general population (e.g., older age, less education), but also included factors specific to MSM (e.g., HIV positive, more attracted to females than males). Black (vs. white) MSM and participants aged 16-18 (vs. 19-24) were less likely to have ever used e-cigarettes. Regular e-cigarette users were more likely to be transgender (male-to-female), white (vs. black), more educated, and attracted to mostly females, but some males (vs. only males).

Conclusions: Findings highlight potential disparities in smoking and e-cigarette use among young sexual minority men. Although some variables (e.g., gender identity, attraction) demonstrated similar relationships with smoking and e-cigarette use, others (e.g., race, education) demonstrated opposite patterns. Findings underscore the urgent need for tailored tobacco prevention and cessation efforts for young MSM and suggest that different frameworks may be required for different tobacco products.

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Paper Session 20: Tobacco: An Ongoing Behavioral Medicine Challenge 3:55 PM-4:12 PM

UNDERSTANDING CIGARETTE SMOKING TRAJECTORIES THROUGH ADOLESCENCE AND WEIGHT STATUS IN YOUNG ADULTHOOD IN THE UNITED STATES

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Background: Adolescent cigarette smoking has steadily declined since 1999, while obesity rates have quadrupled since the 1980s. Few studies have looked at the longitudinal relationship of smoking and weight in youth and young adulthood. This study examines the relationship of smoking trajectory beginning in adolescence on weight status in young adulthood in a nationally representative US longitudinal sample.

Methods: The study sample was drawn from Add Health Waves I-IV (N=13,361). Four trajectories were generated through repeated-measures latent class analyses using current cigarette smoking status in Waves I-IV and age of initiation: nonsmokers (44%), early establishers (23%), late establishers (21%), and former smokers (12%). Wave IV weight status included self-reported body mass index (BMI) and measured waist circumference (WC). Bivariate analyses addressed associations between smoking trajectory and BMI at each wave. Multivariate linear regression models tested the relationship of smoking trajectory and weight status at Wave IV. Future planned analyses include addressing related health behaviors as potential moderators of the relationship between smoking trajectory and BMI.

Results: Weight status increased over time for all trajectories. In bivariate analyses, early and late establishers had a significantly lower BMI at Wave III and all smoking trajectories had a significantly lower BMI at Wave IV compared to nonsmokers. All smoking trajectories had a significantly lower BMI than nonsmokers [early establishers: (B=-1.27, CI: -1.56, -0.98); late establishers: (B=-0.84, CI: -1.16, -0.52); & former smokers: (B=-0.63, CI: -0.93, -0.34); ($p < 0.05$)] in an adjusted multivariate regression model predicting Wave IV BMI. Males reported a lower BMI ($\beta = -0.28$; CI: -0.53, -0.03) than females. Results predicting Wave IV WC showed a similar trend.

Discussion: Smoking during adolescence does not attenuate the risk of becoming obese in young adulthood, even though smoking trajectories had a lower BMI and WC than nonsmokers. These results have implications for interventions concerning cigarette smoking

and weight control in youth and young adults. Both tobacco use and obesity need to be studied concurrently in order to better understand potential additive and/or synergistic effects among youth and young adults in the US.

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Paper Session 20: Tobacco: An Ongoing Behavioral Medicine Challenge 4:13 PM-4:30 PM

MISPERCEPTIONS OF PEER NORMS FOR TOBACCO USE AND PERSONAL USE: EVIDENCE FROM STUDENTS IN GRADES 6-12 ACROSS 63 SCHOOLS IN THE US

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Actual peer social norms and students’ perceptions of those norms within the school context may be an important determinant of tobacco use initiation and frequency among adolescents as youth look to peers for social cues on what to believe and how to behave. This study distinguishes between actual and perceived peer norms regarding tobacco use attitudes and behavior, and examines the independent associations of both actual and perceived norms with personal attitude and personal use among U.S. students in grades 6-12. Data were collected from 27,545 students across 63 schools in 11 states from 1999 to 2014 via anonymous surveys. Even though permissive attitudes about tobacco use and the actual prevalence of tobacco use increased across grade and age levels, believing that tobacco use is okay or actually using tobacco during the year was rarely the norm in any grade level in any specific secondary school. However, dramatic misperception was found across a diversity of schools and students. Although 77% of students said tobacco use was never good, 64% of students thought that most others in their grade thought use was okay. Similarly, although 78% of students reported never using tobacco, 67% of students perceived that students in their grade most typically used tobacco monthly or more often. Although the prevalence of misperceptions of the attitudinal and behavioral norms regarding tobacco use was greater and more inaccurate across increasing grade and age levels, these misperceptions were pervasive across all racial categories of students, socio-economic status levels of schools, size of grade cohort in one’s school, and time periods within this study. In addition, perception of the attitudinal norm was highly predictive of personal attitude about use. Moreover, misperceiving tobacco use as the norm among same-grade peers strongly predicted personal tobacco use even after adjusting for the actual same-grade prevalence of tobacco use, personal attitude about use, and several other individual and school-level factors. Researchers should give increased attention to designing experiments to assess causality while also testing interventions to reduce misperceptions, and presumably reduce permissive attitudes and actual use. Furthermore, practitioners could begin to explore comprehensive ways to promote the awareness of positive actual norms related to tobacco use.

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Paper Session 21: Influence of Tobacco Advertising 3:00 PM-3:18 PM

PRO-TOBACCO ADVERTISEMENT EXPOSURE AMONG AFRICAN AMERICAN SMOKERS: AN ECOLOGICAL MOMENTARY ASSESSMENT STUDY

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Significance: African Americans live in communities with a disproportionately high density of tobacco advertisements compared to Whites. Some research indicates that point-of-sale advertising is associated with unplanned purchases of cigarettes, craving, and smoking. Most previous research is limited by recall bias and did not focus on African American smokers. Ecological Momentary Assessment (EMA) can be used to obtain prospective associations between tobacco advertisement exposure and smoking in the natural environment. The current study used EMA to assess self-reported advertisement exposure, craving, smoking, purchases, and impulse purchases among African Americans.

Methods: Non-treatment seeking African American smokers (N = 64) were given a mobile device for 2 weeks. They were prompted four times per day to respond to questions about advertisement exposure, craving, smoking, and unplanned purchases. At each assessment, participants reported their craving “right now”, the number of cigarettes smoked “since the last assessment”, the number of advertisements seen “since the last assessment”, and whether they made any unplanned purchases.

Results: Participants provided data on advertisement exposure in 2,298 assessments. Participants reported seeing at least one advertisement in 33.54% of assessments. Among assessments in which an advertisement was seen, 33.07% of assessments had one advertisement, 29.31% had two advertisements, 17.51% had three advertisements, and 20.10% had four or more. Participants reported that 86.82% of advertisements seen were menthol. Number of advertisements seen was positively associated with smoking, F (1,2110) = 112.85 p F (1,1417) = 16.54 p p p > .05.

Conclusions: African American smokers are frequently exposed to pro-tobacco marketing. Advertisement exposure is associated with smoking and impulse purchases, but not craving. Future research should assess advertisement exposure among smokers wishing to quit.

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Paper Session 21: Influence of Tobacco Advertising 3:19 PM-3:36 PM

CITATION AND MERITORIOUS AWARD WINNER

STANDARDIZED PACKAGING MAY REDUCE THE PERCEPTION THAT AMERICAN SPIRIT CIGARETTES ARE LESS HARMFUL

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Background: Although the Family Smoking Prevention and Tobacco Control Act of 2009 essentially banned the marketing of any cigarette as “safer” in the United States, more than 2.5 million U.S. consumers believe they are smoking a brand of cigarettes that might be less harmful. This misconception of reduced harm appears to be most common among those who smoke the brand American Spirit.

Methods: Using a between-subject fractional-factorial experiment (3-brands x 3-packaging/ labeling styles), smokers recruited through Amazon Mechanical Turk (N=909) rated their perceptions of a randomly assigned cigarette package. We assessed whether smokers tended to rate the standard packaging of American Spirit Full-Bodied cigarettes higher than the standard packaging of Marlboro Red or Newport Green cigarettes (the most popular U.S. brands) on an 18-point scale assessing whether the packaging conveyed that the cigarettes were less harmful (Cronbach’s α = 0.92). Then, we estimated the effect of standardized cigarette packaging (all branding replaced with a green color) and Australian-like packaging (all branding replaced with a green color and a graphic image) on harm perceptions conveyed through American Spirit packaging, using the same 18-point scale.

Results: Smokers’ ratings of the standard American Spirit package (mean=9.9; standard deviation(SD)=4.4) were 1.5 times (t(df=165.5)=6.0; $p < 0.001$) higher than smokers’ ratings of the Marlboro Red package (mean=6.6; SD=3.4) and 1.4 times (t(df=171.9)=4.9; $p < 0.001$) higher than smokers’ ratings of the Newport Green package (mean=7.0; SD=3.6) on the reduced harm perceptions scale. The standardized packaging had a medium-sized effect (Cohen’s d=0.66; t(df=179.4)=4.5; $p < 0.001$) and the Australian-like packaging had a large effect (Cohen’s d=1.56; t(df=146.3)=10.5; $p < 0.001$) on reducing the perception that American Spirit packaging conveys that its cigarettes are less harmful. The standardized packaging had a negligible effect on reducing harm perceptions conveyed through Marlboro Red (Cohen’s d=0.02; t(df=207.3)=6.7; p=0.87) and Newport Green (Cohen’s d=0.16; t(df=176.5)=1.1; p=0.29) packaging; however, the Australian-like packaging had a large effect on both

Marlboro Red (Cohen’s d=0.88; t(df=207.3)=; $p < 0.001$) and Newport Green (Cohen’s d=0.84; t(df=167.8)=5.7; $p < 0.001$) packaging.

Conclusion: These data suggest that many smokers perceive that American Spirit’s cigarette packaging conveys that its cigarettes are less harmful. The data also suggest that standardized packaging, both with and without warning images, may reduce this perception.

Implication: Standardized packaging may be a viable option for preventing erroneous inferences about harms of cigarettes conveyed through cigarette packaging.

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Paper Session 21: Influence of Tobacco Advertising 3:37 PM-3:54 PM

ICONS OF HEALTH EFFECTS OF CIGARETTE SMOKE: A TEST OF SEMIOTIC TYPE

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Purpose. U.S. law requires the government to inform the public about the harmful and potentially harmful chemicals in cigarette smoke. Information about these chemicals – and their harmful effects – must be understandable and not misleading. One way to achieve this communication goal is through the use of simple visuals, such as icons. We sought to identify icons to effectively communicate the health harms of cigarette smoke.

Methods. Participants were 701 U.S. adults. Within-subjects online experiments explored the effects of icon semiotic type: symbolic (arbitrary, most abstract), indexical (illustrating evidence of a physical connection), and iconic (representation of an object, most concrete).

Results. For the not-easy-to-visualize harms of cancer and addiction, symbolic icons received higher ratings than other icon types on cognitive and affective reactions (perceived representativeness of the icon, affect toward smoking, elaboration about the harms of smoking, perceived severity of health effects of smoking, perceived effectiveness of the icon for discouraging smoking, and icon preference) (all $p < .001$). For the easy-to-visualize symptoms of heart attack/stroke, indexical icons received the highest ratings (all $p < .001$). For the easy-to-visualize harm of reproductive organ damage, the iconic image did best (all $p < .001$).

Conclusion. Our findings contribute new insights for icon development for health communication – a process that is often anecdotal rather than informed by theory. Using semiotics as a framework to anticipate how people would interpret icons, we found systematic preferences detectable through cognitive and affective responses, as well as through simple preference selection. For communicating harms cause by cigarette smoke, health effects not easily visualized were best represented with symbolic icons. Health effects linked to a specific organ or observable symptom were best represented with iconic and indexical icons, respectively.

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Paper Session 21: Influence of Tobacco Advertising 3:55 PM-4:12 PM

CITATION AWARD WINNER

MEDIATORS OF THE IMPACT OF PICTORIAL CIGARETTE PACK WARNINGS ON QUIT ATTEMPTS

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Background. Pictorial warnings on cigarette packs increase quit attempts, but the mechanism of the effect remains uncertain. We examined several hypotheses about mediators of the impact of pictorial cigarette pack warnings on quit attempts.

Methods. We conducted a 4-week randomized clinical trial in California and North Carolina. We recruited a convenience sample of 2,149 adult cigarette smokers from the general population from September 2014 through August 2015. We randomly assigned participants to receive on their cigarette packs for 4 weeks either a text-only warning (one of the Surgeon General's warnings currently in use in the United States on the side of the cigarette packs) or a pictorial warning (one of the Family Smoking Prevention and Tobacco Control Act's required text warnings with pictures that showed harms of smoking on the top half of the front and back of the cigarette packs). The primary trial outcome was attempting to quit smoking during the study. Analyses were intent-to-treat: 1) warnings to quit attempts (c path), 2) warnings to mediators (a path), and 3) multivariable analysis of the full mediational pathways from warnings to mediators to quit attempts (a*b paths).

Results. First, smokers whose packs had pictorial warnings were more likely than those whose packs had text-only warnings to attempt to quit smoking during the 4-week trial (40% vs 34%; odds ratio=1.29; 95% CI, 1.09-1.54). Second, pictorial warnings increased several potential mediators: attention to the warning message, 8 different warning reactions such as negative affect and avoidance, and social interactions about the warnings (*p*. < 05). However, pictorial warnings changed only 2 of 15 belief and attitude measures (*p*. < 05). Third, pictorial warnings led to greater avoidance of the warnings which led to more quit attempts (mediation, *p*. < 05). Other mediators were cognitive elaboration (thinking about the warning and harms of smoking), negative pack attitudes, and quitting self-efficacy (all, *p*. < 05).

Discussion. Pictorial warnings increased quit attempts by both creating aversive reactions and by keeping the message vividly in smokers' minds. Contrary to predictions from several theories of health behavior, the warnings exerted little of their influence through changes in beliefs and attitudes and none of their influence through changes in risk perception.

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Paper Session 21: Influence of Tobacco Advertising 4:13 PM-4:30 PM

WHY DO PEOPLE USE ELECTRONIC NICOTINE DELIVERY SYSTEMS (ELECTRONIC CIGARETTES)? A CONTENT ANALYSIS OF TWITTER, 2012-2015

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The reasons for using electronic nicotine delivery systems (ENDS) are poorly understood and primarily documented by expensive cross-sectional surveys that force respondents to adhere to investigator's preconceived notions rather than using their own words. We passively identify the reasons for using ENDS longitudinally from a content analysis of public postings on Twitter. All English language public tweets including several ENDS terms (*e.g.*, “e-cigarette” or “vape”) were captured from the Twitter datastream during 2012 and 2015. After excluding spam, advertisements, and retweets, posts indicating a rationale for vaping were retained. The specific reasons for vaping were then inferred based on a supervised content analysis using annotators from Amazon’s Mechanical Turk. During 2012 quitting combustibles was the most cited reason for using ENDS. Forty-three percent (95%CI 39-48) of all reason-related tweets cited quitting combustibles, *e.g.*, *“I couldn’t quit till i tried ecigs,”* eclipsing the second most cited reason by more than double. Other frequently cited reasons included social image (21%; 95%CI 18-25), use indoors (14%; 95%CI 11-17), flavors (14%; 95%CI 11-17), safety relative to combustibles (9%; 95%CI 7-11), cost (3%; 95%CI 2-5) and lack of odor (2%; 95%CI 1-3). By 2015 the reasons for using ENDS cited on Twitter had shifted. Both quitting combustibles and use indoors significantly declined in mentions to 29% (95%CI 24-33) and 12% (95%CI 9-16). At the same time, social image increased to 37% (95%CI 32-43) and lack of odor increased to 5% (95%CI 2-5), the former leading all cited reasons in 2015. Our data suggest the reasons people vape are shifting away from cessation and toward social image. These data also show how the ENDS market is responsive to a changing policy landscape. For instance, smoking indoors was less frequently cited in 2015 as indoor smoking restrictions where applied to vaping in many places since 2012. Because the data and analytic approach are scalable, adoption of our strategies in the field can inform follow-up survey-based surveillance (so the right questions are asked), interventions, and policies for ENDS.

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Paper Session 22: HIV in Low-Resource Settings 3:00 PM-3:18 PM

HIV VULNERABILITY AMONG ZAMBIAN MIGRANTS AND MOBILE POPULATIONS

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HIV vulnerability among Zambian migrants and mobile populations

Introduction: Migrant and mobile populations (MMP) throughout Zambia face unique barriers to accessing HIV counselling, testing, and treatment associated with employment-driven mobility. These factors in combination with elevated alcohol consumption heighten MMP's risk of HIV infection and transmission. This qualitative study assessed barriers to accessing HIV prevention and treatment services among MMP within Zambia, and explored potential strategies to reduce barriers and enhance HIV prevention.

Method: This studyutilizedCommunity Based Participatory Research methods to investigate MMP risk factors and proposed community-based HIV prevention strategies in Zambian districts with the largest communities of MMP (Chingola, Mazabuka, Mufulira). Male and female urban and rural Zambian MMP were enrolled in focus group discussions (n =137) and key informant interviews (n=156). MMPs were primarily miners, cane cutters, mobile contractors, truck drivers, sex workers and fisher folk. Stem questions explored HIV risk factors and strategies to address barriers and facilitators of condom use, VCT and HIV treatment. Resulting content was coded for dominant themes.

Results: Mobility increased the opportunity for large sexual networks and networking with multiple partners. Local bars, lodges and truck stops were the primary locations for sexual solicitation of MMP. Cheap, easily accessible short term lodging were hot spots for HIV risk behavior and provided convenient venues for sexual exchange. Difficulty accessing support groups, condoms, HIV treatment and health information and counseling due to transience placed MMP at elevated risk. A lack of clinics in less accessible rural areas such as truck stops and country borders exacerbated HIV risk, particularly among female MMP. Proposed initiatives to reduce risk included promotion of border-based health clinics and employer-driven programs to provide medical support and health resources to MMP. Regulation of bars and lodges to reduce their use by sex workers was proposed, as well as economic stimulus programs for sex workers to reduce their reliance on survival-based sex exchange.

Discussion: Barriers to HIV prevention tools in combination with large sexual networks increase HIV vulnerability among Zambian MMP. Stimulation of economic opportunities for commercial sex workers serving MMP should be explored as an avenue to substantially reduce HIV risk. Involvement of MMP employers, Zambian governmental agencies and district health facilities are needed to implement educational and social programs tailored to the MMP lifestyle and respond to urgent health needs.

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Paper Session 22: HIV in Low-Resource Settings 3:19 PM-3:36 PM

IMPACT OF DEPRESSION IN HIV-INFECTED WOMEN ON INFANT DEVELOPMENT IN RURAL SOUTH AFRICA

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Introduction: High rates of depression have been identified among pregnant women living with HIV (WLHIV) in rural South Africa (49%). Pregnancy-related depressive episodes among WLHIV are associated with decreased prenatal care, and increased alcohol use and interpersonal disengagement. HIV-exposure has also been associated with developmental delays in infants, and HIV-exposed infants born to depressed women may be at an even greater risk for adverse developmental outcomes. This study examined the impact of depression in HIV-infected women in rural South Africa (SA) on infant development at 12 months of age.

Method: Participants (n = 68) were mother-infant dyads recruited from antenatal clinics in rural SA. All women had a male partner. Women were 18 ± 5 weeks pregnant at enrollment and completed assessments of demographics, HIV disclosure status, pre- and postnatal depression, male involvement during pregnancy, and alcohol use at baseline and 12 months postpartum. Infant HIV serostatus (PCR) and domains of developmental functioning (cognitive, expressive and receptive communication, and fine and gross motor) were assessed at 12 months of age.

Results: Women were an average of 29 ± 5 years old. One-third had completed at least 12 years of education, and 32% had a monthly income of ~US$76. Two-thirds of the pregnancies were unplanned, and 45% of the women were diagnosed with HIV during pregnancy (average time since diagnosis: 32 ± 43 months); 59% had disclosed their HIV status to their partners. Nearly half (45%) were depressed and 16 were referred for treatment for antenatal depression. Four infants (6%) tested positive for HIV at 12 months. Infant seropositive HIV status was associated with delayed receptive communication in bivariate analyses. In multivariate analyses, not being married to their partner (p = .028), nondisclosure of HIV status (p = .016), and postnatal depression (p = .038) predicted infant cognitive delay at 12 months of age. There also was an association between decreased prenatal male involvement

and delayed infant gross motor development at 12 months (*p* = .002) and a non-significant trend between delayed receptive communication and postnatal depression (*p* = .090),

Discussion: Findings highlight the need for healthcare providers to assess postpartum depression among pregnant WLHIV, given its negative impact on infant development. Interventions to support the mental health of pregnant WLHIV and increase male partner involvement may enhance antenatal care and neonatal development outcomes in rural SA. Further research examining child development theories in the South African context may be merited to inform pedagogical approaches to managing developmental delay among infants born to HIV-infected mothers experiencing postpartum depression.

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Paper Session 22: HIV in Low-Resource Settings 3:37 PM-3:54 PM

CITATION AWARD WINNER

REDUCING HIV VULNERABILITY AMONG ZAMBIAN ADOLESCENT GIRLS AND YOUNG WOMEN

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Reducing HIV vulnerability among Zambian adolescent girls and young women

Introduction: HIV/AIDS is the leading cause of death for adolescent girls and young women (AGYW) aged 15 to 24 in Zambia. AGYW have the highest rates of HIV infection in Zambian risk groups (e.g., 13% girls, 7% boys). Social and economic factors, including low social and economic status, unemployment and early marriage, make AGYW especially vulnerable to HIV. This qualitative study examined the sociocultural context and behavioral factors placing AGYW at risk and explored community-based solutions to prevent HIV infection among AGYW.

Method: Community Based Participatory Research methods were used to assess HIV AGYW risk factors and proposed community-based prevention strategies in Zambian provinces with high HIV prevalence (Lusaka, Copperbelt, Southern Provinces). Urban and rural participants (n = 566 males and females aged 15 - 75 years) were enrolled in focus group discussions (73 groups) and key informant interviews (n = 128), and content was coded for dominant themes.

Results: Gender inequity underlay HIV vulnerability in AGYW. The potential to complete school and options for employment among AGYW were diminished by traditional gender roles and inequity, resulting in sexual exchange, sex work and intergenerational sex. Sexual practices increasing HIV risk were sustained by men's sexual preferences and dominance in sexual decision making, and often enforced by physical violence and sexual assault. Both genders reported sexual risk associated with alcohol use; violence was more prevalent in rural communities. Governmental agency and NGO programs were proposed to implement economic stimulus strategies, e.g., loans for small businesses, financial aid for AGYW students, particularly targeting those engaged in sex work. Community sensitization for both women and men was encouraged, with a focus on empowering women, risky traditional practices, youth friendly clubs and support groups.

Discussion: Gender equity appears critical for HIV prevention in AGYW. Current Zambian government initiatives target equity and the reduction of gender-based violence, but community-based and endorsed programs are needed to promote and facilitate education and financial security among AGYW, and reduce dependence on survival-based sexual exchange. Community buy-in for gender equity programs, particularly in rural areas, should be sought to reduce resistance to initiatives to enhance the status of women. While women's voices are increasingly heard, men play a key role in bridging the gap between gender disparities. Both male and female opinion leaders are needed to champion equity between genders, and future research should involve both genders to establish new social norms for women.

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Paper Session 22: HIV in Low-Resource Settings 3:55 PM-4:12 PM

MERITORIOUS AWARD WINNER

IMPACT OF A FAMILY-BASED PREVENTION PROGRAM ON ECONOMIC COMMUNICATION AND HOUSEHOLD ECONOMICS: RESULTS OF A RANDOMIZED TRIAL

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Objective. Evaluate effects of a family- centered HIV intervention in rural Kenya on secondary outcomes including family economic communication and household economic behavior including budgeting, saving, and spending on youths' basic needs in rural Kenya.

Method. The intervention was developed using community-based participatory methods and focused on strengthening family relationships to improve future developmental outcomes for youth and reduce HIV acquisition. Modules addressed economic empowerment, emotional support, and HIV knowledge and prevention skills using evidence-based strategies informed by social cognitive theory and culturally grounded content. The intervention was delivered in four churches and evaluated using a stepped wedge cluster randomized trial. Participants included 124 families (237 adolescents ages 10-16; 203 caregivers) and interviewer-administered surveys were completed over 5 rounds. Primary outcomes included: engagement in income generating activities, couples economic communication, having a household budget, amount of household savings, spending on youths' basic needs, and youth-reported material resources. Intent-to-treat effects were estimated via ordinary least squares regression with clustered standard errors.

Results. The majority of participants initiated new income generating activities following the intervention. The intervention significantly increased couples economic communication 1 month post intervention compared with controls as reported by females and males (effect size, female = 0.12, $p < 0.05$; effect size, male = 0.09, $p < 0.05$). There was no effect on household savings, but the intervention had small effects on household spending on youths' clothing (effect size = 0.37, $p < 0.05$) and on youth-reported ownership of shoes (effect size = 0.19, $p < 0.05$). No effects were observed for other indicators of spending and youth material resources.

Conclusions. Results suggest that a family-strengthening intervention can change family interaction patterns related to finances, a major source of conflict and risk factor for HIV acquisition, especially in very low-resource settings. However, limited treatment effects on

youth provision suggest that some effects on actual spending behavior may take longer to emerge or that more focused interventions, such as direct financial assistance, are needed in this context to effect large changes.

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Paper Session 23: Complementary and Integrative Approaches to Health 3:00 PM-3:18 PM

PASSIVE SPIRITUAL HEALTH LOCUS OF CONTROL IS ASSOCIATED WITH LOWER PHYSICAL ACTIVITY LEVELS IN AN URBAN, FAITH-BASED COMMUNITY

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Background: Assessing one's *spiritual health locus of control* (SLOC) provides a way to examine how spiritual beliefs may be related to health outcomes based on whether an individual has an "*active*" or "*passive*" orientation to his or her health behaviors. While an individual with an "*active*" SLOC believes that God *empowers* them to take personal healthy actions, an individual with a passive SLOC relies on God to take care of his/her personal health.There is some evidence of SLOC being associated with health behaviors in African-American communities. Less is known about the relationship between SLOC, physical activity (PA) behaviors, and the use of wearable mobile health (mHealth) PA-monitoring technology. This analysis examines the relationship between SLOC, health behaviors, and the use of mHealth technology in a predominantly African-American church population in at-risk Washington, D.C. communities.

Methods: This analysis was conducted using data from a community-based participatory research (CBPR) study designed to evaluate psychosocial and environmental factors associated with cardiovascular health in a predominantly African-American church population in at-risk Washington, D.C. communities (NCT#01927783). Participants (n=99, 78% female, 99% African American) also received a mHealth PA monitor and were instructed to wirelessly upload PA data weekly to church-based data collection hubs. Participants viewed PA data on home- or church-based computers. SLOC was captured using a 13-item validated and scored SLOC scale. Associations between PA and mHealth usage and SLOC scores were evaluated by Spearman correlation coefficients (r_S).

Results: Among participants (age: 58 ± 11.0 years; BMI: 33±7 kg/m^2), median score for active and passive SLOC was 46 (interquartile range [IQR]=41-51) and 3 (IQR=2-5) points respectively. Increasing passive SLOC was associated with less leisure-time vigorous PA in minutes/week (r_S=-0.30, p=0.04), more hours watching TV/week (r_S=0.26, p=0.01), and annual household income under $60,000 ($r_S$=0.34, p= 0.001). There was no association between

mHealth device usage and passive SLOC (r_S=-0.08, p=0.43). In contrast, active SLOC was not associated with PA, sedentary time, or mHealth device usage (p >0.05 for all).

Conclusions: Among faith-based communties in at-risk Washington, D.C. areas, those with passive SLOC may be less likely to engage in leisure-time PA. These findings highlight the potential for SLOC to identify a target population for a CBPR-designed PA intervention in this community**.** SLOC does not appear to be a barrier to mHealth PA-monitoring device usage in this population. Thus, mobile health technology may serve as a useful method to help engage at-risk, faith-based populations from urban communities in increased PA for improved cardiovascular health.

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Paper Session 23: Complementary and Integrative Approaches to Health 3:19 PM-3:36 PM

PRELIMINARY EFFECTS OF A MINDFULNESS-BASED INTERVENTION FOR LATINO YOUTH WITH PSYCHOLOGICAL DISTRESS

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Nearly one third (~30%) of United States adolescents report disturbances in their usual activities due to feelings of sadness and hopelessness, and Latino adolescents consistently report higher levels of depressive symptoms and disorders than their non-Hispanic White, African American and Asian American peers. A substantial body of literature with adults supports the effectiveness of mindfulness-based interventions in the reduction of several forms of psychological distress, including depression. Mindfulness –based studies with adolescents suggests similar effects, although limited evidence exists regarding the impact of mindfulness interventions with diverse populations of youth. The purpose of this study, therefore, was to test the feasibility and preliminary effects of a mindfulness-based training program with at-risk adolescents from a predominantly Hispanic/Latino community. A single group, pre- and post-test intervention design was used to test a five week, group-based mindfulness intervention with young adolescents (12-15 years) reporting high levels of perceived stress or brooding. Participants were recruited from a pediatric primary care clinic serving un-insured and underinsured families in the southern United States. Measures of perceived stress, brooding, self-esteem, depressive symptoms, and mindfulness were completed by adolescents at baseline and immediately post-intervention. Participants are currently completing a 1 month post-intervention assessment. Seven adolescents (57% female, 85% Hispanic/Latino) of 15 interested met study inclusion and exclusion criteria and were able to attend the weekend sessions. 100% participation in all sessions was achieved with two participants completing one make-up session each. Wilcoxon-Signed Rank Tests were used to evaluate pre- to post-intervention changes in key study variables. Statistically significant improvements were detected in depressive symptoms ($Z=-2.37$, $p=.018$), perceived stress ($Z=-2.02$, $p=.043$), and self-esteem ($Z=-2.20$, $p=.028$). No statistically significant changes were identified with brooding or mindfulness. Preliminary results suggest brief mindfulness interventions may be effective at reducing depressive symptoms and perceived stress and enhancing self-esteem in high risk adolescents. The lack of change with brooding and mindfulness warrants further study as both have been suggested as mechanisms through which mindfulness-based interventions exert their effect. One month post-intervention assessments will provide additional evidence as to the sustained effects of the intervention.

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Paper Session 23: Complementary and Integrative Approaches to Health 3:37 PM-3:54 PM

CITATION AWARD WINNER

YOGA THERAPY FOR VETERANS WITH CHRONIC LOW BACK PAIN

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Military veterans are more likely to have chronic low back pain (CLBP) than non-veterans, and many current treatment options such as opioid medications have limited effectiveness and/or significant side effects. Hatha yoga has been shown to improve CLBP in non-veteran populations, but has not been well studied among military veterans with CLBP. We present the main results of a randomized, controlled trial (RCT) of yoga for military veterans with CLBP. Participants were recruited through primary care and specialty clinics at VA San Diego. Eligible patients were randomized to either yoga or a delayed treatment comparison group. Yoga consisted of 2x weekly yoga sessions for 12 weeks. Yoga home practice was encouraged via a manual. Both groups received usual care and were asked to not change other CLBP treatments unless medically necessary. The primary outcome was back-specific disability (RMDQ). Secondary outcomes included pain severity, pain interference, fatigue, quality of life, and depression. Assessments occurred at baseline, 6-weeks, 12-weeks, and 6-months. Multivariable random effects models were used in intent-to-treat analyses of change in health outcomes by treatment group over time. 150 VA patients with CLBP were enrolled in 6 cohorts. Participant had a mean age of 53.4 years; 26% were women, 51% were non-White or Hispanic, 34% were employed, and 18% were homeless in last 5 years. At baseline, 20% were taking opioid, 15.0 years was the mean duration of CLBP, and 61% had never tried yoga. For the primary outcome, both groups reported less disability at 12-weeks ($p < 0.05$), but group differences were not significant. However, at 6-months, yoga participants had significantly greater reductions in disability ($p = 0.003$). Yoga participants also had greater reductions in pain severity, pain interference, SF-12 Physical, and fatigue at 12-weeks ($p < 0.05$), and at 6-months, greater reductions in pain severity and fatigue ($p < 0.05$). Attendance was lower than expected, with 53% of yoga participants attending at least 12 of the 24 sessions. A main effect of reduced use of opioid medications and other medical pain treatments was also found. In conclusion, although some veterans receiving VA care faced numerous challenges with attending the 2x weekly yoga sessions, intent-to-treat analyses indicate that yoga participants reported better outcomes after 12 weeks and after 6 months. Efforts to increase accessibility and facilitate attendance may result in stronger effects in the future.

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Paper Session 23: Complementary and Integrative Approaches to Health 3:55 PM-4:12 PM

CITATION AWARD AND MERITORIOUS WINNER

SELF-COMPASSION AND MINDFULNESS: THE RELATIONSHIP WITH DISORDERED EATING, APPEARANCE-MOTIVATED EXERCISE, AND DEPRESSION

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Background: Disordered eating is a prevalent problem among college students in the United States (Eisenberg, Nicklett, Roeder, & Kirz, 2011). Past research shows that the percentage of students eating according to a special weight loss diet increased from 4.2% in 1995 to 22% in 2008 (White, Reynolds-Malear, & Cordero, 2011). Although concerns with weight and body appearance have become readily accepted by society, they can often develop into serious problems, which affect mental and physical health. The present study examined the role of self-compassion and mindfulness in predicting disordered eating behaviors, depression, and appearance-motivated exercise among college students. **Methods:** Participants were 732 college students, both male (46%) and female (54%), ages 18-25 (*M*=19). Hierarchical regression analysis was conducted to test main and interaction effects of self-compassion and mindfulness on disordered eating behaviors, appearance-motivated exercise, and depression.

Results: Self-compassion was a significant negative predictor of disordered eating behaviors, appearance-motivated exercise, and depression. Mindfulness was a significant negative predictor of disordered eating and depression, and a partial negative predictor of appearance-motivated exercise.

Conclusion: Results of this study suggest that self-compassion and mindfulness may serve as protective factors for disordered eating, depression, and appearance-motivated exercise. The present study provides support for the advancement of self-compassion and mindfulness research. These findings build on previous research suggesting that self-compassion and mindfulness may reduce the risk of disordered eating behaviors and depressive symptomology. Additionally, self-compassion may reduce the desire to exercise for appearance-motivated reasons. One possible explanation, which builds on previous research, is that self-compassion promotes body acceptance, which in turn reduces the need to exercise to control one's appearance. While research on self-compassion in the exercise domain is fairly limited, this study provides initial support for further research in this area.

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Paper Session 23: Complementary and Integrative Approaches to Health 4:13 PM-4:30 PM

RELIGIOUS COMMITMENT MODERATES THE RELATIONSHIP BETWEEN SYMPTOM BURDEN AND POSITIVE AFFECT

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Religious Commitment Moderates the Relationship Between Symptom Burden and Positive Affect

Background: Religion/spirituality has consistently been linked to positive affect; conversely, physical symptom burden has demonstrated an association with negative emotion. It is not clear, however, if religion/spirituality offers protection against the deleterious effects of higher symptom burden levels on positive affect.

Methods: In the Landmark Spirituality and Health Survey study, a representative sample of the U.S. population (N=3,010), completed a survey measuring physical and mental health indices as well as a variety of religious/spiritual dimensions. Specific variables of interest included physical health symptoms, religious commitment, and the positive emotions of gratitude, hope, and meaning in life. Hierarchical regression analyses were used to test if religious commitment moderated the associations between symptom burden and positive affect.

Results: Controlling for covariates, religious commitment and symptom burden were significantly associated with each positive affect (ps $< .001$). Entering the interaction term between religious commitment and symptom burden further accounted for a significant proportion of the variance in gratitude ($\Delta R^2 = .003$, $\Delta F(1, 2742) = 6.667$, $b = .017$, $t = 3.110$, $p = .002$), hope ($\Delta R^2 = .005$, $\Delta F(1, 2695) = 15.501$, $b = .027$, $t = 3.937$, $p < .001$), and meaning in life ($\Delta R^2 = .004$, $\Delta F(1, 2680) = 13.148$, $b = .035$, $t = 3.626$, $p < .001$).

Conclusion: Participants with higher levels of religious commitment had greater gratitude, hope, and meaning in life than those with less religious commitment in the context of high symptom burden. As such, the religious commitment should be supported within the healthcare setting.

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Paper Session 24: Integrated Primary Care as a Vehicle for Behavioral Medicine Excellence
3:00 PM-3:18 PM

BRIEF BEHAVIORAL INTERVENTIONS FOR BEHAVIORAL MEDICINE CONCERNS FOR USE IN ADULT PRIMARY CARE SETTINGS: A SYSTEMATIC REVIEW

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Large healthcare organizations (e.g., Department of Defense, Veterans Health Administration) are embracing the Primary Care Behavioral Health (PCBH) model of integrated primary care. Although evidence-based behavioral interventions exist that target a variety of behavioral medicine concerns, integrated behavioral health providers need interventions that are sufficiently brief (i.e., ≤6 sessions) to be compatible with the PCBH model. Therefore, we conducted a systematic review of published studies examining behavioral interventions targeting behavioral medicine concerns that can be employed by PCBH providers in adult primary care settings. Our literature search targeted behavioral medicine concerns identified as prevalent within primary care or among patients seen in PCBH. A total of 67 published articles representing 63 original studies met eligibility criteria. We extracted data on the behavioral interventions employed, results comparing the active intervention to a comparison group, general fit with the PCBH model, and methodological quality. The vast majority of studies (*n*=47) examined brief interventions targeting either sleep difficulties or increasing physical activity, with no studies targeting sexual health or sleep apnea, and ≤5 studies targeting each of the remaining domains. The most commonly employed interventions comprised techniques derived from cognitive behavioral therapy (CBT) and motivational interviewing (MI). Outcomes were generally statistically significantly in favor of the active intervention groups relative to comparison groups, with highly variable methodological quality ratings (range=0-5; *M*=2.0). Results will be discussed in relation to the need for more evidence for brief behavioral interventions targeting other behavioral medicine concerns, as well as the need for more specificity regarding the compatibility of such interventions with the PCBH model of care.

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Paper Session 24: Integrated Primary Care as a Vehicle for Behavioral Medicine Excellence
3:19 PM-3:36 PM

MEASURING THE NEED AND IMPACT OF BEHAVIORAL HEALTH CONSULTANTS IN PRIMARY CARE

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One proposed benefit of collaborative care, or integrated behavioral health, is that “warm hand-offs” from primary care physicians (PCPs) to behavioral health providers (BHPs) increase the chance that the patient in need will follow through with a referral for specialty mental health care. However a research gap exists estimating the actual increase in the rate of follow-through that such a “warm hand-off” provides, as well as which factors moderate this impact. In fact few if any research reports have documented what evidence-based activities the BHP provides. A unique opportunity to address this research gap was presented when BHPs were available only during certain times across 3 primary care outpatient clinics operating within a larger university-based healthcare system. While a BHP is trained to provide evidence-based brief interventions to patients, oftentimes they also support a referral from the PCP to psychotherapy or health coaching, if warranted. However, there is a paucity of research literature quantifying the various activities of BHPs, nor of the frequency of their use, or the impact on patient completion of a referral for more extended care.

Data was extracted from an EHR on all patients presenting to any of 3 primary care clinics between January 1, 2016 and May 31, 2016, with follow-up data on visits for specialty mental health care extracted through July 31, 2016. A total of 14,748 patient visits resulted in a total of 649 referrals for psychotherapy, of which 216 had involved a BHP warm hand-off at the time of referral. One-way ANCOVAs showed that patients referred for therapy associated with a BHP warm hand-off were more likely to be seen by a psychotherapist within 60 days of referral than patients referred without such BHP involvement ($\underline{p} < .05$). Regression analyses suggest that the factors most predictive of patient follow-through with a referral were BHP warm hand-off, female gender, and diagnosis of patient by PCP at time of referral (PTSD & anxiety > depression & stress, $\underline{p} < .05$).

Overall, BHPs were more often called upon by PCPs when the patient was non-white, male, and on private insurance. Overall, we found a significant impact of a warm hand-off on referral follow-through rates ($\underline{p} < .05$) but more often when the patient was female, an ethnic minority, or had a specific DSM diagnosis already in their medical record. Analyses also revealed that when BHPs were available, they were most often used by PCPs to assess suicide risk, provide information on sleep, use motivationla interviewing and SMART goals for weight loss and physical activity, address medication adherence barriers, or increase support for follow-through for specialty mental health care.

This demonstrates that the benefit of short behavioral medicine interventions is not that they can help all patients equally, but rather that they can have a substantial impact on certain subsets of the community. Further analsyes on the different activities of the BHPs and the implications of this on further development of integrated behavioral health services will be discussed.

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Paper Session 24: Integrated Primary Care as a Vehicle for Behavioral Medicine Excellence
3:37 PM-3:54 PM

FACTORS INFLUENCING SUICIDE RISK ASSESSMENT AND MANAGEMENT IN VA PRIMARY CARE SETTINGS

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Background: Individuals who die by suicide are commonly seen in primary care in the months prior to death (Ahmedani et al., 2014). One tool to improve primary care suicide prevention is the Veterans Affairs/Department of Defense Clinical Practice Guideline for the Assessment and Management of Patients at Risk for Suicide (2013; VA/DoD Suicide Risk CPG), as it offers an algorithm for evidence-based assessment and management of suicide risk in primary care. CPGs alone minimally change provider behavior. Thus, understanding the context of the practice environment, which can be obtained through stakeholder viewpoints, is essential to successful CPG implementation (Stetler et al., 2011).

Aim: Obtain VA primary care provider (PCP) perspectives regarding the barriers and facilitators of suicide risk assessment and management and the impact of integrated mental health services on PCP suicide risk assessment and management practices.

Methods: Eleven VA PCPs in four states (AK, CO, UT, VT) participated. PCPs completed a semi-structured qualitative interview that took on average 26 minutes (SD = 8.6). Data was analyzed using a hybrid inductive-deductive thematic analysis approach.

Results: Qualitative analysis identified the following themes: (1) suicide risk assessment and management is most effective when conducted as a collaborative, team-based endeavor; (2) integrated mental health providers are an outlet for suicide prevention training; (3) variability in access to mental health follow-up care impacts management; and (4) VA-system suicide prevention efforts supports generalists' ability to assess and manage suicide risk.

Discussion: Results from this multi-site qualitative study produced cross-cutting themes regarding the barriers and facilitators of suicide prevention in VA primary care settings. Nuanced implementation implications that are informed by the results will be discussed. Adherence to the VA/DoD Suicide Risk CPG would likely enhance PCPs' delivery of evidence-based care for suicide risk in primary care and may reduce Veteran deaths by suicide.

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Paper Session 24: Integrated Primary Care as a Vehicle for Behavioral Medicine Excellence
3:55 PM-4:12 PM

PHYSICIAN MANAGEMENT OF BEHAVIORAL HEALTH CONCERNS IN PRIMARY CARE PATIENTS AND ITS IMPLICATION FOR RESOURCE UTILIZATION

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Although behavioral health services are increasingly offered in primary care, physicians continue to manage behavioral health needs in most patients. Understanding physicians' ability to manage behavioral health concerns in patients can guide the design of behavioral health services in primary care. We surveyed physicians' perceived ability to diagnose and manage depression, anxiety, and bipolar disorders in their patients. Physicians included residents in training and attending faculty from a family medicine residency practice in an underserved community.

Repeated measures General Linear Models tested main effects of disorder type and provider type, and their interaction effects. Separate analyses compared responses by resident to faculty providers (noted by $_{FvsR}$), and by resident year (noted by $_{Ryear}$). Special contrast follow-ups tested differences by disorder type, and polynomial trend follow-ups tested differences by resident year. Some significant results follow. Main effects of disorder type (($F_{FvsR}(2, 42)=24.45$, $p < .001$); ($F_{Ryear}(2, 28)=20.38$, $p < .001$)), provider type ($F(1, 21)=5.86$, $p=.025$), and resident year ($F(2, 14)=4.67$, $p=.028$) were found for confidence diagnosing. Providers were more comfortable diagnosing depression and anxiety than bipolar disorders ((F_{FvsR} (1, 21)=29.84, $p < .001$); (F_{Ryear} (1, 14)=23.79, $p < .001$)). Faculty were more comfortable diagnosing than residents ($F(1, 21)=5.86$, $p=.025$), and 2nd year residents were more comfortable diagnosing than 1st and 3rd years ($F(1, 14)=9.29$, $p=.009$). A main effect of disorder type was found for confidence personally providing therapy ((F_{FvsR} (2, 42)=19.37, $p < .001$); (F_{Ryear} (2, 28)=20.52, $p < .001$)). Providers were significantly more comfortable providing therapy for depression and anxiety than bipolar disorders ((F_{FvsR} (1, 21)=25.56, $p < .001$); (F_{Ryear} (1, 14)=30.84, $p < .001$)).

Providers of all levels of experience express less comfort diagnosing and managing bipolar than depression and anxiety disorders. Thus, behavioral health specialists in primary care practices may be best used as consultants to providers in their management of depression and anxiety, and as direct providers for more challenging bipolar and other mental health concerns.

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Paper Session 24: Integrated Primary Care as a Vehicle for Behavioral Medicine Excellence
4:13 PM-4:30 PM

CITATION AWARD WINNER

CUSTOMIZING DEPRESSION CARE FOR PATIENT COMPLEXITY:: AN APPROACH TO EXPAND THE EVIDENCE BASE FOR INTEGRATED PRIMARY CARE

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Objectives: Complex biopsychosocial factors other than depression symptoms can complicate depression care and impact patient outcomes. Yet depression guidelines provide little direction on addressing these factors, particularly in the primary care settings where most depressed patients are detected and treated. We aimed to identify complexity dimensions—or areas of focus beyond depression itself—and strategies for addressing these, while relying on empirical data. We aimed to prioritize complexity dimensions and strategies for incorporation in Veterans Affairs (VA) depression care guidelines through a key stakeholder expert panel.

Methods: We reviewed the relevant literature and products from a multisite longitudinal study of depression among Veterans in primary care to identify complexity dimensions for depression management and to generate clinical management strategies. We identified employment, social support, comorbidity, stigma, patient preferences, faith/spirituality, women Veterans' needs, and ethnicity as key dimensions and identified 50 clinical strategies for addressing them. We convened an expert panel of 13 VA stakeholders with diverse clinical, administrative and research expertise who rated, discussed and re-rated the importance and feasibility of each complexity dimension and strategy. Importance ratings ranged from '1=low' to '7=high'.

Results: Patients' treatment preferences (6.3, SD=.86), social support (6.2, SD=.90), and employment (5.9, SD=.86) were rated as the most important complexity dimensions for accommodation in primary care-based depression treatment. Ratings showed agreement on some strategies for addressing complexity dimensions but uncertainty about others. Expert panelists' commentary provided guidance on implementation barriers and feasibility of specific strategies and reflected a tension between the need to address the dimensions and uncertainty about which specific strategies were feasible and effective for doing so.

Implications: Our VA expert panel identified specific patient complexity dimensions as critical for achieving optimal depression care outcomes in primary care. Consistent with recent work in multimorbidity/patient complexity, our panelists ascribed high importance to incorporating treatment preferences, social support, and employment considerations in depression guidelines. While panelists agreed on some potential management strategies (e.g., educating care managers about the impact of complexity on clinical status) our results suggest an urgent need for further development of standard methods for addressing key complexity dimensions.

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Paper Session 25: Interventions for Pain Management 3:00 PM-3:18 PM

CITATION AWARD WINNER

ACCEPTANCE AND COMMITMENT THERAPY VS. MEDICAL TREATMENT AS USUAL WAIT-LIST CONTROL GROUP FOR PRIMARY HEADACHES: THE ALGEA STUDY

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Headache sufferers commonly use experiential avoidance as a coping mechanism to manage pain or other private events (e.g. thoughts) related to their headache difficulties. However, avoidance of headache triggers or of other headache-related internal experiences are found to instead increase trigger potency, restrict lifestyle, decrease internal locus of control, and exacerbate and maintain pain perception. New treatment approaches, such as Acceptance and Commitment Therapy (ACT; Hayes et al., 2012), emphasize acceptance and valued-living as alternatives to avoidance. Though APA has included ACT as an empirically supported treatment for chronic pain, very little evidence exists as to its effectiveness for head pain. This paper presents the results of a Randomized control trial comparing an ACT-based intervention (added to medical treatment as usual-MTAU) compared to MTAU only control for primary headache. Secondly, it investigates whether the proposed ACT process of change mechanisms (i.e. acceptance and values-based actions) mediate headache interference and treatment outcomes (quality of life). 120 headache sufferers were randomly assigned to either 9 sessions of ACT or to MTAU, and completed questionnaire at three point assessments (pre, post, follow up periods). Results demonstrate significant reductions in headache-related interference, increases in emotional and physical functioning and improvements in quality of life in the ACT group compared to control. Mediation analysis show ACT to work through its proposed mechanisms of action (acceptance, defusion and values consistent living). This study provides new evidence regarding the utility of ACT in the management of primary headaches.

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Paper Session 25: Interventions for Pain Management 3:19 PM-3:36 PM

TREATMENT OUTCOMES FOR AN INTERDISCIPLINARY PAIN REHABILITATION PROGRAM: COMPARISON OF OUTCOMES BASED ON OPIOID USE STATUS

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Introduction: Chronic pain is a major public health concern with profound negative effects on the well-being of millions of Americans, and widespread use of prescription opioids for chronic pain has contributed to the escalating problem of opioid use disorder. Medically-directed opioid tapering is increasingly recognized as an unmet need for patients with chronic pain who desire to discontinue long-term opioid therapy. Multidisciplinary pain rehabilitation programs can be highly effective in discontinuing opioids in patients with chronic pain while also improving patients' functional status. This study sought to examine treatment outcomes among two cohorts of patients enrolled in a three-week interdisciplinary pain rehabilitation program: Patients engaged in interdisciplinary pain treatment + physician supervised opioid taper vs. nonopioid users engaged in interdisciplinary treatment.

Methods: Mixed model ANOVAs 2 (Group: opioid use, no opioid use) x 2 (Time: admission, discharge) were used to compare groups on pre- to post-treatment changes on self-report (pain severity, interference, depression, catastrophizing, performance in ADL's) and observer-rated outcomes (aerobic capacity, trunk strength) among 285 treated patients.

Results: All patients in the opioid cohort successfully completed their opioid taper (mean MME = 79). For self-report measures, significant main effects for time were detected for all self-report outcomes (F's > 247.0; p's < .001; n^2 >.46). No significant main effect of opioid use or opioid use x time or interaction effects detected. Similarly, for observer-rated outcomes, significant main effects for time were detected (F's > 124.2; p's < .001; n^2 >.33), while no main effect of opioid use or opioid use x time effects were detected. Self-report treatment gains were maintained at 6 month follow-up (F's >41.4; p's < .001; n^2 >.44). Patients in the opioid cohort also reported significant pre- to post-treatment reduction in opioid craving (F= 20.6; p2 =.16)

Conclusion: Interdisciplinary pain programs that incorporate opioid withdrawal demonstrate significant improvements in functional and psychological sequelae of chronic pain, irrespective of opioid use status. More programs utilizing evidence-based approaches are needed to address this significant public health issue.

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Paper Session 25: Interventions for Pain Management 3:37 PM-3:54 PM

CO-MORBID ADDICTION AND PAIN: DEVELOPING A CBT TREATMENT TO ALTER PSYCHO-PHYSIOLOGICAL PAIN RESPONSE

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Aims: The purpose of this study is to evaluate STOP (**S**elf-regulation **T**herapy for **O**pioid addiction and **P**ain) a novel rolling-entry group therapy intervention developed directly from a previous study identifying psycho-physiological treatment needs of patients with comorbid pain and opioid addiction. ***Method***: 16 individuals with diagnosed long term chronic pain and opioid addiction (2 + years) on stable doses of methadone or buprenorphine for opioid addiction were recruited from local addiction treatment centers. Participants completed a psychological assessment and a cold water task to assess pain sensitivity at 3 time points pre- post- and at a 3 month followup. Participants completed the 12 session weekly 90-minute group therapy intervention as part of their MMT/Bup treatment agreement with their local treatment centers. Urine toxicology was given weekly. Repeat measure ANOVAs were performed on pain, activity, and illicit drug cravings and use. ***Results***: The study showed high feasibility and acceptability among patients with an 80% attendance rate. There was no illicit drug use, as confirmed by urine toxicology and self-report, after week 8. Pain tolerance (seconds) to a laboratory pain trigger significantly improved from Pre (M=38.3, SD=7.10) to 3 month follow up which approached the national average (M=123.5, SE=11.09; p*Conclusion*: STOP, a novel 12-week, rolling entry group therapy based on the results of a psychophysiological needs assessment of individuals with co-morbid pain and opioid addiction, has early evidence of high feasibility, acceptability, and effectiveness. Focusing on improving pain self-efficacy may be a key to successful treatment for patients with comorbid pain and opioid addiction. Future research should examine if substance abuse clinicians without experience in pain can be taught to use STOP in a community treatment setting.

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Paper Session 25: Interventions for Pain Management 3:55 PM-4:12 PM

A PATIENT DECISION AID TO REDUCE DEMAND FOR OPIOIDS

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Background We developed a patient decision aid (PDA), a web-based, patient-centered educational intervention that helps patients have an informed discussion about pain medication with their ED provider. We hypothesized that better informed patients would be less likely to prefer an opioid pain reliever (OPR). This presentation will describe the formative research used to develop the PDA, the content of the PDA, and the RCT pilot test protocol for the two test sites (Maryland, West Virginia) with preliminary results.

Methods. In-depth interviews were conducted with 13 ED clinicians, 6 nationally recognized pain experts, and 17 recently discharged patients. Interviews were transcribed and coded for analysis. Two rounds of beta testing of the PDA were conducted with 10 ED patients. For the pilot test, 144 participants are recruited in the ED waiting rooms.

Results Clinicians uniformly expressed the belief that an OPR PDA could be useful as a patient centered educational tool and a supplement to their treatment planning. Patients reported receiving little to no information on OPRs during their most recent ED visit, and they would have liked more information. Beta test participants thought the tool was useful and would be appreciated by patients waiting to be seen. They provided suggestions, which we addressed through improving the readability of the printed information and the graphics. The pilot testing protocol involves random assignment of eligible patients (adult, chief complaint of pain, acute injury, pain score 7-10, no current use of OPR, English-speaking) to complete the PDA or a health risk assessment (HRA), both completed on a tablet prior to seeing the treating provider. The PDA provides tailored feedback for use by the patient and provider. Measures taken before and after interacting with the PDA/HRA, after the ED visit, and 6 weeks later include: decisional conflict; knowledge; pain management preference; pain scores; patient satisfaction; and use, storage, and disposal of medication if prescribed an OPR. The trial will run from September, 2016-December, 2016, with outcome data available at the conference.

Conclusions Creating a patient-centered decision aid benefits from formative research. Computer technology can efficiently provide tailored patient education, which should facilitate shared decision making for pain management.

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Paper Session 25: Interventions for Pain Management 4:13 PM-4:30 PM

INTRODUCTION TO PROGRESSIVE MUSCLE RELAXATION THERAPY FOR MIGRAINE IN THE EMERGENCY DEPARTMENT: A PILOT FEASIBILITY STUDY

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Background: There are 5 million visits to US emergency departments (ED)/year for migraine/headache. Though many of these patients would benefit from behavioral or pharmacologic preventive therapy these teachable moments are usually lost. Herein we assess whether ED patients with migraine would agree to progressive muscle relaxation (PMR), a proven therapy amenable to introduction in the ED and independent practice at home. **Objective**: We sought to examine whether migraine patients would agree to try PMR while in the ED, and for how long they would engage in an introductory session. **Methods**: Research assistants in our urban academic ED introduced the study concept to eligible migraine patients in the ED. Patients completed a survey about their headache history and were asked to listen to a 20-minute audio recording of PMR. **Results**: We approached 11 patients and 8 agreed to participate (73%). Mean age of participants was 35.5 (13.17) years and 63% were female. Headaches occurred on 10.7 days/month on average and were usually severe (63%) or moderate (25%). No one had previously done PMR though two had previously tried biofeedback. All had previously visited an ED for their headaches; mean number of prior ED visits was 2.38 (range 1-5). Half had seen a neurologist for treatment of their headaches. One person did not do the PMR session in the ED. Of the remaining seven who did the PMR, the mean time spent doing it was 7.6 minutes (range 1-20). **Conclusions**: Migraine patients presenting to the ED have severe and frequent migraines which make them candidates for preventive behavioral treatments. PMR is a behavioral technique which can be introduced in the ED setting. Follow-up studies should examine whether patients will continue to use these behavioral techniques at home.

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B001 6:00 PM-7:00 PM

DETERMINANTS OF PARTNER SUPPORT FOR PHYSICAL ACTIVITY: A COUPLES-FOCUSED ANALYSIS AMONG OLDER ADULTS WITH OSTEOARTHRITIS

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Objective: Physical activity (PA) can decrease pain and improve function among older adults with osteoarthritis (OA), yet most people with OA are insufficiently active. While partner support for PA is one of the most robust predictors of PA, research on the determinants of partner support is limited. Using data from the Partners in Active Living Study (PALS), we aimed to identify individual and household characteristics associated with the quantity of positive and negative partner support for PA. **Methods**: Data are from baseline surveys of main participants (mains) and support partners (partners) participating in PALS, a 12-month longitudinal dyadic study of 170 couples in central North Carolina. Inclusion criteria for mains include self-report of OA, ability to walk unaided, insufficient levels of PA (< 120 minutes of PA/week), and marital or cohabiting status with a partner who is willing to participate. Partners may or may not have osteoarthritis. Dependent variables are amount of positive and negative enacted support for PA, dichotomized into high versus low using a median split. Independent variables are individual and household characteristics and a global score for the quality (effectiveness) of enacted support. Bivariate and multivariable models were fit using logistic regression. Statistical significance was set at $P < .05$. **Results**: Mains and partners were of similar age (~65±9 years) race/ethnicity (~80% Non-Hispanic white), and education (~55% >4y college). Mains were significantly more likely than partners to be female (64.71% versus 36.47%, $P<.001$*).* In bivariate analyses, support effectiveness, the partner being female, and the main being female were significantly associated with positive enacted support for PA (odds ratio [OR]=3.80, [95% confidence interval (CI): 2.00-7.19]), OR=2.91, 95% CI: 1.51-5.58, and OR=0.38, 95% CI: 0.20-0.73, respectively). These associations remained significant in multivariable analyses. Partner stiffness and greater depression levels in couples were significantly associated with negative enacted support for PA in bivariate analyses (OR=1.90, 95% CI: 1.03-3.52 and OR=2.48, 95% CI: 1.04-5.89, respectively), but became nonsignificant in adjusted models. **Conclusion**: Identifying determinants of enacted social support, a consistent predictor of PA, is important information for the targeting and tailoring of behavioral interventions. Our findings demonstrate the importance of the quality (effectiveness) of support provided and suggests women and men may differ in their ability to provide positive support for PA, with men potentially needing more guidance. Future research among larger, more demographically diverse samples is warranted.

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B002 6:00 PM-7:00 PM

DIFFERENCES AMONG US: UNDERSTANDING THE IMPACT OF BEHAVIORAL VARIATION ON COACHING ENGAGEMENT

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BACKGROUND: Health coaching is a key intervention in combatting the prevalence of lifestyle-driven conditions. Little research, however, has examined differences in how people progress through such programs. The current purpose was to examine whether individuals with different behavioral profiles (based on demographic and health-related behaviors), differ regarding their activity and outcomes in a coaching program.

METHOD: Humana created the behavioral profiles to improve how it engages and intervenes with members in clinical and wellness services. Exploratory analyses of participants enrolled in health coaching between2012-2016 indicated 4 of 8 total behavioral profiles had different levels of participation than the total population. These analyses examined the first 60 days of coaching for the 4 segments (N=3761) – Overwhelmed Guidance Seeker (OGS), Participating Realist (PR), Selfless Support Seeker (SSS), and Simply Compliant (SC). Significance tests by behavioral profile in number/type of interactions, number of goals set/complete, and biometric outcomes were conducted, as well as survival analyses of probability/time to goal completion.

RESULTS: Behavioral segments varied significantly by modality: SC were more likely to work online than PR ($p < 0.001$) and SSS ($p < 0.05$); PR more likely to use telephonic/online mix than OGS ($p < 0.01$) or SC ($p < 0.0002$). SSS were less likely to interact with a coach than other profiles (ps < 0.05). The PR and OGS segments set ($p < 0.001$) and completed ($p < 0.0001$) more goals than SC and SSS segments. Survival analysis indicated PR had higher probability of goal completion/shorter time to completion than other segments; OGS had higher probability of goal completion/shorter time to completion than SSS or SC (ps < 0.002). Participants in coaching most commonly work on managing weight; analyses of weight loss by segment revealed no group differences ($p=0.579$).

DISCUSSION: Understanding how different behavioral profiles respond to coaching enables practitioners to implement tailored approaches that better support participation and progress among individuals in groups (Selfless Support Seekers and Simply Compliant), who tend to

participate less and achieve fewer goals. Next steps are to test which tailored interventions are most effective.

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B003 6:00 PM-7:00 PM

DISMANTLING THE THEORY OF PLANNED BEHAVIOR: EVALUATING CHANGE IN ATTITUDES, NORMS, AND PERCEIVED BEHAVIORAL CONTROL

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Background: It is still largely unknown which theoretical constructs in a particular theory (e.g., the Theory of Planned Behavior) are the active ingredients of change. The lack of a solid understanding of how key theoretical constructs interact to motivate behavior change may be partly to blame. ***Purpose:*** The current study examines the utility of each of the hypothesized determinants of behavior in the Theory of Planned Behavior (i.e., attitudes, norms, perceived behavioral control, and intentions) and explores the optimal combination (single construct interventions vs. three constructs vs. four) of these constructs in an intervention to increase condom use intentions and behavior among college students. ***Methods:*** 317 participants (M_{age} = 19.31; SD_{age} = 1.31; 53.3% female; 74.1% Caucasian) were randomly assigned to one of seven computer-based interventions. Interventions were designed using the Theory of Planned Behavior as the guiding theoretical framework. 196 (61.8%) completed behavioral follow-up assessments three-months later. ***Results:*** In a meditational model, we found that the four construct intervention was marginally better at changing intentions (estimate = -.06, *SE* = .03, *p* = .06), but the single construct interventions were related to risky sexual behavior at follow-up (estimate = .04, *SE* = .02, *p* = .05). ***Conclusions:*** This study suggests that many of the constructs manipulated here are conceptually and empirically interconnected. Perhaps these constructs synergistically work together in order to produce change. Further research is necessary to develop the optimal combination of constructs in the Theory of Planned Behavior and their ordering of presentation in intervention materials. (ClinicalTrials.gov number NCT# 02855489).

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B004 6:00 PM-7:00 PM

EFFECTS OF CONTEXTUALLY-TAILORED SUGGESTIONS FOR PHYSICAL ACTIVITY: THE HEARTSTEPS MICRO-RANDOMIZED TRIAL

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Effects of contextually-tailored suggestions for physical activity: The HeartSteps micro-randomized trial

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Often the easiest way to increase physical activity is by walking more. Yet, opportunities for walking vary throughout the day, by contexts like location, weather and busyness. Increasingly, mHealth technologies can sense such context and deliver behavior-change interventions at moments of opportunity or risk. HeartSteps is an Android application that delivers contextually-tailored activity suggestions to help individuals walk more. HeartSteps contains a library of over 500 suggestions, each tagged with a set of contexts indicating appropriate suggestion use. Suggestions are delivered up to five times a day (decision times)—morning commute, lunch, mid-afternoon, evening commute, and after dinner—and are tailored to user location (work, home, other), time of day, weather, and weekday/weekend. HeartSteps includes two types of suggestions: suggestions for walking or for disrupting sedentary behavior. We evaluated HeartSteps in a 6-week micro-randomized trial with 37 sedentary adults. Each participant was randomized with .6 probability to receive a suggestion at each of the five decision times each day; if a suggestion was provided, a second equal randomization determined whether to send a walking or sedentary suggestion. We assessed if providing a suggestion impacts participants' step count in the 30 minutes following randomization, and if that effect changes over time. GEE models estimated the effect of delivering a suggestion on 30-min step count (logged) post-randomization, controlling for 30-minute step count prior to randomization (logged). Results: Averaging over study days and suggestion type, the effect of providing a suggestion was positive and marginally significant (e^b=1.14 p = .059, a 14% 30-min step count increase). Separating

suggestion types showed a significant effect for walking suggestions, increasing 30-min step count by 24% ($p=.02$) on average, but not for sedentary suggestions. For an individual with the mean 30-minute step count of 253 steps, this equates to 61 extra steps in the 30 minutes post-randomization. When an interaction with time is added, suggestions show a large initial effect ($e^b=1.66$, $p < .01$), a 66% increase in 30-minute step count on average, that diminishes over time ($e^b=.98$, $p < .01$). This effect is also driven by walking suggestions.

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B005 6:00 PM-7:00 PM

EFFECTS OF PHYSICAL ACTIVITY GOAL ATTAINMENT ON ENGAGEMENT AND OUTCOMES IN THE NATIONAL DIABETES PREVENTION PROGRAM

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The National Diabetes Prevention Program (DPP) is a widely-disseminated, evidence-based intervention to prevent or delay diabetes onset. Greater engagement in the yearlong program is expected to yield better outcomes, but high attrition is a major concern and improved retention strategies are needed. The National DPP curriculum, published by the Centers for Disease Control and Prevention, is highly prescriptive for weight loss including through a weekly goal of 150 or more minutes of physical activity. However, previous evidence suggests it may be overly challenging and unnecessary to require a high threshold of physical activity. We assessed the effects of failing to achieve prescribed physical activity goals on outcomes in the National DPP. We included 406 participants who attended the National DPP at a large healthcare organization. Participants reported not meeting physical activity goals about half of the time on average. Across all participants, each occurrence of goal failure predicted a 25% lower likelihood of attending the next session (OR 0.75; $P < .001$; 95% CI 0.64-0.87). In adjusted models, there was an inverse relationship between the frequency of failure to achieve physical activity goals and attendance, $\beta = -0.21$ ($p < .01$), and a positive linear relationship with weight gain, $\beta = 0.14$ ($p < .05$). Similarly, there was an inverse relationship between failing to meet physical activity goals and completing the program (OR 0.47; $P < .05$; 95% CI 0.24-.90) and obtaining at least five percent weight loss (OR 0.39; $P < .01$; 95% CI 0.19-0.76). In contrast, there was no significant effect of not meeting physical activity goals on the amount of weight change per session attended. Findings suggest the experience of goal failure may be a deterrent to retention in the National DPP, yet the program was equally efficacious in terms of weight loss per session attended regardless of meeting physical activity goals. Results are not fully generalizable as this was an observational study with no control group. Implications are to consider adopting a more patient-centered, individualized approach to setting physical activity goals in the National DPP.

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B006 6:00 PM-7:00 PM

EXAMINING THE BEHAVIORAL MEDICINE STANDARD OF CARE FOR ETOH CONSULTATIONS WITHIN TRAUMA DEPARTMENT

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The ACOS and Committee on Trauma require patients admitted to a trauma service with elevated Blood Alcohol Concentration (BAC) be seen for brief ETOH screening and intervention. Research indicates there is no current standard of care (SOC) across hospitals. At Cooper University Hospital (CUH), the Behavioral Medicine Consultation-Liaison (CL) service has completed screens and interventions since 2014. A protocol at CUH was created based upon the Screening, Brief Intervention and Referral of Treatment (SBIRT), which provides only recommendations for screening and intervention. At CUH, the Alcohol Use Disorders Identification Test (AUDIT) is used to assess alcohol use/abuse. Psychosocial stressors, acute trauma symptoms and stage of change are also assessed. Intervention focuses on psychoeducation, the effects of alcohol use, and includes brief MI to determine desire for behavior change. Treatment resources are provided to interested patients. The AUDIT is repeated post-discharge. The current study aims to provide retrospective rationale for effectiveness of CUH's SOC. Trauma patients (n = 289, 76.5% male, 56.4% White, mean age = 45) with elevated BAC (M = 178.96) were referred as part of the SOC. Of those, 287 patients completed the intervention and 37 (12.8 %) followed-up post discharge. Baseline AUDIT scores were significantly related to ETOH levels on admission (r = .19, p < .01). A paired samples t-test indicated that those who completed SBIRT significantly reduced AUDIT scores at follow-up (t (38) = 3.34, p < .01). A repeated measures ANOVA was conducted to compare main effects of time and baseline ETOH and interaction effect of time and baseline ETOH on AUDIT scores. Results revealed main effect of time (F (1, 33) = 14.24, p < .01) and baseline ETOH (F (1, 33) = 11.11, p < .01). A trend-level interaction effect was observed in which higher BAC on admission led to steeper improvements at follow-up (F (1, 33) = 2.12, p = .15). At follow-up, 21.1% reported seeking treatment for alcohol and 71.1% reported modifying drinking behavior. Eleven patients reported hospitalizations since intervention, 2 were alcohol-related. A positive reduction in alcohol symptoms was found, which may decrease future hospitalizations related to alcohol use. Results provide sufficient rationale to continue this SOC and to consider it for implementation at other hospitals. Modifications may include

strategies to increase follow-up, such as establishing a specific timeline for post-assessments and collecting multiple types of contact information for patients at screening. Additional data is anticipated and will be included in future analyses.

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B007 6:00 PM-7:00 PM

EXERCISE MAY ENHANCE SMOKING CESSATION THROUGH IMPROVED SLEEP

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The present study examined data from 166 women in the exercise arm of a randomized controlled community-based exercise and smoking cessation trial. Female smokers (N=330, M_{age}=44.1[SD=9.9], M=17.4 cig/day[SD=8]) were randomly assigned to a 12-week cognitive-behavioral smoking cessation program plus either exercise or contact control. Dose of exercise was defined as total days over 12 weeks of reported aerobic and/or resistance exercise. Previous analyses have shown a dose-response relationship between exercise dose and 7-day point prevalence abstinence (PPA) at 12 weeks. Using a series of generalized models, we tested the association between exercise dose and sleep as measured by the Insomnia Severity Index over the 12-week treatment. Logistic regression was used to test associations between bio-verified 7-day PPA and changes in sleep over 12 weeks as well as the associations between patterns of quitting behavior and changes in sleep. Patterns have previously been identified using Latent class models, suggesting five distinct patterns of quitting behavior: those who made few quit attempts, non-quitters, early attempters, late attempters (quit at 12 weeks but didn't attempt until late) and quitters, with exercise participants reporting a significantly greater proportion of late attempters than controls. Results of the present study show significant associations between greater exercise dose and better quality of sleep at 12 weeks controlling for baseline (b=-0.14, SE=0.07, $p < .05$). Exercise dose was also significantly negatively associated with difficulty falling asleep (b=-0.03, SE=0.01, p=0.04) and satisfaction with sleep (b=-0.03, SE=0.02, p=0.04) at 12 weeks. The odds of bio-verified 7-day PPA at 12 weeks was significantly higher for those reporting better sleep at 12 weeks (OR=0.73, p=.04), and a trend for higher odds of quitting for those whose sleep scores improved from baseline to 12 weeks emerged (OR= 1.78, p=0.09). Finally, non-quitters had more difficulty falling asleep compared to quitters, and late attempters had worsening sleep scores over 12 weeks compared to quitters (p's < .05).The association between exercise

and quitting seen in our prior study may be related to improved sleep. Additional mediational analyses will explore whether improved sleep may be a mechanism underlying the efficacy of exercise for helping smokers quit.

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B008 6:00 PM-7:00 PM

EXPLORING MODERATORS OF THE RELATIONSHIP BETWEEN EXERCISE AND ALCOHOL USE

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Exercise has been proposed as an adjunct to alcohol prevention and treatment efforts, yet research typically supports a positive correlation between alcohol use and exercise. This relationship is not well understood and one specific area needing more focus is for whom this relationship may be more or less pronounced. The current investigation explored demographic, personality, motivational, and behavioral moderators of the relationship between exercise and alcohol. In a cross-sectional investigation, participants (N=122) provided assessments of alcohol use and exercise over the past three months. Variables tested as moderators included age, sex (demographic), positive and negative urgency, positive and negative affect (personality), alcohol dependence and drug use (behavioral), and motivation to use exercise as a compensatory behavior (motivational). Alcohol use and exercise over the past three months were positively correlated ($r = .23$, $p = .01$). A series of hierarchical regressions tested the main effects of exercise, the proposed moderator variable in Step 1, and the exercise x moderator interaction term in Step 2 on alcohol use. With the exception of positive affect, all proposed moderator variables were associated with alcohol use. However, only drug use ($\beta=.20$, $p=.03$) and compensatory motivation ($\beta =-.15$, $p = .08$) moderated the exercise-alcohol use relationship. Those who engaged in greater exercise and drug use reported greater alcohol use. Those who engaged in less exercise and had lower compensatory were less likely to consume alcohol. Although replication and extension of these findings are needed, they do provide some insight into factors that could contribute to the exercise-alcohol use relationship. Specifically, previous drug use and compensatory motivation could be important factors to take into consideration when designing interventions focused on alcohol reduction or problem-drinking prevention with exercise as an adjunct.

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B009 6:00 PM-7:00 PM

EXPLORING THE EFFECT OF LONGSTANDING ACADEMIC-COMMUNITY PARTNERSHIPS ON STUDY OUTCOMES:A CASE STUDY

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Background: We conducted two large trials (CRC1 & CRC2) to promote colorectal cancer (CRC) screening among Filipino Americans. By design, about half of the organizations that participated in CRC2 had also participated in CRC1. While sustained academic-community partnerships can improve working relationships between research partners, they could also influence study outcomes, thereby impacting the generalizability of study findings. We explored the effect of being a new versus a previous research partner on CRC2 study outcomes.

Methods: CRC2 tested two strategies (basic and enhanced) for implementing an evidence-based multi-component intervention to promote CRC screening at community organizations (N=17) with the help of trained community health advisors (CHAs; N=63). In both the basic and enhanced arms, CHAs recruited Filipino Americans (N=673) who were not adherent to CRC screening guidelines. The main study outcome was CRC screening status of participants at 6-month follow-up. Previous versus new served as a stratification variable for randomization of organizations. Using multilevel logistic regression, we obtained estimates of the odds ratio (OR) for new versus previous partner controlling for several organizational characteristics (study arm, faith-based versus social service organization, years in operation) and further controlling for CHA and participant characteristics.

Results: Screening rates were substantially higher among participants of previous versus new partner organizations in unadjusted analysis (68% versus 45%, OR 2.5, p=.21), after adjusting only for variables at the organization level (73% versus 34%, OR 7.3, p=.01) and after additionally adding CHA and participant level factors to the model (70% versus 40%, OR 4.8, p=.10). Although power was low due to the limited number of organizations, absolute differences in screening rates were large and consistent.

Discussion: These findings suggest that study outcomes that are achieved with long-term community partners may not be generalizable to new partners. Inclusion of organizations that do *not* have an ongoing research relationship with an academic partner may improve external validity of trials in community settings.

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B010 6:00 PM-7:00 PM

FAMILY-BASED LAY HEALTH WORKER INTERVENTION PROMOTES HEALTHY NUTRITION AND PHYSICAL ACTIVITY IN VIETNAMESE AMERICANS: A RCT

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Background: Many Asian Americans do not meet nutrition and physical activity (NPA) recommendations, which increases their vulnerabilities to chronic diseases. A majority of Vietnamese Americans, the 4th largest Asian American group, are foreign-born with limited English proficiency. This study reports outcomes of a randomized controlled trial of a family-based lay health worker (LHW) intervention in promoting healthy NPA among Vietnamese Americans.

Methods: Participants were 107 dyads of Vietnamese male cigarette smokers and non-smoking family members (total N = 214) who were randomized to one of the two groups: the NPA intervention (n=106 or 53 dyads) or smoking cessation control (n=108 or 54 dyads). All participants received 2 LHW-led small group sessions and 2 individual telephone calls on their assigned topic within 6-8 weeks. Participants were assessed at baseline and 6-month follow-up. Multivariable logistic regression models were used to compare between the study arms on the changes in knowledge of USDA's MyPlate and CDC's physical activity (PA) recommendations, self-reported vegetable/fruit intake and PA, and changes in body weight from baseline to 6-month.

Results: The 214 participants included 107 male daily smokers and 107 family members (92.5% female) with mean age = 55.0 years (range: 19-86), 93.4% spoke limited English, and 60.7% with BMI >23 (overweight or obese using recommended cut-off for Asians). At baseline, a minority knew about MyPlate (29.0%) or PA recommendations (5.1%) or met the recommended vegetable/fruit intake (39.3%) or PA level (41.6%). At 6-month, the NPA group reported a greater increase in knowing MyPlate (NPA: 20.9% vs. control: 5.5% increase, p=0.003) and PA recommendations (NPA: 28.3% vs. control: 0% increase, p < 0.001) as well as meeting recommended vegetable/fruit intake (NPA: 39.3% vs. control: 10.6% increase, p < 0.001) and PA level (NPA: 12.3% vs. control: 2.8% increase, p=0.006). In multivariable models, baseline BMI was not associated with any of the outcome measures. The NPA group was more

likely to know MyPlate (adjusted odds ratio [AOR] = 2.9; 95% CI: 1.6 – 5.3) or PA recommendations (AOR: 8.0; 95% CI: 3.0 – 21.2). Although they were not more likely to meet PA recommendation (p=0.09), the NPA group were more likely to meet vegetable/fruit intake recommendation (AOR = 4.5; 95% CI: 2.2 – 9.1) and have had weight loss of 5 lbs. or more (AOR: 1.8, 95% CI: 1.2 – 2.6) than the control group.

Conclusions: Family-based LHW outreach delivering NPA information was effective in increasing NPA knowledge, self-reported vegetable/fruit intake and weight loss in Vietnamese Americans. Findings underscore the continuing needs to promote NPA knowledge and behaviors in Vietnamese Americans with limited English proficiency and the promise of involving families and peers in addressing such needs.

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B011 6:00 PM-7:00 PM

FEMININE HYGIENE PRODUCTS: ATTITUDES AND BELIEFS ABOUT SAFETY

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Objective Despite being used by women all over the world for 80% of their lifetime, limited research on the use and safety of various feminine hygiene products persists, particularly among men. Our objectives were to assess 1) use (women) and awareness (men) of feminine hygiene products, 2) differences in safety attitudes and norms between men and women, and 3) association of practice with safety attitudes and norms of these products in women.

Methods A cross-sectional, online survey was conducted among young adults 18 to 30 years old. The Theory of Planned Behavior guided survey development. T-tests compared differences in attitudes and norms between men and women. Associations between current use of feminine hygiene products (tampons, maxi-pads) with safety attitudes and norms were estimated using logistic regression.

Results Our sample (n=179) included men (n=43), was highly educated (>bachelor's degree= 59%), employed (75%), had an annual family income of >$50,000 (58%), and resided in an Appalachia county (82%). Common products used by women included tampons (82%), panty liners (59%), and maxi pads (54%). Unconventional products used included menstrual cups (8%) and sanitary panties (4%). More controversial products such as feminine wipes (22%) and douches (3%) were also used. Some men were unaware of common feminine hygiene products: tampons (21%), maxi pads (26%), panty liners (51%), douches (40%) and feminine wipes (54%), as well as unconventional products: menstrual cups (79%) and sanitary panties (71%). There was a trend such that women had more positive safety attitudes (p=0.06) and norms (p=0.10) all products than men. Most women had high safety attitudes about tampons (mean=2.77, SD=0.67) and maxi-pads (mean=2.8; SD=0.67). Women using tampons were less likely to be Hispanic (p=0.01), more likely to be White (p=0.003), and had positive safety attitudes (p=0.03) as compared to non-users. Women using maxi-pads were more likely to have an annual family income of

Conclusion Our novel study included men while studying products used by women. Despite being widely advertised and sold in markets, some men were unaware of common feminine hygiene products. Safety attitudes guide selection of feminine hygiene products. Additional research and education is needed about the actual safety of these products to help women in feminine hygiene decision-making.

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B012 6:00 PM-7:00 PM

GENDER DIFFERENCES IN PEER SUPPORT IN TYPE 2 DIABETES SELF-MANAGEMENT: AN INTERNATIONAL QUALITATIVE STUDY

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Gender Differences in Peer Support in Type 2 Diabetes Self-Management: An International Qualitative Study

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Background: The effectiveness of peer support programs as a means to sustain self-management in patients with type 2 diabetes has been well-documented. However little is known of how gender differences in peer support might influence the provision and receipt of support.

Purpose: This study used the key functions of peer support as framework to explore gender differences in peer support programs and identified gender-related issues and global cultural contexts that influence peer support.

Method: Qualitative data were generated through telephone interviews using open-ended questions to nine programs across the globe: Africa (Cameroon and Uganda), Asia (Cambodia, Hong Kong, Thailand, and Vietnam), and the United States (Alabama, California, and Illinois). Qualitative content analysis was done to achieve in-depth exploration of categories.

Results: Five themes emerged: 1) Differences in emotional support: female peer supporters reportedly displayed more emotional support than any other form of support; 2) Differences in instrumental support: male peer supporters gave information as their primary form of support; 3) Who is a peer supporter: males dominated as peer supporters in two Asian countries (Cambodia and Hong Kong) and females dominated in African American and Latino peer support programs in the US; 4) Matching by gender: male peer supporters were assigned only male recipients, but female peer supporters could be assigned to either sex; 5) Gender differences in participant availability: there was considerable variety in how gender was manifest in programs and both peer supporters' and participants' responses to them.

Conclusion: This study provided evidence that substantial gender differences and gender-related issues were present in all the peer support programs and that the manifestation of differences varied considerably across settings and cultures. Gender differences have to be taken into consideration when planning peer support programs.

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B013 6:00 PM-7:00 PM

MERITORIOUS AWARD WINNER

GET ACTIVE! EFFICACY OF A BRIEF ACCEPTANCE-BASED BEHAVIORAL INTERVENTION TO PROMOTE EXERCISE ADOPTION AND MAINTENANCE

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Regular exercise confers tremendous transdiagnostic benefits for health, yet 54% of American women are insufficiently active. Affective/experiential factors influence exercise adoption and maintenance, but how best to address these constructs and maximize health outcomes is not well understood. This study proposed that participants may be able to learn acceptance-based skills for managing inherent/inevitable exercise discomfort. The central aims of this investigation were to (1) compare exercise change across time and condition, and (2) assess mechanisms of exercise behavior change over time. A sample of $N = 119$ insufficiently active women aged 21 – 65 were randomly assigned to 1 of the 3 conditions: (1) acceptance-based health coaching (ACT), (2) education-based health coaching (EDUC), or (3) no-health coaching control (CTRL). The study was divided into: Phase 1 Adoption (baseline visit – post intervention), and Phase 2 Maintenance (3- and 6- months follow up). During Phase 1, all participants completed a 30-day exercise program, and ACT and EDUC participants received visit 1 and 2 workshops. All participants were contacted at 3- and 6-months post-intervention to complete follow-up assessments. The overall trend across Phases 1 and 2 was for ACT participants to score highest on exercise outcomes. Notably, a time X condition interaction for PAR total minutes of exercise was observed such that ACT participants completed more exercise minutes in the past week at visit 2 compared to EDUC and CTRL participants, $F(2,103) = 4.58$, $p = .012$, $\eta^2 = .082$. Additionally, only ACT participants completed 150-minutes of exercise per week, on average, over the course of the 30-day intervention (as recorded *objectively* by HR monitors). Repeated measures tests showed significant main effects of time on exercise scores through Phase 2, $F(3, 201) = 22.99$, $p < .001$, $\eta^2 = .255$; but not significant main effects of condition or time X condition interactions. Regarding mechanisms of action, assignment to ACT predicted higher experiential acceptance scores at visit 2, and visit 2 experiential acceptance scores predicted exercise scores at both 3- and 6-months follow-up as tested via mediational analyses. These results demonstrate that a brief acceptance-based intervention can improve metrics of psychological flexibility, which in turn influences exercise

behavior maintenance. Future work should assess the optimal intervention “dose” for bolstering these associations across time.

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B014 6:00 PM-7:00 PM

HOW PEER MENTORSHIP CONVERSATIONS SUPPORT PEOPLE WITH SCI: A THEMATIC ANALYSIS

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Background: Participation is defined as the extent and nature of a person's involvement in society. Full participation in society is a U.N. human right. People with a spinal cord injury (SCI) often have lower levels of participation compared to the general population. Peer mentorship is an approach that shows promise for improving participation among people with SCI. Peer mentors can be defined as individuals with lived experience of SCI who provide knowledge, counsel, and encouragement to mentees with SCI. To date, research has not examined how SCI peer mentorship conversations enhance participation among mentees with SCI, or the nature of the topics discussed during these conversations.

Purpose: The purpose of this study is to gain an understanding of how peer mentorship conversations enhance participation among mentees with SCI. Specifically, it aims to use thematic analysis to understand topics discussed during SCI mentorship conversations.

Methods: Three provincial SCI community organizations in Canada recruited participants with SCI. Participants completed a baseline survey to collect information about demographics and prior experience with peer mentorship. Peer mentors and mentees were matched, and their telephone conversations were audio recorded and transcribed verbatim. Two researchers inductively coded each transcript independently to identify topics. The researchers then came together to reach a consensus of the key themes.

Results: Similar to previous analyses of behavioural support conversations, 5 conversations between 5 mentors and 5 mentees were recorded (mean age: 49.2 ± 14.3 years, 40% female). The mean duration of the conversations was 38.25 ± 21.28 minutes. Identified themes included: sports and recreation; perception of their injury; similarities between the mentor

and mentee; accessibility issues in the home and community; information about available resources; the importance of support from peers; aging with SCI; and physiological changes due to SCI, particularly with sensory and motor function and changes with the bladder and bowel. Mentees primarily initiated conversation around these themes, with physiological changes and aging being the most commonly discussed.

Discussion: Peer mentorship conversations address various topics related to participation with topics related to physiological changes and aging being most commonly instigated by mentees. This study is the first to record and inductively code SCI peer mentorship conversations. Future research will apply these findings to develop coding frameworks that will allow for in-depth conversation analyses of peer mentorship conversations and will ultimately aim to improve SCI peer mentorship programs.

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B015 6:00 PM-7:00 PM

IDENTIFYING HEALTH AND WELLNESS PERCEPTIONS AND NEEDS AMONG WIC EMPLOYEES

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Introduction: Social service employees are at risk for experiencing poor health due to the burden associated with job stress (i.e. difficult clients, volatile situations). There is a need for worksite interventions specifically designed for stress associated with social service employment. The purpose of this qualitative research study was to identify Women, Infants, and Children's Nutrition Program (WIC) employee perceptions of health and wellness to inform a worksite wellness program. **Methods:** Four focus groups were conducted with 38 WIC staff and 14 30-minute interviews with WIC supervisors. Data were analyzed by WestGroup Research. **Results:** Data were organized by individual health and wellness (IHW) and role of the employer in health and wellness (EIHW). IHW had three subthemes: (1) health and wellness concerns, (2) ways staff stay healthy (3) barriers to health and wellness. EIHW had five subthemes: (1) aspects employer *should* support; (2) ways employer supports; (3) ways employer *could* support; (4) obstacles to participation; and (5) motivators for participation. The major health and wellness concern was stress. Walking was most identified as a way to stay healthy. Health and wellness barriers were time and work environment. In relation to the role of the employer, WIC staff felt physical and mental health, and the environment *should* be supported. Staff felt WIC provided health insurance, health coaching, and mental health services but most services were inaccessible. Staff felt the employer *could* provide support for stress reduction, fitness and diet, environmental improvements (i.e., cleanliness, standing desks), and staff appreciation. Obstacles to participation included location (i.e., programs are off-site and too far away), time, policies, stress (i.e., demands of the day leads to fatigue and low motivation), email challenges, lack of space in clinic, and cost. Motivators included positive encouragement from leadership, fellowship (i.e., inclusion in programs, support from others), offering programs in-clinic, allowing worktime (i.e. scheduled breaks) to participate, participation incentives, and staff appreciation. **Discussion:** Programming that is supported by leadership and is aligned with employee needs is critical for the success of worksite health and wellness programs. The results of this study will inform the implementation of an evidenced-based wellness program targeting stress reduction and physical activity behaviors in WIC staff.

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B016 6:00 PM-7:00 PM

IMPACT OF A COMMUNITY-BASED DIABETES PREVENTION AND MANAGEMENT PROGRAM FOR IMPROVING PHYSICAL ACTIVITY IN WEST VIRGINIA

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Physical activity is critical for blood glucose management and overall health in individuals with diabetes and pre-diabetes. Researchers have estimated that as much as 10% of type 2 diabetes cases worldwide are caused by physical inactivity. More specifically, West Virginia is burdened by higher rates of type 2 diabetes and physical inactivity. This study explored the relationship of physical activity with anthropometric and clinical factors among participants in a community-based diabetes prevention and management (DPM) program.

Eighty-three adults with type 2 diabetes and pre-diabetes completed a 12-month (22-session) DPM program in two churches in Morgantown and Charleston WV (completion rate 82%). The program was modeled after the Diabetes Prevention Program and modified to include diabetes management sessions. The trained student health coaches (HCs) (included a multidisciplinary group of undergraduate and graduate students) were used as change agents; HCs had weekly communications with the participants to provide continuous feedback and reinforcement of health education messages. Program assessments included step count (pedometer), surveys, clinical (blood pressure, triglycerides, cholesterol) and anthropometric measurements (weight, waist circumference (WC), body mass index, and % body fat).

Mean age was 58.5 years; 63% self-reported that they had diabetes; 38 participants (75% females, 63% diabetics) completed the weekly activity log to track their physical activity for at least 24 weeks (46% activity log completion rate). A significant improvement in physical activity occurred from baseline (2nd and 3rd week) to mid-program (17th to 19th week) (*p=0.05*). There was a significant (negative) bivariate association between average steps and BMI and WC ($p < .05$). Controlling for Weight, WC and HDL in the multiple linear regression, physical activity was significantly associated with change in A1c between baseline and 6-months ($p=0.042$).

Results show that a lifestyle education program can have a positive impact on improving physical activity. Partnerships with churches to deliver evidence-based diabetes programs can serve as a prototype for future efforts to improve physical activity and health outcomes for WV communities

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B017 6:00 PM-7:00 PM

IMPACT OF A HEALTH PROMOTION INTERVENTION ON FEMALE ULTRA-ORTHODOX JEWISH TEACHERS' HEALTH BEHAVIORS AND HEALTH SELF-EFFICACY

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Introduction: Women in low socio-economic, religious, cloistered communities often have lower levels of health knowledge and preventive health behaviors. Ultra-Orthodox Jewish (UOJ) women engage in lower levels of preventive health behaviors and have higher rates of diabetes and obesity. Interventions aimed at improving engagement in preventive health behaviors in this population are unknown. This study evaluated the impact of a health promotion intervention with UOJ female high school teachers on health knowledge, preventive health behaviors, general health self-efficacy, and self-rated health status.

Methods: 246 female UOJ teachers from two girls' high schools in Israel completed questionnaires before and one year following a school-based health promotion intervention. Questions included demographic, preventive health behaviors, health knowledge items, self-rated health status, as well as a general health self-efficacy scale.

Results: Women's age range was 21-71, average number of children was 6.4 (range= 0-17), 36% were below poverty level and 55% were overweight or obese. Post intervention, women had increased knowledge of heart attack symptoms $p < .005$) and cardiovascular disease risk factors ($p < .05$). They had increased whole grain consumption ($p < .05$), decreased margarine consumption ($p < .05$), and increased blood pressure testing ($p < .005$). Women also reported increased accuracy in self-rated health status ($p < .005$) and increased general health self-efficacy ($p < .005$).

Conclusions: This study is the first investigating an intervention aimed at improving engagement in preventive health behaviors with UOJ women. School-based health promotion interventions can improve health knowledge, preventive health behaviors, self-perception of health status, and health self-efficacy in female UOJ high school teachers. Utilizing the school setting in interventions aimed at improving engagement in preventive health behaviors may provide an accessible, effective method for preventive health behaviors promotion in UOJ and other women from low SES, religious, cloistered populations.

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B018 6:00 PM-7:00 PM

IMPACT OF A MODULAR SOCIAL COGNITIVE SMARTPHONE APPLICATION ON PHYSICAL ACTIVITY IN ADULTS: A RANDOMIZED FACTORIAL TRIAL

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Smartphones have received considerable attention as vehicles for behavioral intervention, but a focus on randomized controlled trials has provided mHealth developers with little guidance in constructing their own health apps. The present study aimed to assess the individual and combined impact of two social cognitive theory (SCT)-based “intervention ingredients” on moderate to vigorous physical activity (MVPA) and important SCT outcomes. Adults (N = 116; M_{age} = 41.38 7.57) were recruited to participate in a goal-driven 12-week MVPA intervention, and were randomized to receive the base-level app containing 3 common eHealth tools (i.e., MVPA tracking, instant/bi-weekly feedback, weekly educational modules), base-app + guided goal setting (i.e., GGS; participant behavior automatically generated weekly goal-setting strategies and recommendations), base-app + points-based feedback (i.e., PBF: all app features were associated with points, motivational content, levels, and badges), or the base-app + both modules. MVPA was assessed via accelerometry at baseline and week 12. SCT outcome measures included the exercise self-efficacy scale (EXSE); lifestyle self-efficacy scale (LSE); barriers self-efficacy scale (BARSE); multidimensional outcome expectations (OE) for exercise scale, which included physical (POE); social (SOE); and self-evaluative (SEOE) subscales; the perceived barriers scale (PBE); and exercise goal-setting scale (EGS). Repeated measures factorial analysis of variance (RM-ANOVA) revealed a significant effect for time (pp=.05): those with PBF recorded an additional 5.94 minutes of daily MVPA. For BARSE, there was a significant PBF*time interaction. Post-hoc analyses indicated a protective effect for those with PBF (p=.20) and a decrease in those without PBF (p < .01). There were time effects for EXSE and LSE (p’s .02). Participants reported poorer efficacy following the intervention; however a significant time*PBF*GGS interaction for EXSE (p = .04) indicated those with PBF and GGS maintained efficacy (p = .98), while those without PBF significantly decreased (p < .01). No significant effects were present for OE. For POE there was a trend toward significance in the time*PBF interaction (p = .05): there was a nonsignificant increase for those with PBF (p=.14), and a non-significant decrease for those without (p=.2). The time effect for EGS was significant ($p < .01$): all individuals increased goal setting strategy usage, and those with PBF engaged in still greater strategy usage ($p = .01$). For PBE, the main effect for time was significant ($p < .01$). Participants perceived fewer barriers to exercise following the intervention. These results are of immediate use to mHealth developers, suggesting that although the base-level app may have been overbuilt, the use of a theory-based PBF system may positively impact MVPA and important SCT outcomes.

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B019 6:00 PM-7:00 PM

INTER-RATER RELIABILITY OF TAXONOMY CODING OF THE BEHAVIOR CHANGE TECHNIQUES USED IN A WEIGHT MANAGEMENT INTERVENTION

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Background: The Behavior Change Technique Taxonomy (BCTTv1) was developed as a common language for describing behavior change interventions across disciplines (Michie et. al, 2013). This taxonomy tool can be used to identify the behavior change techniques that are the most effective and most frequently used in multi-component interventions. Requisite to using a taxonomy to identify and classify behavior change techniques, however, is the need to establish inter-rater reliability among taxonomy coders.

Purpose: The purpose of this study was to determine the feasibility and reliability of novice coders in coding the behavior change techniques (BCTs) used in two theoretically-different interventions of a randomized clinical trial to reduce childhood obesity.

Methods: The process involved a pair of expert coders and a pair of novice coders. Novice coders received 120 hours of online training over 3 months, including phone and e-mail correspondence with expert coders. Each person of the two pairs (expert and novice coders) independently coded the materials from two interventions. The materials consisted of 884 pages of the interventionist protocol manual and participant materials used in a 1-year family-oriented behavior change intervention that met face-to face every 2 weeks. The materials for both interventions were coded separately by each coder with adjudication by coder pairs in early phases of coding. The number of BCTs identified by each set of coders were recorded, and inter-rater reliability was calculated using prevalence- and bias-adjusted kappa (PABAK) and percent agreement.

Results: Training for each novice coder took approximately 125 hours. It took 120 hours for each novice coder to independently code the intervention materials. Inter-rater reliability between the novice coder pairs were PABAK scores of 0.80 and 0.81 and agreement scores of 88% and 90% for the two interventions, respectively. Reliability between novice coder pairs and expert coder pairs showed PABAK scores of 0.46 and 0.59 for the two interventions (acceptable PABAK ≥ 0.67 (Sim and Wright, 2005)). Percent agreement was 73% and 80%, respectively.

Conclusions: The results indicate good taxonomy coding inter-rater reliability among novice coders of two different interventions. Although the PABAK scores were not as high between novice and expert coders, the agreement was still good. Our results indicate that with adequate training, reliable taxonomy coding of behavior change techniques in behavior change interventions can be successfully achieved with newly trained individuals.

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B020 6:00 PM-7:00 PM

OBJECTIVELY MEASURED E-NEWSLETTER ENGAGEMENT AND WORKPLACE SEDENTARY BEHAVIOR

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Workplace behavior change interventions often incorporate educational electronic messages (i.e., E-newsletters). However, there is limited objective data on whether engagement with E-newsletters actually drives behavior change. We examined whether E-newsletter engagement was associated with changes in sedentary and active behaviors during the first three months of a sedentary behavior workplace intervention. Participants (N = 413, 75.6% female, 72.4 % White, 43.6 ± 11.1 years of age) were recruited from 14 worksites in the Phoenix and Minneapolis regions to participate in a multi-component intervention to reduce sitting and increase light-intensity physical activity (LPA). E-newsletters were sent weekly for the first month and biweekly thereafter and were monitored using email tracking software (Salesforce.com, Inc.). E-newsletter engagement was assessed by “open rates” (i.e, number of emails opened) and “click rates” (i.e., number of embedded hyperlinks clicked). Participants wore an activPAL accelerometer to assess sitting, standing, LPA (< 100 steps/min), moderate-vigorous physical activity (MVPA; ≥ 100 steps per/min), number of sit-stand transitions, and long bouts of sitting (≥30 minutes) during work hours. Outcomes were standardized to an 8h workday. Mixed-effects regression models (clustered by worksite) were adjusted for age, gender, race, BMI, and job type. Participants spent 323.0 ± 86.1 minutes sitting, 106.8 ± 74.5 minutes standing, 27.4 ± 13.5 minutes in LPA, 5.7 ± 5.2 minutes in MVPA, 6.3 ± 4.0 sit-stand transitions, and 146.5 ± 92.1 minutes in long bouts of sitting at work. Open rates were associated with reductions in sitting (*b[se]*=-5.4 [2.6] min/workday, *p*=.04), but not with changes in standing, LPA, MVPA, sit-stand transitions, or long bouts of sitting. Click rates were not associated with any of the outcomes. E-newsletter engagement - as measured objectively by e-mail open rates - was associated with reductions in sitting time at work. However, the

effect did not translate to significant increases in standing or more active behaviors. Future interventions should continue to focus on E-newsletters as a viable means of intervention delivery; however, more robust methods are likely necessary for long-term and substantive decreases in workplace sedentary time.

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B021 6:00 PM-7:00 PM

ACCULTURATION MODERATES AMBIVALENCE OVER EMOTIONAL EXPRESSIONS AND WELL-BEING AMONG CHINESE BREAST CANCER SURVIVORS

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Ambivalence over emotional expression (AEE) is defined as individuals' internal conflict between wanting to express their emotions but fearing the consequences of such expressions. In one study among European American gastrointestinal cancer patients, AEE was associated with greater pain and lower quality of life. Whereas low levels of AEE are regarded as essential to healthy interpersonal and intrapersonal functioning among European Americans, the ability to restrain or control emotions to maintain social harmony is a sign of maturity and social awareness among Asian Americans. Hence, the relations between AEE and well-being may be different among Asian Americans. Few studies to date have examined these emotional processes using a sample with chronic illness that prioritizes emotional self-control. The present study examines the relations between AEE and well-being (viz., depressive symptoms and quality of life) as a function of acculturation among a sample of 93 Chinese breast cancer survivors. Specifically, we predicted that AEE would not be predictive of quality of life and depressive symptoms among less acculturated Chinese breast cancer survivors, whereas AEE would be associated with lower quality of life and greater depressive symptoms among highly acculturated Chinese breast cancer survivors. Consistent with our hypotheses, we found that acculturation moderated the relations between AEE and depressive symptoms, $F(1, 82) = 6.18$, $p < .05$, $\Delta R^2 = .06$, $\eta_p^2 = .07$, and marginally moderated the relations between AEE and quality of life, $F(1, 84) = 3.36$, $p = .07$, $\Delta R^2 = .03$, $\eta_p^2 = .04$. Specifically, AEE was positively associated with higher depressive symptoms (B = .20, $p < .001$) and lower quality of life (B = -.45, $p < .001$) for women with high acculturation, but not for women with low acculturation (B = .04 and -.15, $p > .05$ for depressive symptoms and quality of life, respectively). As Chinese women acculturate to mainstream American culture and obtain Western values of individuality, self-assertion, and emotional expression, AEE becomes a detrimental emotional process associated with maladjustment. Future research would benefit from exploring the directionality of these processes and explore specific cultural values that were obtained or lost as a function of acculturation.

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B022 6:00 PM-7:00 PM

ADVOCACY AND STIGMA AMONG PATIENTS WITH LUNG CANCER

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Introduction: Stigma is pervasive among patients with lung cancer, and is associated with negative psychosocial and behavioral outcomes. To develop stigma-focused interventions, there is a need to understand potential avenues of adaptive coping and stigma resilience among lung cancer patients. Preliminary investigations (e.g., Brown & Cataldo, 2013), including our previous qualitative work (Hamann et al., 2014), indicate that patient engagement in lung cancer advocacy (supporting a cause, idea, and/or policy through knowledge, personal contact, fundraising and other organized activities) may mitigate negative effects of stigma for patients. The present quantitative analysis builds on this work to examine lung cancer advocacy and possible relationships to stigma and other characteristics among patients with lung cancer.

Methods: The sample included 231 patients (147 women; 84 men) diagnosed with lung cancer and recruited from outpatient clinics associated with two NCI-designated cancer centers. Lung cancer advocacy was assessed through four items endorsed on a 1-5 scale ("I have tried to learn as much as I can about my lung cancer"; "I have been involved in a group that promotes lung cancer awareness"; "I have wanted to help others who have lung cancer"; "I have tried to share with others what I know about lung cancer"). Lung cancer stigma was assessed using the *Lung Cancer Stigma Inventory (LCSI;* Hamann et al., In press*)*, a 25-item measure reflecting factors of Perceived Stigma (negative appraisal and devaluation from others), Internalized Stigma (self-blame, guilt, and regret), and Constrained Disclosure (social avoidance, disclosure discomfort, and disengagement).

Results: We found a statistically significant difference in advocacy based on smoking status, *F* (2, 216) =3.35, *p*=.04), with never smokers reporting higher scores (*M*=12.28) on the advocacy measure than current smokers (*M*=9.79; *p*=.02) and marginally higher scores than former smokers (*M*=11.37; *p*=.10). Although not significantly associated with factors of perceived or internalized stigma, advocacy was negatively correlated with the factor of constrained disclosure (*r*=-0.19; *p* < .01).

Conclusions: Involvement in advocacy may buffer lung cancer patients against the social avoidance and disengagement associated with lung cancer stigma. Advocacy involvement may enhance social support and feelings of shared purpose that help guard against constrained disclosure. Facilitating community involvement and advocacy may be useful components of multifaceted interventions to mitigate lung cancer stigma. There may, however, be barriers to advocacy engagement for current smokers that require increased focus and understanding.

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B023 6:00 PM-7:00 PM

CHALLENGING THERAPEUTIC DISCUSSIONS WITH LATINO CANCER PATIENTS: PROVIDER PERSPECTIVES FROM LATIN AMERICA AND THE USA

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BACKGROUND: Latino cancer patients (LCP) are at risk of poor psychological outcomes. Managing distress in LCP requires therapeutic skill and cultural competency. In this study, we explored mental health providers'(MHP') perceptions about the challenging or difficult aspects of discussing the cancer diagnosis (CD), cancer prognosis (CP) and death and dying (DD) in therapeutic discussions.

METHODS: A survey with open-ended questions was emailed to MHP practicing in the USA and Latin America. Three qualitative questions explored difficult aspects of counseling LCP when discussing the CD, CP and DD issues. Fifty five MHP providing mental health services in Spanish participated. Four independent coders coded responses and inductive content analysis was utilized to analyze the data.

RESULTS: Ten percent of MHP reported that they find challenging having discussions about the CD, 21% about CP, and 28% about DD. Thematic categories across the three areas (CD, CP, and DD) were: 1) emotional impact and coping, 2) cultural issues, and 3) patient-provider related themes. Providers perceived difficulty addressing the emotional impact and coping strategies of patients; particularly, it was difficult to address distress and coping mechanisms such as denial and avoidance when talking about CD, CP, and DD. There was a need for increased cultural sensitivity to address LCP specific cultural beliefs. There was an expressed need to build therapeutic trust and to receive specialized training to treat LCP.

A significant theme was the lack of information, cancer-related education, and/or communication about the CD and CP. Stigma was challenging in conversations about CP and DD, specifically, fatalistic perceptions about cancer and death taboo. Family impact and the desire to protect the family were challenging themes during DD conversations.

DISCUSSION: MHP describe encountering many challenges in their therapeutic discussions with LCP about CD, CP and DD. Addressing the emotional impact, the educational needs, the

cultural context, stigma, and family impact, were challenging aspects of having these conversations. The need for specialized training to improve therapeutic effectiveness during therapeutic discussions was emphasized. Psycho-oncology educators and training programs should incorporate additional training on how to address these challenging topics and the cultural context of patients in a sensitive manner.

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B024 6:00 PM-7:00 PM

CHANGES IN OBJECTIVELY MEASURED ACTIVITY OVER 6 MONTHS AMONG BREAST CANCER SURVIVORS ON ADJUVANT THERAPY

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Objective: The objective of this study was to assess the prevalence of objectively measured moderate-to-vigorous PA (MVPA), light and sedentary time among breast cancer survivors (BCS) currently undergoing adjuvant therapy. We also wanted to determine if there were any changes over time.

Methods: Participants completed baseline surveys and wore an accelerometer to measure MVPA during waking hours for nine consecutive days at baseline and 6 months. Seven valid days were used by deleting the first and last day if nine were completed. 5-second epochs were used to provide a more sensitive estimate of MVPA levels. Repeated Measures Analyses of Variances (R-ANOVAs) were used to determine changes over time.

Results: BCS were recruited from the QEII Health Science Centre in Halifax, Nova Scotia. Of the 114 approached 77 (68%) agreed to participate. Participants were aged 57 years, 68% married, 51% employed, and BMI of 28kg/m^2. 70 (91%) and 56 (72%) provided PA data for ≥3 valid days at T1 and T2 respectively. At baseline, the average duration of MVPA bouts was 119 minutes and 27% were meeting guidelines. At 6 months, the average duration was 138 minutes and 38% were meeting guidelines. Sedentary time did not change from T1 to T2 (597 vs 601 minutes). Significant increases from T1 to T2 were found in daily light minutes (+6.9; p=.048), daily moderate minutes (+5.6; p=.021), weekly moderate minutes (+42.7; p=.007), and weekly MVPA minutes (+36.5; p=.045).

Conclusion: This study found that BCS increased their objectively measured light and MVPA over six months. This would generally be when most survivors have completed the majority of their treatments. They may be feeling better and are returning to their previous activity levels. However, the smaller number of T2 measures may bias the results and artificially inflate them. More research needs to be conducted with larger sample sizes to gain a more accurate representation of activity levels of BCS undergoing adjuvant therapy.

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B025 6:00 PM-7:00 PM

DEVELOPMENT OF A PATIENT NAVIGATION INTERVENTION TO IMPROVE COLORECTAL CANCER CARE

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Purpose: Compared to non-Hispanic whites, Hispanics/Latinos are at an increased risk for cancer disparities. This intervention development study outlines the creation of a patient navigation (PN) intervention designed to improve colorectal cancer (CRC) diagnostic care and screening at a Federally Qualified Health Center (FQHC). ***Methods:*** Evidence-based environmental and behavioral determinants from CRC literature and data from semi-structured interviews with staff (n=17) at a FQHC provided the needs and context for the intervention. Intervention Mapping (IM) steps 1-4, encompassing themes generated from the Social Ecological Model (SEM), were then used to develop an outcome-oriented intervention. ***Results:*** During step 1 of IM, researchers collected data from literature searches and interviews conducted with the FQHC's staff to identify the specific assets and barriers contributing to completion of recommended CRC screening and diagnostic care. In step 2, researchers created a logic model of the problem based on the SEM model; this model outlined the behavioral and environmental determinants and factors contributing to the health problem (premature death from CRC and poor health-related quality of life). Researchers then decided on specific behavioral and environmental outcomes for the intervention (e.g., completing diagnostic/screening colonoscopy within 3 months of provider order [behavioral], and navigator explaining a health care provider's recommendation for screening/diagnostic colonoscopy in the patient's preferred language [environmental]).To accompany intervention outcomes, performance objectives describing how the outcomes could be accomplished were included. To complete steps 3-4, researchers are using the outcomes and performance objectives to create the program's structure, materials, and

protocols using health behavior theory. ***Conclusion:***This study describes the development of a CRC PN intervention for Hispanic/Latinos served by a FQHC that has the potential of lessening the CRC burden among this community.

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B026 6:00 PM-7:00 PM

DEVELOPMENT OF AN EDUCATIONAL VIDEO TO PROMOTE CERVICAL CANCER SCREENING AMONG BURMESE AND BHUTANESE REFUGEE WOMEN IN THE US

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Background: Immigrant and refugee women in the United States (US) have high cervical cancer incidence rates coupled with low cervical cancer screening rates. Women from Southeast Asian and other US communities with a high proportion of refugees are among the most likely to have never been screened. Refugees from Burma and Bhutan were the two largest refugee groups arriving in the US in 2011, making up 56 percent of all resettled refugees. These refugee communities come from countries that experience marked cervical cancer disparities. However, little is known about cervical cancer screening among these refugee groups and few health education interventions have targeted this population. **Methods:** Using the Behavioral Model for Vulnerable Populations as a conceptual framework, we conducted eight focus groups in King County, Washington to gather information about women's perceptions and knowledge of cervical cancer (need for care factors) as well as their cervical cancer screening barriers and facilitators (predisposing and enabling factors). A total of 58 women participated (Burmese n=31; Bhutanese n=27). **Results:** Only 28% reported being screened for cervical cancer before coming to the US and 55% reported being screened after resettling in the US. The focus groups revealed limited knowledge about cervical cancer and the need for screening; barriers such as competing priorities and cost; and facilitators such as trusted providers, interpreters, and support from social networks. We used our findings to develop two 15 minute narrative educational videos (one in Nepali for Bhutanese women and one in Karen for Burmese women) that provide basic information about women's anatomy and reproductive health, guidelines for cervical cancer screening, a description of screening procedures, and how to request female providers and interpreters. We are currently pilot testing the videos to assess changes in knowledge and cervical cancer screening intentions. **Conclusions:** Bhutanese and Burmese refugee women are in need of culturally relevant health education about cervical cancer screening. If effective, educational videos may serve as a useful tool for reaching a population at high risk for cervical cancer.

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B027 6:00 PM-7:00 PM

DEVELOPMENT OF AN MHEALTH BEHAVIORAL CANCER PAIN PROTOCOL FOR MEDICALLY UNDERSERVED COMMUNITIES

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Cancer patients in medically underserved areas, characterized by a shortage of healthcare providers and services and economic or cultural barriers to healthcare, report higher pain, more negative pain-related outcomes, and are less likely to have their pain adequately treated. Women with breast cancer in these areas are particularly vulnerable to pain; they are often diagnosed at a later stage, increasing their risk of disease- and treatment-related pain. Behavioral cancer pain interventions can help with pain management. Persistent barriers (e.g., transportation, lack of experts) inhibit the use of these interventions with medically underserved populations. To address this need, we developed a mobile-health (mHealth) Pain Coping Skills Training protocol (mPCST) specifically tailored for women with breast cancer in medically underserved areas. A nationally recognized expert in applying behavioral pain protocols to patients with low-literacy in rural areas provided extensive input into tailoring the intervention. Patient focus groups were conducted to aid in intervention development. Participants (N=19) had a primary diagnosis of breast cancer, reported clinical pain at a 3/10 or greater (0=no pain, 10=worst pain imaginable), and received cancer treatments at a clinic in a medically underserved area. Three 90-minute focus groups were held. Demographic, medical, and self-reports of pain were collected. Participants provided verbal information about their pain experiences and input on the intervention. Group feedback was used iteratively to update the intervention. Field notes and audio recordings were reviewed, and themes were identified. Women were *M*=60 years old, married (63%), and the majority were African-American (53%); 25% had a college degree or more and 33% were working full or part time. Women reported their pain to be *M*=3.2/10 in the last week. Participants reported pain and fatigue were significant unaddressed concerns. Participants reported limited behavioral intervention opportunities and were enthusiastic about mHealth resources. Participants endorsed willingness to travel to their home clinic to participate in tele-video conferencing and to use mobile phones as an adjunct intervention component. They suggested explicit direction be given for use of mHealth technologies. Results suggest that an mPCST intervention designed to meet the needs of breast cancer patients in medically underserved areas is likely to be feasible and acceptable. Key protocol modifications based on focus group data include addressing fatigue, modifying activity suggestions, and creating detailed mHealth

technology instructions. mHealth technologies provide new opportunities to implement efficacious behavioral cancer pain interventions and have the potential to benefit underserved populations. We are currently testing the mPCST protocol in a small trial.

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B028 6:00 PM-7:00 PM

DEVELOPMENT OF THE TRUENTH PROSTATE CANCER PEER NAVIGATION CORE COMPETENCY FRAMEWORK

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Peer navigation (PN) is an emerging concept in cancer care where individuals who have experienced cancer volunteer valuable informational, emotional and practical support to new patients and their caregivers (CG; Freeman, 1995; CPAC, 2010). PN in prostate cancer (PC) is in line with reports from men with PC about their preference for one-to-one support from peer cancer survivors (King et al, 2015). While some existing literature is available to guide the definition, role, and scope of peer navigators, no existing framework defined core competencies specific for PC peer navigators. Furthermore, no known sources included the CGs of men with PC as peer navigators. The study aim was to develop a set of core competencies for PC peer navigators to guide the definition, role, and scope of peer navigators, and a subsequent PN training program. Drawing on existing literature and stakeholders, we developed the PN Core Competency Framework in 3 phases. Phase 1: Identified PN knowledge, skills, abilities, or attributesfrom formative research including (a) a systematic review, (b) an environmental scan of cancer navigation programs, and (c) semi-structured qualitative interviews exploring PC navigational support needs among patients, CGs, and healthcare providers. Phase 2: Drafted initial set of competency statements and mapped into domains. Phase 3: Verified competency statements with PN stakeholders via an online survey in which agreement with inclusion (yes/no) and priority (low/medium/high) were rated. In the verification phase, 27 participants (19 patients, 3 CGs, and 5 healthcare providers) completed the online survey. The majority of participants rated the competencies as medium and high priority. Most statements had an affirmative consensus for inclusion, with comments about exclusion pertaining to concerns about overlapping role with healthcare providers, time required to execute, and limited knowledge/information. Following revisions, the resulting consensus-based framework consisted of 6 core competency domains for PC peer navigators: (1) navigator attributes (e.g., professionalism, cultural

competency, responsibility, self-awareness, empowerment, problem-solving, character, personal and professional development); (2) communication; (3) knowledge/information; (4) facilitate patient-centered care; (5) eHealth/technology; and (6) CG needs. This framework can be used to develop a PN training program to prepare PC survivors for a peer navigator role.

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B029 6:00 PM-7:00 PM

DIFFERENT METHODS OF LOCALIZATION FOR NON-PALPABLE BREAST TUMORS AND PATIENT REPORTED ANXIETY

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Background: Women with breast tumors that cannot be felt on exam need to have a localization procedure done in radiology to help the surgeon find the right area to take out. The most common way this is done is with a wire (WL) that is placed into the breast on the day of surgery. An alternative method uses a radioactive seed (SL) that gives off a signal that can be detected with a probe in the operating room. The seed is contained entirely within the breast and can be placed days before surgery. There are several advantages to using seed localization with the scheduling advantages for the surgeon and radiologist being the most widely recognized, but there is very little data on the patient experience and no study has specifically looked at patient reported anxiety at the time of the procedure As we implemented a seed localization program in our institution, we aimed to explore the patient experience with a specific focus on peri-procedure anxiety. We hypothesized that WL would be associated with greater anxiety because it must be done on the day of surgery and because WL can be associated with delaying the surgery start time which may be anxiety provoking.

Methods: Patients with non-palpable, invasive or pre-invasive breast cancer with no history of anxiety disorder, who had not undergone a localization procedure in the past were recruited. The WL group consisted of patients prior to implementation of the SL program and patients in the SL group were recruited after program implementation. All patients completed a validated, single-item anxiety assessment (5 point Likert scale with a 0.78 correlation to the State Trait Anxiety Inventory) before and after the procedure. Scheduled surgery time and the time the patient arrived in the OR were recorded for all patients. Logistic regression models were used to compare the likelihood of increased anxiety and time delay in the start time in OR between the two groups, controlling for age and family history of cancer.

Results: The 29 patients in the WL group and 31 patients in the SL group were well matched for all demographic and disease characteristics. There were no significant differences in pre-procedure, post-procedure, or change between pre and post-procedure anxiety between the two groups. The majority of patients reported low pre and post-procedure anxiety. Patients

with high levels of post-procedure anxiety were seen more often in the WL group, but this was not statistically significant. There were significant differences in delay time to the OR with seed localization associated with lower likelihood of delays (OR for seed 0.024 (95% CI 0.003-0.207), $p < 0.001$).

Conclusions: Implementation of a seed localization program reduced delays to the operating room. Delays to the operating room decrease patient satisfaction and impact negatively on the patient experience, but this is not associated with anxiety levels around the time of the localization procedure.

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B030 6:00 PM-7:00 PM

DO SPOUSAL CANCER CAREGIVERS RECEIVE ADEQUATE DEPRESSION TREATMENT? EVIDENCE FROM A POPULATION-BASED STUDY

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Background: Recent research suggests that mental health problems in spouses are associated with worse mental health in cancer survivors. Adequately treating spousal mental health problems therefore represents an opportunity to improve outcomes for both cancer survivors and their co-surviving family members. Using nationally representative data, this study sought to determine how depression treatment differs between spousal cancer caregivers with depression compared to the general married population and assess rural/urban disparities in treatment.

Methods: Data are from the Medical Expenditures Panel Survey, a household-based survey of US adults; we concatenated data from 2004-2013. We identified spouses of cancer survivors and a comparison group of married adults. Key measures included depression (ICD-9 codes generated from participant interviews), adequacy of depression treatment (at least four prescriptions related to depression treatment, or at least eight psychotherapy or counseling visits), and sociodemographics. We calculated the prevalence of depression in spousal caregivers and comparisons. Among caregivers and comparisons with depression, logistic regression evaluated the association between caregiver status and receipt of adequate treatment, controlling for sociodemographics; secondary analyses included rurality as a moderator. Analyses were weighted to account for the complex sampling design.

Results: Twelve percent of spousal caregivers were depressed, compared with 9% of the general married population. Most depressed caregivers received guideline concordant treatment (65%), with no difference from comparisons (60%; p=0.50). Urban caregivers were less likely to receive adequate treatment compared to urban comparisons (Odds Ratio [OR]: 0.39, 95% Confidence Interval [CI]: 0.17-0.91). Rural caregivers did not differ significantly from urban comparisons (OR: 0.88, 95% CI: 0.59-1.31) or rural comparisons (OR: 1.05, 95% CI: 0.72-1.52). However, rural comparisons were less likely to receive treatment than urban comparisons (OR: OR: 0.84, 95% CI: 0.72-0.98).

Conclusions: Although spousal caregivers overall receive adequate depression treatment at rates roughly equal to their non-caregiving counterparts, these data suggest that urban caregivers may be at increased risk of inadequate treatment. Future research should examine

and seek to mitigate clinical- and community-level barriers to depression care for urban caregivers.

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B031 6:00 PM-7:00 PM

EFFECTS OF SOCIAL MEDIA ADVERTISEMENT CONTENT ON THE RECRUITMENT OF YOUNG GAY AND BISEXUAL MEN FOR AN HPV VACCINE INTERVENTION

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Background. Social media is a promising approach for reaching and recruiting participants for research studies. We sought to evaluate the effects of different images and text included in social media advertisements (ads) used to recruit young gay and bisexual men for an online human papillomavirus (HPV) vaccine intervention.

*Methods.*In July and September 2016, we used paid Facebook advertisements to recruit men who were ages 18-25, self-identified as gay or bisexual, lived in the US, and had not received any doses of HPV vaccine. A 4x2x2 factorial experiment varied the ad image (a single young man, a male couple, a group of young men, or a young man talking to a doctor), content focus (text about HPV infection or HPV vaccine), and disease framing (text about a sexually transmitted disease [STD] or cancer). Poisson regression determined if these experimental factors affected ad performance.

Results. The recruitment campaign reached a total of 35,646 Facebook users and resulted in an overall unique click-through rate of 2.01% and an overall conversion rate of 0.66%. Ads that included an image of a male couple had a higher reach (IRR=4.91, 95% CI: 2.68-8.97) and conversion rate (IRR=2.56, 95% CI: 1.13-5.77) compared to ads that included an image of a single young man. The unique click-through rate was higher for ads with text about an STD compared to ads with text about cancer (IRR=1.34, 95% CI: 1.06-1.69). The campaign cost a total of $413.72 and resulted in 150 eligible and enrolled individuals ($2.76 per enrolled participant).

Conclusions. Facebook was an efficient and cost-effective approach for reaching and recruiting a national sample of young gay and bisexual men for an HPV vaccine intervention. The success of individual ads varied based on their image and text. Researchers should consider the importance of ad content in order to maximize the recruitment of participants into health-related studies via social media.

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B032 6:00 PM-7:00 PM

EFFECTS OF THE DOCTOR-PATIENT RELATIONSHIP ON LUNG CANCER PATIENTS' TREATMENT EXPECTATION AND QUALITY OF LIFE

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The doctor-patient relationship is a key component of patient quality of life in terminal illness. Patients present with different backgrounds and belief systems about illness, health, and death that can make effective communication with their physician challenging and shape treatment expectations. The extent to which a patient feels their physician is culturally competent may impair or enhance communication and care; therefore, understanding the relationship between patient perceptions of their physician and quality of life is important to improving patient care. Our study used a 21-day longitudinal design in which 20 lung cancer patients (75% stage IIIB/IV disease, MN age = 73 years; MN education = 13 years; 60% female, 80% white) completed questionnaires regarding their daily quality of life, treatment expectations, and perception of their physician's cultural competency, communication, trust, and partnership building. Higher ratings of physician's patient-centered cultural competence corresponded with higher ratings of trust ($r = .67$, $p = .001$), effective communication ($r = .57$, $p = .009$), and partnership building ($r = 0.69$, $p = .001$). Patient information index, a subscale of communication, was a significant predictor of treatment expectation ($b = 1.48$, 95% CI [.71, 2.3]). Better physician communication predicted higher daily social and role functioning ($b = 4.04$, 95% CI [1.12, 6.96]), higher daily physical functioning ($b = 4.51$, 95% CI [1.28, 7.74]), and fewer physical symptoms ($b = -.11$, 95% CI [-.18, -.04]. To our knowledge, this is the first study to relate aspects of physician communication to daily quality of life during treatment for advanced lung cancer. Results underscore that the doctor-patient relationship is multifaceted and that physician communication does play an important role in patients' quality of life. Results highlight the need for increased attention to the quality of physician interactions with patients and cultural factors, as these interactions impact patients' daily lives during illness.

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B033 6:00 PM-7:00 PM

EMPOWERING BREAST CANCER PATIENTS WITH WEARABLE TECHNOLOGY: HEALTH LITERACY, COMMUNICATION, AND CONNECTION: A PILOT STUDY

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According to the NCI, it was estimated that in 2013, there were over 3 million women living with breast cancer in the US; that there will be more than 249,000 new cases of breast cancer in 2016, and that 89.7% of those women will survive more than 5 years. With increasing survival rates and well-established benefits of patient-centered communication, such as improved quality of life, adherence to medical treatment regimen, and health literacy, there is a need for more efficient communication and monitoring of psychosocial and physical functioning. Wearable technology allows patients to consistently monitor symptoms and to quickly share that information with the medical team. The current study aims to assess the utility of a novel app used via Apple™ watch and iPhone in improving communication, improving health literacy, and tracking patient data, including passive data (heart rate, activity level), self-report data (mood, pain, and fatigue levels), and engagement data (use of social media, daily challenges, ability to communicate with study cohort). Twenty women with various stages of breast cancer were enrolled in the study: mean age 50 years (range: 27-66 yrs.); 80% White, 20% African American; 15% having completed some high school and 85% completing at least some college (20% graduate school). 70% of subjects reside with spouse and/or children with only 5% live alone. Intake assessment completed at enrollment indicated: 60% moderate to severe distress, 15% moderate to severe anxiety (GAD7), and 20% moderate to severe depression (PHQ9). Overall, subjects reported very good social and emotional well-being (FACT-B) and showed a range of difficulty with functional well-being (mean 18.6, SD 6.7, range: 6-27) on a scale from “28” (excellent) to “0” (very poor). Subjects reported very good satisfaction with treatment team, including communication with medical staff, confidence and trust, and willingness to recommend providers. Qualitative feedback has allowed researchers to tailor the app and includes requests for afternoon (as opposed to morning) check-in about mood, pain, and fatigue; inclusion of a sufficient number of daily challenges (i.e. take a hike, talk to a friend); and for data to be incorporated into medical chart for monitoring. Subjects reported overall satisfaction with the app and using wearable

technology for self-report and monitoring, appreciated being electronically connected, and learning about their patterns of physical and emotional functioning during treatment, which, many noted, improved targeted communication with physicians during medical exams.

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B034 6:00 PM-7:00 PM

ENHANCING BREAST CANCER SURVIVORSHIP FOR KOREAN WOMEN USING A RANDOMIZED CONTROLLED TRIAL TO IMPROVE QOL AND DECREASE STRESS

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Background: Existing research on cancer survivorship among Asian subgroups is highly sparse. Specifically, Korean American women have experienced a surge of breast cancer incidence in recent years and report low levels of quality of life (QOL) and high levels of stress, partly due to linguistic and cultural barriers, which diminish their ability to cope with cancer. However, few studies have examined breast cancer survivorship in this population underscoring the strong need for linguistically and culturally appropriate resources for Korean American breast cancer survivors (KABCS). We developed and assessed the effectiveness of *one of the first* linguistically and culturally tailored randomized controlled trial (RCT) for KABCS.

Methods: This RCT aimed to improve QOL and decrease stress using cognitive-behavioral stress management. Participants attended seven 2-hour weekly sessions and one follow-up session seven weeks after the intervention. The analytic sample consisted of 77 KABCS in the Washington, D.C. metropolitan area. The standard intervention (SI) group (n=37) were provided linguistically and culturally appropriate information related to breast cancer survivorship, whereas the enhanced intervention (EI) group (n=40) were provided the SI content in addition to information on practicing relaxation, enhancing coping, reducing stress, using social support, managing anger, and being assertive.

QOL and stress were measured at baseline (T1), end of the program (T2), and follow-up (T3). The Functional Assessment of Cancer Therapy-Breast (FACT-B), which consists of five subscales [physical well-being (PWB), social well-being (SWB), emotional well-being (EWB), functional well-being (FWB), and breast cancer subscale (BCS)] was used to assess QOL, and the Perceived Stress Scale (PSS) was used to measure stress. Generalized estimating equations (GEE) models were used to examine program effects on QOL and PSS separately.

Results: The EI group had a 5.2 unit greater increase in mean FACT-B scores, 1.7 unit greater increase in mean SWB scores, 1.1 unit greater increase in mean EWB scores, and 2.2 unit greater increase in mean FWB scores from T1 to T2 as compared to the SI group.

For mean PSS scores, EI group participants had a 2.4 unit greater decrease in mean PSS scores as compared to those in the SI group from T1 to T2. Among participants who resided in the U.S. for less than 10 years, the EI group had a significantly greater decrease of 6.8 units in mean PSS scores from T1 to T2 as compared to the SI group (p= 0.03). Likewise, among participants who resided in the U.S. for 10 or more years, EI group participants had a marginally greater decrease of 2.2 units in mean PSS scores (p= 0.05).

Conclusions: Findings support the use of a linguistically and culturally tailored support program to improve QOL and decrease stress among KABCS.

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B035 6:00 PM-7:00 PM

EVALUATION OF BLACK/AFRICAN AMERICAN CANCER SURVIVORS' HEALTH BEHAVIORS

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Introduction: Healthy eating, physical activity, tobacco cessation and maintaining healthy weight are healthy lifestyles can help cancer survivors control their risk for cancer recurrence, secondary cancers, and improve health outcomes and overall quality of life. However, the health behaviors of Black/African American cancer survivors have been understudied. We examined young, middle-aged, and older black/African American cancer survivors' health behaviors.

Methods: 2,878 Black/African American cancer survivors (age 63.79 ± 12.59 years) participated in the post-diagnosis survey and it was mixed cancer types. Survivors self-reported their body mass index (BMI), and health behaviors (Yes/No for exercising, smoking, alcohol use, and fruit/vegetable consumption). Chi-squared analyses and analyses of variance (ANOVA) were used to compare young (18-39 years), middle-aged (40-64 years) and older adults' (>65 years) health behaviors.

Results: Middle-aged and older survivors were more likely to be obese/overweight than young survivors (young 64%, middle-aged 78%, older 75%). Older survivors were more likely to be current drinkers than middle-aged and young survivors (young 49%, middle-aged 68%, older age 78%). Young survivors were more likely to be binge drinkers (young 18%, middle-aged 7%, and older 3%); and current smokers (young 31%, middle-aged 23%, and older 11%). Older adult and young survivors were more likely than middle-aged survivors to lead sedentary lifestyle (young 42%, middle-aged 28%, older adult 43%). Middle-aged survivors were less likely to eat one or more fruit servings per day (young 60%, middle-aged 58%, and older 65%). All comparisons $p< 0.05$.

Conclusion: Differences were noted across the age spectrum for unhealthy behaviors. While young African American survivors reported more unhealthy behaviors like binge drinking, tobacco use, and sedentary behaviors, middle-aged survivors reported low fruits and vegetables consumption, and older adults reported high alcohol consumption. Clinical efforts should be tailored to African American survivors to address their specific unhealthy behaviors including life stage considerations. Health behavior interventions at community and individual levels should be implemented to educate Black/African cancer survivors, especially the young survivors about healthy behaviors and its impact on health outcomes and quality of life.

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B036 6:00 PM-7:00 PM

EXPERIENCE OF CANCER TREATMENT IN THE US AMONG PATIENTS FROM SAUDI ARABIA

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Statement of the problem: An increasing number of Saudi cancer patients seek treatment in the United States. To understand this group's experience, we examined the perspectives from a group of Saudi cancer patients in a large U.S. metropolitan cancer center.

Study design: A qualitative grounded theory study**.**

Sample size and composition: Twelve cancer patients from Saudi Arabia; six females and six males, who varied in ages, diagnoses, therapies and treatment durations.

Measures utilized: In-depth face-to-face interviews

Analysis method: Interviewes were audio recorded and transcribed. A grounded theory was employed to collect and analyze the data through constructing analytical codes and categories.

Results: Our sample recognized the professionalism and kindness of their U.S. healthcare providers; especially the knowledge that their physicians' displayed and their skills, expertise, and attitudes. Moreover, they were successful in building a trustful relationship with their providers. Although interviewees encountered difficulties of living abroad, the trust with they had on their providers and the support of other Saudi cancer patients enhanced their faith in cancer treatment internationally.

Conclusion: Our Saudi cancer patient participants had a positive experience in receiving cancer treatment in the United States.

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B037 6:00 PM-7:00 PM

EXPRESSED AFFECT AND PERCEPTIONS OF CLINICAL INTERACTIONS

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Physicians and patients convey information via emotional behavior that is used in forming judgments about each other and their interactions. The current research is a preliminary investigation of the role of emotional expressivity in clinical interactions between Black cancer patients and their non-Black physicians. This is a secondary data analysis examining patient-physician communication during discussions of cancer treatment for expressions of emotion. Naïve coders rated the emotional expressivity of patients and physicians, as well as the rapport between them, using five “thin slices” of 74 interactions. Using generalized estimating equation (GEE) regression models to control for patients nested within physicians, we tested whether observer ratings of patient and physician positive affect, negative affect, or the combination of both predicted (a) observer ratings of patient-physician rapport and (b) patients’ post-visit perceptions of physician patient-centeredness. The interaction between patients’ positive and negative affect predicted perceptions of both rapport (β=.12, SE=.03, $p < .001$) and patient-centeredness (β=.10, SE=.03, p=.004). Observers perceived higher rapport among patients displaying positive affect, especially when patients also expressed relatively high levels of negative affect.Patients perceived their physician to be less patient-centered if they had high levels of expressed negative affect and low levels of expressed positive affect, whereas expressed negative affect was unrelated to patient-centeredness among those who had high levels of expressed positive affect. Regarding physician affect, physicians’ expressed negative affect was inversely related to ratings of rapport (β=-0.31, SE=.05, $p < .001$) and patient-centeredness (β=-.36, SE=.14, p=.011). Physicians’ positive affect was unrelated to either outcome (ps>.10). These findings suggest patients’ positive and negative emotional expressivity jointly contribute to positive perceptions of physicians and interactions, perhaps by eliciting empathic responses from physicians. However, in reverse, physicians’ high expressed negative affect may have negative consequences for patient perceptions and the quality of interactions. Future work will examine the contribution of pre-interaction attitudes and experiences that may influence patient and physician emotional expressivity.

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B038 6:00 PM-7:00 PM

FACTORS ASSOCIATED WITH INTENTIONS OF HPV INITIATION AMONG VACCINE NAïVE FEMALES WITH AND WITHOUT A HISTORY OF CHILDHOOD CANCER

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Purpose: Effective vaccination is available to prevent many high-risk types of human papillomavirus (HPV), the most common sexually transmitted infection and cause of cervical cancer. This study aimed to examine vaccine intentions among vaccine naïve young adults with and without a cancer history in addition to identifying factors associated with HPV vaccination intentions.

Methods: Vaccine naïve females (aged 18-26 years, *n* = 120) completed surveys querying HPV vaccination intentions, HPV knowledge and communication, along with sociodemographic, medical, and health belief factors specific to HPV vaccine intent. Multivariate logistic regression was utilized to calculate odds ratios (OR) and 95% confidence intervals (CI) for HPV vaccination intentions.

Results: Univariate analyses indicated no differences between participants with/without history of cancer on intention to vaccinate or considered risk factors. Multivariate logistic regression analyses for those who self-identified as non-white revealed that those who reported their physician recommended HPV vaccination were more likely to report having intentions to vaccinate (ORs = 4.25 – 8.08, *p*s p =.014).

Conclusion: There are various factors that affect vaccine intentions among vaccine naïve young adult women. Future interventions aimed at increasing HPV vaccination intentions among childhood cancer survivors should include training providers in recommending the vaccine as a mechanism to increase vaccine intentions, and subsequently, vaccine initiation. Additionally, future research should further examine the relationship between HPV-related knowledge and intentions to vaccinate to elucidate this inverse relationship in underrepresented racial groups.

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B039 6:00 PM-7:00 PM

FACTORS THAT INFLUENCE CERVICAL CANCER SCREENING UPTAKE AMONG LESBIAN AND BISEXUAL WOMEN AND TRANSGENDER MEN

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The purposes of this study were to measure the prevalence of, and identify factors associated with, cervical cancer screening uptake among a sample of lesbian, bisexual and queer (LBQ) women, and transgender men. Past research has found that LBQ women underutilize cervical screening services, and because deficient screening remains the most significant risk factor for cervical cancer, it is essential to understand the differences between routine (Pap test < 3 years) and non-routine (Pap test > 3 years) screeners. The widely used health care utilization framework, Andersen’s Behavioral Model of Health Services Use (BMHSU), was used as a structure to mix the data sets and contextualize the results. It was chosen because it accounts for the different levels of determinants. Participants for this convergent-parallel mixed methods study were conveniently recruited from the Internet and community events from August to December 2014. To be included, participants had to be female or transgender male, age 21-65 years and identify with a sexual orientation other than heterosexual. Quantitative data were collected via a 48-item Internet questionnaire, and qualitative data were collected through in-depth interviews. The quantitative and qualitative data were analyzed separately and then mixed. Quantitative data analyses entailed four steps: 1) screening the data and reporting descriptive statistics for the observed cases, 2) multiple imputations, 3) bivariate analyses, and 4) multivariate logistic regression. Qualitative data were analyzed using deductive-inductive content analysis. Finally, a matrix approach was used to compare the quantitative and qualitative results. Seventy-three percent of the participants received routine cervical cancer screening. Twenty factors were found to be statistically significantly different between routine and non-routine screeners. Eighteen themes/factors were found in the qualitative data. Factors triangulated during the mixed analyses if they were statistically significant and identified in the qualitative data. Routine screeners reported feeling more welcome in the health care setting, while non-routine screeners reported more discrimination related to their sexual orientation and gender expression. Routine screeners were also more likely to be 'out' to their provider. Many of the factors identified in this study related to the healthcare environment and to interactions between the patient and provider. The factors found in the quantitative and qualitative data have implications for research and practice around cancer prevention for LBQ women and transgender men. The factors that contrasted between the quantitative and qualitative data sets are signals for additional research.

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B040 6:00 PM-7:00 PM

FEAR OF PALLIATIVE CARE IN YOUNGER ADULTS WITH CANCER: AN INDIRECT EFFECT OF DEPRESSION SYMPTOM SEVERITY

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Title: Fear of Palliative Care in Younger Adults with Cancer: An Indirect Effect of Depression Symptom Severity

Objectives: Drawing upon socioemotional selectivity theory, this study examined differences in fear of palliative care consultations based on age and depression symptom severity. Increased knowledge about how different age groups view palliative care could help inform tailored interventions in the future.

Methods: The sample of 598 participants was drawn from Project EMPOWER, an internet based palliative care educational intervention study. Participants had no prior palliative care consultations and were adults with cancer in current oncological care. The sample was heterogeneous in terms of caner type, had an age range of 27 to 93 years old, and was 42.8% female. Participants completed self-report measures of their health history, depression symptom severity (PROMIS), and fear of palliative care (Palliative Care Preference Scale – emotion subscale). Hierarchical regression was used to determine how baseline palliative care preferences varied based on age.

Results: Results indicated that younger age was associated with greater fear of palliative care consultations ($p < .01$). This association was mediated by depression symptom severity.

Discussion: Younger participants indicated greater fear of palliative care consultations, potentially due to elevated levels of depression symptoms. Future studies should examine whether educating patients about the impact of mood on preferences reduces barriers to palliative care utilization.

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B041 6:00 PM-7:00 PM

FEASIBILITY OF A PHYSICAL ACTIVITY INDEX IN CLINICAL PRACTICE: PERSPECTIVES OF PROVIDERS AND CANCER SURVIVORS

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Background: Physical activity (PA) is a well established behavioral recommendation for older adults and has specific benefits for cancer survivors. However, most older adults and survivors do not meet PA recommendations. Clinical tools are being sought to help counsel these increasingly intersecting groups, but the feasibility of these tools in clinical practice is not well understood. We developed an integrated Physical Activity Index (PAI) that synthesizes physical and behavioral components to assist with this task. The purpose of this project was to conduct interviews to assess the feasibility and clinical utility of the PAI from both provider and patient perspectives.

Methods: We recruited 18 participants from the Washington, DC area (9 providers, 9 post-treatment cancer survivors) for one-on-one, in-person interviews. Providers were purposively sampled to include a mix of practice settings (e.g., primary care and oncology). Eligible providers reported seeing survivors “regularly”; eligible survivors had completed treatment within the last 5 years. Interviews were recorded and transcribed verbatim. An interview guide and interviewer training ensured consistently in interview procedures. Segmented coding procedures tracked responses to specific PAI elements (i.e., cognitive assessment). Thematic coding synthesized qualitative data to assess barriers and feasibility of implementing the PAI in clinical practice.

Results: Five oncology providers (including 2 nurses) and 4 primary care providers (including 2 nurses) were interviewed. Patient participants included 5 prostate and 4 breast cancer survivors with a mean age of 69 yrs (range 55-79 yrs) and mean time of 4 years post treatment. Most providers were receptive to the PAI as a brief screener and liked the idea of report-card style output to track and counsel patients on lifestyle changes, especially if this could be linked to electronic medical records (EMR). Most survivors had received a provider recommendation to exercise, but liked the idea of creating customized exercise goals and partnering with providers to achieve them. For barriers, providers worried about having time to explain the tool and output to patients, a concern also shared by many survivors. Some survivors mentioned symptoms and chronic conditions as potential barriers to lifestyle

changes.

Conclusion: The PAI could be a feasible tool in clinical practice, for providers and survivors, especially if the tool could be integrated with the EMR to assist providers and patients in pursuing PA recommendations. Supplementary provider education resources on patient counseling would facilitate use of the PAI in primary care and oncology practices. Survivors may need additional support from the medical team to adapt PA goals based on individual health concerns, especially older survivors or those with multi-morbidities.

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B042 6:00 PM-7:00 PM

FORGIVENESS AS A BUFFER TO LUNG CANCER STIGMA

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The majority of individuals diagnosed with lung cancer report experiencing stigma, such as perceiving that they are responsible and/or deserving of lung cancer. Stigma is associated with a number of deleterious psychosocial and medical outcomes in lung cancer patients, including delayed medical help-seeking, increased psychosocial distress, lower quality of life, and poorer provider communication. As such, a better understanding of modifiable targets for development of stigma-reducing interventions are needed. Forgiveness, or resolving emotional and cognitive distress through an intraindividual, prosocial change process, has been shown to decrease stigma and buffer individuals from the deleterious effects of stigma broadly. However, forgiveness has never been studied in the context of lung cancer stigma. We aim to examine whether forgiveness provides a buffer to stigma in lung cancer patients in order to guide the development of interventions for better mental and physical wellbeing outcomes in this vulnerable population of cancer survivors.

Method

Lung cancer patients (N = 231) completed a battery of questionnaires assessing demographic information, lung cancer stigma (Lung Cancer Stigma Inventory; Hamann, Shen, Thomas, Craddock Lee, & Ostroff, 2016) and forgiveness (Forgiveness subscale of the Fetzer Multidimensional Measure; Fetzer Institute, 1999; Neff, 2006), as part of a larger study.

Results & Discussion

Internal reliability for the forgiveness subscale in this sample was good (α = .758). Bivariate correlations between forgiveness and lung cancer stigma indicated a statistically significant negative relationship (r = -.211 p < .001). Stepwise regression analyses indicated that forgiveness was a statistically significant correlate of lung cancer stigma, even when accounting for age, gender, race, ethnicity, and education (B = -2.27, p = .008).

It appears as though forgiveness may mitigate lung cancer stigma such that more reported forgiveness of self, God, and others is related to less reported lung cancer-related stigma. Forgiveness may serve as a buffer against experiencing lung cancer stigma, or may protect against the deleterious effects of lung cancer stigma, and may serve as a target for interventions. These preliminary findings must be confirmed in future longitudinal studies.

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B043 6:00 PM-7:00 PM

GENDER ROLE NORMS AND SPIRITUAL PEACE AMONG CHINESE HUSBANDS OF BREAST CANCER SURVIVORS: THE MEDIATING ROLE OF COPING PROCESSES

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Studies have found that stress/coping processes are associated with well-being among husbands of breast cancer survivors (BCS). However, little is known about how gender role norms associate with these stress/coping processes, and subsequently affect the husband caregivers' well-being. This study applied the Stress and Coping Model to examine the psychosocial correlates of spiritual peace among Chinese husbands of BCS. Participants (n=176, mean age =54.4) were recruited in Weifang, China. Their individual characteristics (including male gender role norms), caregiving burden, self-efficacy, denial coping, and spiritual peace were measured in a cross-sectional survey.

Path analysis results supported the proposed mediation model, with satisfactory fit indices (χ^2 (5) = 6.79, *p* = .24; CFI = .99, TLI = .99, RMSEA = .045). The "masculinity strength" norm was associated with lower caregiving burden, higher self-efficacy, less denial coping; whereas the "avoid being feminine" norm was associated with higher caregiving burden. Lower caregiving burden was associated with less denial coping and higher self-efficacy, which in turn associated with higher spiritual peace. The model explained 43.2% of the variance in spiritual peace.

Bootstrapping results indicated that both the "masculinity strength" (β= 0.39, 95% CI =0.34, 0.45) and "avoid being feminine" (β= -0.11, 95% CI =-0.16, -0.07) norms had significant indirect effects on spiritual peace, supporting that stress/coping variables (caregiving burden, self-efficacy, and denial coping) mediated between the gender role norms and spiritual peace.

This was the first study exploring how male gender role norms were associated with stress/coping processes and spiritual peace among husbands of Chinese BCS. Interventions that help caregivers reduce caregiving burden, enhance self-efficacy, and encourage the use of adaptive coping strategies may increase their spiritual peace. Regarding gender role norms, supporting men by appreciating their commitment to take good care of their spouses ("masculinity strength" norm) and by reducing their barriers to express tenderness ("avoid being feminine" norm) may help to reduce caregiving burden and improve their well-being.

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B044 6:00 PM-7:00 PM

HEALTH BEHAVIORS AND SUPPORTIVE CARE NEEDS OF LOW-INCOME LATINA BREAST CANCER SURVIVORS

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Background: Latina breast cancer survivors are disproportionately at risk for poor health outcomes. Supportive care services can promote well-being during cancer survivorship and reduce health disparities. However, little is known about the supportive care needs of low-income Latina breast cancer survivors, particularly as they relate to health behaviors. This pilot study aimed to identify the unique supportive care needs and health behaviors of low-income Latina breast cancer survivors. **Design:** This descriptive study utilized a battery of three self-report questionnaires. **Setting:** Subjects were recruited from the oncology clinic of a major public hospital. Participants were breast cancer survivors (n=102) with no metastasis who had completed surgery, chemotherapy, and radiation. **Outcome Measures**: Three self-report questionnaires: 1) The Supportive Care Needs Survey (SCNS-SF34), a standardized, 34-item survey designed to capture the supportive care needs of cancer survivors. 2) The Health Behaviors and Logistical Challenges Survey, a 31-item measure developed for the purposes of this study to gather supplemental data about lifestyle-related needs. 3) A standard demographics questionnaire. **Results:** All participants self-identified as Latina, with an average age of 54. 77% disclosed an annual income of $15,000 or less. 72% of participants indicated having at least one co-morbidity, most commonly hypertension (38% of participants) and diabetes (31%). Respondents reported, on average, 16 unmet supportive care needs. They indicated the highest level of unmet need in the domain of “health systems and information.“ Items most commonly rated as 5/5 (“high need”) in this domain included "being informed about things you can do to help yourself to get well" and "being given information about aspects of managing your illness and side-effects at home.” The most frequently reported needs related to health behaviors and logistical challenges were “help with everyday management of another health condition” (45% of respondents) and “paying my bills/rent” (48% of participants). Other commonly-reported health behavior challenges included obtaining adequate nighttime sleep and addressing weight loss/maintenance. **Conclusions**: These findings suggest that low-income Latina breast cancer survivors may require more and/or better-tailored health-related information and increased support in self-management of co-morbidities, along with guidance in health behavior change. These findings carry implications for optimizing multidisciplinary supportive care for this population.

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B045 6:00 PM-7:00 PM

HEALTHCARE USE AND COST AMONG DEPRESSED AND NON-DEPRESSED CANCER PATIENTS

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OBJECTIVE: We examined differences in healthcare costs between depressed and non-depressed cancer patients.

BACKGROUND: Cancer is a disease for which treatment may be both lengthy and costly. The prevalence of depression is significantly higher among individuals with cancer relative to those without. In non-cancer patients, depression has been associated with increased annual healthcare use and cost. Among those with cancer, depression has been associated with increase in annual healthcare visits, increased risk for emergency department visits, and inpatient hospitalizations. However, the link between depression and healthcare costs in those with cancer is less clear. This study investigated whether annual healthcare costs were higher among depressed cancer patients relative to non-depressed cancer patients.

METHODS: A retrospective analysis of UCSD healthcare system administrative data was conducted on 13,194 patients who had an ICD-9 diagnosis of cancer. Of these, 1,624 (12.3%) had an ICD-9 diagnosis consistent with a depressive disorder. GLM with gamma distribution and log link was used to estimate annual healthcare costs for depressed vs non-depressed participants after controlling for participant age, gender, race/ethnicity, comorbid medical conditions, metastasis status, and number of mental health visits. Secondary analyses examined healthcare charges for outpatient visits in depressed and non-depressed participants.

RESULTS: Depressed cancer patients had annual healthcare charges (M ± SE = $15,761 ± $497) that were 61.1% higher than non-depressed cancer patients (M ± SE = $9,690 ± $112). Similarly, outpatient charges for depressed patients were 57.4% higher than non-depressed patients (mean ± SE = $3,307 ± $78 vs $1,915 ± $18, respectively). When mental health charges were excluded from total outpatient charges, costs remained almost identical to those found when mental health costs were included (depressed = $3,102 ± $73; non-depressed = 1904 ± $18), suggesting that increased cost of depression was not due to costs associated with mental health treatment.

CONCLUSIONS: Depressed cancer patients had higher average annual healthcare costs, as well as higher outpatient charges, than non-depressed cancer patients. These data suggest

that depression comorbidity be taken into account when assessing healthcare and treatment options for those with cancer. Future studies should replicate results using standardized diagnostic criteria for depression, determine the impact of severity of depressive symptoms on healthcare costs, and evaluate if change in depression status via psychiatric treatment reduces healthcare costs in depressed cancer patients.

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B046 6:00 PM-7:00 PM

HIGH PREVALENCE OF COMBINATION TANNING AMONG UNDERGRADUATES: SURVEY OF A SOUTHEASTERN U.S. UNIVERSITY

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Background: Tanning is a common behavior among young adults. While outdoor tanning (OT) is common, indoor tanning (IT) and sunless tanning products (STP) are also utilized. However, little is known about how young adults combine multiple tanning modalities. The objective of this study was to define the prevalence of combination tanning among undergraduates and to identify characteristics distinguishing combination tanners from single-modality tanners. **Methods**: Undergraduate students at a public university in the southeastern United States were invited to complete an online survey about their participation, knowledge, and attitudes regarding OT, IT and STP. Combination tanning was defined as engaging in two or more tanning behaviors. Uni- and multivariate analyses were performed to identify factors associated with combination vs. single-modality tanning. **Results**: 2,668 of 11,015 undergraduates completed the survey (24% response rate). Of these, 1,942 (73%) engaged in tanning behavior(s). There were 726 single modality tanners (38%) and 1,216 combination tanners (62%). Among combination tanners, 772 used two tanning modalities (63%), most commonly OT and IT, whereas 444 used three tanning modalities (OT+IT+STP, 37%). Combination tanners, compared to single-modality tanners, were more likely to be aware of the risks of tanning beds (OR 1.6, 95% CI 1.1-2.4), but also more likely to agree or strongly agree that using a tanning bed is fine if not used too frequently (OR 2.5 (1.7-3.6), 6.4 (3.0-13.9), respectively). Furthermore, combination tanners had greater intention to use IT within the next 12 months (OR 23.7, 95% CI 11.9-47.3). **Conclusions**: The majority of those engaged in tanning behaviors used more than one modality. Combination tanning appears to be an under-recognized phenomenon, with the beliefs and perceptions of this population not well-studied. Understanding concurrent tanning behaviors may be important in order to develop effective interventions.

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B047 6:00 PM-7:00 PM

HOW ARE MULTIFACTORIAL BELIEFS ABOUT CANCER CAUSATION ASSOCIATED WITH RISK PERCEPTIONS, CANCER COGNITIONS, AND WORRY IN THE US?

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Background: Cancer, like many common health conditions, is caused by a combination of genetic, behavioral, and environmental factors. Understanding this multifactorial nature of cancer etiology is a critical component of genomic health literacy. Our past work has demonstrated that multifactorial beliefs about cancer causation are common in the U.S. (endorsed by 64.3%), and that endorsement of multifactorial beliefs is associated with some cancer screening behaviors. However, it is unclear whether these multifactorial causal beliefs are associated with other cognitive and affective variables that theory and research have identified as contributors to the adoption of health behaviors.

Methods: Using nationally representative cross-sectional data from the U.S. Health Information National Trends Survey (N=2,756), we examined whether endorsing a multifactorial model of cancer causation (operationalized as simultaneous endorsement of genetic and behavioral causal beliefs) was associated with perceptions of risk, cancer cognitions, and worry about toxic environmental exposures.

Results: Multivariable linear regression analyses adjusted for demographics and health history indicated that multifactorial beliefs were associated with higher absolute ($b = 0.18$, $p = 0.01$) and affective perceived cancer risk ($b = 0.10$, $p = 0.05$), more worry about ingested ($b = 0.21$, $p = 0.002$) and emanating ($b = 0.17$, $p = 0.01$) environmental exposures, and with more agreement that cancer can be prevented ($b = 0.24$, $p < 0.001$). Multifactorial beliefs were not associated with comparative perceived cancer risk or with believing that there are too many cancer recommendations to follow and that everything causes cancer.

Conclusions: Multifactorial causal beliefs are associated with cognitive and affective factors that drive healthy behaviors. Specifically, multifactorial beliefs about cancer etiology are related to personal understanding of disease risk, the possibility of preventing cancer, and worries about toxic environmental exposures. These findings highlight possible mechanisms by which multifactorial beliefs may support healthy behaviors. They can also inform the development of health communication efforts that aim to translate basic genomics research into clinical and public health practice.

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B048 6:00 PM-7:00 PM

IMPACT OF A MULTIMEDIA INTERVENTION ON TREATMENT DECISION MAKING AMONG PROSTATE CANCER PATIENTS: A NATIONWIDE TRIAL

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Introduction: Men diagnosed with early stage prostate cancer (PC) face multiple treatment options, each with distinctive side effects that have significant implications for post-treatment quality of life. “Healing Choices for Men with Prostate Cancer” is a multimedia educational and decision aid program designed to support patients’ personalized treatment decision making. This nation-wide randomized controlled trial evaluated the impact of the Healing Choices program on decision variables.

Methods: Eligible cancer patients who called the National Cancer Institute’s Cancer Information Service (CIS) were invited to participate. Participants completed a baseline interview and were randomized to either a usual service call with a CIS information specialist (comparison condition), or CIS standard consultation plus the Healing Choices program (intervention condition). Follow-up interviews were conducted at 2-months post-enrollment. Decisional conflict and psychological distress about PC treatment were assessed using the Decision Conflict Scale and the Impact of Event Scale respectively. Group differences at 2 months post-randomization were tested using the intent-to-treat principle. Hypothesized moderation effects of demographic and clinical characteristics were evaluated.

Results: 440 participants were randomized to the intervention (n=221) or comparison (n=219) conditions. The sample was on average 64 years old, primarily White and well-educated. Intervention effects were not significant on total decisional conflict (t[312]=1.13, ns) or psychological distress (t[338]=-.48, ns). However, evaluation of specific aspects of decision processes indicated a significant effect on levels of perceived decisional support (t[339]=2.01, $p < .05$. The intervention effect was greates for non-White minority participants (b=10.19, SE=4.36) and those with lower educational attainment (b-3.87, SE=2.21).

Conclusions: This interactive, comprehensive education and decision aid program may be most effective for a subset of patients at risk for unmet needs and decisional conflicts. It is therefore critical to be able to identify at-risk patients in need of decision support services. Future work should determine the best ways to leverage this technology to provide tailored interventions with the greatest reach.

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B049 6:00 PM-7:00 PM

IMPACT OF DIAGNOSIS ON HEALTH BEHAVIORS OF BREAST CANCER SURVIVORS AND THEIR PARTNERS: A QUALITATIVE STUDY

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Obese breast cancer survivors are at increased risk of disease progression, recurrence, and death. The stress and responsibility faced by caregiving partners may also result in weight gain, unhealthy eating, and inactivity putting them at risk for poor health outcomes. Given the strong concordance of health practices of couples, we conducted a qualitative study of breast cancer survivors and their partners to better understand weight-related behaviors among dyads. Focus groups were held with obese breast cancer survivors (n=14) and their overweight/obese partners (n=14). Participants provided information about changes in weight and factors impacting health behaviors following diagnosis and treatment. Field notes and audio recordings were reviewed; relevant themes were identified. Couples were married (93%) and had been together for *M*=27 years (*SD*=14.6). The average BMI was 33.1 (*SD*=2.7) for survivors and 30.6 (*SD*=3.5) for partners. The majority of survivors were diagnosed with 2 other medical comorbidities, and 57% of partners reported 2 or more health conditions; hypertension and pain-related conditions (e.g., osteoarthritis) were most common. Weight gain following diagnosis was common, and weight loss was difficult. Couples endorsed fatigue, change in taste making high fat/sugar foods more palatable, and increased eating outside the home as challenges to weight management. Survivors and partners reported a link between emotions and eating behaviors, describing food as a source of comfort. Couples shared in the experience of eating for comfort with one partner describing him and his wife as “partners in crime.” Couples provided information about barriers to activity. Survivors noted that their physical activity was limited by joint stiffness, pain, and fatigue. For some partners, side effects from medical conditions affected their activity level. Behavioral weight loss interventions for cancer survivors have not typically involved partners and rarely address physical and psychological symptoms related to poor eating and inactivity. Qualitative data suggest that a dyadic behavioral weight loss intervention that includes symptom management strategies may improve weight management and health behaviors for couples during cancer survivorship.

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B050 6:00 PM-7:00 PM

IMPACT OF HEALTH LITERACY AND PATIENT ACTIVATION ON USE OF PROSTATE CANCER AND COPING WEBSITE INTERVENTION

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Background: Patient activation and health literacy are important indicators of self-management and health seeking behaviors. We examined their impact on patient use of an interactive web-based multimedia program (PROGRESS) that is theoretically guided by the Cognitive-Social Health Information Processing Model (C-SHIP) to help prostate cancer patients with self-management after treatment.

Methods: The PROGRESS website intervention for prostate cancer patients focused on common concerns (e.g., communication, emotional and body-image issues, managing treatment side effects) and provided training tools and tips to promote coping and reduce disruption of daily activities. Prostate cancer patients (n=186) within six months of treatment were given access to the PROGRESS website. Health literacy was measured using a three-item health literacy screening tool designed by Chew et al. Patient activation was measured using the patient activation measure (PAM-13) scale. Descriptive statistics were used to summarize website usage, health literacy, patient activation and demographics such as race, age, household income, marital status, and education. Chi-square and ANOVA were used to determine bivariate associations. Logistic regression was used to analyze multiple predictors of website use.

Results: High health literacy levels (mean=4.36, *SD*=0.76) and high patient activation (55%=high compared with 6%=low) were observed. Bivariate analyses reported patients with higher levels of health literacy were more likely to access and use the website (r=0.22, *p*

Discussion: Data suggests that patients with high literacy are more likely to find the website intervention useful. Findings also suggest participants with greater health literacy scores have greater patient activation. Future research is needed to better understand the relationships between health literacy, patient activation, and other predictors of use of interactive educational websites tools for prostate cancer and other patient populations.

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B051 6:00 PM-7:00 PM

INTRA- AND INTERPERSONAL FACTORS THAT MAY INFLUENCE GENETIC COUNSELING AMONG HIGH RISK BREAST CANCER SURVIVORS

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Purpose: Many survivors at increased risk for hereditary breast cancer (BC) do not receive genetic counseling (GC) and/or testing. We evaluated intra- and interpersonal factors predicting survivor readiness to engage in GC.

Methods: BC survivors meeting National Comprehensive Cancer Network criteria for referral to GC were recruited using clinic and community based approaches. After consent, participants responded to items based on the Health Belief Model assessing intrapersonal (perceived risk, susceptibility, severity, worry and impact of BC, benefits and barriers to GC, self-efficacy, and decisional conflict), interpersonal-provider (provider encouragement of GC), and interpersonal-family (cancer family history, family encouragement of testing) factors and demographic items. Participants also reported whether they planned to make a GC appointment, and drawing from the Transtheoretical Model of Behavior Change, were categorized by pre-contemplation (did not plan to make an appointment) and contemplation (did plan to make an appointment in the next 1-6 months) status. We used X^2 and t-tests to compare pre-contemplators and contemplators on intra- and interpersonal factors.

Results: Of 111 participants analyzed, 48 (43%) were contemplators and 63 (67%) were pre-contemplators. Compared to pre-contemplators, contemplators were younger (M=61 vs 65, p=.04), but there were no other significant demographic differences. Contemplators reported higher perceived susceptibility and severity, and more worry and intrusiveness related to BC (ps

Conclusions: Our results suggest that intrapersonal factors may be more important than interpersonal factors in predicting whether at-risk BC survivors seek GC. However, families of pre-contemplative survivors may recognize their reticence and offer more explicit encouragement for testing. Findings suggest potentially modifiable targets to improve rates of GC in high risk BC survivors.

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B052 6:00 PM-7:00 PM

PREDICTORS OF ADHERENCE TO AEROBIC EXERCISE IN RECTAL CANCER PATIENTS DURING AND AFTER NEOADJUVANT CHEMORADIOTHERAPY

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Background: Treatment for locally advanced rectal cancer includes 5-6 weeks of neoadjuvant chemoradiotherapy (NACRT) followed by surgery 6-8 weeks later. Unfortunately, NACRT is associated with side effects including fatigue, diarrhea, and physical deconditioning. Preliminary evidence suggests that aerobic exercise may improve cardiorespiratory fitness in rectal cancer patients during and after neoadjuvant chemoradiotherapy (NACRT), however, adherence to exercise is a challenge in this clinical setting. **Objective:** To explore the predictors of adherence to supervised aerobic exercise during NACRT and unsupervised aerobic exercise after NACRT in rectal cancer patients. **Methods:** Rectal cancer patients (N=18) scheduled to receive NACRT followed by definitive surgery were recruited from the Cross Cancer Institute in Edmonton, Alberta. The exercise program consisted of 3 supervised moderate-intensity aerobic exercise sessions/week during NACRT followed by ≥150 minutes/week of unsupervised moderate-intensity aerobic exercise after NACRT. Demographic, health, psychosocial, and motivational variables were assessed pre- and post-NACRT.. **Results:** For the patients included in the current analysis, adherence to the supervised exercise sessions during NACRT was 77% (SD = 19%, n = 17) and the mean number of aerobic exercise minutes per week post-NACRT was 160 (SD = 67 minutes, n = 13). Although not statistically significant, adherence to supervised exercise during NACRT was meaningfully better for patients who were women (*d*= 0.82; p=0.12), younger (*d*=-0.62; p=0.30), married (*d*=0.62; p=0.42), with better mental health (*r*=0.32; p=0.21), fewer diarrhea symptoms (*r*=0.48; p=0.052), and higher anticipated enjoyment (*r*=0.31; p=0.23), support (*r*=0.32; p=0.22), and motivation (*r*=0.31; p=0.23). After NACRT, adherence to unsupervised exercise was significantly better for patients who reported worse mental health (*r*= -0.56, p=0.046) and meaningfully better for patients who were women (*d*= 0.54; p=0.38), better educated (*d*= 0.77; p=0.22), had no comorbidities (*d*=-0.63; p=0.17), and were aerobic exercisers at baseline (*d*=1.05; p=0.12). **Conclusions:** This pilot study suggests that demographics, tumor side effects, and motivational variables may predict adherence to supervised exercise during NACRT. Predictors of adherence to unsupervised exercise after NACRT may differ and be influenced by treatment response.

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B053 6:00 PM-7:00 PM

SMOKERS’ ATTITUDES TOWARDS CONTINUED SMOKING AFTER A NEGATIVE CT RESULT & LATER TOBACCO USE IN A LUNG CANCER SCREENING POPULATION

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Background: Low-dose computed tomography (LDCT) for lung cancer screening decreases lung cancer mortality and offers a “teachable moment” to deliver smoking cessation treatment. However, there is concern that patients given negative results may believe they are no longer at risk of cancer and will continue to smoke - the health certificate effect.
Methods: We surveyed Veterans 3 mo. after screening invitation as part of a larger lung cancer screening evaluation. Survey respondents were asked how strongly they agreed or disagreed with the statement ‘If I had a normal CT scan result, I could continue to smoke without worry’. We dichotomized responses strongly disagree/disagree (i.e., worried about continued smoking) vs neutral/agree/strongly agree (i.e., not worried about continued smoking). Current smokers at invitation (45% of original sample) completing the item were included in analyses (N=263).We assessed smoking status 6 mo. later (N=217) and collected LDCT completion and results (negative result; abnormal result) from medical records. We evaluated bivariate associations between the reported worry of continued smoking post-negative LDCT, sociodemographics, and subsequent smoking status.
Results: Respondents were mostly male (94%) and white (87%). Overall, 46% were not worried about continued smoking after a negative LDCT result. Not worrying about continued smoking varied by age group, with older smokers (age ≥ 65) reporting this view more often than younger smokers (56% vs 37%, X^2=9.16; $P < 0.01$). Compared to those who worried about smoking post-negative LDCT, a higher proportion of respondents who were not worried about continued smoking later reported smoking everyday, and a lower proportion smoked some days or not at all (X^2=7.57; $P < 0.05$). Forty-eight Veterans completed LDCT; 13 received normal and 35 abnormal results, of which 2 required further diagnostic evaluation. Though the sample was too small for formal analyses, 100% of Veterans who were not worried about continued smoking on the survey and actually received a negative LDCT result later reported smoking daily at follow up.
Discussion: Nearly half of respondents reported that they would not be worried about continued smoking after a negative LDCT result, and this attitude was associated with actual tobacco use. This suggests that the health certificate effect is present in lung cancer screening,

particularly among older smokers. Successful lung cancer screening implementation will require evidence-based smoking cessation treatment and addressing patients’ views towards continued smoking post-negative LDCT.

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B054 6:00 PM-7:00 PM

SYMPTOMS AND QUALITY OF LIFE IN PATIENTS WITH DIVERSE MALIGNANCIES PRESCRIBED ORAL CHEMOTHERAPY

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Background: Oral chemotherapies are increasingly utilized in oncology care. However, patients on these regimens lack close monitoring with regard to adherence, side effects, and toxicities. Data are lacking regarding the types of physical and psychological symptoms patients experience. Little is known about patients' quality of life (QOL) and factors associated with QOL during treatment.

Methods: From 12/2014–8/2016, adult patients with solid and hematologic malignancies prescribed oral chemotherapy were enrolled in a randomized controlled study of adherence and symptom management at the Massachusetts General Hospital Cancer Center. Patients reported sociodemographic information and completed baseline assessments of QOL (FACT-G), symptom severity (MDASI), depression and anxiety (HADS), fatigue (BFI), satisfaction with social support (MSPSS), and satisfaction with providers and treatment (FACIT-TS-PS). Prevalence of symptoms and relationships among these constructs were examined using measures of central tendency, proportions, Pearson product-moment correlations, and multivariate linear regression.

Results: Patients (N=174) commonly reported fatigue (88.7%), pain (44.6%), and nausea (37.6%). Higher QOL (M=81.66, SD=15.13) was associated with lower depressive and anxiety symptoms, lower fatigue, better social support, and higher satisfaction with providers and treatment (ps < .001). Having children was associated with lower QOL (r=-0.19, p=.013). In a

multivariate regression model, each factor was associated with QOL above the effects of others; ($F[6,157]=67.13$, $p < .001$, adj. $R^2=.71$).

Conclusions: Findings elucidate common symptoms and correlates of QOL in patients prescribed oral chemotherapy. Data suggest the potential value of addressing symptoms and psychosocial targets for interventions to enhance patients' QOL.

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B055 6:00 PM-7:00 PM

TRAJECTORIES OF CANCER-SPECIFIC DISTRESS OF INDIVIDUALS WITH PROSTATE CANCER AND THEIR PARTNERS

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Introduction: The prostate cancer experience affects both prostate cancer (PCA) survivors and their partners. Although existing observational longitudinal studies of cancer-specific distress differ regarding the trajectories of distress they report, there have been no studies to date that have reported whether different trajectories of distress may emerge from the same sample of PCA survivors and their partners. The current study sought to characterize cancer-specific distress trajectories for PCA survivors and their partners and to determine predictors of trajectories.

Method: The current study analyzed data spanning 26 weeks across four time points from PCA survivors (n = 79) and their partners (n = 79) within the usual care arm of a clinical trial for an intimacy-enhancing intervention (NIH CA140297). Growth mixture modeling was utilized so as to extract trajectory classes of cancer-specific distress for survivors and their partners, separately. Logistic regression models were run to determine baseline univariate and multivariate predictors of class membership.

Results: Two-class linear models of cancer-specific distress emerged for both PCA survivors (high-high, low-low) and their partners (high-low, low-low). The high-high and low-low classes began at high and low levels, respectively, and remained at those levels. The high-low class began at a high level that decreased over time. Univariate predictors included age, bowel function, psychological distress, psychological wellbeing, intimacy, concern, and masculine self-esteem for survivors (ps < .05). Univariate predictors included mutual avoidance, holding back concern, concern, general psychological distress, and psychological wellbeing for partners (ps < .05). Significant multivariate predictors of class membership included bowel function and general psychological distress for survivors and concern and general psychological distress for partners (ps < .05). Multivariate models correctly classified 83.3% and 78.7% of survivors and partners, respectively.

Discussion: The data suggest that discreet trajectories of cancer-specific distress exist for both PCA survivors and their partners. Future studies should demonstrate whether the extracted trajectories and their predictors are generalizable to other samples. Healthcare professionals

should consider cancer-specific distress screening for PCA survivors with poor bowel function as they may benefit from psychopharmacological or psychosocial interventions.

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B056 6:00 PM-7:00 PM

ANXIETY SENSITIVITY IN SMOKERS WITH INDICATORS OF CARDIOVASCULAR DISEASE

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There is growing recognition of the importance of understanding the nature of the associations between anxiety and cardiovascular disease (CVD), although limited research has examined mechanisms that may explain the anxiety-CVD link. Anxiety sensitivity (fear of anxiety-relevant somatic sensations) is a cognitive-affective risk factor implicated in the development of anxiety psychopathology and various behavioral risk factors for CVD, although has not been examined among individuals with CVD. Adult daily smokers (n = 619; 50.9% female; Mage = 44.0, SD = 13.67) completed an online survey that included the Anxiety Sensitivity Index-3 (ASI-3) and the Patient Health Questionnaire (PHQ). The presence of CVD indicators was assessed via the presence of ≥ 1 of the follow: heart attack, heart murmur, positive stress test, heart valve abnormality, angina, and heart failure. Smokers with CVD indicators (n = 66, 10.7%) had significantly higher scores on the ASI-3 (M = 33.5, SD = 22.15), relative to smokers without CVD (M = 22.0, SD = 17.92; Cohen' s d = .57). Physical and social concerns about the meaning of somatic sensations were common among smokers with CVD. Mediational analyses indicated that anxiety sensitivity indirectly accounted for the association between (a) anxiety psychopathology and likelihood of CVD, and (b) CVD and likelihood of anxiety psychopathology. While these findings are preliminary and warrant replication in future prospective studies, anxiety sensitivity is a potentially novel psychological mechanism that plays a facilitatory role in bidirectional associations between anxiety psychopathology and CVD.

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B057 6:00 PM-7:00 PM

HOW MANY US CITIZENS ARE AT RISK FOR HEART DISEASE? FINDINGS FROM THE NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY, 1999-2014

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Background: Cardiovascular Disease (CVD) is the leading cause of death worldwide, costs billions of dollars in healthcare spending each year, and affects people of all ethnicities, ages, and geographic locations. With the increasing age of the U.S. population and the obesity epidemic, CVD related morbidity and mortality is likely to increase in prevalence in the future. Early prediction of individual risk may aid in reversing this trend.

Purpose: Assess the 10-year atherosclerotic CVD (ASCVD) risk of the U.S. population aged 40-79 years utilizing the newly developed, race-and sex-specific Pooled Cohort Equations for non-Hispanic White and African-American men and women from the American College of Cardiology (ACC) and the American Heart Association (AHA).

Methods: Using data from the 1999-2014 National Health and Nutritional Examination Survey, 10-year ASCVD risk scores were calculated using stepwise addition of the provided equation parameters for 11,553 participants. After calculating the total, the percent risk was calculated using 1-(baseline survival rate)^e^(total-overall mean). Both baseline survival rate and overall mean were provided by the ACC/AHA. We then sorted scores into categories of less than 5%, 5-10%, and greater than 10% risk. The analyses were conducted using SAS 9.4 program and accounted for complex survey design.

Results: Of all participants, 57.66% (weighted % hereafter, 95% confidence interval [CI]: 55.89 – 59.43%) had a 10-year ASCVD risk of ≥ 5%. In addition, 20.29% (CI: 18.92-21.66%) had a risk of 5 - 10%, and 22.06% (CI: 20.99-23.12%) had a risk of < 10%. Sex and age disparities were found, with 28.02% males (vs. 15.48% females; Rao-Scott chi-square=1,251.43, df=2, p < .001) and 41.83% of those 55 years and older (vs. 3.28% 50-55, 1.03% 45-50, 0.33% 40-45 year; Rao-Scott chi-square = 11,437.59, df=6, p < .001) had a < 10% risk.

Conclusion and Future Directions: Given the high percentage of individuals with a 10-year ASCVD risk < 10%, steps must be taken to lower individual risk. Previous studies suggest that providing specific diet and exercise guidelines as well as individual and group counseling about healthy eating and exercise behaviors in gender and race specific contexts can aid in creating lasting behavioral changes that lead to lower risk. In addition to the efforts to improve individual CVD risk lowering behaviors, environmental improvements must be emphasized to support individuals in making risk-lowering decisions.

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B058 6:00 PM-7:00 PM

LONELINESS, CARDIOVASCULAR DISEASE, AND DIABETES PREVALENCE IN THE HISPANIC COMMUNITY HEALTH STUDY/STUDY OF LATINOS

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Background: Cardiovascular, immune, and nervous system changes have been identified in chronically lonely people. Yet, the relationship between loneliness and prevalence of cardiovascular disease (CVD) and diabetes mellitus (DM) has been understudied in U.S. Hispanics/Latinos, a group at high risk for DM. **Purpose:** We examined whether loneliness was associated with CVD and DM, and whether sex, marital status, and years in U.S moderated these associations. **Methods:** Participants were 5,313 adults ages 18 -74 (M (SD) age = 42.39 (15.01), 54.5% female) enrolled in the Hispanic Community Health Study/Study of Latinos Sociocultural Ancillary Study. Loneliness was assessed via the 3-item Revised UCLA Loneliness Scale. CVD was assessed via self-reported medical history and DM from serum glucose levels, A1C percentage, OGTT findings, and diabetes medication use. **Results:** Although mean level of reported loneliness was low, loneliness adjusted for demographic, disease risk factors (body mass index, smoking) and depression was significantly associated with CVD: OR = 1.10 (CI: 1.01-1.20), $p = .024$ and DM: OR = 1.08 (CI: 1.00 – 1.16), $p = .048$. Each unit increase in the loneliness total score was associated with 10% greater odds of having CVD and 8% greater odds of having DM. Results did not vary among groups defined by sex, marital status or years in the US. **Conclusions:** Results from this large epidemiological study indicate that increased loneliness is associated with higher cardiometabolic disease prevalence beyond depressive symptoms, regardless of sex, marital status, or years living in the U.S. These results raise the possibility that Hispanic/Latino adults experiencing high levels of loneliness may be a subgroup at particularly elevated risk of CVD and DM.

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B059 6:00 PM-7:00 PM

A NEEDS ASSESSMENT OF MIDWESTERN MOTHERS TO BETTER UNDERSTAND MATERNAL MENTAL AND PHYSICAL HEALTH

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Background: Up to 23% of women struggle with depression during pregnancy and few meet nutrition and physical activity recommendations during pregnancy and the postpartum period. Specifically, up to 60% of pregnant women engage in little to no physical activity in a typical week and these numbers do not improve during the postpartum period. In regards to nutrition, few women prior to pregnancy are meeting nutrition recommendations and minimal improvements to nutrition occur during pregnancy. There is a vital need to improve the mental and physical health of mothers. **Purpose:** The purpose of this study was to conduct a needs assessment to assess women's perceptions of their own mental and physical health as well as their desire for additional services. **Methods:** This non-experimental cross-sectional study utilized a 35-question survey completed by pregnant and postpartum women. Data were analyzed using descriptive statistics. **Results:** A total of 527 mothers living within a large Midwestern metropolitan city completed the survey. The majority of mothers were Caucasian (94.2%), employed full-time (54.6%) and had a household income of $50,000-$75,000 (25.6%). When asked about causes of stress, the most common causes reported were exhaustion (53.5%) and financial distress (38.2%). Mothers indicated these components had been often to very bothersome in the past year. Additionally, 47.3% of mothers felt at least somewhat bothered by a lack of access to physical activity and healthy food options. When asked if they felt they were receiving empathy, trust, and love in their life 15.7% reported no. When asked if they would like more information regarding their own mental and physical health 82.2% of mothers said yes primarily through the format of online support groups (58.4%) or in-person workshops/events (48.5%). **Conclusion:** Mothers need greater access to resources related to mental and physical health to improve overall health thus improving the well-being of their family. Future interventions could focus on utilizing free workshops/events that included an education component as well as online resources related to financial planning, mental health, and health behaviors (i.e., healthy eating, physical activity).

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B060 6:00 PM-7:00 PM

EAT MOVE WIN: PILOT RESULTS OF AN ONLINE NUTRITION EDUCATION PROGRAM FOR HIGH SCHOOL STUDENTS

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Background: Childhood overweight and obesity are major health problems. School-based nutrition education programs can be implemented with relative ease and cost-effectiveness, and disseminate health information to large groups of adolescents through in class activities. *Eat Move Win* delivers information about nutrition and its impact on personal health through issues relevant to adolescents. The program consists of 5 interactive online lessons that inform and empower students to take small steps to improve their eating habits. Students are encouraged to critically reflect on the content, which aligns with the USDA MyPlate, and make SMART goals for behavior change.
Objective: The goal of this research was to conduct a pilot test of *Eat Move Win* to assess preliminary efficacy at changing students' eating behaviors.
Methods: Pilot testing of the five lessons took place in ninth and tenth California classrooms (N = 4) in early Spring 2016. One hundred and sixty students completed a pre-survey before the curriculum was taught and a post-survey immediately after the five lessons. The survey, from the California Department of Public Health, utilizes the School Physical Activity and Nutrition Survey (SPAN) instrument. It measures food consumption, physical activity, and psychosocial factors influencing fruit and vegetable consumption with high school students.
Results: Pilot data indicated a significant positive change in fruit, carrot, milk, yogurt, whole grain bread intake from pre-to post survey (p's < .05). Changes in salad and vegetable consumption were also positive and approached statistical significance (p's < .10). Chi-square tests indicated that participants did not significantly change their breakfast eating habits between the pre- and post-survey, although a small increase was observed. Approximately three-quarters (73.6%) of participants reported consuming breakfast on the pre-assessment, and 79.2% of participants reported consuming breakfast on the post-survey. Physical activity (past 7 days) significantly increased from pre-to post survey (p < .05). Moreover, pilot data indicated small but not statistically significant reductions in the consumption of sports drinks, soda, French fries/chips, and pastries from pre to the post survey.
Conclusion: *Eat Move Win* is an online nutrition curriculum that shows promise for increasing

healthy eating habits and physical activity, and decreasing consumption of unhealthy foods/drinks for high school students.

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B061 6:00 PM-7:00 PM

EFFECTS OF AEROBIC EXERCISE ON COGNITION AND MENTAL HEALTH SYMPTOMS IN CHILDREN WITH ATTENTION-DEFICIT HYPERACTIVITY DISORDER

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PURPOSE: To test the effects of aerobic exercise on cognition and mental health symptoms in children with Attention-Deficit/Hyperactivity Disorder (ADHD); to bring a new level of rigor to this field (diagnosis; randomization; attention to CONSORT); and to calculate effect sizes to inform future trials.

METHODS: 8 children were randomized into exercise (n = 4) or wait list control group (n = 4). Participants were selected based on diagnosis of ADHD (Parent/Teacher Disruptive Behavior Disorders (DBD) Rating Scale, the Impairment Rating Scale (IRS), and Diagnostic Interview Schedule-IV Parent Interview by a child psychologist). The exercise group attended a 4-week, 40-minute daily aerobic exercise program. Independent samples t-tests measured changes over time by group (Hearts & Flowers, Flanker Fish, DBD, IRS, and the Strengths and Difficulties Questionnaire (SDQ)). Cohen’s d assessed effect size.

RESULTS: No significant differences between groups were found. Effect size in Flanker Fish and each of the symptom ratings (DBD, IRS, SDQ) showed large differences between groups.

CONCLUSIONS: Results did not show significant group effects, but large effect sizes suggest we might encounter significant benefits of exercise in a larger study. Limitations include a small sample size, some baseline group differences and the short duration of the intervention.

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B062 6:00 PM-7:00 PM

EXPANDING THE LIVING HEALTHY SUMMER CAMP TO LATINO FAMILIES

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The prevalence of childhood obesity in the US remains high with little recent change. While parent-focused interventions are recommended for modifying obesity-related behaviors among children, participation and retention of parents is a major barrier. This study used a community-based participatory approach to translate a child-focused summer program to families in Memphis, TN. The Living Healthy Summer Camp began in 2010 as a 4-session culinary camp offered through a church in South Carolina, which served a primarily low-resource African-American community. Participants found the camp acceptable as a way of providing nutrition and cooking skills to families. In translating the camp, the study team met with representatives from 10 churches with multi-ethnic congregations. These meetings expanded the camp into a 4 month curriculum that included: weekly mailings of family-focused diet and physical activity (PA) education activities; a week-long camp offering child-focused cooking and PA skill building; 2.5 hour sessions offered to parents 4 times and focused on diet and PA education and skill building. Thirty youth enrolled along with 17 parents. Parents and children completed diet and PA behavior questionnaires and had anthropometrics measured. Parents also completed home environment questionnaires. Baseline data are reported, with measurements being repeated mid and post program. All participants identified as Latino. Children were between 7 and 12 years old (9.4± 1.5), primarily male (70%), and 47% were classified as obese, using age and sex specific growth charts. Parents were on average 32.2±5.1 years old, obese (BMI=31.2±6.5 kg/m^2), female (77%), and received public assistance (65%). Almost half (47%) of children reported eating at a fast food restaurant 1-2 times a week. They also reported eating on average 3.4±2.0 servings/day of fruits and vegetables and spending 3.6±3.0 hours/week in moderate-to-vigorous physical activity. Most children (53%) reported not being involved in meal preparation during the past week and their average cooking ability was 3.8±2.9 on scale of 1 to 10 (highest). Baseline data indicates a population with a high need, and recruitment indicated a high interest, for this type of intervention.

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B063 6:00 PM-7:00 PM

FAMILY STRESS AND PAIN-RELATED DISTRESS IN YOUTH WITH IBD: TARGETS FOR TREATMENT?

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PURPOSE: Abdominal pain is common in pediatric inflammatory bowel diseases (IBD) but physiological causes have not adequately accounted for the pain experience. Pain is a subjective experience and predicts unfavorable outcomes, but it is unclear who is at risk, and who experiences typical adjustment in the face of chronic illness. The present study aimed to examine the role of several factors prior pain research has found to be associated with poor outcomes - life stressors, coping, and depressive symptoms - in pain-related distress in youth with IBD.

METHODS: 183 parents and their children ages 8-18 years old (Mean age=13.75; 47.5% female, 4.3% Hispanic, 88.0% Caucasian) diagnosed with IBD were recruited (68.3% Crohn’s Disease and 31.7% Ulcerative Colitis). Parents completed measures on child pain related distress, family stressors, and child coping, and children completed the Children’s Depression Inventory.

RESULTS: Mediation analysis was conducted using ordinary least squares path analysis. Higher family stress was positively associated with passive coping. Passive coping was positively associated with depressive symptoms ($p < .001$) and pain-related distress ($p < .001$). Depressive symptoms were positively associated with pain-related distress ($p < .05$). Mediated effects were demonstrated by significant indirect effects in the relationship between family stress and pain-related distress through passive coping (point estimate=.03, 95%CI=.01-.04), depressive symptoms (point estimate=.001, 95%CI= .0003-004) and through both passive coping and depressive symptoms sequentially (point estimate=.004, 95%CI=.00-.01). The full model including mediators accounted for 66% of the variance in pain-related distress; family stress alone account for 27% of the variance in pain-related distress.

CONCLUSIONS: Children whose families have experienced greater family stressors reported greater passive coping and depressive symptoms, which each independently were associated

with pain-related distress. These findings suggest that addressing coping and depressive symptoms during treatment may reduce the burden of pain in young IBD patients.

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B064 6:00 PM-7:00 PM

FOOD CRAVING MEDIATES THE RELATIONSHIP BETWEEN EXTERNAL EATING AND EXCESS GESTATIONAL WEIGHT GAIN

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Excess gestational weight gain (GWG) is a major public health concern and contributes to medical complications in both mother and child. Craving frequency in pregnant women accounts for a considerable portion of the variance in excess GWG (Orloff et al., 2016). Food craving has also been shown to mediate the effect of external eating (i.e., eating in response to environmental cues) on body mass index (BMI) in university students (Burton et al., 2007). This study tested the hypothesis that craving frequency similarly mediates the relationship between externality and excess GWG.

68 pregnant women (mean age=30.47, SD=4.23; average weeks of gestation=24.01, SD=8.91) completed the Dutch Eating Behavior Questionnaire, which measures "emotional" (Cronbach's a=.95), "external" (a=.86), and "restrained" (a=.90) eating styles, and the Food Craving Inventory, which measures frequency of cravings for high fat foods (a=.70), sweets (a=.86), carbohydrates/starches (a=.82), and fast food fats (a=.66). Excess GWG was calculated based on pre-pregnancy BMI and stage of gestation at time of survey completion.

36.9% of participants had gained in excess of the recommended GWG for their stage of gestation. Excess GWG was significantly and positively correlated with "emotional" (*r*=.45, *p*r=.30, *p*=.02), and "restrained" eating (*r*=.31, *p*=02), as well as with reported frequency of cravings for high fat foods (*r*=.42, *p*=.001) and fast food fats (*r*=.29, *p*=.02). Eating styles accounted for 27% of the variance in frequency of cravings for high fat foods [*F*(3,52)=6.44, *p*=.001], with "external" eating emerging as the single significant predictor (β=.41, *p*b=6.06, *p*=.01, 95% C.I.: 1.59, 10.53), as was the regression of "external" eating on frequency of craving for high fat foods (*b*=.37, *p*b=3.67, *p*=.14, 95% C.I.: -1.30, 8.63), suggesting full mediation. A Sobel test approached statistical significance (*z*=1.76, *p*=.08).

Findings are consistent with past research showing that food craving is a mediator of the relationship between externality and BMI, and suggest that interventions focused on coping with external cues and cravings may help pregnant women more effectively manage gestational weight gain.

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B065 6:00 PM-7:00 PM

GARDASIL FOR BOYS AND YOUNG MEN: PARENTS' AND PHYSICIANS' REPORTED BARRIERS TO VACCINE UPTAKE

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Background: The human papillomavirus (HPV) can cause penile, anal, and oropharynx cancers, as well as genital warts among boys and men who are sexually active. Within the United States, the Human Papillomavirus Quadrivalent vaccine, Gardasil$^{(R)}$, was approved for use in boys and young men in 2009; however, despite its documented effectiveness, uptake of the vaccine among this population remains limited.

Methods: In order to better understand the discrepancy between the vaccine’s documented effectiveness and its lack of uptake among boys and young men, we conducted a systematic search of the literature and qualitatively reviewed 10 published studies that focused on barriers to Gardasil$^{(R)}$ uptake and reasons for uptake among boys and young men, as reported by both parents (*n*=5 studies) and physicians (*n*=5 studies).

Results: Parents reported a number of barriers to vaccine uptake, including low awareness of the existence of Gardasil$^{(R)}$ (*n*=4, 80%), its applicability to boys and young men (*n*=4, 80%), and the vaccine’s cost (*n*=2, 40%). Parents were most likely to vaccinate their sons to protect them from cancer (*n*=4, 80%) and protect their sons’ future sexual and romantic partners (*n*=4, 80%). Physicians also reported concerns regarding the cost of the vaccine, specifically in regards to the patient’s healthcare coverage (n=3, 60%), but also reported additional barriers to vaccine uptake, including the lack of physician/parent communication (*n*=4, 80%) and a concern for vaccine efficacy (*n*=3, 60%). Similar to parents, physicians’ primary reasons for promoting the Gardasil$^{(R)}$ vaccine to boys and young men included cancer prevention (*n*=3, 60%) and promotion of sexual health (*n*=3, 60%).

Conclusion: Parents and physicians aware of the Gardasil$^{(R)}$ vaccine reported similar reasons for uptake of the vaccine in boys and young men. However, parents and physicians differed on the main barriers to vaccine uptake. Particularly, many parents were unaware of the Gardasil$^{(R)}$ vaccine and how it might be useful for their sons. Physicians, in contrast, struggled with the doctor-parent relationship and how to engage in conversations regarding the

Gardasil$^{(R)}$ vaccine. Future research needs to establish best practice promotional strategies for Gardasil$^{(R)}$ uptake, and should focus on both parental and physician audiences in order to maximize vaccination uptake.

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B066 6:00 PM-7:00 PM

IMPACT OF PROVIDER SUPPORT SERVICES ON BREASTFEEDING DURATION

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Background: The benefits of breastfeeding for both infants and mothers are well-documented. However, many women struggle to successfully breastfeed – resulting in a call to action to promote and aid in breastfeeding by providing support and services to increase the success of breastfeeding mothers. This support may include lactation consultants inside and outside of the hospital, nurses, doulas, midwives and medical providers (MD/CNP).

Objective: This study examined factors relating to breastfeeding duration, including types of provider support and services. Specifically, the use of lactation consultants, nurses, doulas, midwives, and medical providers on breastfeeding success were explored. It was hypothesized that these support services have a positive effect on breastfeeding duration.

Methods: Snowball sampling was used to recruit participants for the Breastfeeding Opinions, Outcomes, Behaviors, and Services (BOOBS) online survey. The current sample consisted of 1,964 mothers whose first child was born between 2004 and 2014, who had attempted to breastfeed this child, and who answered questions about using providers to aid with breastfeeding efforts.

Results: Of the sample, 61% breastfed for at least 12 months. It was found that breastfeeding support from a lactation consultant outside of a hospital setting ($t(1860)= -4.275$, $p< .05$), a doula ($t(1699)= -7.581$, $p< .05$) or a midwife ($t(1698)= -8.572$, $p< .05$) was associated with longer breastfeeding durations. The greatest difference was seen among women who had support from a doula. These women breastfed for 17 months, almost 4 months longer than those who did not have a doula. Women who received breastfeeding support from a nurse or doctor/nurse practitioner reported shorter breastfeeding durations ($t(1,774) = 4.06$, $p =.01$, $t(1752) = -8.57$, $p < .05$ respectively). This was most notable for women who had seen a doctor/CNP, who breastfed for 12 months, 2 months less than women who did not.

Conclusion: Results indicate that the use of breastfeeding support services, specifically lactation consultants outside of the hospital, doulas, and midwives were associated with longer breastfeeding durations. These findings indicate that implementation and utilization of these breastfeeding support services may be important factors in increasing the likelihood of successful breastfeeding experiences.

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B067 6:00 PM-7:00 PM

INTERVENTIONS TARGETING MEN'S ALCOHOL USE AND FAMILY RELATIONSHIPS IN LOW AND MIDDLE-INCOME COUNTRIES: A SYSTEMATIC REVIEW

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Problem drinking disproportionally affects men and has disabling psychosocial, behavioral, and physical consequences. These can lead to a cascade of negative effects on men's families, with documented ties to intimate partner violence (IPV) and child maltreatment. These multi-level problems are often exacerbated in contexts with high poverty rates, including low and middle-income countries (LMICs). In societies where strong patriarchal norms place men in positions of power, family-level consequences are often even more pronounced. To understand how these intertwined consequences have been addressed, we conducted a systematic review of the empirical literature on interventions conducted in LMICs targeting men's problem drinking and any family-related outcomes (i.e., parenting, IPV). Cochrane and PRISMA procedures guided the review, and the search was conducted in PsychInfo, PubMed, and Web of science databases. The initial search yielded 1261 publications that were evaluated, with eight studies from four different countries meeting inclusion criteria. Of those, none had the primary goal of improving both drinking and related family-level outcomes; rather these were secondary outcomes for the majority of the interventions, and none directly targeted parent-child relationships. However, half of the studies documented modest improvements on both drinking and couples or family relationship outcomes, supporting the value of combined alcohol and family interventions. Specific strategies emerged as promising across outcomes including behavioral, communication, narrative, and participatory learning; gender-transformative approaches were associated with reduced IPV and more equitable gender norms, and motivational interviewing and behavioral approaches were beneficial for reducing alcohol use. Overall findings highlight the scarcity of interventions addressing men's drinking and its effects on families, particularly in the domain of parenting. However, results point to strategies that, combined with the broader evidence-base on family-based interventions, can guide the development and rigorous evaluation of new combined approaches.

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B068 6:00 PM-7:00 PM

SELF-EFFICACY PREDICTS CHANGE IN HEALTH KNOWLEDGE IN MIDDLE SCHOOL AGE GIRLS

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Introduction:
Health knowledge and self-efficacy are common outcome variables measured in health promotion studies. While motivational theory suggests children with higher general self-efficacy are more motivated to learn information, and, thus, produce higher classroom achievement scores, research on the relationship between *health* self-efficacy and *health* knowledge is virtually nonexistent. The purpose of the current study was to investigate whether baseline self-efficacy predicts change in health knowledge scores following a health promotion intervention.

Methods:
This project investigated the relationship between self-efficacy and health knowledge in 288 middle school age girls of diverse ethnic backgrounds who were enrolled in a 3-week summer camp that emphasized the importance of a healthy lifestyle. Nutrition and physical activity knowledge were quantified as the percent of items correct on a 7-item nutrition knowledge assessment and on a 6-item physical activity knowledge assessment, respectively. The participants also completed two questionnaires assessing their nutrition and physical activity self-efficacy. All measures were taken at baseline and at the end of camp.

Results:
Two multilple regression models were run, a dietary and physical activity model, controlling for baseline knowledge, age, maternal education, ethnicity, and treatment condition. Dietary results suggest that baseline nutrition self-efficacy and the covariates accounted for significant variability in nutritional knowledge score at the end of the program, adjusted R^2 = .286, F (10, 220) = 10.31, p < .001. Results indicate that, controlling for covariates, for every one-point increase in baseline nutrition self-efficacy, week 3 nutritional knowledge score increased by 5.5%, 95% CI [.12, 10.93]. Similarly, the physical activity model results suggest

that baseline physical activity self-efficacy and the covariates accounted for significant variability in physical activity knowledge score at the end of the program, adjusted $R^2 = .305$, $F(10, 221) = 11.23$, $p < .001$. Results indicate that, controlling for covariates, for every one-point increase in average baseline physical activity self-efficacy item score, week 3 physical activity knowledge score increased by 19.03%, 95% CI [4.38, 33.67].

Conclusion:

The results of the present study show that greater gain in health knowledge scores were predicted by higher baseline health self-efficacy. Heath knowledge is important to possess as increased knowledge may lead to positive attitudes toward healthy behaviors, instill fear of the risks of being unhealthy and motivate healthy weight behaviors in children. The findings suggest that, in order to assure that children can maximize the benefits of health interventions, it may be advantageous to direct intervention efforts at increasing self-efficacy *before* targeting other health variables.

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B069 6:00 PM-7:00 PM

WHAT DOES PHYSICAL LITERACY MEAN TO YOU? AN EXPLORATION OF PARENTS' UNDERSTANDING AND PERCEPTIONS OF PHYSICAL LITERACY

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Purpose: Physical literacy is defined as the knowledge, confidence, motivation, and physical competence to engage in physical activity for life (Whitehead, 2010). The purpose of this study is to explore parents' understanding and perceptions of physical literacy and its importance in their family.

Methods: Parents of children aged 16 years and younger, living in Ontario, Canada, were recruited to participate in an online questionnaire via social media (i.e., Facebook and Twitter) and word-of-mouth. Questionnaires contained a combination of Likert-scale and open-ended questions to examine parents': (1) understanding of physical literacy (e.g., "What does physical literacy mean to you?"), and (2) perceived importance of physical literacy in their family (e.g., "How much do you agree or disagree with this statement: physical literacy is important to me for my family?"). Quantitative data were analyzed with descriptive statistics and qualitative data underwent thematic analysis assisted by QSR NVivo 10.

Results: Participants (n = 81, M_{Age}= 39.2 years) were predominantly female (93.8%) and married (79.0%). More than half of respondents (62.5%) were familiar with the term "physical literacy". Participants provided a wide variety of meanings and definitions for physical literacy including knowledge of physical activity's impact on health, awareness of physical activity guidelines, and ability to perform fundamental physical movements. After reading a definition and several examples of physical literacy provided by the researchers, all participants (100.0%) agreed that it was important to them for their family. Overall, participants expressed that they valued physical literacy because it promotes health and wellbeing, strengthens family bonds through exercise, and enhances children's capacity to engage in physical activity for life. The majority of respondents (77.6%) believed that it could be improved by a moderate or great extent in their family.

Conclusions: Preliminary findings demonstrate the variability in parents' understandings of physical literacy. Though, generally speaking, parents perceived physical literacy to be important, they also believed that it could be improved within their families. Thus, researchers should be encouraged to explore and investigate the feasibility of home and community-based interventions and resources to enhance physical literacy in families.

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B070 6:00 PM-7:00 PM

BODY IMAGE DISSATISFACTION, DEPRESSION, AND DISORDERED EATING IN COLLEGE-AGED WOMEN SEEKING A YOGA INTERVENTION

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Introduction: Previous studies have shown that 75% of college-aged women report body image dissatisfaction, and negative body image has been shown to be an independent predictor of disordered eating in young women. This study examined baseline characteristics and correlates of young women interested in a yoga intervention for body image dissatisfaction.

Methods: The preliminary study sample included 118 women (M ±SD; age = 21.0 ±2.7 years, White = 64.4%, Asian = 14.4%, Black = 13.6%, More than one race/Not reported = 7.6%, attending undergraduate/graduate school = 96.6%, BMI = 24.5 ±5.4 kg/m^2) screened for a yoga intervention for body image dissatisfaction. The relationships between baseline body image dissatisfaction (Multidimensional Body-Self Relations Questionnaire – Appearance Scales; MBSRQ-AS), depressive symptoms (Beck Depression Inventory – Second Edition; BDI-2), disordered eating symptoms (Eating Attitudes Test – 26), and demographic variables were assessed using Pearson correlations and independent samples t-tests. An MBSRQ-AS score $\leq$ 3.0 was utilized as the clinical cut-off for significant body image dissatisfaction, and a BDI-2 score $\geq$ 14 was utilized as the clinical cut-off for significant depressive symptoms.

Results: Clinically significant body image dissatisfaction was endorsed by 72% of participants. Although prior studies suggest a 10% prevalence rate of depression in college-aged women (e.g., Michael, 2006), 33.1% of women in this sample screened positive for clinically significant depressive symptoms. Moreover, while only 28.8% of the women had BMIs in the overweight/obese range, 55.1% reported trying to lose weight over the prior three months and 70.3% reported being $\geq$ 5 lbs. heavier than their ideal weight. More severe body image dissatisfaction was associated with greater depressive symptoms, $r = -.324$, $p < .001$, and greater disordered eating symptoms, $r = -.264$, $p = .004$. Moreover, those with negative body image reported significantly greater depressive symptoms, $t(97.8) = -3.63$, $p < .001$, and greater disordered eating symptoms, $t(116) = -2.15$, $p = .034$, than those with positive body image. Mean body image dissatisfaction was not significantly different across ethnicities or races (e.g., Caucasian vs. African American, $p = .115$).

Discussion: In this sample, clinically significant depressive symptoms were three times more prevalent than in the general population of college-aged women, and a substantial proportion of participants reported wanting to lose weight despite being at a healthy BMI. Notably, worse body image dissatisfaction was associated with greater depressive and disordered eating symptoms. These findings highlight the interrelation of mood, appearance evaluation, and health behaviors in young women interested in a yoga intervention for body image dissatisfaction.

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B071 6:00 PM-7:00 PM

A RANDOMIZED CONTROLLED TRIAL COMPARING TWO CONSENT INTERVENTIONS FOR ENROLLMENT INTO A SEQUENCING STUDY

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Despite the widespread use of genome sequencing in research, evidence-based procedures for obtaining participants’ consent to enter such studies are lacking. It is unknown how successfully participants make an informed choice (defined as having sufficient knowledge and attitudes consistent with one’s decision) to enroll in a sequencing study. Increasingly, such studies include return of secondary findings that should be made clear to participants. Secondary findings are results unrelated to the primary reason (such as the health condition under investigation) the sequencing was obtained.

This study compared an evidence-based “shorter” consent to a “standard” consent among women affected with primary ovarian insufficiency and eligible to participate in an NIH sequencing study. Participants were randomized to receive the shorter or the standard consent document. A mixed methods approach yielded data from surveys at baseline, immediate and six month follow up. Quantitative data were analyzed using descriptive statistics and bivariate analyses. Thematic content analysis was used to analyze qualitative data. Of the 387 women contacted, 212 were recruited and randomized (rr=55%), with complete data available from 188 participants. There were no differences between the two consent type groups in genome sequencing knowledge, perceived benefits or decisional conflict ($p>0.05$). Participants had high expectations to learn information of personal benefit, including secondary findings. Most (n=171) decided to participate in the sequencing study prior to the consent process. Intentions to receive secondary findings were high (mean, 10.9; SD, 1.6; maximum possible score 12) as were attitudes (mean, 6.5; SD, 0.9; maximum possible score 7). Based on the data from the knowledge, attitudes and intentions scores, 90 (47.9%) participants made an informed choice to receive secondary findings.

Participants have high expectations for receiving sequencing results of personal benefit. This study demonstrates a lack of differnce in outcomes between the longer, standard consent and the shorter consent suggesting that a more concise, evidence based consent is as effective at

consenting individuals to genome sequencing studies. However, it may be challenging to achieve informed choice, as defined by current measures, for receiving secondary variants. Future research should focus on the level of knowledge participants require to make an informed choice about entering a sequencing study.

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B072 6:00 PM-7:00 PM

A SYSTEMS-THINKING, PROBLEM-SOLVING APPROACH TO STUDY MIGRAINE SELF-MANAGEMENT AND EMPOWERMENT IN SOCIALLY VULNERABLE WOMEN

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Migraine affects over 20% of women and is the sixth most disabling condition worldwide. Both in incidence and severity, migraine disproportionately disables women with less education, living in poverty, un- or underemployed, and/or with high levels of chronic stress due to the unequal distribution of health-damaging experiences. Self-management is a crucial part of chronic illness management, with direct correlations to health outcomes. Yet, effectiveness of self-management behaviors is inextricably linked to social determinants of health. Socially vulnerable women are often ignored in highly medicalized migraine research, making their experiences and choices in managing migraine relatively unknown.

We developed a systems-thinking data collection approach that can feasibly be applied to study migraine self-management behaviors using a complexity/systems science framework with women in diverse social locations. We crafted a two-part activity for use in focus groups. First, using systems dynamics concept mapping, women tracked a migraine episode, from triggers through self-management strategies and desired and actual outcomes, including behavior needs, facilitators, and supports. Next was a causal loop diagramming activity to delve deeper into the relationships between triggers, self-management behaviors, and outcomes. Part two--while often enlightening for affluent participants—left more vulnerable women feeling overwhelmed and defeated, with a solution to one challenge becoming the cause of another. Through constant comparison analysis, we recalibrated the approach, using a combination of theory, clinical experience, and participant feedback to replace the causal-loop diagram with an individually-tailored, strengths-based problem-solving activity highlighting relationships and trade-offs in a more empowering, actionable way. Bringing a critical lens and strengths-based approaches for vulnerable populations can replace traditional deficit thinking in healthcare, developing options for leveraging resources and understanding complex health behaviors without losing sight of systemic, distributional justice issues. These tools can provide a way to extrapolate the complexities of actual self-

management behaviors and challenges faced by vulnerable women with migraine, versus what they may be instructed to do by a medical model that does not always account for the social determinants of health.

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B073 6:00 PM-7:00 PM

ASSESSING FIDELITY FOR A COMPUTER TAILORED INTERVENTION WITH TELEPHONIC COACHING FOR DECISION-MAKING IN KIDNEY TRANSPLANT

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Your Path to Transplant (YPT) is an ongoing longitudinal study that aims to enhance decision to pursue living donor kidney transplant (LDKT) in adults with end-stage renal disease utilizing a telephonic coaching intervention grounded in the Transtheoretical Model (TTM) of behavior change. This study aimed to evaluate reliability by assessing treatment fidelity to the intervention protocol. YPT coaches complete standardized surveys and deliver tailored feedback at three time-points over eight months, examining whether transplant education and individualized, computer tailored TTM feedback increases readiness, self-efficacy and decisional balance to pursue LDKT compared to usual care transplant education.

Five raters evaluated a random sample of audio recorded coaching sessions. Rater pairs assessed at least 10% of sessions at each study time-point. Coaching fidelity was assessed using a standardized rubric that assigns a scale value (1-3) to the coach's standardized interviewing capacity, quality of TTM feedback, and relevant clinical skills (e.g. reflective listening). Mean scores of all rubric items served as fidelity adherence scores for the coach's survey. Rater agreement was evaluated using the two-way random effects Intraclass Correlation Coefficient (ICC (2, *k*)) for each rater pair.

All surveys (n=777) were recorded for fidelity review, with 13% (101) of all intervention condition surveys rated by 2+ raters; scores ranged from 1.40 to 3 (*M*=2.58, *SD*=0.27). ICC revealed that rater agreement ranged from 0.76 to 0.92 where sample size was sufficient (n≥10 ratings between rater pairs), (M=0.83, SD=0.07). Raters demonstrated good (ICC=0.75–0.90) to excellent (ICC>0.90) reliability.

Significant ICC results indicate that fidelity raters are evaluating TTM telephonic feedback similarly and consistently. Monitoring intervention fidelity supports treatment efficacy and provides coaches with consistent evaluation and feedback for telephonic expert-system delivery. Future research will aim to evaluate whether rater agreement, which supports reliability, is also providing effective feedback for telephone coaches that supports patient decision-making for kidney transplant.

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B074 6:00 PM-7:00 PM

DEVELOPING AN INTERNATIONAL MEASURE OF BELIEFS ABOUT CAUSES OF MENTAL ILLNESS: THE MENTAL ILLNESS ATTRIBUTION QUESTIONNAIRE

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The study of mental illness attributions, or beliefs about the causes of mental illness, is well-documented and ongoing in the academic literature. Attributions have traditionally been dichotomized along four dimensions based on their locus, controllability, specificity, and stability and have been associated with a wide variety of thoughts, emotions, beliefs, and actions related to the stigma of mental illness. However, more recent studies have introduced a new cross-cultural model incorporating lay beliefs about the specific biological, emotional, social, and spiritual causes of mental health problems. The present research outlines the design and initial validation of a comprehensive, international measure of causal beliefs using this new cross-cultural model, the Mental Illness Attribution Questionnaire (MIAQ). The research project included item formulation, piloting, qualitative rating, and preliminary validation with a sample of 680 international students representing 94 nations. Factors captured causes related to supernatural forces, social/stress, lifestyle, physical health, substance use, heredity/biology, and personal weakness. This structure was tested for model fit using confirmatory factor analysis across three vignette conditions – one each describing a man with schizophrenia, depression, or alcoholism – with further examination yielding strong test-retest reliability and promising convergent, discriminant, and cultural validity data. Taken together, the results support the MIAQ as a valid and reliable measure of mental illness attribution with strong potential for use in future studies, particularly those examining barriers to help-seeking and stigmatizing behavior across cultures.

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B075 6:00 PM-7:00 PM

DOES COGNITIVE STATUS MODIFY THE RELATIONSHIP BETWEEN SELF-RATED HEALTH AND MORTALITY?

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Self-rated health status (SRHS) predicts mortality in older hospitalized patients and community-dwelling persons, however its predictive validity in persons with dementia has not been established. We examined: 1) the correlation between SRHS and nurse ratings of health status (NRHS); 2) whether SRHS/NRHS predicted 12-year mortality; and 3) whether cognitive status modified the association between SRHS/NRHS and mortality in a population-based sample of older adults.

3340 participants [58% female; mean(SD) age = 77.3(6.47) years] had SRHS; a subset (686; 56% female) had both SRHS and NRHS. SRHS was assessed by asking how the participant felt over the past week (excellent, good, fair or poor), and NRHS was based on the General Medical Health Rating, which considers stable/unstable health conditions, frailty, and results of a physical exam. We used Spearman's rank correlation to examine the association between SRHS and NRHS and Cox proportional hazards regression models to examine time to mortality for each factor. Covariates tested included cognitive impairment [none, cognitive impairment-no dementia, dementia], age, sex, depression, and body mass index.

SRHS and NRHS were modestly correlated ($\rho = .31$), but not in persons with dementia. NRHS and SRHS predicted mortality: hazard ratio (95% CI) for NRHS "fair/poor" was 3.49 (2.59-4.70); SRHS "poor" was 2.65 (2.18-3.21), compared to those with "excellent" health. Cognitive status did not modify the associations between SRHS/NRHS and mortality. BMI and depression did not further predict mortality.

Self-rated health predicted mortality regardless of cognitive status. A simple self-rating may provide a quick and valid way to monitor health in older adults, even among persons with mild dementia.

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B076 6:00 PM-7:00 PM

EFFECT OF SERVICE QUALITY AND PERCEIVED RISK ON SERVICE VALUE, CONSUMER SATISFACTION AND CHURN INTENTION IN KOREAN NURSING HOMES

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Background: Korea has a rapidly increasing population of elders with 11.0% aged 65 and older in 2010, growing to 20.8% in 2026. Accordingly, service quality provided by long-term care (LTC) facilities and consumer retention (vs. new consumers) is paramount.

Purpose: Therefore, the effect of *service quality* (SQ) and *perceived risk* (PR) by consumers on *perceived service value* (PSV), *consumer satisfaction* (CS), and *churn intention/intention to leave* (CI) in LTC facilities was investigated.

Methods: Three dimensions of SQ are modelled(*technical quality* (TQ), *functional quality* (FQ), and *service environment* (SE)) and PR, assessing their effects on CS and PSV. A cross-sectional survey using convenience sampling of families or guardians of elders living in LTC facilities was utilized because these individuals are likely to make substantial elder-care decisions (n=235).

Results: The model fit statistics were χ^2 = 340.202 (d.f. = 152, p = 0.000), GFI = 0.862, AGFI = 0.810, NFI = 0.879, CFI = 0.928, RMR = 0.041, and RMSEA = 0.073, indicating acceptable fit. In the model, SQ consisting of TQ, FQ, and SE had a statistically significant impact on PSV. PR had a negative impact on PSV (β = -0.122, p = 0.004). Only TQ (β = 0.492, p = 0.016) and PSV (β = 0.397, p = 0.008) had statistically significant impacts on CS. Finally, CS (β = -0.327, p = 0.037) and PR (β = 0.510, p = 0.001) had statistically significant impacts on CI. For direct effects, CS was positively related to TQ (standardized coefficient = 0.474) and PSV (standardized coefficient = 0.328). CI was positively related to PR (standardized coefficient = 0.453).

Conclusion: PR related to nursing service had a direct impact on CI. Therefore, it is necessary to reduce uncertainty and risks related to the service. It also seems necessary to improve SQ perceived by consumers if the goal is to reduce CIof families or guardians.

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B077 6:00 PM-7:00 PM

ENHANCING PROCEDURES FOR INFORMED CONSENT (EPIC) STUDY

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Informed consent is an important part of research with human participants. Historically, deception was common practice. Through extensive litigation, the rights of human participants in research have grown. This study is evaluating a technology-mediated method of informed consent. The project is part of the Healing and Empowering Alaskan Lives Towards Healthy-Hearts (HEALTHH) study; a video telemedicine intervention to improve heart health for Alaska Native (AN) People in rural Alaska. AN People have endured attempted cultural, physical, and social genocide. In addition, unethical research practices with AN People are well documented. Due to the problematic history of unethical research, historical trauma, and intrusion of a western worldview, it is a reasonable concern that AN People may be a vulnerable research population. This, coupled with additional concerns presented by telehealth delivery, highlights the need for researchers to ensure that truly informed consent is obtained from AN People. A multimedia enhanced form of the consent process may provide a better understanding of the elements of the study and allow participants to be more thoroughly informed when choosing if they wish to take part in studies. This project created a 9-minute animated video version of the consent form to enhance the informed consent process. The information presented as a hypothetical patient joining the study and going through study activities. Half of the participants were randomized to the standard paper-based consent while the other received the addition of the video. Immediately after, a brief survey and the MacArthur Competence Assessment Tool for Clinical Research (MacCAT-CR) were administered. The MacCAT-CR is an adaptable capacity assessment that measures understanding, appreciation, reasoning, and the ability to express a choice. It provides an overall score which can be used for comparisons. Preliminary data were gathered from 17 AN People (8 men, 9 women) with an age range of 32 to 64 (M=52 SD=10.5). The MacCAT-CR scores for the intervention group (M=27, SD=4) were significantly higher (better) than the control group (M=18, SD=9); t(15) = 2.66, p = 0.018, demonstrating better comprehension and ability to express a choice. Our video enhancement to the informed consent process is a useful prototype with large effects and applicability to a variety of health-related research projects.

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B078 6:00 PM-7:00 PM

HOW DO HEALTH EXPECTANCIES & VALUES COMBINE TO DETERMINE DIETARY INTENTIONS? APPLYING FUNCTIONAL MEASUREMENT TO FOOD INTAKE

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Background. The expectancy-value (EV) framework is one of the most prominent theoretical approaches to understanding and predicting health-related outcomes. By and large, EV models have predicted behavioral intentions (and, by extension, behaviors) by aggregating expectancies and values multiplicatively, positing that this is how these factors are cognitively integrated. However, this assumption has yet to be tested vis-à-vis other cognitive integration rules. This research used Information Integration Theory (IIT) to test empirically how health-related expectancies and values are cognitively integrated to determine dietary intentions.

Method. Ninety participants—with a mean age of 19.03 years (*SD*=0.92) and 73 females—were presented with a scenario depicting physical health consequences of junk food consumption (weight gain, disease risk), which varied in terms of objective probability (low, medium, high, and no probability information), and corresponding subjective participant expectancies. The values participants assigned to these consequences were trichotomized into low, medium, and high levels, and participants indicated their likelihood of consuming junk food for each of the probability conditions.

Results. Participants combined their health-related expectancies and values using an additive—rather than a multiplicative or averaging—cognitive integration rule to determine their intentions to consume junk food.

Conclusions. Dietary research and treatment—particularly for junk food consumption—may benefit by aggregating expectancies and values additively, and by addressing both in interventions designed to promote behavior change.

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B079 6:00 PM-7:00 PM

IMPACT OF SNAP ON HEALTH DISPARITIES AMONG ELDERLY PATIENTS WITH NUTRITIONAL DISEASE

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This study investigates the impact of households altering their financial behavior to qualify for the nutritional safety net programs (i.e., Supplemental Nutritional Assistance Program, SNAP) on the incidence of nutritional diseases. Our study exploits the fact that individuals have the option to modify their financial behavior to deduct medical expenses at age 60 to qualify for SNAP (instead of being subject to a gross income test) and we use a difference-in-differences (DD) model to examine the impact of the SNAP eligibility on the morbidity of nutritionally sensitive diseases. Our primary study population consists of Medical Expenditure Panel Survey (MEPS) respondents aged 56 to 64. For the overall sample, the DD estimates show that SNAP has no impact on nutritional disease morbidity, with an exception for diabetes, where SNAP is associated with a statistically significant 10.4% ($P < 0.10$) decline in the incidence of diabetes. However, when narrower racial subgroups are considered, the results vary widely across race. Whites only report a 9.5% ($P < 0.05$) decline in the incidence of diabetes. On the other hand, blacks report that SNAP is associated with a 9.1% ($P < 0.10$) decline in the incidence of cancer, 29.8% ($P < 0.01$) decline in the incidence of hypertension, and 24.6% ($P < 0.05$) decline in diabetes. These results are significant, as they demonstrate that low-income households exploit changes in the SNAP eligibility rules by altering their financial decision-making (i.e., itemizing deductions on tax returns) to receive a direct cash-transfer from the government. Moreover, the results demonstrate that the altered financial decision-making leads to the adoption of health promoting behaviors that directly lead to a lower incidence of nutritional disease, and that minorities, blacks in particular, benefit the most from the program, which closes a significant baseline nutritional disease disparity across racial groups.

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B080 6:00 PM-7:00 PM

LIVING KIDNEY DONATION: ASSESSING POTENTIAL BARRIERS AND FACILITATORS THROUGH NOMINAL GROUP TECHNIQUE

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The number of individuals in need of donated kidneys far surpasses the number of donors, and, despite the literature showing improved outcomes for recipients of living compared to deceased kidney donation, the number of living donors has decreased over the past decade. The vast majority of individuals are aware of the need for donation, support the idea of living donation, and would consider donating to a known recipient, and many even report that they would consider donating to an unknown recipient. However, only a tiny proportion of these individuals ever go on to donate. This study utilized nominal group technique, a method designed to generate ideas around a specific topic and determine which ideas are most salient among group members, to determine what factors would make one more or less likely to serve as a living donor, as well as which factors are most important in the decision-making process. Thirty individuals, recruited from a large academic medical center, participated in four groups (two groups of seven women and two groups of eight men) in which they were asked to brainstorm factors that would impact willingness to be a living donor and vote on which factors they deemed most important. Responses were analyzed and categorized into themes. Participants identified and ranked the following factors (from most to least important): altruism, relationship to recipient, knowledge, personal risk/impact, convenience/access, cost, support, personal benefit, and religion. Ranking lists were similar for men and women, though women were more likely to report knowledge as a key factor in decision making, while men were more likely to identify altruism as a key factor. While much of the literature on living donation tends to debate the ethics of providing incentives for donation and eliminating disincentives, cost appears to play a smaller role in decision making compared to factors such as altruism and knowledge about the process and the personal impact that donation would have on the donor. Future studies should explore whether public campaigns that specifically address these factors might help to reduce the significant gap in supply and demand of kidneys.

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B081 6:00 PM-7:00 PM

LUNG CANCER SCREENING: A QUALITATIVE STUDY EXPLORING THE DECISION TO OPT OUT OF SCREENING

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Aims. Lung cancer screening with annual low-dose computed tomography is relatively new for long-term smokers in the U.S. supported by a US Preventive Services Task Force Grade B recommendation. As lung cancer screening programs are more widely implemented and providers engage patients about lung cancer screening, it is critical to understand what influences a patient's decision to screen, or not, for lung cancer. Understanding lung cancer screening behavior among high-risk smokers who opt out provides insight, from the patient perspective, about the shared decision-making process for lung cancer screening. The purpose was to explore screening-eligible patients' decision to opt out of lung cancer screening after receiving a provider recommendation. This knowledge will inform intervention development to enhance shared decision-making processes between long-term smokers and their providers and decrease decisional conflict about lung cancer screening.

Methods. Semi-structured qualitative telephone interviews were performed with 18 lung screening-eligible men and women who were members of an integrated, mixed model healthcare system in Seattle about their decision to opt out of lung cancer screening. Participants met lung cancer screening criteria for age, smoking and pack-year history. Audio-recorded interviews were transcribed verbatim. Two researchers with cancer screening and qualitative methodology expertise conducted data analysis using thematic content analytic procedures.

Results. Participant mean age was 66 years (SD 6.5). Majority were female (61%), Caucasian (83%), current smokers (61%). Five themes emerged: 1) Knowledge Avoidance; 2) Perceived Low Value; 3) False Positive Worry; 4) Practical Barriers; and 5) Patient Misunderstanding.

Conclusions. Many screening-eligible, smokers opt out of lung cancer screening. The participants in our study provided new insights into why some patients make this choice. While there are known drawbacks to lung cancer screening, and it is not necessarily the best option for everyone who is eligible, it is known to be effective in early lung cancer detection

among high-risk patients. Understanding why people decide not to screen will enhance future efforts to improve knowledge transfer from providers to patients about the risks and benefits of lung cancer screening and ultimately enhance shared decision-making about lung cancer screening.

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B082 6:00 PM-7:00 PM

PREDICTING COLLEGE STUDENTS' HUMAN PAPILLOMAVIRUS VACCINATION INTENTION

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A 'catch-up' Human papillomavirus (HPV) vaccine is recommended for 13 to 26 years-old females and 13 to 21 years-old males who have not been vaccinated previously. Most Americans reach adulthood without receiving the recommended HPV vaccine doses. HPV vaccine uptake is especially lower in key priority populations, indicating significant racial disparities and potential for enhancing preventive healthcare. Increasing the HPV vaccination series uptake requires theory-driven empirical research on factors influencing HPV-related decisions among young adults. Based on Social Cognitive Theory, this study assessed the interaction between personal and environmental determinants of vaccine uptake and its effect on behavioral intention to obtain the HPV vaccine. The lead author's Psychology Department participant pool was utilized to anonymously collect data from 209 participants, aged 18-26 years who had not yet obtained any dose of HPV vaccine. Data were analyzed using a series of eight Pearson or point biserial correlation analyses, one mediation analysis using PROCESS macro, and one path analysis. Findings demonstrated that: (1) social influence (i.e., parent and peer endorsement of HPV vaccine), HPV vaccine-related self-efficacy, attitudes and knowledge regarding the vaccine, and physician's recommendation to obtain the HPV vaccine were correlated with intentions to obtain the HPV vaccine (all *p*s < .05); (2) controlling for gender, self-efficacy mediated the relationship between social influence and intentions to obtain HPV vaccine, *p* were related to physician's recommendation, and this relationship, in turn, predicted intentions to obtain the HPV vaccine (both *p*s< .05). The present study offers an understanding of personal and environmental factors associated with HPV vaccine decisions among college students, and also highlights the need for studying these mechanisms longitudinally.

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B083 6:00 PM-7:00 PM

REDUCED ALTRUISM DURING DECISION MAKING IN VACCINE HESITANT INDIVIDUALS

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The United States has seen a recent resurgence of vaccine preventable diseases. Cases of measles have doubled in some instances when vaccine hesitant individuals intentionally withheld immunizations. Rates of personal beliefs exemptions for school vaccinations have increased as well. Under herd immunity, people who receive vaccinations provide a health benefit to people who are not vaccinated (Vietri et al., 2012). For instance, vulnerable populations who cannot safely be vaccinated receive protection from high levels of population vaccination uptake. This suggests that altruism may influence vaccine uptake. Our hypothesis was that individuals who are hesitant in the efficacy of vaccines would show lower altruism, thereby discounting the benefits to individuals outside their immediate social networks. mTurk was used to recruit vaccine confident (n = 50) and vaccine hesitant (n = 70) individuals for the present study. Participants completed a hypothetical treatment choice paradigm that presents a range of vaccine risks and benefits. This paradigm asks participants to consider benefits to socially distant individuals (using a scale from 1-100) as well as benefits to their children, and examines how their willingness to risk side effects changes as benefits to others are considered. Area under the curve (AUC) was used to assess altruistic motivation. Larger AUC indicates more willingness to risk side effects to prevent disease at each social distance. A 2x5 (hesitancy by social distance) repeated measure ANOVA assessed the main effects of hesitancy and social distance, as well as the interaction of vaccine hesitancy and social distance. Social distance proved a significant main effect ($f(4,472) = 3.05$, $p < .0001$) as did vaccine hesitancy ($f(1,118) = 10.57$, $p = .001$). Moreover, we uncovered a significant social distance by vaccine hesitancy interaction ($f(4,472) = 3.05$, $p = .04$). Results suggest that vaccine hesitant individuals are less altruistic when making their decisions and heavily discount vaccine benefits for their children as well as individuals outside their immediate family. Previous models have suggested that altruism may account for up to 25% of decisions to vaccinate (Shim et al., 2012), and this therefore could be used as a method to promote vaccine uptake and health outcomes. Our research quantifies the amount that vaccine hesitant individuals de-value potential benefits to their children and others during vaccine decisions. Future research may wish to examine means of providing psychoeducation to increase altruism among vaccine hesitant individuals.

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B084 6:00 PM-7:00 PM

ASSOCIATION BETWEEN PURPOSE IN LIFE AND GLUCOSE CONTROL AMONG MIDDLE-AGED AND OLDER ADULTS

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Background: Greater purpose in life is associated with lower rates of certain chronic diseases. Whether purpose can protect against development of prediabetes or type 2 diabetes is unknown.

Purpose: To examine the association between purpose in life and change in blood glucose among 3,914 adults age ≥50 and without a history of type 2 diabetes or prediabetes in the Health and Retirement Study.

Methods: Baselinepurpose in life was measured using a 7-item, validated adaptation of Ryff and Keyes' Scales of Psychological Well-Being. Participants were then grouped into tertiles of purpose in life (high, medium, or low). We used multivariable linear regression to examine the association between change in HbA1c from baseline to 4-year follow-up and purpose in life. Multivariable logistic regression was used to examine the association between purpose in life and incident prediabetes or type 2 diabetes over the same time period.

Results: After adjusting for sociodemographic factors, body mass index, physical activity, and physical and mental health factors, change in HbA1c was 0.07 percentage points lower among participants with high purpose compared to participants with low purpose (95% CI, -0.12 to -0.02; p=0.011). Participants with high purpose had lower odds of developing prediabetes or type 2 diabetes compared to participants with low purpose (adjusted odds ratio 0.78 [95% CI, 0.62 to 0.98]; p=0.037).

Conclusions: Among older adults, greater levels of purpose in life are associated with a lower incidence of prediabetes or type 2 diabetes. Strategies to promote greater purpose in life should be tested as part of type 2 diabetes prevention efforts.

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B085 6:00 PM-7:00 PM

DEVELOPING A CULTURALLY TAILORED DIABETES SELF-MANAGEMENT PROGRAM FOR CHINESE AMERICANS WITH TYPE 2 DIABETES

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Background/Aims: Despite having lower age- and sex-adjusted body mass index, Chinese Americans (CA) evidence higher risk for developing Type 2 diabetes than non-Hispanic Whites. Unfortunately, few attempts have been made to culturally adapt evidence-based diabetes interventions to this at risk group. The goal of this study is to develop a culturally adapt evidence-based intervention program for CA patients with Type 2 diabetes. A series of formative research under an integrative top-down and bottom-up community-participatory approach was conducted to identify areas for cultural adaptation.

Methods: A systematic review of diabetes self-management programs was conducted to evaluate strengths and weaknesses of extant evidence-based interventions. Five focus groups were conducted in the San Gabriel Valley region of Southern California with 23 CA participants (14 females and 9 males). Participants also completed a questionnaire regarding their diabetes self-management. On average, participants had a diabetes history of 18 years, and they were all first-generation of immigrants with 17 (73.9%) originally from mainland China and the rest from Taiwan, Hong Kong and Vietnam.

Results: Review of the literature indicated a number of areas where cultural adaptations can potentially take place such as communications with health professionals, medication adherence, family support and stress coping, dietary control and physical activity. Descriptive analyses with the questionnaire survey revealed that the average score was 9.96 out of 14 for diabetes knowledge, 2.93 out of 6 for distress, 2.61 out of 5 for diabetes quality of life, and 6.73 out of 10 for diabetes self-efficacy. Focus group results showed that most participants felt depressed when they were first diagnosed with Type 2 diabetes. Problems they encountered in their management of disease included lack of adequate communications with physicians or other health practitioners (e.g. clinical dieticians) on diabetes treatment and control, lack of culturally appropriate health education and materials, lack of access to training on how to optimize diabetes self-management. The biggest challenges they faced are dietary control and glucose monitoring.

Conclusion: Our formative research highlighted needs and directions for developing a culturally tailored diabetes self-management program for CAs.

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B086 6:00 PM-7:00 PM

DIABETES-RELATED DISTRESS AND INSUFFICIENT SLEEP FOR PERSONS WITH TYPE 2 DIABETES MELLITUS EXPERIENCING HEALTH DISPARITIES

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Background: Diabetes-related distress, referring to “patient concerns about disease management, support, emotional burden, and access to care,” is substantively related to symptoms of depression, but a separate and distinct construct(Fisher, Skaff, Mullan, Arean, Mohr, Masharani, Glasgow, & Laurencin, 2007). Similar to depression, distress is significantly and positively associated with HbA1c(Fisher, Skaff, Mullan, Arean, Glasgow, & Masharani, 2008), and is highly responsive to intervention (Fisher, Hessler, Glasgow, Arean, Masharani, Naranjo, & Strycker, 2013). Fisher, Gonzalez, & Polonsky (2014) suggest studies clarify diabetes related distress so that appropriate and targeted patient-centered interventions can occur. Additionally, insufficient sleep has been associated emotional distress related to chronic diseases, such as T2DM (Liu, Croft, Wheaton, Perry, Chapman, Strine, McKnight-Eily, & Presley-Cantrell, 2013). Furthermore, few studies have examined insufficient sleep as it relates to disease-related distress (DD) in persons with T2DM.

Purpose: This study uses data from a Diabetes Self-Management Education Program to explore the relationship between insufficient sleep and DD. Descriptive, anovas and logistic regression are used to examine these relationships.

Results: Ninety-seven persons with T2DM (mean HbA1c = 8.79 ± 2.42) participating in a DSME Program at a southern urban community non profit hospital enrolled in this study. The majority of these patients were obese (mean BMI=38.56±8.20). Only 11% reported normal sleep, with 41% reporting short sleep (< 6 hours). 28% (n=22) reported distress meeting clinical thresholds. 73% (n=16) were also short sleepers [x^2(1, *N*=78)= 8.71, p=.003]. A logistic regression was performed to ascertain the effects of short sleep on the likelihood that participants would have clinical distress. The regression model was statistically significant, x2(1)=1.56, p < .05

Conclusions: We’ve found that people with T2DM who have insufficient sleep are five times more likely to experience clinical levels of distress. Interventions promoting healthy sleep may improve distress and ultimately improve disease management for those in need. Future research could more closely examine the relationship between sleep and distress.

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B087 6:00 PM-7:00 PM

DISORDERED EATING, NEGATIVE EMOTIONS, AND TYPE 1 DIABETES MANAGEMENT DURING LATE ADOLESCENCE

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Late adolescence is a difficult time for those with type 1 diabetes (T1D), in part due to increased risk behaviors such as disordered eating (e.g. binge eating and insulin restriction). Disordered eating behaviors are more common among those who have high negative affect (i.e. depressive symptoms), which itself is associated with poorer glycemic control. These associations have generally been studied as a function of individual differences in negative affect and disordered eating rather than considering within-person daily processes. The present study examined whether negative affect was associated with individual differences and within-person day-to-day changes in disordered eating, and whether disordered eating was associated with glycemic control independent of negative affect. Adolescents recruited during their senior year in high school (N = 219; 59.6% female; 77% non-Latino Caucasian, 12% Latino, 5% African American) completed surveys evaluating their depression symptomology and insulin restriction with the intent to control weight; glycemic control was measured with HbA1c assay kits. Participants then completed a 2-week daily diary indicating daily binge-eating and daily blood glucose levels. At the individual difference (between-subjects) level, adolescents who restricted insulin to lose weight had higher depressive symptoms (*r*=.36), and poorer HbA1c (*r* = .15, *p*s < .05). Adolescents who restricted insulin also reported higher daily depressive symptoms (*r*=.23) and higher daily binge eating (*r*=.27) on average over the subsequent two weeks (*ps* < .05). Regression analyses revealed that associations of insulin restriction with HbA1c was marginally significant when depressive symptoms were covaried (β**=**.18, *p*=.07). At the daily (within-subjects) level, adolescents were more likely to report binge eating on days that they experienced heightened depressive symptoms, and this association occurred independent of a tendency to restrict insulin (coefficient (SE) = .30 (.15), p = .04). Finally, at the daily level, binge eating was associated with higher blood glucose levels independent of depressive symptoms that day, coefficient = 17.46 (SE = 6.98), p = .013. Findings demonstrate that risky disordered eating behaviors are more common in the context of negative affect, and that there are both individual and daily contextual factors that may be targeted to promote better diabetes management in this vulnerable population.

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B088 6:00 PM-7:00 PM

ECOLOGICAL MOMENTARY ASSESSMENT TO MEASURE MOTIVATORS AND BARRIERS TO BLOOD GLUCOSE MONITORING IN YOUTH WITH TYPE 1 DIABETES

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Background: Type 1 diabetes (T1D) is the second most common pediatric chronic illness; adequate disease management requires daily monitoring of children's blood glucose (BG) levels. BG levels are often poorly controlled during adolescence, a time when youth are becoming more autonomous. Ecological momentary assessment (EMA) is the repeated sampling of behaviors and experiences in real time in the natural environment. The current study used EMA via text-message delivered surveys to evaluate the immediate motivators and barriers to BG monitoring in adolescents to better understand T1D treatment adherence in youth.

Methods: Adolescents between the ages of 11-21 with T1D were recruited during routine outpatient endocrinology appointments at the University of Florida Shands Hospital. Adolescents received 3 text messages per day for 10 consecutive days with a link to a brief survey which asked if the adolescent checked his/her BG the last time he/she ate, and why or why not. Descriptive and frequency analyses were conducted to assess the barriers and motivators to monitoring BG.

Results: 36 adolescents (mean age(SD)=16.6(2.7) years, 20 males, 78% Caucasian) with T1D answered a total of 592 surveys over a 10-day period (53.62% surveys answered). Of those who responded to the surveys, 71.5% indicated they had checked their blood glucose the last time they ate (10.3%=did not; 18.2%=hadn't eaten yet). The greatest motivator for checking BG was acknowledging it was important for health (97.1%), followed by being afraid of highs/lows (31.7%), and not wanting to upset doctors (26.9%) or parents (21.4%). Barriers to checking BG included forgetting (55%), ignoring (33.3%), not having a meter with them (30%), thinking it was not necessary (8.3%), and not wanting to check in front of others (6.7%).

Conclusion: This study provides preliminary evidence on the barriers and motivators of BG monitoring adherence. Given the greatest barrier to BG monitoring in this sample was forgetfulness, future research may examine the use of mobile health interventions to remind adolescents with T1D to monitor.

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B089 6:00 PM-7:00 PM

EVALUATION OF AN INTEGRATED RESEARCH PRACTICE PARTNERSHIP TO ADDRESS DIABETES DISPARITIES IN LATINO FAMILIES

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Multi-sector, participatory approaches are needed to address the complex challenge of preventing type 2 diabetes and reducing health disparities in high-risk populations. Integrated research practice partnerships bring academic, community, and clinical partners together to develop and implement innovative strategies to accelerate the translation of research to practice and to improve the health of communities. This study aimed to evaluate the impact of one such partnership on building capacity for developing, implementing and assessing a community-based diabetes prevention program for Latino families.

The collaboration included a Federally Qualified Health Center, a family wellness program, a YMCA, and an academic research institution. The partnership was created to foster resource sharing, bidirectional exchanges of knowledge and skills, communication, and capacity building to deliver a diabetes prevention program to Latino families. Administrators and staff (*N*=12) from each institution completed the Community Impact of Research Oriented Partnerships tool, which uses a 7 point Likert scale (7=great impact-1=no impact) to assess perceptions of the personal and organizational impact of the partnership.

After the first year of planning and implementation, Partners reported that the partnership had a moderate to high impact on their personal knowledge development (*M*= 6.4±.2), personal research skill development (*M*=4.6±.5), organizational access to and use of information (*M*= 5.3±.2), and organizational development (*M*= 4.9±.4). Areas within the partnership that had the most impact included the collective ability to develop a shared mission, partner with a medical home, and improve capacity to engage in research. Areas of least impact included advocacy, securing additional funding, and engaging a broader range of collaborators.

These findings demonstrate that partnership activities are impacting personal and organizational capacity to engage in research. Capacity building has significant implications for the sustainability and expansion of the diabetes prevention program and will empower Partners to engage in future research opportunities. Similarly, improving personal and organizational knowledge through the use of health information can benefit the current program and improve other services within each institution. Evaluation of collaborative partnerships is essential to identify strengths within the partnership that can be leveraged and weaknesses that should be addressed.

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B090 6:00 PM-7:00 PM

EXPLORING TYPE II DIABETES AND HYPERTENSION: THE LIVED EXPERIENCE

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BACKGROUND: Helping to reduce the occurrence, and improve the management, of Type II diabetes and hypertension is a major goal for primary care providers. To achieve these goals, it is important to elucidate how patients understand multiple factors of their conditions; such as what caused the condition, its associated symptoms, complications, and treatments. The overall aim of the current study was to elicit qualitative responses about these factors, in order to understand illness beliefs among diabetic and hypertensive patients. METHODS: Older diabetic (*N* = 27, mean age = 63 years) and hypertensive (*N* = 50, mean age = 72 years) adults recruited from the community took part in a 60-minute semi-structured interview, which covered the entire course of their disease. Four themes associated with each condition were analyzed using NVivo: (1) causes, (2) complications, (3) symptoms, and (4) treatments. RESULTS: Participants spent most of the interviews discussing their medical treatments; diabetics mentioned treatments 277 times, and hypertensive patients 580 times. Subjects focused on their prescribed medications as well as their diet and exercise regimes (or lack thereof), and to a lesser extent complementary and alternative medications. Diabetic participants were more likely to discuss the difficulty of adhering to diet/exercise plans, and they were less specific than hypertensives in acknowledging types of foods/exercises which were healthy. Interviews also focused on the complications (diabetic = 97, hypertensive = 269) and symptoms (diabetic = 115, hypertensive = 195) that the participants experienced or had heard about. Diabetic participants were more likely to discuss extreme complications and symptoms which they had experienced firsthand, whereas hypertensive participants often stated that they were asymptomatic but explained symptoms and complications which they had heard about from friends and family. A small portion of the interviews focused on the causes of the conditions (diabetics = 53, hypertensives = 145). CONCLUSIONS: These results highlight the lived experience of the participants, and reveal that there are differences in the participants' beliefs depending on which condition they had. Overall, participants focused on their daily actions and consequences of having a chronic illness. This research may lead to advances in the ways medical care is presented to specific elderly populations, thereby enhancing the lives of individuals.

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B091 6:00 PM-7:00 PM

GOAL-SETTING FOR TYPE 1 DIABETES MANAGEMENT

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Diabetes management is a complex self-regulatory task, which requires consistent monitoring and adjustments. Such tasks may be aided by setting domain-relevant goals. However, not all types of goals may be equally beneficial. According to current research on goal-setting, the more specific a goal is, the better it will serve as a guide to behavior. For instance, whereas higher-level goals (e.g., ”get sugars down”) only specify a general target and not the means to achieve that target, a low-level goal (e.g., “test blood sugar before every meal”) specifies the precise behavior to perform, potentially making it more automatic to perform that behavior. Thus, diabetes-related goals that deal with low-level behaviors, such as performing blood glucose checks, may be more effective than higher-level goals, such as improving blood glucose or HbA1c levels.

In the present study, we examined predictors of the domains of goals as well as how these goals were related to diabetes-related management over the next two weeks among young adults with type 1 diabetes (*N*=239). At baseline, participants were asked to set a diabetes-related goal that they intended to work on over the next two weeks. Two coders categorized goals as belonging to one of six domains (Blood glucose checks, diet, insulin, blood glucose levels, HbA1c, Other). A subset of 20% of the goals were double-coded; agreement was 92%.

Baseline predictors of goal content were analyzed in a series of logistic regression models in which predictors (IQ, HbA1c, self-reported adherence, gender, and time since diagnosis) were entered simultaneously. Participants exhibited responsiveness to their current weaknesses; those with lower reported adherence were more likely to set a goal related to blood glucose testing, and those with higher HbA1c were more likely to set a goal related to their HbA1c level.

Next, in a series of multilevel models, goal domain was used to predict diabetes-related management reported in daily diaries (mean blood glucose, self-reported adherence) over the next two weeks. Overall, compared to the other domains, setting a goal related to blood glucose testing predicted worse management. However, during the two-week diary period, a significant decrease in mean daily blood glucose over time was observed only among those

who set a goal related to blood glucose testing, suggesting that this type of goal, which contains the specific behavior to be performed, assisted young adults to begin to change their behavior. Young adults with type 1 diabetes are more likely to benefit from setting realistic, short-term goals targeting specific behaviors.

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B092 6:00 PM-7:00 PM

INFLUENCE OF NEIGHBORHOOD DISORDER AND LEVEL OF EDUCATION ON DIABETES DISTRESS AND SELF-CARE

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Type 2 diabetes (T2DM) affects a greater proportion of socially and economically disadvantaged individuals. The conditions in which individuals live may have important consequences for diabetes self-care. This study examined the relationships between indicators of socioeconomic status, neighborhood disorder, and diabetes distress alongside diabetes self-care behaviors.

N= 941 adults with T2DM in suboptimal glycemic control were recruited for a larger telephonic intervention study in the South Bronx. *N*= 480 completed self-report measures assessing neighborhood disorder, diabetes distress, and diabetes self-care behavior. Regression examined main effects of individual and neighborhood socioeconomic factors on health behaviors; and moderation effects of individual and neighborhood level disadvantage on the association between diabetes distress and health behaviors.

Participants (*N*= 480) were predominately middle-aged adults (mean[SD]=56.4[11.7] years old), female (67%), Latino (68%), Black (28%), had incomes below $20,000 (77%), and completed the 11th grade or less (50%). Diabetes distress demonstrated stronger and more consistent relationships with self-care behaviors (R^2= .11, *p*< .001 for diet, R^2= .08, *p*< .001 for medication) than neighborhood disorder (R^2= .02, *p*= .131 for diet, R^2= .02, *p*= .021 for medication). Neighborhood disorder was independently associated with diabetes distress (*B*= .04*,* *p*< .001). The relationship between diabetes distress and both diet and exercise was significantly stronger among individuals with higher educational attainment (*ps*< .001*).* On the other hand, the relationship between diabetes distress and exercise was significantly stronger at lower levels of neighborhood disorder (*p*< .001).

Diabetes distress, unlike neighborhood disorder, was consistently associated with health

behaviors. Moderation results suggest the strength of the relationship between distress and self-care behavior is influenced by level of education and perceptions of neighborhood disorder. At lower levels of education and higher levels of neighborhood disorder, other factors besides diabetes distress may play a greater role in influencing diabetes self-care. It may be important for health professionals to factor in the neighborhood context when evaluating and addressing diabetes-specific distress.

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B093 6:00 PM-7:00 PM

INFORMATION, MOTIVATION, & BEHAVIORAL SKILLS BARRIERS TO ADHERENCE AMONG ADULTS WITH DIABETES IN SAFETY-NET CLINICS

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Nonadherence to diabetes medication is common and associated with suboptimal glycemic control and a cascade of health problems. According to the Information-Motivation-Behavioral Skills (IMB) model of diabetes medication adherence, adherence to diabetes medications is determined by adherence-related information, personal and social motivation, and behavioral skills. This model has explained over 40% of adherence behavior among adults with type 2 diabetes (T2D) and low socioeconomic status using validated measures of the IMB constructs. However, *barriers* to diabetes medication adherence have not been identified using the IMB model as a guiding framework.

We conducted a thorough review of published studies reporting medication adherence barriers among adults with T2D and identified 36 unique barriers (31 general and 5 insulin-specific). We mapped each barrier onto Information (IN), Personal Motivation (PM), Social Motivation (SM), or Behavioral Skills (BS). Adults with T2D (N=102) receiving care at Federally Qualified Health Centers in Nashville, TN rated how much each barrier got in the way of taking their diabetes medicine(s) (1=not at all to 10=a lot). For each IMB model construct, we identified the most frequently endorsed (scored>1) barriers and averaged scores to examine bivariate relationships with participant characteristics (i.e., age, gender, race/ethnicity, education, income, health literacy [Brief Health Literacy Screen, BHLS], diabetes duration, insulin status, number of diabetes medications), medication adherence (Adherence to Refills and Medications Scale for Diabetes), and glycemic control (A1c) using nonparametric tests (Spearman's ρ/Mann-Whitney U).

Participants endorsed BS and PM barriers most frequently and ranked IN and PM as creating the largest (highest scored) barriers. Younger participants reported more IN (ρ=-.21), PM (ρ=-.25) and SM (ρ=-.21) barriers (all *p*ppppp

Identification of specific IMB barriers can improve patient education and by informing intervention content and priorities. Among adults with T2D and low socioeconomic status, adults' IMB barriers were associated with younger age, limited health literacy, and worse medication adherence and A1c. These findings, combined with prior validation of the IMB model of diabetes medication adherence, suggest targeting these barriers will improve adherence and, in turn, glycemic control.

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B094 6:00 PM-7:00 PM

MOTIVATING DIABETES SELF-CARE: PATIENTS’ PERSPECTIVES ON SOCIAL AND GOAL-BASED COMPARISONS OF DIABETES HEALTH STATUS

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Background

Social comparisons, self-evaluation in comparison to others, can influence motivation and behavior. However, little is known about patients’ perspectives toward social comparison information regarding their diabetes health status. This study aims to understand patients’ perspectives on social-comparison information regarding their diabetes health status and how receiving such information might compare to goal-based comparisons (i.e., self-evaluation in comparison to a set standard such as hemoglobin A1C < 7).

Methods

We conducted semi-structured interviews with 25 patients with type 2 diabetes regarding social comparisons involving their diabetes health status (e.g., self-evaluation of their own A1C in comparison to others’ A1Cs). Using thematic content analysis, 2 independent researchers coded interview transcripts, reached consensus, and identified themes.

Results

Participants were 48% female, 68% white, 52% college graduates, mean age was 65 years (range: 45 – 81), mean A1C was 7.5% (range: 5.6 - 12.6%). Participants reported comparing their diabetes health status to others they knew with diabetes to varying degrees. Participants who compared themselves to others commonly reported comparing to others who were socio-demographically similar (e.g., same race/ethnicity, age, gender, neighborhood), and that these similarities made the comparisons more relevant to their self-evaluation. Themes included desire for information about one’s diabetes health status compared to similar others, belief that this information would be motivating either to improve (if doing worse than most others) or maintain their self-care behaviors (if doing better than most others), and that this information was more “personalized” and motivating than comparisons to a standard goal (e.g., A1C < 7). If faced with social comparison information that indicated that their diabetes health status was worse than the majority of similar others, eleven participants described a desire for information about what the others were doing differently (e.g., taking a different medication, eating differently), and said they would use this information to improve their own diabetes health status.

Conclusions

Providing patients with social comparison information about their diabetes health status may increase motivation for self-care and promote information seeking among some patients.

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B095 6:00 PM-7:00 PM

PROGRAM ACTIVE II: TREATING MAJOR DEPRESSION IN T2DM

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Program ACTIVE II: Treating Major Depression in T2DM

Objective: Program ACTIVE II (R18DK092765) is a multi-state comparative effectiveness study of cognitive behavioral therapy (CBT) and community-based exercise on depression and glycemic outcomes in adults with major depressive disorder (MDD) and type 2 diabetes (T2DM).

Research Design and Methods: The study utilized a 2X2 factorial repeated measures RCT design in which participants were randomized to: CBT (10 individual sessions), EXER (12 weeks of community-based exercise), CBT+EXER (10 individual CBT sessions and 12 weeks of concurrent exercise) or usual care (UC). Participants were assessed at baseline and post-intervention (POST). Participants were recruited from Indiana, Ohio, and West Virginia using a community-engaged research (CEnR) approach. Community partners in mental health and exercise provided interventions to participants.

Results: The sample (N=140) was mean age 56 years (SD=10.7), 77% female, 71% White, 52% married and 34% completed high school or trade school. At POST, participants assigned to CBT, EXER, or CBT+EXER reported fewer depressive symptoms ($p < .01$), improved automatic thoughts ($p < .04$), improved physical quality of life (QOL; $p=.01$), and improved diabetes distress ($p < .01$). Participants in EXER and CBT+EXER reported improved diabetes-specific QOL ($p < .01$) compared to UC. Pairwise comparisons showed the odds of achieving at least partial remission from MDD for CBT and EXER groups were 12.6 and 5.6 times the odds for UC, respectively ($p < .03$). Odds of full remission for CBT, EXER, and CBT+EXER were 5.3 to 6.5 times the odds for the UC group ($p < .01$) as assessed by psychiatric interview. For participants with a baseline HbA1c≥7.0, EXER resulted in a clinically meaningful 0.7% improvement in HbA1c ($p < .03$).

Conclusions: Program ACTIVE is a set of manualized interventions that has demonstrated clinically meaningful improvements in depression and glycemic outcomes in adults with

T2DM. These interventions are beneficial to behavioral health and exercise professionals to increase access to depression treatment for patients with T2DM.

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B096 6:00 PM-7:00 PM

PSYCHOLOGICAL STRESS, SOCIAL SUPPORT, AND GLUCOSE REGULATION IN A LOW-INCOME MIGRANT COMMUNITY ON THE U.S.-MEXICO BORDER

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The global increase in type 2 diabetes (T2DM) prevalence has become an urgent public health concern. Migrants and other low-income individuals living near the U.S-Mexico border are at elevated risk for T2DM due to poor access to medical care, disrupted employment, psychological stress, and lack of social support. Prior research has shown a relationship between psychological stress and the development of glucose dysregulation and T2DM. Social support is associated with better health and may influence the relationship between stress and glucose regulation. This cross-sectional study explored the association of self-reported psychological stress with clinically measured glucose regulation in a convenience sample of individuals seeking free medical care in Tijuana, Mexico in 2016, and explored whether social support moderated this relationship. Participants were 165 Hispanic/Latino adults $\geq$18 years old who spoke Spanish or English. Stress was measured using the 4-item Perceived Stress Scale (PSS); social support was assessed via the 12-item Interpersonal Support Evaluation List (ISEL). Glucose regulation was determined by point-of-care hemoglobin A1c (HbA1c) percentage. Participant mean age was 46.9 years (SD = 11.7) and 76.4% were male. The majority (74.5%) reported history of migration to the U.S., 78.9% reported at least one experience of deportation out of the U.S., and 35.8% reported intent to migrate to the U.S. in the next year. Mean HbA1c percentage was 6.1% (SD = 1.8), which falls in the range of prediabetes. Mean PSS score was 7.1 (SD = 3.0, range = 0-16); mean ISEL-12 score was 19.5 (SD = 6.8, range = 0-36). Stress was significantly associated with glucose regulation ($r = .24$, $p < 0.01$). Adjusting for age, sex, and education, individuals who reported higher stress had significantly higher (poorer) HbA1c values ($\beta = 0.14$, $p < .01$). This relationship remained significant after controlling for previous diabetes diagnosis. Social support was negatively associated with stress ($r = -.42$, $p < .01$), but not associated with glucose regulation, and did not moderate the relationship between stress and glucose regulation. Psychological stress is a prevalent and potentially modifiable determinant of cardiometabolic risk in low-income individuals and migrants living along the U.S.-Mexico border. Interventions for stress reduction and management may reduce risk for diabetes and decrease individual and public heath costs in both the U.S. and Mexico.

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B097 6:00 PM-7:00 PM

RACIAL DIFFERENCES IN PREVALENCE OF DIABETES AND DIABETES SELF-MANAGEMENT USING CALIFORNIA HEALTH INTERVIEW SURVEY (CHIS)

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Background: Diabetes affected 9.3% of the U.S population in 2012 and the prevalence continues to rise rapidly. Minority groups are affected by diabetes significantly at a greater rate compared to White Americans. Despite having lower BMI, Asian Americans are more likely to have diabetes compared to White. Among Asians, Asian Indians and Filipinos are found to have the highest prevalence of diabetes. Scholars have stated that 95% of the diabetes care is self-care. Therefore, the integral part of effectively managing diabetes is to practice good diet, physical activity, blood sugar monitoring, medication adherence and self-efficacy. Although diabetes management practices among different ethnic groups have been studied, little is known about diabetes management among Asian.

Methods: We used data from 2009 CHIS to study racial differences in the prevalence of diabetes and diabetes self-management. We performed a univariate analysis to describe the prevalence of diabetes among racial and ethnic groups. A multivariate logistic regression model (including age, gender, level of education, insurance, BMI, poverty level and regularity of exercise) was conducted with weighted analyses using svy from STATA version 13.

Results: Among 47,614 California adults, the prevalence of diabetes was 8.46% (95% CI 0.08-0.10). American Indians/Alaska Natives (26%, 95% CI 0.16-0.40) had the highest prevalence of diabetes among all race groups. White Americans had the lowest (6.3%, 95% CI 0.06-0.07) prevalence of diabetes followed by Asian Americans (7.75%, 95% CI 0.06-0.10). However, the disaggregation of Asian data indicates that Filipinos (12.4%, 95% CI 1.23-3.57) are significantly more likely to have diabetes compared to White. In multivariate analysis, being a male, older, having lower education, health insurance, low poverty level, being obese, and not exercising were associated with having diabetes. Among ethnic groups, Koreans are worst at self-managing diabetes.

Conclusion: Finding indicates that diabetes prevalence is increasing rapidly in Asians compared to Whites. It also highlights the importance of disaggregating data to understand diabetes prevalence among racial and ethnic groups. The difference in diabetes management demonstrates the importance of culturally integrated interventions to target these populations.

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B098 6:00 PM-7:00 PM

REPRODUCTIVE HEALTH AWARENESS AND COMMUNICATION IN DIABETIC ADOLESCENT LATINAS AND THEIR MOTHERS

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Introduction: Diabetic adolescent Latinas are at increased risk for reproductive health (RH) complications, including poor maternal/child outcomes. Current recommendations require that preconception counseling (PC) start at puberty.

Purpose: To describe understanding of diabetes, sex, family planning, pregnancy, and PC among diabetic young Latinas (13-21 yrs.) and their mothers and to explore cultural modifications of a validated PC program for diabetic teens (READY-Girls).

Methods: Qualitative, descriptive study; used open-ended questions and markups of the READY-Girls book. Latina mothers and daughters reviewed pages from the book and wrote comments on pages. Analysis was guided by qualitative descriptive methods. Responses to questions and markups were transcribed for theme analysis. Three members of the research team discussed themes and consensus was reached.

Sample: 19 daughters and 13 mothers were recruited from a children's hospital. Most daughters (n=11) were 16-18 yrs.; 11 had type 2 diabetes (T2D) and 8 T1D.

Results: Major themes: 1) Lack of Latina mother-daughter (M-D) communication about sex and pregnancy (e.g., most M-Ds had not talked about sexuality or pregnancy; mothers want daughters to initiate conversations but daughters may be uncomfortable), 2) importance of diabetes management (most M-Ds reported healthcare providers (HCPs) discussed diabetes but did not provide PC or RH information), 3) diabetes complications on pregnancy (e.g., infant mortality, maternal death, infertility), 4) importance of safe sex, while difficult to discuss (e.g., both M-Ds expressed that talking about RH was important but "awkward", “embarrassing”; mothers were concerned about teen pregnancy; daughters stated that teen sex/pregnancy is seen as disappointing; most M-Ds stated their culture encourages delay of sex/pregnancy until marriage), and 5) lack of communication between girls HCPs about RH (e.g. only 5 daughters and 1 mother reported having heard of PC).

Conclusions: While diabetes information was provided by HCPs, deficits were reported in RH. Many M-Ds do not appear to be discussing RH amongst themselves. These data can help to modify a culturally-relevant PC program for young Latinas and support further research.

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B099 6:00 PM-7:00 PM

SELF- AND SOCIAL REGULATION IN EMERGING ADULTS WITH TYPE 1 DIABETES

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Self-management of type 1 diabetes (T1D) poses significant regulatory challenges where patients must simultaneously engage in self-regulation (regulating their thoughts, behaviors, and emotions) together with regulating their social context to facilitate optimal diabetes management and outcomes. Previous dynamic systems modeling with this sample during late adolescence revealed multiple facets of self-regulation were coordinated together and that facets of social regulation (disclosing to parents so that parents are knowledgeable and can help) were coordinated separately for mothers and fathers. Further, mothers' helpfulness specifically served to support adolescents' self-regulatory efforts. Due to normative developmental changes in relationships during late adolescence, with parents potentially becoming less involved, it is important to examine how self- and social regulation function in diabetes management in the face of these changes. The goal of the study was to investigate whether this same self- and social-regulatory structure characterized the self- and social regulation of these individuals one year later as these emerging adults managed their diabetes in the context of friend relationships. Emerging adults with T1D (N=203, M_{age} = 18.7) reported – for both mothers and fathers - how much their parents knew about their diabetes management, whether they disclosed to their parents, how helpful their parents and friends were for their diabetes management, as well as multiple facets of their own self-regulation surrounding diabetes care (negative affect, self-regulatory failures, and adherence behaviors) for 14 days in an online diary. Using a dynamical systems approach, a multi-level latent coordination model was used to first evaluate the coordinative structure of self- and social regulation and then identify which of the variables drove the changes in other variables in the diabetes management system. Consistent with patterns observed in late adolescents, the best-fitting model included separate factors for social regulation involving mother and father and for self-regulation. However, a shift emerged in the relations between these coordinated structures from the previous time point. Mothers no longer drove day-to-day changes in regulation, and fathers were much more distally connected. Neither mothers nor fathers significantly influenced changes in daily self-regulation surrounding diabetes. The results suggest greater independence between self and social regulation in the diabetes

management system during emerging adulthood than during adolescence, which is consistent with broader normative changes in the emerging adults' relationships with their parents.

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B100 6:00 PM-7:00 PM

SELF-CONTROL IS ASSOCIATED WITH ADHERENCE TO CERTAIN SELF-CARE BEHAVIORS AMONG ADULTS WITH TYPE 2 DIABETES

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The initiation and maintenance of diabetes self-care behaviors (i.e., taking medications, eating healthily, exercising, and self-monitoring blood glucose) are critical for achieving optimal glycemic control and preventing diabetes complications. However, rates of self-care adherence remain low among adults with type 2 diabetes (T2D). Self-control is the ability to alter one’s emotions, desires, and behaviors to meet long-term goals, and may be a determinant of self-care initiation and maintenance. Associations between self-control and healthier eating and more exercise have been reported among people without diabetes and people with type 1 diabetes, but evidence of these relationships among people with T2D is limited. Therefore, we examined cross-sectional associations between self-control and adherence to diabetes self-care behaviors using baseline data from a diabetes self-care promotion intervention.

Adults with T2D who were receiving care at Federally Qualified Health Centers in Nashville, TN consented, provided patient characteristics (i.e., age, gender, race/ethnicity, education, income, insulin status, and diabetes duration), completed the Brief Self-Control Scale (BSCS), Adherence to Refills and Medications Scale for Diabetes (ARMS-D), Personal Diabetes Questionnaire (PDQ) to assess eating behaviors, the International Physical Activity Questionnaire (IPAQ), and the Summary of Diabetes Self-Care Activities (SDSCA) blood glucose monitoring subscale, and received a blood-drawn A1c test. We regressed each self-care behavior onto self-control, separately, first unadjusted and then adjusted for patient characteristics and A1c.

Participants (n=64) were 51.5±10.5 years old; 60% female; 61% non-White; 38% had ≤a high school degree, 61% had annual incomes < $35K; 53% were on insulin and reported being diagnosed with T2D for 8.6±6.5 years with an A1c of 8.7±2.0. Participants scored 30.3±5.2 on the BSCS (possible range 8-40). Higher self-control was associated with healthier eating in unadjusted (β=.38, $p < .01$) and adjusted (β =.34, $p < .05$) analyses, and with better medication adherence in unadjusted (β=.28, $p < .05$), but not adjusted (β =.24, p=.12) analyses.

Among adults with T2D, self-control was associated with both better adherence to medications and healthier eating, but was a stronger determinant of eating than taking medication. Self-control may be an overlooked reason some patients with T2D adhere to certain self-care behaviors while others do not. Future studies should examine these associations longitudinally with larger samples and different self-care measures. Finally, examining modifiable predictors of self-care (e.g., self-efficacy) as mediators of associations between self-control and self-care may identify targets for interventions among adults with low self-control.

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B101 6:00 PM-7:00 PM

STRESSFUL LIFE EVENTS AND GLYCEMIC CONTROL IN YOUNG ADULTS WITH T1D

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Background: For young adults with type 1 diabetes (T1D), stressful life events may impact their ability to achieve glycemic goals, possibly by altering their ability to perform self-management.

Methods: Data from 4,745 participants (age 18 to < 31 years old) in the T1D Exchange Registry were analysed. Report of a stressful life event was defined as one or more positive responses on a 15-item stressful life events index created for use in the registry, and defined as a dichotomous variable (yes-no). Comparisons using Wilcoxon and χ^2 tests were conducted between participants who were classified as having a stressful life event vs. those who did not. Linear regression was used to test associations between stressful life events and A1c levels. Ordered logistic regression was used to test associations between stressful life events and frequency of missing insulin doses. Frequency of missing insulin doses was treated as a categorical variable with 3 values, never/rarely missing a dose (< 1x/week), occasionally missing a dose (1-2x/week), or often/freqently missing a dose (>2x/week). Regression models were adjusted for age, sex, and race/ethnicity.

Results: Nearly half (48.0%) of respondents reported having a stressful life event within the preceding 12-months. The most frequently reported stressful life events were problems at work or school (15.8%), financial problems in the family (14.5%), serious arguments with family members or a close friend (13.9%), and moved to a new home (12.1%). Compared to the group not reporting stressful life events, those that reported stressful life events were more likely to be female, have a lower household income, and have a higher level of educational attainment (all $p < 0.001$). The stressful life event group had a higher mean A1c 8.5±1.8% vs 8.2±1.7% ($p < 0.001$). Compared to a person not reporting stressful life events, an equivalent person reporting a stressful life event was more likely to miss insulin doses >2x/week (13.3% vs 20.0%), and less likely to miss insulin doses < 1x/week (64.5% vs. 54.7%).

Conclusion: These findings may indicate that for young adults with T1D the experience of a stressful life event may increase their risk of poorer glycemic control, possibly by disrupting

performance of self-management. Further exploration of these relationships may allow for the potential for future identifying those at risk and assisting them with more positive approaches to managing stress.

The source of the data is the T1D Exchange, but the analyses, content and conclusions presented herein are solely the responsibility of the authors and have not been reviewed or approved by the T1D Exchange."

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B102 6:00 PM-7:00 PM

ACCULTURATION IS ASSOCIATED WITH RESTRAINED EATING AMONG LATINO ADOLESCENTS

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Background: Dietary behavior shifts among adolescents as they acculturate from their heritage culture to the receiving culture in the United States. Eating habits such as restrained eating have been understudied in Latino adolescents. As acculturation to the United States increases, exposure to social norms to maintain or lose weight might lead to an increase in levels of restrained eating as a means to control diet and improve weight status. The objective of this study was to explore the influence of acculturation on restrained eating among Latino adolescents in Southern California. It was hypothesized that greater acculturation would be positively associated with greater restrained eating.

Methods: Latino adolescents (*n* = 131) in Grades 9-12, aged 14 to 17 years, at public schools in Southern California were recruited and completed a single self-report survey using mini laptops. Acculturation was assessed using Unger's Acculturation, Habits, Interests Multicultural Scale for Adolescents, 5-item family support for dietary habits scale, and a 10-item subscale from the Dutch Eating Behavior Questionnaire to measure restrained eating. Multiple linear regression tested acculturation on restrained eating controlling for age, gender, BMI, SES and family support for dietary habits.

Results: As acculturation increased, ($B=0.254$, $p < .01$) restrained eating increased as predicted. BMI ($B=0.464$, $p < .01$) and family support ($B=.228$, $p < .01$) were positively associated with restrained eating, while SES ($B=-.199$, $p < .05$) was negatively associated with restrained eating.

Conclusions: Acculturation was positively associated with restrained eating among Latino adolescents. Future research should continue to examine acculturation as a predictor of restrained eating to delineate if this relationship holds in more ethnically diverse populations.

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B103 6:00 PM-7:00 PM

COMPARING MINDFULNESS-BASED WEIGHT MANAGEMENT TO CURRENT STANDARD PRACTICES

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Background: Comprehensive approaches to weight loss that incorporate behavioral components are needed to address barriers to long-term weight loss maintenance. Investigating the practice of mindfulness as a behavioral tool to enrich weight loss programs is an emerging field of research.

Objectives: The purpose of this study was to compare the effectiveness of a 12-week mindfulness-enriched weight management program to a 12-week standard behavioral weight loss program on changes in weight.

Methods: This was a two-group randomized experimental design study. Adults (n=53) between the ages of 25 and 65 with body mass index between 28 and 45 kg/m^2 were recruited. The pool of participants was randomized into either the standard group or the mindfulness group, and then further subdivided into two smaller groups of 8 to 13 participants each. Each group met once per week for 60 minute sessions with a registered dietitian for twelve weeks. Paired t-tests were used to assess changes over time among participants. Independent t-tests were used to compare changes over time between the two groups. Pearson's correlation coefficient was used to determine associations between variables.

Results: 40 people completed the 12-week intervention. The sample was 90% white, 90% female, 48 ± 11.5 years of age on average, with an average BMI of 33.9 ± 4.3 kg/m^2. At 12 weeks, the mean difference in weight loss between the two groups was not significant (p=.45), with the intervention group losing 8.75 ± 7.8 lbs. and the standard group losing 6.35 ± 6.8 lbs. Mindful eating scores improved by 14% on average in the mindful group versus 6.6% in the standard group (p=0.18). Levels of general mindfulness improved by 6.9% in the mindful group versus 0.8% in the standard group (p=0.326). A change in mindful eating was correlated with weight loss in women (R=0.444, p=0.008), but not men (R=-0.833, p=0.167) in the entire sample.

Conclusions: Both groups produced significant weight loss, however, the two groups were not different at 12 weeks. The impact of change in mindful eating on weight was evident in

women, but not men; this suggests different causal pathways for overeating in women and men.

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B104 6:00 PM-7:00 PM

PERCEPTION VS. REALITY: IS IT MORE EXPENSIVE TO GROCERY SHOP ON A VEGAN/VEGETARIAN DIET?

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Introduction: Adhering to a vegetarian or vegan diet is associated with a range of health benefits, including lower risk of cardiovascular disease, hypertension, and type II diabetes. Despite these health benefits, Americans are predominately omnivores. A common argument against adopting a vegetarian/vegan diet is that it is more expensive than an omnivorous diet. This study aims to examine if there is an empirical basis for this concern by contrasting perceptions of cost of vegan and vegetarian diets with the actual amount of money spent grocery shopping by omnivores, vegetarians, and vegans. **Methods:** Community members (*n*=540, mean Age= 31.12, SD= 12.72, 79.7% female, mean BMI=24.22, SD=5.14) completed a computer-based battery of measures assessing food preferences and eating behaviors. **Results**: Using a paired samples t-test, it was found that omnivores view vegans as richer than themselves (t(158) = 3.31, p = .001), vegetarians view omnivores as richer than themselves (t(76) = -2.16, p = .034), and vegans view both omnivores and vegetarians to be richer than themselves (t(274)= -4.64, p < .001; t(274)= -4.07, p < .001). 52.3% of omnivores (n= 58), 13.3% of vegetarians (n=6), and 5.5% of vegans (n=10) agreed that a vegetarian diet is more expensive than an omnivorous diet [χ^2 = 90.83, *p* = < .001, ϕ=.52]. Similarly, 61.6% of omnivores (n=98) and 41.8% of vegetarians (n=33) thought a vegan diet is more expensive than a vegetarian diet [χ^2 = 8.42, *p* = .01, ϕ=.19]. Despite these perceptions, there were no significant group differences in reported amount of money spent on groceries in an average week (M = 103.86, SD = 78.42 in omnivores vs. M = 110.29, SD = 114.41 in vegetarians vs. M = 103.14, SD = 80.20 in vegans; F(2, 296) =.12, p = .89, = .001). **Discussion:** Although vegan and vegetarian diets are often perceived as more expensive, this study provides evidence that there is no difference in the amount of money spent on groceries per week between omnivores, vegetarians, and vegans. In fact, many countries around the world eat less meat because these diets are more affordable. It is important to educate people on the health benefits associated with adopting a vegan/ vegetarian diet and inform them that the cost barrier is a mere perceived, as opposed to a real, obstacle of adopting this diet.

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B105 6:00 PM-7:00 PM

PROMOTING HEALTHIER CHILDREN'S MEALS AT QUICK-SERVICE AND FULL-SERVICE RESTAURANTS: RESULTS FROM A FEASIBILITY STUDY

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Background: Energy dense restaurant foods contribute to childhood overweight. Promoting healthier kids' meals in restaurants may lead to increased sales of these items, thus improving children's nutrition and demonstrating to industry a demand for these items.

Methods: An 8-week intervention using four strategies (toy incentive, placemats, server prompts, signage) to promote healthier kids' meals was implemented at two locations each of a quick-service (QSR) and full-service (FSR) restaurant chain. Convenience samples of 1st-4th grade children and their parents (n=28) were surveyed regarding parent and child perceptions of intervention components. Restaurants' sales of healthier kids' meals were examined before and during the intervention.

Results: Parent and child-reported awareness of intervention components varied, with greatest awareness of the sign and placemat. At the FSRs, the percentage of monthly kids' meals sales from healthier kids' meals was 4.9% at baseline, 8.1% during implementation, and 6.3% at study end. The percentage of monthly sales from healthier kids' entrees at the QSRs increased from 61.7% at baseline to 61.8% during implementation, and ended at 63.1%; however, the percentage of monthly sales from healthier kids' side dishes decreased from 25.0% at baseline to 23.0% at implementation, and ended at 22.9%.

Conclusions: Initial study findings indicate promising strategies for future restaurant interventions, while also uncovering barriers that can inform future work. Given the mixed results for parent and child awareness of intervention components, future studies can build upon these findings and maximize the feasibility, effectiveness, and sustainability of efforts to promote healthier eating in restaurants.

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B106 6:00 PM-7:00 PM

SEVERITY OF DEPRESSIVE SYMPTOMS AFFECTS WEIGHT LOSS GOALS, EATING PATHOLOGY, AND DIETING BEHAVIORS IN COLLEGE WOMEN

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College women are at particularly high risk for dieting and unrealistic weight loss goals, disordered eating, and depressive symptoms. A number of studies have explored how disordered eating behaviors and weight loss goals differ between depressed and non-depressed college women. However, few studies have investigated whether such behaviors and goals differ across various degrees of depressive symptomatology. The purpose of this study was to explore differences in weight loss goals, eating pathology, and dieting behaviors among college women screened as minimally depressed, moderately depressed, and severely depressed.

Methods: Participants consisted of 166 undergraduate women who completed the Center for Epidemiologic Studies – Depression Scale (CES-D), Binge Eating Scale, and Three Factor Eating Questionnaire. Participants also self-reported their dieting histories and self-efficacy, weight loss goals, and eating behaviors. Participants were divided into three groups using CES-D cutoff criteria previously demonstrated to correspond with minimal, moderate, and severe depressive symptomatology. ANOVA and post-hoc testing were used to explore differences among the three groups.

Results: Although there were no significant differences in BMI across the three depression groups, minimally depressed women endorsed a higher percentage of desired weight loss compared to moderately depressed women, $F(2,162) = 4.48$, $p=.013$, as well as greater dieting self-efficacy compared to severely depressed women, $F(2,59) = 2.16$, $p=.043$. Significant differences also emerged with respect to eating pathology, with minimally depressed women reporting lower levels of eating disinhibition than severely depressed women, $F(2,159) = 3.06$, $p=.049$, as well as lower levels of binge eating compared to both other groups, $F(2,157) = 6.65$, $p=.002$. With respect to dieting behaviors, severely depressed women initiated dieting behavior at an earlier age compared to moderately depressed women, $F(2,74) = 3.24$, $p=.044$, whereas moderately depressed women endorsed less weight loss via diet and exercise compared to minimally depressed women, $F(2,74) = 3.21$, $p=.046$.

Discussion: Results suggest that severity of depressive symptoms may affect eating behaviors

and weight loss goals differently in college women. Specifically, those with lower levels of depression may be at the highest risk for unrealistic weight loss goals, whereas those with higher levels of depression may be at the highest risk for eating pathology. Future studies should continue to explore how severity of depressive symptoms affects eating behavior and weight loss in college women, as doing so can allow for enhanced outreach and screening efforts aimed at this population.

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B107 6:00 PM-7:00 PM

THE ROLE OF LATINO CHILDREN'S ACCULTURATION ON THEIR MOTHERS' DIETARY INTAKE AND DIETARY BEHAVIORS

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Purpose. Though theories posit the importance of family-level factors on health behaviors, the role of children in mothers' dietary intake has received little attention. This study examined the relation between Latino children's acculturation and mothers' dietary intake/behaviors. We also examined the mother-child acculturation gap to identify the types of dyads related to mothers' lower diet quality. **Methods.** Baseline surveys were collected from 361 Latino mother-child dyads enrolled in a family-based dietary intervention. Dyads resided in Imperial County, CA, located on the US-Mexico border. Children were between 7-13 years old. Daily intake of fruits, vegetables, and sugary beverages, percent of calories from fat, weekly away-from-home foods, percent of weekly grocery dollars spent on fruits and vegetables, and summary scores of healthy and unhealthy dietary practices were examined. Bidimensional acculturation was assessed using continuous measures of Hispanic and non-Hispanic dimensions and acculturation groups (assimilated, bicultural, traditional, and marginalized). Three computation methods determined the acculturation gap: a) difference score in acculturation; b) match/mismatch in acculturation groups; and c) interaction between mothers' and children's acculturation scores. Separate regression models with child acculturation or mother-child acculturation gap were tested for each dietary outcome. **Results.** Having an assimilated vs. a bicultural child was inversely related to mothers' vegetable intake and positively associated with the likelihood of engaging in unhealthy dietary practices. The match/mismatch computation method demonstrated the most associations with unhealthy dietary outcomes (sugary beverage servings, percent of calories from fat, away-from-home eating, and engaging in unhealthy dietary practices). Overall, traditional mothers of assimilated children reported lower diet quality than others. **Discussion.** Results suggest that assimilated children may be important to their mothers' dietary intake/behaviors. Researchers should examine the potential mechanisms for how and under which circumstances assimilated children affect their traditional mothers' dietary intake/behaviors.

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B108 6:00 PM-7:00 PM

THE ROLE OF STRESS AND NEGATIVE AFFECT IN FOOD CONSUMPTION FOR INDIVIDUALS WITH COMORBID ADDICTION TO FOOD AND ILLICIT SUBSTANCES

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Individuals recovering from a substance use disorder (SUD) tend to experience excessive weight gain in the first year of recovery (Cowan et al, 2008). There has been little or no research into the nature of this phenomenon, or its consequences. Koob et al's (1997) theory of spiraling dysregulation suggests that people with food addiction (FA) during the early stages of recovery from a SUD might be prolonging a cycle of negative reinforcement, replacing an illicit substance with unhealthy food, in response to negative affect (NA) or daily stressors. In the long term, continuing the negative reinforcement cycle may lead to relapse.We examine eating patterns of N=108 people in their first 12 months of recovery from alcohol and drugs with an emphasis on 'self-medicating' with food (i.e., non-nutritive eating in response to daily stress or negative affect). We describe who in the sample meets criteria for FA, which was measured using the modified Yale Food Addiction Scale. We then test the hypothesis that who meet the threshold for FA will eat more calories and a diet characterized by a higher glycemic load (GL) on days when they report feeling higher levels of stress and NA.Participants received brief ecological momentary assessment surveys delivered to their personal mobile phones up to 4 times per day for 7 consecutive days. These surveys assessed affect and stress levels in the moment. There were up to 3 of these intensive measurement bursts, each spaced 6 weeks apart. Additionally, participants received a phone call from a trained interviewer to conduct a 24-hour dietary recall each day during the bursts. Nutritional information was coded using NDSR software.Because our outcomes were counts and daily data were nested within individuals, we applied generalized linear mixed models to assess the effect of daily stress, daily NA, and the interaction between daily stress and daily NA with FA on total calorie consumption (controlling for gender and weight) and total GL (controlling for total calories). People with FA, but not those without, consume more calories on days characterized by higher levels of stress. Whereas all people tend to consume a higher GL diet on days characterized by higher levels of NA, this was particularly true for people who met criteria for FA. We characterize participants with comorbid SUD and FA and those with SUD only.

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B109 6:00 PM-7:00 PM

USAGE AND PERCEPTIONS ASSOCIATED WITH HEALTHFULNESS OF VENDING MACHINES IN PUBLIC INSTITUTIONS

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Energy-dense snack foods are ubiquitous among vending machines, and though school settings have become a recent focus for intervention, little work has been done to assess vending machines at public institutions, worksites, and other key locations such as hospitals. The purpose of this study was to assess the healthfulness, usage and perception, and nutritional standards of vending machines in a sample of 13 public institutions, including hospitals, across a Midwest state. Data were collected using the Nutrition Environment Measures Survey-Vending (NEMS-V) to assess the healthfulness of foods and beverage options, a survey to assess employee perceptions and usage of vending machines at work, and interviews with designated representatives about practices and policies regarding nutritional standards of vending machines at their institutions. Of the 44 vending machines assessed, seven (each at different institutions) received a NEMS-V award because at least 30% of foods or 55% of beverages met nutritional criteria aligning with the 2010 Dietary Guidelines for Americans. Four institutions reportedly engaged in practices or policies with regard to purchasing requirements; placement, promotion, pricing policies; and/or comprehensive nutrient standard(s) for their vending machines, all of which had one award-level vending machine. Of the 520 employees surveyed, 12% reported purchasing food at least once per week and 20% reported purchasing a beverage at least once per week from the vending machine, though 40% reported that they would be more likely to use the vending machine if there were a greater variety of healthful options. While few (20%) reported that they perceived most foods and beverages in the vending machines at work to be healthy, employees of institutions with an award-level vending machines were significantly more likely to perceive the foods and beverages to be healthy ($X^2(1, N = 471) = 66.8$, $p < 0.001$). Given the prevalence of less healthful options available through vending machines, perception of employees that vending machines are relatively unhealthy, and lack of nutritional standards with regard to vending machines, these findings underscore a need for implementing evidence-based nutrition standards for vending machines in public institutions, especially among institutions where vending may be an important source for meals.

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ADVOCACY AND INFLUENCE IN A NEW MEDIA LANDSCAPE: WHAT CAN WE LEARN FROM BIG MEDIA DATA?

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The strategies that experts have used to share information about social causes have historically been top-down, meaning the most influential messages are believed to come from planned events and campaigns. However, more people are independently engaging with social causes today than ever before, in part because online platforms allow them to instantaneously seek, create, and share information. Big data analytics make it possible to rapidly detect public engagement with social causes by analyzing the same platforms from which organic advocacy spreads. To demonstrate these claim we evaluated several high-profile cases covering a range of subjects, including Leonardo DiCaprio's 2016 Oscar acceptance speech citing climate change, Charlie Sheen's HIV status disclosure, Brazilian President Lula's throat cancer disclosure which he attributed to smoking, and Awareness Days such as the Greater American Smokeout and World No Tobacco Day. Using news trends (Bloomberg Terminal news archives), social media (Twitter postings) and information-seeking (Google searches and Wikipedia page views) about the related health issues we can assess the impact of these events. Because these data are freely available in real-time our analytical strategy provides substantial lead time for experts to detect and participate in organic advocacy while an issue is salient. By amending our communication frameworks, building infrastructure for monitoring, and reacting to organic advocacy in near real time, we open novel possibilities for communication advocacy and research. we believe that ignoring organic advocacy and bottom-up communication approaches imperils the effectiveness of media advocacy and, ultimately, public health. The scientific community must adapt to the 21st century dynamic communication landscape and ready itself for the next opportunity to harness the agents of change.

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DESIGN CONSIDERATIONS FOR MHEALTH TOOLS FOR SMOKERS NOT READY TO QUIT

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Most smoking interventions—including apps—are designed for smokers who are ready to quit. In contrast, most smokers want to quit someday, but are *not yet* ready, so existing cessation apps do not fully address their needs. If apps were designed for smokers not ready to quit, they could encourage and assist more people in quitting. But little is known about how to design these programs to be appealing and effective. To address this gap, we surveyed smokers online from across the U.S. (n=116) to assess whether they 1) were interested in mHealth tools to help them decide if, when, or how to quit smoking and 2) their preferred app features and functionality. Participants were adults who wanted to quit smoking someday, but were not yet ready to quit, and owned a smartphone. The sample was 72% female, 7% Hispanic, 69% white, and 41% only had a high school degree. Only 3% had downloaded a cessation app, but most were interested in an app to help them reduce smoking (88%) or decide if, when or how to quit (91%). Participants rated the importance and appeal of 35 specific app features, functions, and topical content. We also assessed the maximum they would be willing to pay for this app and what reputational metrics they thought were most important (e.g., app source, recommendation from doctor, user ratings). Features viewed as 'very important' included: password protection, a trusted source, and that the app does not access other personal information. Functions rated as 'very appealing' included: ability to track smoking and spending on cigarettes, earn points/rewards, and redeem these for gifts. Content rated as 'very appealing' included guidance how to quit and help managing withdrawal. Participants generally were not interested in video chat with experts or peers, sharing their progress with family/friends, or connecting via social media. These and other findings will be discussed. Overall, smokers not ready to quit are interested in smoking-focused apps, but their design and marketing may need specific tailoring. Results will be contrasted against findings from similar research with smokers who are ready to quit. Results are relevant to addiction treatment experts, design experts, and software developers interested in mHealth.

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DEVELOPMENT OF A MOBILE APP TO ENGAGE AND EMPOWER BREAST CANCER PATIENTS

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Background: The emPower mobile application (App) was developed to engage and support breast cancer (BC) patients by increasing awareness of emotions, physical symptoms, and physical activity. The App offers a mobile connection between the patient, care team and other BC patients via the Apple Watch and iPhone. Procedure: To test the feasibility and acceptability of a native iOS App in a clinical setting, patients in active treatment for BC were recruited between Dec 2015-May 2016. Participants were given an Apple Watch and an iPhone 5s with a service plan, if they did not own an iPhone. Group training sessions were held at the Cancer Center lasting about 3 hours: approximately 1 hour of training/questions and 2 hours of socialization. Participants were alerted daily to complete a brief check-in on the Watch or Phone regarding subjective wellbeing, distress, pain, fatigue, sleep quality. They also received a daily “inspiration” and choice of physical, social, or mindfulness “challenge.” Optional questions regarding daily physical symptoms could be completed on the Phone if desired. Participants were also prompted to complete weekly and bi-monthly study questions on the Phone: 1) a weekly social support check-in, and 2) questions pertaining to depression (PHQ2) and anxiety (GAD2) every 2 weeks. The App interfaces with the Apple “healthkit,” which passively obtains active calories and steps from the Watch. Distress, pain, fatigue and active calories were presented in an interactive graph on the Phone revealing to the participant the interrelationships between these variables. This data was also available to the care team. Results: Twenty women with various stages of BC were enrolled in the study. Mean age 50 years (range= 27-66 yrs.); 80% White, 20% African American. Intake assessment completed at enrollment indicated 60% moderate to severe distress, 15% moderate to severe anxiety (GAD7), 20% moderate to severe depression (PHQ9). Data analyzed during the first 4 weeks of use indicated a trend toward increased number of steps taken (Week 1: Mean= 4262 steps, s.d.=3766; Week 4: Mean=5116 steps, s.d.=4293; p=.06) and a slight increase in active calories (Week 1: Mean= 215 calories, s.d.=128; Week 4: Mean=241 calories, s.d.=150; p= ns). Since the participants were in various stages of cancer and treatment, the small changes in activity were expected. Issues encountered during the study mainly pertained to use of Watch and Phone. Participants were evenly split regarding who completed check-ins on the Watch or Phone. Conclusion: Overall, the use of the emPower App proved feasible in a clinical setting and feedback from participants has been positive. One of the most advantageous features

noted by participants was support and knowledge gained from the cohort. This App can be adapted to all types of cancer as well to other chronic diseases.

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HEALTH IT TO INCREASE PATIENT ACTIVATION: DEVELOPMENT AND USABILITY OF A PATIENT-FACING, DIABETES DASHBOARD

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Background
This study aimed to develop and evaluate a patient-facing, diabetes dashboard embedded within an existing patient portal tethered to an electronic health record system to display social and goal-based comparisons of users’ diabetes health data and increase patient activation and improve self-management.

Methods
We performed a qualitative evaluation consisting of semi-structured interviews with 6 stakeholders and key informants (e.g., patient, endocrinologist, primary care physicians, nurse, diabetes educator, health psychologist) to discern content, support needs, and preferences regarding dashboard features and tools. We used grounded theory to analyze these interviews for themes. After prototype design, we conducted usability testing under controlled conditions with 8 patients with type 2 diabetes mellitus. Each patient participated in a single usability session using a “think aloud” process. Patients preformed standardized tasks within a dashboard prototype displaying fictitious patient data. Sessions were audio recorded and computer screen activity was captured using QuickTime Player. Transcripts and recordings were evaluated for common themes. Following testing, patients completed the Computer Usability Satisfaction Questionnaire which assessed their perceptions of the dashboard’s ease of use and the likability of the interface using a 7-point Likert scale, with seven indicating the highest possible satisfaction.

Results
Results showed that stakeholders and key informants desired a dashboard that: (1) displays diabetes health data in ways that facilitate patient understanding and promotes patient activation, (2) facilitates patient action in response to the data they see (e.g., request a test or vaccine, seek advice from their doctor), (3) provides diabetes education relevant to the data being displayed, and (4) facilitates goal setting, tracks progress, and celebrates accomplishments. Usability testing revealed problems with navigation, intuitiveness, design, and terminology. Satisfaction was greatest for "easy to learn to use" (mean 6.6) and lowest for "organization of information is clear" (mean 5.0). Overall mean satisfaction scores improved between prototype iteration one and two (means, 5.9 vs. 6.6).

Conclusions

This study demonstrated that diabetes stakeholders desire a patient-facing, diabetes dashboard that facilitates patients' understanding of their diabetes-related health data and facilitates and track action. Task-based usability testing demonstrated difficulties in navigation, medical language complexity, and organizational schema which led to improvements. The current study also demonstrates that usability testing can assist in making healthcare application interfaces for patients more useable and potentially more usefull.

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ONE DROP MOBILE APP USERS REPORT IMPROVED GLYCEMIC CONTROL

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Objective: Most mobile health apps lack scientific evidence. The One Drop mobile app offers tracking of diabetes self-care behaviors and blood glucose (BG) values manually or automatically via Bluetooth-enabled meters, CGMs, and other health apps. The app includes a robust food library, medication scheduler, recipes, health tips, user polls, and community support ('likes', stickers, and data sharing). Users specify BG and self-care goals, and receive data-driven insights to draw connections between behaviors, goals, self-reported hemoglobin A1c and weight. In July 2016, we assessed A1c change among One Drop users self-reporting a diabetes diagnosis.

Method: We queried data on ~50,000 users, identifying those users with two A1c values at least 60 and no more than 365 days apart. A two-sided paired t-test assessed changes from first to last A1c. Two-sided independent t-tests assessed gender and diabetes type differences on the A1c change score, and Spearman's correlation coefficients assessed relationships between diabetes duration, tracking data, and A1c change.

Results: The sample included 133 users (63 males), including 41 with type 1 (T1D) and 88 with type 2 diabetes (T2D). Average diabetes duration was 12.4 ± 10.8 years with 44.2% using insulin and 50.4% using the One Drop medication scheduler. The average time interval between A1c values was 146.1 ± 76.7 days, with 3,225 ± 5,780 (range: 2-37,838) tracking entries during that period. A1c improved significatly from initial (7.8% ± 2.1%) to final period (7.1% ± 1.3%), two-sided $t=4.2$, $p < .001$, and the change in mean A1c was similar irrespective of gender or diabetes type. However, subgroup analyses by diabetes type revealed substantial A1c improvement among people with T2D (7.7% ± 2.2% vs. 6.9% ± 1.2%; $t=4.0$, $p < .001$), with a trend of improvement among people with T1D (8.0% ± 2.0% vs. 7.5% ± 1.3%; $t=1.7$, $p=0.09$). Changes in A1c were not associated with duration of diabetes or tracking intensity.

Conclusion: People with diabetes using the One Drop health app reported a nearly 0.70% reduction in A1c during 2-12 months of using it. Mean A1c change did not differ by gender or

diabetes type. Ongoing analyses of user data combined with results from a third-party trial will provide further evidence of One Drop’s self-care and clinical value.

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PERCEPTIONS OF SOCIAL MEDIA ENGAGEMENT AND SOCIAL NORMS FOR WEIGHT LOSS

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Background: Examining social media engagement and encouragement as it relates to body weight can provide a channel for understanding the relative influence and impact of social contacts. Purpose: Assess and examine social media engagement, social norms for weight loss, and determine influences and differences by weight status or sex. Method: University students (N=165; mean age=21.8+3.1 years; mean BMI=31.7+3.6 kg/m^2; %female=80%; % non-white=42.4) completed: demographics, social norms for weight loss (i.e., social contacts approve or disapprove of weight loss/provide weight loss information or tools); social media engagement (6-items: “Facebook is part of my every day activity”, “I’m proud to tell people I’m on Facebook”, “I feel out of touch when I haven’t logged into Facebook”, “I feel I am part of the Facebook Community”, “I would be sorry if Facebook shutdown; “Facebook has become part of my daily routine” Cronbach’s alpha=.836). Results: Almost all (98.5%) reported close social contacts would somewhat or strongly approve if they were to lose weight, yet 79.1% reported close social contacts rarely or never provided weight loss information or tools. There were no differences in social norms for weight loss by weight status (overweight vs. obese) or sex. Most endorsed high levels of social media engagement, agreeing or strongly agreeing with Facebook being a routine (78.7%) and daily activity (82.9%), feeling Facebook proud (82.9%) and part of a community (57.7%), and disappointed if Facebook no longer existed (53.8%); yet, only 46.2% reported they would feel out of touch without Facebook. There were no differences in social network engagement by weight status or sex. Chi-square analyses examined the relationship between perceptions of social norms and social networking engagement. When examining the social norm of contacts approving of weight loss, there were significant results for Facebook being a part of one’s routine, a daily activity, and feeling proud to be part of Facebook (p’s < .05). No significant differences were found for the social norm of contacts providing weight loss assistance and social networking engagement. Discussion: Although most reported social contacts approved of weight loss, few reported contacts provided tangible weight loss support. Future studies are needed to examine the directionality of the relationship between approval of weight loss by social contacts and level of engagement in social networks.

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PREDICTORS OF ENGAGEMENT WITH A SMOKING CESSATION APP

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Background: Mobile phones are increasingly being used to deliver smoking cessation interventions. One factor that limits the potential effectiveness of these programs is lack of maintained use of mobile cessation apps ("engagement"). There is a need to better understand factors that are associated with higher engagement with smoking cessation mobile health interventions.

Objective: To examine patterns of use and functionality that are associated with engagement among users of an evidence-based, publicly available smoking cessation app, QuitGuide.

Methods: Individual-level Google Analytics event data tracking and time stamping captured each user action in the app between August 2015 and June 2016. Classification and regression tree analysis (CART) was used to construct a model predicting the number of days a user was active in the app.

Results: 9,348 unique users downloaded the app. Most users were daily smokers (90.5%), reported their cravings were highest in the morning (51.0%), and smoked a mean of 16.2 cigarettes per day. Users were active in the app between 1 and 181 days – with more than half of users only being active 1 day (40.6%) or 2 days (18.9%). In the app, users can report being smoke free, a slip, a craving, or their mood. Tracking cravings and reporting mood were the most used features (53.0% of users reported each). CART analysis identified nine unique groups with varying average number of days in the app. Those who were active in the app for more days more frequently: (1) returned to the app after receiving local notifications (i.e., reminders encouraging to return to the app for support or tips); (2) reported being smoke free; and (3) tracked their cravings.

Conclusion: These findings suggest that specific features – local notifications and self-monitoring (days smoke free, cravings) – may encourage users to maintain use of a smoking cessation app. Also, particular support may be needed for individuals to maintain use of a cessation app beyond one or two days and before they achieve initial abstinence.

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PROSTATE CANCER PATIENTS’ INFORMATION TECHNOLOGY USE, PREFERENCES AND NEEDS: A CROSS-SECTIONAL POPULATION BASED SURVEY

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Objective: To determine how prostate cancer patients want to use the Internet for information and support, and barriers and facilitators to use.

Methods: Surveys were conducted in three provinces in Canada (BC,AB,SK) in 2014-15, using a modified Dillman mail-survey methodology. A random sample of ~55% of the population of men in each provincial registry diagnosed with prostate cancer in the last half of 2012 was surveyed.

Results: Response rates ranged from 46%-55% (N=1007). Mean age was 69 years old. 76% used the Internet, and 63% used the Internet daily. Younger age, higher education, higher income, urban residence and broadband Internet access were associated with Internet use. 74% accessed the Internet with a desktop/laptop 32% with a tablet, and 28% with a smartphone. 53% found it easy to get information from the Internet. 37% agreed that they felt confident using information from the Internet to help make health decisions (eHealth literacy). 31% felt that their confidence in using the Internet to help make health decisions had increased since being diagnosed with prostate cancer. Greater eHealth literacy was associated with better self-reported health status. From a list of 10, top barriers to using the Internet relate to low eHealth literacy inluding: not knowing what to trust (46%); not knowing if it was personally relevant (41%); and not knowing how/ where to search (20%). If access were easy, 58% would want to use the Internet for prostate cancer information. If there was a website designed specifically for men with prostate cancer, 20% would not use it. From a list of 13, top 5 features wanted in such a website were: library (64%); decision support tools (57%); navigation support tools (49%); links to trusted websites (46%); and health assessment

tools (43%). 28% would want it to include an online peer support forum. In this website, 50% or more would want information on: prostate cancer treatments (65%); disease progression (64%); how to manage treatment side effects (61%); personally tailored information (54%); and latest research (53%). Top facilitators for using such a website were: telephone support (40%); using the website with a family/friend (28%); or a personal/group training session (25-24%).

Conclusions: The majority of prostate cancer patients want to use the Internet as a source of information about prostate cancer, but many do not know what information to trust or how to find personally relevant information. To be optimal, prostate cancer websites should offer tailored health information focusing on treatment options and side effects, and include decision support tools and telephone technical support.

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USE AND ACCEPTANCE OF A MOBILE APPLICATION TO PREVENT ALCOHOL MISUSE AMONG MILITARY PERSONNEL

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Background: Alcohol misuse is a serious and growing issue among active duty military servicemembers. There are many barriers to implementing military alcohol interventions, such as the organizational drinking culture, stigma against substance abuse treatment, and the transient lifestyles of servicemembers. The accessibility of mobile health applications (“apps”) offers a unique approach to reaching servicemembers, yet no prior research has examined the feasibility of employing this tool for alcohol misuse prevention in a military setting. The objective of this study was to assess the use and acceptance of a mobile app for alcohol misuse among servicemembers.

Methods: An original app, *Alcohol Determinator*, was developed specifically for Marines. App content was based on the principles of brief intervention and included five components: self-assessment with feedback, drinking log with goal-setting, blood-alcohol content (BAC) calculator, information, and resources. One-hundred fifty-eight active duty Marines were randomly assigned to an intervention group (n=65; 89.1% male, 49.2% White) or an attention control group (n=93; 86.8% male, 50.0% White). The intervention group received *Alcohol Determinator* and the control group received a popular fitness app. After one month, user ratings and app usage data were collected for both study groups via in-app tracking and electronic surveys.

Results: A majority of intervention participants agreed the app was easy to use (82.7%), was appropriate for Marines (74.5%), and would recommend it to another Marine (75.0%). In terms of content, intervention participants were most satisfied with the BAC calculator, feedback on money spent on alcohol and the drinking log charts. Group comparison tests showed intervention participants used the app less often than control participants during the observation period (p.05).

Conclusions: Servicemembers used and favorably reviewed the *Alcohol Determinator.* Mobile apps to prevent alcohol misuse built on evidence-based principles may be an appropriate intervention for this unique, at-risk population.

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B119 6:00 PM-7:00 PM

USING MHEALTH APPS IN SELF-MANAGEMENT INTERVENTIONS TO PROMOTE PHYSICAL ACTIVITY: RANDOMIZED CONTROLLED PILOT STUDY

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Purpose: Examine the effectiveness of using commercially available mHealth apps in a self-management intervention to promote physical activity in 46 adults with mobility-impairing musculoskeletal or neurological conditions, such as arthritis, multiple sclerosis, and fibromyalgia.

Methods: Participants were randomized to one of three groups: (1) mHealth-based self-management intervention, (2) paper-based self-management intervention, and (3) contact-control intervention. All three interventions consisted of one in-person visit plus three phone calls over a six week period. Participants in the mHealth and paper-based intervention groups received a Google Nexus Tablet or a paper diary, respectively, to facilitate goal-setting, self-monitoring, and action planning. Participants in the control intervention received information on healthy behaviors without being taught self-management skills. Outcomes were administered at baseline and seven weeks. Three MANOVAs were conducted: (1) self-report physical activity (planned exercise and leisure-time physical activity, general physical activity, and employment physical activity), (2) psychosocial constructs (self-efficacy, self-regulation, and social support), and (3) physical function (PROMIS, 6-Minute Walking Test, chair stands, and arm curls).

Results: Both the mHealth and paper-based interventions had significant (Wilks' $\lambda = 0.71$, $F_{6, 76} = 2.34$, $P = .04$) and large effect size increases in planned exercise and leisure-time physical activity compared to the control intervention (Cohen’s d = 1.20 and d = 0.82, respectively). The mHealth-based intervention had non-significant but small to moderate effect size increases in planned exercise and leisure-time physical activity compared to the paper-based intervention (Cohen’s d = 0.47). Both the mHealth and paper-based interventions had non-significant (Wilks' $\lambda = 0.85$, $F_{6, 76} = 1.10$, $P = .37$) differences but moderate effect size improvements in self-efficacy (d = 0.48 and d = 0.75; respectively) and self-regulation (d = 0.59 and d = 0.43, respectively) compared to the control intervention. There were no significant changes in physical function within and between the three interventions. Participants were significantly ($P = .02$) more likely to track physical activity behaviors using the paper diary compared to the Google Nexus Tablet.

Conclusions: This study demonstrates the feasibility of conducting a larger randomized controlled trial to examine the use of mHealth apps in self-management interventions. We found that using commercially available mHealth apps in self-management interventions shows promise in promoting physical activity in adults with neurological and musculoskeletal conditions. Further research is needed to improve the usability of mHealth apps for adults with neurological and musculoskeletal conditions.

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VIRTUAL GARDENING PILOT INTERVENTION INCREASES SELF-EFFICACY TO COOK AND EAT FRUITS AND VEGETABLES IN MINORITY YOUTH

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African American and Hispanic youth in Los Angeles have significantly higher rates of overweight and obesity than is reported for these children nationwide. Intake of fruits and vegetables (FV) has been inversely associated with body weight. School gardening programs have shown success in increasing preference of and improved attitudes towards FV, however implementation in urban settings has several limitations. Virtual Sprouts (VS) is a virtual gardening game developed for minority youth and their families. VS teaches users about FV, nutrition, gardening, and cooking through meaningful play.

In this quasi-experimental pilot intervention, elementary school students were enrolled in a 3-week program that included three VS gaming sessions, three in-school lessons, and three in-home activities, using a nutrition- and gardening-focused curriculum. Pre- and post-intervention questionnaires were used to assess psychosocial determinants of dietary behavior, including knowledge about and self-efficacy to eat FV. Data was collected on FV, whole grains, fiber, total sugar, added sugar, and energy from sugar beverages intake via the Block Kids Food Screener (‘last week’ version). Repeated-measures analysis of covariance models was used for continuous outcomes, controlling for age, sex, ethnicity, school, and free school lunch. Ordinal logistic regression was used for binary outcomes with the same covariates.

180 students from 3rd, 4th, and 5th grade classrooms in two Los Angeles Unified School District schools were randomized into intervention and control groups. After the intervention, the intervention group (n=116) had an improved self-efficacy to eat FV score (p=0.01), an improved self-efficacy to cook score (p=0.05), but not a significantly improved self-efficacy to garden score. There were no significant differences in dietary intake between intervention and control groups.

The results from this 3-week pilot study suggest that a virtual gardening game with a nutrition- and gardening-focused curriculum can improve psychosocial determinants of dietary behavior in minority youth.

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B121 6:00 PM-7:00 PM

COMMUNITY KNOWLEDGE OF SOCIAL DETERMINANTS OF HEALTH

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Background: Following the publication of a reporton the health and well-being of African Americans in St. Louis in May 2014, the *For the Sake of All* initiative has focused on engaging and disseminating information to community to increase knowledge of social determinants of health (SDH). Engagement approaches included community feedback meetings, discussion guides, action toolkits, and Community Action Forums (forums).

Methods: Six forums were held at community sites throughout St. Louis from October 2014 through June 2016. Each forum engaged community in a discussion of the impact of SDH on regional health disparities. Forum attendees' self-reported attitudes toward SDH were assessed upon forum registration (pre-event) and approximately 12-weeks following (post-event). Dissemination reach as well as reported changes in attitude were aggregated and assessed.

Results: A total of 426 people have attended the first four forums. Attendees have come from 36 unique zip codes and have been predominantly female (63%-84%), highly educated (70%-86% with at least a bachelor's degree), and affiliated with a community organization (23%-45%) and with higher education (14%-21%). In terms of race, between 41% and 53% of attendees have been white, 25%-34% black, 5%-7% other, and 15%-20% unreported. Each forum draws between 48% and 57% new attendees.

Preliminary results from paired samples t-tests comparing mean differences in pre- and post-event responses indicate small but significant changes in attitude regarding the extent to which health is affected by level of income (Pre M = 8.71, SD = 1.84, Post M = 9.45, SD = 1.00; $t(72) = -4.21$, $p < .001$), level of education (Pre M = 8.03, SD = 1.78, Post M = 8.95, SD = 1.33; $t(72) = -4.99$, $p < .001$), community safety (Pre M = 8.49, SD = 1.71, Post M = 9.27, SD = 1.06; $t(70) = -3.80$, $p < .001$), and having health insurance (Pre M = 8.85, SD = 1.68, Post M = 9.25, SD = 1.16; $t(72) = -2.37$, $p = .02$).There were no significant changes with respect to the influence of personal health practices, access to affordable care, or genetic makeup on health (all *p*s > .05).

Discussion/Conclusion: Public discourse about improving health has long focused on

improving access to health care and on individual health behaviors. Engaging community members in targeted education and discussion about the impact of SDH on health is one method by which public health researchers can shift this discourse to focus on advancing social and economic policy.

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B122 6:00 PM-7:00 PM

COMMUNITY TO CLINIC NAVIGATION TO INCREASE COLON CANCER SCREENING: A DISSEMINATION/IMPLEMENTATION MODEL

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Community to Clinic Navigation to Increase Colon Cancer Screening: A Dissemination/Implementation Model

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Background: Regular screening facilitates early diagnosis of colorectal cancer (CRC) and contributes to reduction of CRC morbidity and mortality. Recent increases in CRC screening utilization are not mirrored in poor and minority populations. CRC screening rates are particularly low for those without a primary care provider or clinic and who also have lower levels of education, income, and insurance. A large proportion of ethnically diverse and poor patients do not regularly visit primary care clinics, further lowering their likelihood for getting screened and underscoring the need to reach this population with effective interventions in community settings.

Purpose: We developed and tested a community to clinic tailored navigation intervention using a dissemination (randomized phase one) and implementation (non-randomized phase two) framework targeting low-income, diverse communities. The final outcomes were: a) clinic attendance, b) CRC screening, and tracking RE-AIM factors of dissemination.

Methods: We randomized 239 community sites to Education + Tailored Navigation (TN) and 116 to Education only. In phase one, all participants received education on CRC risk and screening. Those in the Education only group received up to 5 calls to inquire about appointments/screening. Those in the Education + TN group received up to 5 calls from navigators who assisted them with barriers using a tailored message bank, guiding them to schedule a clinic appointment. In phase two, all those who attended a clinic, regardless of previous group assignment, received TN from a trained study navigator to guide them to complete screening.

Results: Of the 416 participants who completed the baseline survey (53% Female, 47% Male, Mean age 61.5; SD=7.4; 52.7% Latino, 36% Uninsured); 25%; (n = 104) made clinic appointments, and 80% of these participants (n=65) completed a screening test. Overall, the Education + TN participants were 6 times more likely to get screened (54/209, 25.9%, OR = 6.28) than were Education alone participants (11/207, 5.3%).

Conclusions: Adding TN to community education was significantly more efficacious than Education alone, indicating TN was successfully translated into the community setting, with continuing implementation in the clinics to increase CRC screening rates. Reach, effectiveness, adoption, implementation and maintenance data will be discussed.

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B123 6:00 PM-7:00 PM

EXAMINING PARENT ENGAGEMENT IN A FAMILY-BASED CHILDHOOD OBESITY INTERVENTION: A QUALITATIVE STUDY

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Background: Low parent engagement, or limited attendance at or active participation in planned program activities, is often cited as a barrier to the implementation and ultimately, the efficacy of family-based childhood obesity prevention and control programs. This qualitative study examined factors influencing parent engagement in a family-based childhood obesity prevention and control program.

Methods: Participants included 22 mothers (mean age=34.8 years) enrolled in a family-based childhood obesity prevention and control program. Semi-structured interviews guided by the Health Belief Model and Transtheoretical Model assessed parents' motivation for participating, facilitators and barriers to participation, and satisfaction with the program. Interviews were conducted in participants' language of choice (English=13.6%; Spanish=86.4%) in person (31.8%) or via phone (62.2%) following the conclusion of program activities. Interviews were transcribed and summarized. Data were analyzed for differences between parents who attended at least two-thirds of program activities ("high engagement") and those who did not ("low engagement").

Results: There were no significant demographic differences between parents who did and did not complete two-thirds of program activities. Parent engagement was influenced by children's level of support and enthusiasm for the program, and by parental expectations of program benefits to the family. Parents were highly satisfied with the program's content and the community health workers who delivered the program.

Conclusions: This study adds to emergent literature regarding parents' experiences in family-based childhood obesity prevention and control programs. Findings identify potential targets for improving engagement, such as strategies to engage additional family members to increase the support received by the participating parent.

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FEASIBILITY AND ACCEPTABILITY OF GROUP VISIT FOR DERPRESSION IN PRIMARY CARE

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Background: Depression is common in primary care settings and is often chronic, recurring, and comorbid with chronic medical illness. Improving outcomes for depression and chronic medical illnesses requires patients to become educated, active partners in their care. Outpatient psychiatric care is frequently characterized by brief, infrequent individual medication management visits that often fall short of providing guideline-concordant care. Such visits are also insufficient for helping patients with chronic illnesses gain the knowledge, skills, and self-efficacy needed to promote treatment adherence and self-care.

Objective: To assess the feasibility and acceptability of a group visit for depression ("Medication and Self-Management to Empower Recovery (MASTER)") within primary care settings.

Methods: Within the VA Greater Los Angeles' patient-centered medical home, psychiatrists referred patients ≥ 18 years old with depression. Participants were scheduled for a series (16 weeks) of group appointments for depression in VA primary care. Each group was 90 minutes, split between psychoeducation, mindfulness, and a round-robin for medication adjustment and discussion of side effects for each patient. PHQ-9 scores were performed at baseline and group completion. Semi-structured questionnaires at the end of the 16 weeks and qualitative interviews at 3 months follow-up assessed patient experience of the groups, barriers and facilitators, and recommendations.

Results: Of the 9 veterans enrolled, a subsample (n = 6) ultimately completed an average of 7.8 support groups. 5 of the veterans completed the 3 month qualitative interviews. Veterans who completed the interviews would recommend the group to a peer. Some of the Veterans discussed additional topics they would like in the support groups; these were, veterans of different war eras, introduction to relaxation music, pain management for specific conditions. Veterans saw and average of 10.2 points improvement in their PHQ-9 score during the 16 weeks, identified enjoyable activities and coping skills at each session.

Discussion: Group visits for depression were feasible and acceptable in primary care. Veterans with a diagnosis of depression reported that they benefitted from depression support groups. This pilot experience suggests the need for a larger trial to assess the effectiveness of this hybrid treatment model medication management and group self-management support in primary care setting.

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HEALTHY EATING ACTIVE LIVING: PILOT STUDY OF A MULTI-COMPONENT COMMUNITY-BASED PROGRAM AMONG LOWER-INCOME PREGNANT WOMEN

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Healthy Eating Active Living (HEAL) is a multi-component, community-based, community health worker(CHW)-led six-week program designed to promote healthy eating, physical activity, and intention to breastfeed among Medicaid-eligible pregnant women in Houston, TX. Pregnant women are recruited through clinics and participate in weekly 90-minute facilitated and experiential, group-education sessions. The purpose of this pilot study is to evaluate the feasibility and effectiveness of HEAL in improving participants' dietary habits, home nutrition environment, and time spent in physical activity (PA), and intention to breastfeed.

This was a one-group pre-post evaluation design. Availability of fruits and vegetables (FV) (23 items), daily consumption of FV (24 items) and sugar-sweetened beverages (SSB) (1 item), perception (1 item) and frequency (2 items) of PA, and intention to breastfeed (4 items) were measured using self-administered surveys. Ninety-two Medicaid-eligible pregnant women completed both pre-and post- surveys from October 2014-September 2015. Wilcoxin signed-rank test and McNemar's test were conducted to evaluate pre- and post-intervention changes. Process evaluation was conducted weekly using participant surveys to assess program acceptability, and from CHWs through post-session facilitator survey to evaluate program fidelity.

Results showed that participation in HEAL significantly increased home availability of 11 FV ($p < 0.05$), daily FV consumption ($p < 0.05$), and decreased SSB consumption ($p < 0.05$). At post-intervention, significantly more women reported being physically active ($p < 0.05$), and being physically active for over 30 minutes per day ($p=0.03$), and at least 10 minutes at a time ($p < 0.05$). Significant increases in attitude and perceived benefit of breastfeeding ($p < 0.05$) were found at post-intervention, but not in intention to breastfeed. Among women intending to breastfeed, more women planned to continue after returning to work/school ($p < 0.05$).

Process evaluation showed that participants found HEAL sessions very helpful in improving their health behaviors (mean= 3.83, possible score range 0-4). Post-session facilitator survey showed high fidelity of program components (discussion topics 98.9%, physical activity 95.8%, and recipe demonstration 100%).

This pilot study demonstrates the initial feasibility and success of creating successful clinic-community linkage and using a CHW-led intervention to improve health behaviors among low-income pregnant women.

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SUSTAINED IMPLEMENTATION OF A BIOBEHAVIORAL INTERVENTION BY COMMUNITY PROVIDERS

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Background. There is accumulating research on dissemination and implementation (DI) of evidence based treatments (EBTs) for mental health. However, there is a paucity of research regarding the sustainability of these interventions. In the context of a DI effort, mental health professionals completed a 3-day training institute in an evidence-based biobehavioral intervention (BBI) for cancer patients aimed at reducing stress and enhancing mental health. Training was effective (Brothers et al., 2015) and clinicians were provided 6 months of implementation support (e.g. conference calls, web resources). **Purpose.** This study aimed to examine the 12 month sustainability of the providers' usage of the BBI. **Methods.** Providers in social work, psychology, and other licensed mental health professions from large medical centers, community facilities, and private practice all were BBI trained and then reported BBI usage (i.e., the percentage of the patients seen in the prior month that were treated with the BBI). During months 1-6 they were provided with implementation support but none thereafter. Usage rates at 2, 4, 6, and 12 months were reported. A generalized estimating equation with a logistic link function was used to evaluate the level of BBI usage over time. **Results**. The model estimated an average BBI usage of 60.1% (95% CI=53.4-66.4%) at 2 months, 66.3% (95% CI=59.8-72.4%) at 4 months, 68.4% (95% CI=62.2-73.9%) at 6 months, and 70.9% (95% CI=63.6-77.3%) at 12 months. There was a significant difference in BBI usage from month 2 to 6 (p=0.010) and 12 (p=0.005). **Conclusions.** This first dissemination cancer-specific psychological intervention shows success at all stages. There were early, high usage rates which steadily increased during a 6 month period of implementation support. Moreover, usage rates even climbed to rates exceeding 70% at 12 months. The paradigm used here for the successful training of mental health professionals provides guidance for the dissemination of other behavioral medicine psychosocial interventions to community providers.

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THE INFLUENCE OF RISK FACTOR FEEDBACK ON PARTICIPATION IN A DIABETES PREVENTION PROGRAM FOR AFRICAN AMERICAN WOMEN

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Background: Previous research has found that providing health risk data, such as diabetes (fasting glucose or HbA1c) or cardiovascular risk (total cholesterol, high density lipoprotein, low density lipoprotein), can serve as a call to action and increase participation in prevention programs. However, little is known on how provision of health risk data increases participation in prevention programs for African American (AA) women, who are disproportionally affected by diabetes and cardiovascular disease (CVD). **Methods:** Data collected during baseline measures of the Better Me Within randomized study were used to evaluate whether risk status provided at baseline was related to greater participation in a 16-week church based diabetes prevention program. Physiological data was calculated from a fasting blood sample collected through finger stick by trained research staff using a point of care test (Alere Cholestech LDX Analyzer) including total cholesterol (TC), high density lipoprotein (HDL), low density lipoprotein (LDL), and triglycerides (TRG). Fasting glucose (FG) and glycated hemoglobin (HbA1c) were calculated with a fasting blood sample using a point of care test (Bayer A1cNow). Attendance was tracked for each individual by week and a mean attendance score was calculated. **Results:** 263 AA women participated in baseline measures (M_{BMI}= 36.5+8.1; M_{Age} = 51.6+11.9), 43.3% had an annual household income < $50,000, 26% had a high school education or less, 77.2% had at least one risk factor for CVD, and 74.1% had at least one risk factor for diabetes. Of the 5 CVD risk factors evaluated (TC, HDL, LDL, TRG, BMI), only borderline high or high TRG (>150mg/dL) predicted greater participation (>70% attendance of 16 sessions). Neither diabetes risk factor (FG or HbA1c) predicted greater participation. The strongest predictors of participation were household income, with 66% of higher income as compared to 51% of lower income participants (p=.01); and education, with 65% of participants with a higher education as compared to 44% of participants with a lower education (p < .01), attending at least 70% of the 16-week program. Conclusions: Greater participation in health promotion programs have been associated with better participant outcomes such as weight loss or reduced diabetes risk. These findings suggest that real time physiological feedback, for the exception of TRG, does not predict greater participation, and that education and income may be key drivers of individual participation rates. Future

research should explore mechanisms for increasing participation in prevention programs by individuals with lower incomes and less educational attainment as they are at higher risk for chronic disease.

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B128 6:00 PM-7:00 PM

THE ROLE OF MIDDLE MANAGERS IN INNOVATION IMPLEMENTATION IN HEALTH CARE

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Objective: To explore middle managers' role in and experiences with innovation implementation in the cancer system.

Methods: We conducted a grounded theory study using in-depth, semi-structured qualitative interviews of middle managers in two Canadian provinces (Nova Scotia, New Brunswick). Participants were purposively sampled, based on their involvement in implementation initiatives and to obtain variation in manager characteristics (location, years of managerial experience). Interviews were audiotaped and transcribed verbatim. Data were collected and analyzed concurrently, using an inductive constant comparative approach.

Results: Seventeen middle managers participated in this study. Collectively, they were involved in the implementation of a range of innovations in cancer screening, diagnosis, and treatment. The analysis revealed four main categories. Middle managers see themselves as being (1) **responsible for making implementation happen** in their programs/services. As a result, they take on varied tasks, such as leading committees/working groups, navigating bureaucratic processes, gathering information, and developing new operational processes. At the same time, they have (2) **limited decision-making authority** with respect to the implementation decision, with middle managers working within parameters set by upper levels of the organization. Their role during implementation is akin to that of (3) **team captain**, executing leadership tasks but also very much a part of the team effort. This is often challenging, since middle managers (4) **perform many roles**, both clinical and managerial in nature, with innovation implementation added on top of their regular duties. Consequently, most engage in much self-directed learning to help them succeed in these multiple roles.

Conclusions: Middle managers are given scant attention in the implementation literature in health care, where the focus is on senior leaders and frontline staff. As a result, their contribution is often seen as negligible. This study suggests middle managers play a leading role in implementation processes. Optimizing their capacity to fulfill this role may be key to improve innovation implementation in healthcare organizations.

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B129 6:00 PM-7:00 PM

THEMATIC CONTENT ANALYSIS OF PRACTITIONERS' INQUIRIES ABOUT INTERVENTIONS: IMPLICATIONS FOR RESEARCH IMPLEMENTATION

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Background: Improving communication and strengthening collaboration between researchers and public health practitioners is critical for effectively disseminating and implementing evidence-based interventions. To this end, NCI's Research to Reality (R2R) online community of practice convenes researchers and practitioners around a shared commitment to implement evidence-based, cancer-related (e.g., physical activity, tobacco control, screening, prevention) interventions in public health settings. Several dynamic approaches are used to facilitate dynamic communication and collaboration, including monthly webinars, question and answer (Q&A) sessions, and discussion posts.

Methods: This study explored the programmatic considerations most important to R2R community members through a content analysis of webinar Q&A sessions and related discussions. We used deductive coding for segments of text related to implementation strategies (Powell et al 2015; Wang 2016) and intervention adaptation (Wiltsey-Stirman et al, 2012), and inductive coding to explore thematic patterns from participants' questions. This coding schema was applied to 62 transcripts of webinar presentations (Q&A section only) and the related online discussions over a 6-year period (2010-2016).

Findings: Several themes emerged from the content analysis, including queries around institutional support, sustainability, tools and resources. Community members requested additional information from presenters about contextual variables of research studies (e.g., the role of partnerships in implementing disease prevention and public health initiatives) as well as evidence-based programs. Practitioners consistently sought to better understand variables that made an intervention effective and sought guidance on the most appropriate implementation strategies for their projects.

Implications: While a number of resources are designed to implement evidence-based health programs, the strategies and programmatic considerations most salient to practitioners are difficult to elicit but essential to address. These data highlight additional information researchers should include in their intervention presentations, summaries and publications

when communicating with practitioners. By addressing the priority concerns of practitioners, researchers can to improve communication and enhance the actual, widespread implementation of promising public health interventions across jurisdictions.

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B130 6:00 PM-7:00 PM

TRAINING STUDENTS IN UNDERSERVED HIGH SCHOOLS ALONG THE US-MEXICO BORDER TO IMPLEMENT PROJECT STUDENTS ARE SUN SAFE (SASS)

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Background: Skin cancer is a major public health issue in the US and Arizona with overexposure to ultraviolet radiation (UVR) a known cause. Most people living near the rural Arizona-Mexico border are Hispanic; skin cancer incidence is rising within Hispanics. Youth are prone to UVR overexposure, yet few skin cancer prevention programs target rural and underserved youth. Schools are ideal intervention settings, but teachers in border-area high schools have limited time and resources for skin cancer prevention education. Educators and researchers at the University of Arizona (UA) have successfully implemented Project Students are Sun Safe (SASS) in urban schools. In the current model, UA health sciences students (peer leaders) take a one-semester skin cancer prevention academic course: online modules on skin cancer epidemiology, types, prevention and communication, followed by in-person skills evaluation. Trained peer leaders implement, in community classrooms, a brief SASS lesson (basic epidemiology, skin structure, skin cancer, UVR and protection strategies, and tanning consequences), reinforced by three interactive activities. Adapting this model for high school students will allow further dissemination and implementation of SASS, especially into rural and underserved schools.

Purpose: To report preliminary findings on the training of border-area high school students to deliver SASS, specifically a) adaptation process of the college course; b) strategies to engage the students in training; and c) evaluation of the feasibility and efficacy of the training.

Methods: Using a CBPR framework, our research team and community partner with a longstanding relationship with border-area high schools, jointly adapted the SASS training modules and classroom lesson. Eighteen students from 3 border-area high schools were offered the online training. They completed the online pretest and posttest at 3 weeks, measuring skin cancer prevention risk, knowledge, attitudes, and behaviors. We monitored successes and challenges of our strategies.

Results: The adaptation process of several months reduced the modules from 5 to 3. The students had no experience in online learning, which required adjustments in training. The majority of trainees were female, Hispanic, and had skin cancer risk factors: 83.3% were raised in Arizona; over 70% reported skin susceptible to sunburn, with 35% having 2+ sunburns the past year. Following training, sun-safety knowledge improved (p = .002), perceived seriousness (p = .000) and risk (p = .02) were more favorable, and self-reported sun safety behaviors improved (p < .005).

Conclusions: We successfully adapted SASS sun-safety training to youth living along the US-Mexico border. These students had stronger skin cancer risk factors than we anticipated. In January 2017, these students will take a final posttest to assess longer-term efficacy of training.

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USE OF CONTENT CURATION, TAILORED CAMPAIGNS & SOCIAL MEDIA OUTREACH TO SUPPORT LATINO HEALTH

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Use of Content Curation, Tailored Campaigns & Social Media Outreach to Support Latino Health

BACKGROUND: By 2023, it is expected that 30% of public school students will be Latino. Despite rapid population growth and a longer life expectancy, Latinos face disparities in childhood obesity, diabetes, asthma, and certain cancers, which greatly reduces their quality of life and leads to increased costs of health care. In 2014, approximately 73% of Latinos reported using their smartphones to access health information from the Internet. *Salud America!* engages its 50,000+ member network through multi media content, research and e-communications aimed at empowering local level leaders and helping build their case for healthier, more resilient communities.

METHODS: Between Jan-Aug 2016, 3 SA! curators developed an average of 41 geo-tagged blog posts, 33 resource posts and 3 full-length feature role model stories per month. Tenets from social cognitive theory were used to craft campaigns and disseminate messages to support the growth of the *SA!* network and to raise intentions to advocate for policy and systems change. Research, infographics, and videos were used to highlight key issues affecting Latino childhood obesity rates. Materials were disseminated via @SaludToday's social media channels in addition to monthly e-news blasts and weekly #SaludTues Tweetchats. Facebook ads, and Google adwords were also used boost content.

RESULTS: In 8 months, SaludToday's Twitter account generated 2,500 tweets.The network gained 2,000 new followers and produced 17,000 engagements (all organically grown) on Twitter. On Facebook, SaludToday gained over 3,700 new fans and produced over 27,000 engagements. Twitter and Facebook are currently the most popular tools of engagement, however SaludToday's Instagram was the fastest-growing social media channel, with 14.08% follower growth (July-Sept. 2016). Facebook ads and boosted posts have increased user

engagement rates.

CONCLUSION: Social media engagement is a powerful way to reach audiences. Since implementing the use of paid ads, Facebook became the *SA!* webpage's primary source of social traffic. The role that *SA!* curators have in the *SA!* network has become central to the *SA!* hub. Public health officials should consider allocating resources to content curation and social media marketing.

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B132 6:00 PM-7:00 PM

E-MENTORING VIA TEXT MESSAGE: A MODEL FOR MAINTAINING PROFESSIONAL RELATIONSHIPS AND PROVIDING MENTORSHIP FROM ACROSS THE SEA

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Background: International medical service affords the opportunity to work with and provide mentorship for local physicians-in-training. However, these relationships tend to rapidly dissipate after a brief stint abroad. Similarly, local mentor-mentee relationships may also quickly diffuse once participants transition to a new roles and/or institutions. For this reason, electronic mentoring (E-mentoring) may be a useful way to complement traditional face-to-face mentoring. The aim of this study was to assess the feasibility of using a mobile application (app) to sustain pre-existing mentoring relationships between Global Health residents at the University of Pittsburgh Medical Center (UPMC) with local Malawian medical students.

Methods: In 2015, we developed a mentoring group involving UPMC Global Health residents and local medical students at the University of Malawi College of Medicine. The group met weekly for eight weeks during our stay in Malawi. After our return to our local institution we maintained these relationships using the text-messaging program WhatsApp. Each week we sent inspirational quotations and clinical pearls relevant to practice in the resource-limited setting. These quotations and pearls were tailored by each resident based on her/his in-person experiences with the Malawi residents.

Results: There are currently a total of 31 members in the WhatsApp mentoring group. From March 2016 until the present, there have been a total of 76 unique unsolicited student responses to the weekly messages. This represented an average of 10 responses per month and 3 responses to each individual teaching post. One hundred percent of the 76 student responses were positively valenced, with responses expressing gratitude, positivity, and interest in the information provided.

Conclusions: These findings suggest that it is feasible to leverage the text-messaging program Whatsapp to maintain mentor-mentee relationships that end due to distance. While we used this platform to provide weekly inspirational messages and clinical pearls with local medical students at the University of Malawi College of Medicine, the specific nature and frequency of communications can be tailored based on the particular needs of mentors and mentees. In the future, we hope to provide prompts to encourage students to pose their own clinical questions and experiences, and also to share strategies for coping with stressful situations.

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B133 6:00 PM-7:00 PM

A TWITTER ANALYSIS OF MEASLES AND VACCINATION CONVERSATION DURING THE 2015 MEASLES OUTBREAK

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Background: An evolving communications landscape has made social media applications like Twitter a popular platform for conveying opinions to a broad audience. Given its increased utility as an information exchange tool, Twitter provides insight into public views and perceptions that could impact health-related behaviors. We evaluated Twitter discourse on measles and vaccines during the 2015 measles outbreak to determine the evolution of dominant themes of the online conversation and identify how Twitter was used for communication during this critical public health event.

Methods: We analyzed over 745,000 posts on Twitter related to measles and vaccines during the 2015 measles outbreak (December 7, 2015-May 7, 2015) using social media analysis software provided by Crimson Hexagon. We captured relevant conversation from Crimson Hexagon's data library of all public Tweets. We established the key messages driving online conversation, traced the evolution of those themes, and determined the online authors with significant influence.

Results: The online conversation on measles and vaccines evolved over time with some messages gaining popularity. Twitter discourse included vaccination advocacy, criticism of vaccines and support for anti-vaccination movements, descriptions of personal experiences with measles/vaccines, and news reporting. Twitter users also shared stories from news organizations, locations of newly confirmed measles diagnoses, and information on persistent measles cases. News and public health organizations were some of the most influential authors on Twitter.

Conclusions: Posts on Twitter discussing measles and vaccinations became increasingly polarized (supportive or oppositional) towards vaccination during the outbreak. Twitter was an online news source and a sentinel for the spread of measles for its users. Twitter's capability to reach large audiences presents an enormous potential to impact public views that influence behaviors. Since news and health organizations were influential Twitter authors during the measles outbreak, Twitter may be an impactful channel for disseminating vital public health information during critical, fast-moving public health emergencies. While

traditional research approaches often focus either on how messages are transmitted or received, Twitter analysis enables real-time assessment of media messages about the outbreak, the public's reactions to unfolding events, and the evolution of both over time.

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B134 6:00 PM-7:00 PM

ADVERSE EFFECTS OF COMORBID MENTAL ILLNESS ON OVERALL HEALTH

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Comorbidities, the bi-directional relationship of multiple disorders, have been well documented – especially for patients who suffer from mental illness. Co-occuring depression and heart disease are the major causes of disability worldwide. Unfortunately, mental illness is rarely detected and largely undertreated among patients who are treated for chronic disease, increasing the likelihood of poor overall health. Recently, efforts have been made to better assess depression and anxiety symptoms in the primary care setting in order to contribute to a holistic treatment approach, detect underlying mental illness early, and adjust treatment plans accordingly. Although evidence points to the complex relationship of mental illness and chronic disease, less is known about how mental illness might contribute to the presence of multiple disorders and vice versa. Using 2014 data from the nationally representative Health Information National Trends Survey, the aim of the current study was to test whether a diagnosis for depression or anxiety ("Has a doctor or other health professional ever told you that you had depression or anxiety disorder?") predict other disorders and how symptoms of mental illness contribute to poor overall health. Preliminary results from binary logistic regression analyses indicate a positive relationship between mental illness and the simultaneous presence of heart disease (OR=1.58, 95%CI=1.24-2.01), diabetes (OR=1.89, 95%CI=1.58-2.28), lung disease (OR=2.97, 95%CI=2.43-3.64), and arthritis (OR=2.34, 95%CI=1.99-2.75). Results further suggest that symptoms of anxiety ("over the past two weeks, how often have you been bothered by not being able to stop or control worrying?") in particular decreased a patient's perceived ability to take care of one's own health (OR=.41, 95%CI=.33-.51), reducing the likelihood of engaging in healthy lifestyle choices such as exercise and abstaining from smoking – reinforcing the cycle of poor health. Despite these vulnerability factors, an encouraging finding emerged. Comorbid patients are not less likely to seek professional help for medical issues – highlighting the urgent need for physicians to equip comorbid patients who seek treatment with tools to manage symptoms of mental illness alongside other disorders. Opportunities for improving patient-provider communication for patients managing both chronic disease and mental illness will be discussed.

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B135 6:00 PM-7:00 PM

CONFLICTING PRIMARY LANGUAGE AFFECTS PHYSICIAN-PATIENT RELATIONSHIP IN THE EMERGENCY DEPARTMENT

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Communication between physicians and patients during evaluation for acute coronary syndrome (ACS) in the emergency department (ED) is often challenging due to a number of factors. This communication is further complicated if the primary language of the physician does not match that of the patient. It has been shown that effective physician-patient communication is associated with decreased patient anxiety, fewer subsequent PTSD symptoms, and increased patient satisfaction. However, no study has tested whether discrepancy in primary languages of physician and patient negatively impact patient perceptions of communication quality.

We hypothesized that patients who report a different primary language than their ED physician perceive worse communication from that ED physician.

851 participants (mean age, 60.74 (SD, 13.1); gender, 54% female; ethnicity, 57% Hispanic) were enrolled as a part of the Reactions to Acute Care and Hospitalization (REACH) study, which recruits ED patients being evaluated for potential ACS. Participants then reported on the communication received from their ED physician using the physician sub-scale of the Interpersonal Processes of Care Survey (IPCS; 14 items, e.g., How often did the doctor use words that were hard to understand?"), as well as if their primary ED physician appeared to be a native speaker of their primary language. Age, sex, Global Registry of Acute Coronary Events (GRACE) cardiac risk score, and Charlson comorbidity score were included as covariates.

In a linear regression model predicting IPCS physician score [F(5,845)= 2.24, p< .05], physician-patient first language discrepancy was associated with significantly worse perceptions of communication quality (β= .11, p= .002). No other covariates were significantly associated with patient perceptions of communication quality.

Patients who report a different primary language than their ED physician report poorer perception of physician-patient communication. Prior research has shown that poor physician-patient communication is associated with risk for adverse psychological outcomes. Extra effort may be required to ensure that non-native speakers feel informed and cared for by their ED physicians.

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B136 6:00 PM-7:00 PM

DIGITAL STORYTELLING AS A TOOL FOR HEALTH MESSAGING ON AN AMERICAN INDIAN RESERVATION: A DEVELOPMENT PROCESS

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Introduction:
Digital stories offer a collaborative approach to health messaging, and can raise awareness among viewers on issues presented in stories. This study used an iterative, participatory process to produce and vet digital stories for increasing community awareness about strategies to improve child and family health on an American Indian (AI) reservation.

Methods:
We used a collaborative approach to develop digital story topics and content. This included input from the study leadership team, with members representing a tribal college, a tribal health organization, and a university. Story attributes, such as likability and cultural embeddedness of characters, identification with the storyteller, and language were included to increase influence on viewers' attitudes, beliefs, and behavior change. The advisory board and the tribal health and wellness committee were then engaged in a four-step, iterative process (view, evaluate, prioritize, and revise) to evaluate the story. The survey was adapted from a health promotion digital story evaluation study completed in rural Alaska. The twelve-item, closed ended, Likert-style survey explored community members' perspective on digital storytelling likability, intent to communicate with family and friends about the topics presented, cultural acceptability, and intent to change family health behavior. Viewers were asked to complete a written evaluation, then to share feedback and recommendations on how to make it more likeable, informative, and culturally relevant.

Results/Discussion:
A total of 22 community members viewed and evaluated the digital story. The viewers were mostly female (63%), mostly AI or Alaska Native (63%), and 50% were between the ages of 30-39. They reported liking the story (86%), feeling that it was a good way to learn about improving the health of their families (90%), and 90% felt digital stories are a culturally respectful way to receive health messages. Changes suggested by viewers included different

music, including kids' voices, and adding text to the screen to emphasize the message. Dissemination plans include social media outlets for the tribal college, tribal health organization, and a local hospital. Study findings suggest the four-step, iterative digital story development process may produce an effective health messaging tool for improving community awareness of child health, and that digital storytelling can be a likeable and culturally acceptable tool for health promotion.

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B137 6:00 PM-7:00 PM

ENHANCING SMOKING RISK COMMUNICATIONS: THE INFLUENCE OF HEALTH LITERACY AND MESSAGE CONTENT

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Background: For nearly half of United States adults, difficulty with health literacy interferes with the capacity to find, process, and understand health information. Low health literacy is associated with higher smoking prevalence, established predictors of smoking, and relapse following smoking treatment. It has been suggested that risk communications and interventions intended to prevent smoking and promote cessation may not reach those with limited health literacy. Thus, it is critical that smokers with limited health literacy are provided with understandable information about the health consequences of smoking and the benefits of quitting. This study examined the influence of health literacy on smokers' responses to smoking health risk messages manipulated on framing (gain- vs. loss-framed) and emotionality (factual vs. emotional).

Method: Participants (N=402; 66% male; 70% Black; 27% <high school education; 70% < $10,000 total annual household income) were randomized to evaluate one of four sets of smoking health risk messages (factual gain-framed, factual loss-framed, emotional gain-framed, or emotional loss-framed). Multiple linear regression analysis was used to examine main effects of health literacy, message emotionality, and message framing on: 1) risk perceptions, 2) behavioral expectations (i.e., cut down, limit, quit), and 3) risk knowledge. Two-way interactions between health literacy and message emotionality and between health literacy and message framing were examined for these same outcomes.

Results: Smokers with higher health literacy reported significantly stronger risk perceptions and better knowledge retention regardless of message type. A significant main effect emerged for emotionality such that emotional (vs. factual) messages were associated with lower risk perceptions, regardless of level of health literacy. As hypothesized, significant two-way interactions emerged between health literacy and emotionality. Among smokers with lower health literacy, emotion-based messages produced both higher levels of perceived risk

and stronger expectations for quitting, whereas among smokers with higher health literacy, factual messages produced higher levels of these two outcomes.
Discussion: This study provides initial evidence that health literacy plays an important role in influencing how smokers respond to different types of messages. Findings suggest that a "one-size-fits-all" approach to communicating about the health risks of smoking may have limited impact. Thus, one's health literacy should be considered when determining whether smoking risk communications emphasize factual or emotional content.

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B138 6:00 PM-7:00 PM

LUNG SCREENING UNCERTAINTY AND NUMERACY PREFERENCES AMONG CURRENT AND FORMER SMOKERS

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Background: Lung cancer is the leading cause of cancer death in the U.S. and is highly attributable to smoking. Recent guidelines from the National Comprehensive Cancer Network and American Cancer Society recommend ongoing lung screening for current and former smokers (CS and FS) over the age of 55. Recently, Medicare began covering lung screening, but concerns remain about its accuracy and costs. Lack of clarity about screening intent and interpretation could undermine uptake of screening guidelines. This study thus aimed to characterize potential sources of lung screening uncertainty (LSU) and numeracy preferences among CS and FS.

Method: This observational, cross-sectional study examined self-report data obtained from CS and FS undergoing lung screening at a large academic medical hospital. Two items assessed LSU: clarity about purpose for referral (1=Not at all clear, 4=Extremely clear) and perceived accuracy of screening (1=Not at all, 5=Extremely). Numeracy preference was assessed with one item. Bivariate correlations examined demographic predictors of main variables. Group differences were analyzed by independent samples t-tests, Wilcoxon Z-tests, and odds ratios with 2-tailed Fisher exact tests.

Results: Respondents included 169 patients with a smoking history (88, 52.1% CS). CS and FS perceived lung screening to be moderately accurate [M_{total}=3.76, SD=.72]. Mean levels were similar between groups, *p*=.93. Clarity about the purpose for referral was high on average (M_{total} =3.88, SD=.66). Greater clarity was associated with more education (*r*=.31, *p*=.001) and receiving Medicare (*r*=.19, *p*=.048), but not smoking status (Z=1.72, *p*=.09). Preference for numbers in health-related information was associated with years of education (*r*=.25, *p*=.002) and smoking status. Specifically, FS were 2.5 times as likely to prefer numbers in health information compared to CS (P_{FS}=.56, OR=2.51, *p*=.005).

Discussion: We present preliminary evidence that lung screening patients tend to have favorable perceptions of the accuracy of the test and feel they understand the reason for their referral. Values were similar between CS and FS, but varied by insurance and education history. Notably, CS were significantly less likely than FS to favor numeric data. Taken together, findings offer potential targets for interventions aiming to reduce LSU and to tailor communication to suit numeracy preferences in the context of lung screening.

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B139 6:00 PM-7:00 PM

UNDERSTANDING AFRICAN AMERICAN FAMILY HEALTH HISTORY COMMUNICATION: YOUNG ADULT PERSPECTIVES

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Background: Family health history (FHH) is the strongest known risk factor for many chronic diseases. Ethnic minorities have been found to have a low awareness of their FHH, which may pose a contributing factor to health disparities. To date, most research seeking to understand FHH sharing within African American families has been limited to the perspective of older adults. However, it is imperative to also gain African American young adults' perspectives, as they function as the ideal recipients of FHH information from older generations.

Purpose: This poster will present findings from a qualitative study designed to understand African American young adults' perspectives regarding FHH sharing.

Methods: We conducted semi-structured individual interviews with African American males and females, ages 21-35. Interview questions assessed each participant's 1) perceptions about the importance of FHH, 2) ability to define the phrase "FHH," 3) knowledge of his or her maternal and paternal family health histories, and 4) perceptions about health communication practices in his or her immediate family, including frequency of health-related conversations and health topics most and least discussed. We also assessed participants' perceived quality of their immediate familial relationships, as well as their interest in learning more about FHH. Demographic characteristics were collected via written survey.

Results: A total of 38 (16 males, 16 females) African American young adults completed interviews. Mean participant age was 28.5. Most participants were single (63.9%), and had a college degree (41.7%) or higher (38.9%). During the semi-structured interviews, most participants indicated that they perceived FHH to be very important, and wanted to learn more about FHH. Most were able to correctly define the phrase FHH. Most participants discussed having knowledge of their FHH, though many seemed to know more about their maternal FHH than their paternal, particularly when they had a strained relationship with their father. Mothers and grandmothers were the most commonly mentioned sources for providing FHH information. Relatives who worked in healthcare were frequently identified as

FHH information disseminators. We observed mixed responses regarding the frequency of health-related discussions within families, as some participants indicated that their families discuss health often, while others indicated that health is rarely discussed. Nutrition was described as a frequently discussed health topic within families, while mental illness was described as health topic that is avoided.

Conclusion: African American young adults value FHH and want to learn more about it. Future efforts should focus on assisting young adults with strategies to collect both their maternal and paternal FHH, and should also provide them with strategies to initiate FHH discussions.

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B140 6:00 PM-7:00 PM

ARE YOU COVERED? EXAMINING HOW KNOWLEDGE OF THE AFFORDABLE CARE ACT INFLUENCES USE OF PREVENTIVE REPRODUCTIVE HEALTH SERVICES

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The Patient Protection and Affordable Care Act (PPACA) expanded access to insurance coverage and health care services for many citizens, and has increased access for women in particular by including preventive reproductive health services as essential health benefits. The current national rates of sexually transmitted infections (STIs) and reproductive cancer diagnoses serve as major areas of concern for women's health and public health. The present study examined how knowledge of the PPACA influences receipt of preventive reproductive health services among women (e.g., STI screening, breast exams). Women aged 18-44 (N=1083) from across the United States completed online questionnaires assessing demographics, insurance status, preventive service use, and knowledge of the provisions of the PPACA. A substantial portion of participants reported using preventive reproductive health services (73.8%, N=799), including pelvic exams, breast exams, well woman's visits, and STI testing. A hierarchical logistic regression was performed to determine the independent relationship between knowledge of the PPACA and use of preventive reproductive health services after controlling for demographic factors (age, racial/ethnic status, relationship status, education level, and income) and insurance status. Knowledge of the provisions of the PPACA focused on preventive health services was associated with use of preventive reproductive health services after controlling for these factors (OR=1.155, 95% CI = 1.021, 1.306, B=.144, SE=.063, $p < .05$). Results indicate that higher levels of knowledge of the PPACA are associated with a greater likelihood of receiving cancer and STI screenings. The current findings provide support for an increase in funds and resources to outreach and education of the general population about the provisions and benefits of the PPACA, as well as individuals' personal health coverage plans.

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B141 6:00 PM-7:00 PM

CAN BIG MEDIA DATA REVOLUTIONIZE GUN VIOLENCE PREVENTION?

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The scientific method drives improvements in public health, but a strategy of obstructionism has impeded scientists from gathering even a minimal amount of information to address America's gun violence epidemic. We argue that in spite of a lack of federal investment, large amounts of publicly available data offer scientists an opportunity to measure a range of firearm-related behaviors. Given the diversity of available data – including news coverage, social media, web forums, online advertisements, and Internet searches (to name a few) – there are ample opportunities for scientists to study everything from trends in particular types of gun violence to gunrelated behaviors (such as purchases and safety practices) to public understanding of and sentiment towards various gun violence reduction measures. Science has been sidelined in the gun violence debate for too long. Scientists must tap the big media datastream and help resolve this crisis. To demonstrate this value we will present rich analyses of web searches and Twitter posting for one year describing data driven conclusions from these data.

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B142 6:00 PM-7:00 PM

INTERVIEWS OF SUNLESS-ONLY TANNING BUSINESS OWNERS

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Indoor tanning is a group 1 carcinogen along with tobacco, radon, and arsenic. Fourteen states have passed a ban on indoor tanning in minors and the FDA is considering a ban on indoor tanning at the federal level. A frequently occurring argument against banning indoor tanning is that bans will negatively impact small business owners. A counterargument is that tanning businesses could remain viable by providing non-UV alternatives (i.e., spray/airbrush tanning) to clientele who desire a tan. The purpose of our study was to interview sunless-only business owners about their clientele, reasons for offering only sunless tanning, what their clients like about sunless tanning, and about perceived threats to their business.

Participants were 15 sunless tanning business owners in the New England area including brick and mortar salons (n=10; 5 also offered mobile services) and mobile-only businesses (n=5). On average, owners reported being in business for 5 years (sd=3). None reported ever offering or intentions to offer indoor tanning as a service. The cost of a service ranged from $20-$75, discounts offered for packages. Owners said clients visit them on average 2 times per month (sd=1) and that clients are mostly female ages 20-55. Owners estimated that on average 72% (sd=23, range 20-99) are former indoor tanners and switched to sunless and 26% (sd=29, range 0-90) currently use indoor tanning, which doesn’t include all clients since some may not have used indoor tanning at all. When asked what their clients like about sunless tanning, 86% said clients liked the quality of the product (e.g., color of tan), 73% said clients liked that it took less time than indoor tanning to achieve a tan, and 53% said clients liked that it was a healthy alternative to tanning beds. Threats to business included other sunless-only competition (40%), negative experience with sunless products (e.g., orange color) (20%), UV-based competition (13%), and overhead costs (13%). All owners interviewed supported bans on indoor tanning for minors.

Sunless tanning services appear to attract indoor tanners, former indoor tanners, and never indoor tanners which would seem to be a potentially larger customer base than indoor tanners. Product quality, quicker results than indoor tanning, and lack of health risks appear to be selling points for sunless tanning over indoor tanning.

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B143 6:00 PM-7:00 PM

THE EFFECTS OF AGE AND COMORBIDITY ON THE LIKELIHOOD OF TRAUMATIC BRAIN INJURY PATIENTS HIRING A HEALTH CARE ADVOCATE

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Approximately 1.7 million people experience a traumatic brain injury (TBI) in the United States each year and about 53,000 will die from TBI-related causes. The treatment options for a TBI vary depending on severity. Patients often have complex and continuous treatment plans, especially those who are older and have a comorbid health condition. A health care advocate (HCA) is a trained professional who can help ensure patients optimize their treatment outcomes by providing advisory and supportive services that simplify the navigation of the healthcare system. The present study was conducted to determine whether age and comorbidity (type 2 diabetes) predicted the perceived likelihood of hiring an HCA for those with a TBI. It was hypothesized that being older and having a comorbid health condition would predict a greater perceived likelihood of hiring an HCA. Participants were 441 randomly selected community members, asked to complete a self-report questionnaire. A two (comorbidity) by three (age) between subject's analysis of variance was performed on the mean perceived likelihood of hiring an HCA. A significant main effect was found for age, $F(2, 435) = 5.188$, $p = 0.006$. A post-hoc Gabrielle's test revealed that the perceived likelihood of hiring an HCA was greater for 90 years old than 30 years old ($p = 0.006$) but not 60 years old. No significant differences were detected between 30 years old and 60 years old in the perceived likelihood of hiring an HCA. Comorbidity did not significantly predict the perceived likelihood of hiring an HCA. These results indicate that older individuals who have sustained a TBI report a greater perceived likelihood of hiring an HCA than do younger individuals who have sustained a TBI. These findings may help various health care advocacy organizations identify the specific populations most interested in using their services. Additional research is necessary to determine the ways in which HCAs are able to help individuals who have sustained TBIs receive optimal care and improve their overall wellbeing.

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B144 6:00 PM-7:00 PM

AN EXPLORATION OF SOUTHERN FAITH LEADERS' PERSPECTIVES OF SEXUALITY AND SEXUAL HEALTH TEACHINGS

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A critical objective of the National HIV/AIDS Strategy is reducing HIV disparities in the South. This paper describes findings from a qualitative study of southern Black faith leaders regarding sexuality and sexual health teachings in their predominantly Black congregations in Memphis, TN. An HIV coalition, faith-based non-profit, and university partnered to conduct four focus groups using a semi-structured discussion guide. Faith leaders, aged 18 or older, who minister to predominantly Black congregations were eligible to participate. Each focus group was transcribed and then two investigators independently coded the data. The final sample included 26 faith leaders with a mean age of 54. A broad range of denominations was represented in the sample with over half being Baptist. Three themes emerged to describe perspectives of sexuality and sexual health teachings among southern Black faith leaders: (1) restricted by scripture, (2) problematic silence, and (3) tackling multiple stigmas. Churches have been involved in HIV prevention efforts for three decades; however, few community-academic partnerships have explored sexuality and sexual health teachings in southern churches using a participatory approach. These results will benefit researchers when developing faith-based interventions and help facilitate HIV prevention efforts in southern churches.

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B145 6:00 PM-7:00 PM

COGNITIVE BEHAVIORAL THERAPY FOR BODY IMAGE AND SELF-CARE IN SEXUAL MINORITY MEN LIVING WITH HIV: A RANDOMIZED CONTROLLED TRIAL

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Objective: Body image disturbance is a distressing and interfering problem among many sexual minority (e.g., gay and bisexual) men living with HIV, and is associated with elevated depressive symptoms, and poor HIV self-care (e.g., antiretroviral therapy (ART) non-adherence). However, no known interventions exist that address body image disturbance and ART adherence among this population. Thus, the current study tested the preliminary efficacy of a newly created intervention: cognitive behavioral therapy body image and self-care (CBT-BISC) for this population.

Methods: The current study was a two-arm randomized controlled trial (N = 44) comparing CBT-BISC to an enhanced treatment as usual (ETAU) condition. Analyses were conducted at post-treatment (3 months post-baseline) and follow-up (6 months post-baseline). The primary outcome was body image disturbance, and secondary outcomes were ART adherence (electronically monitored via Wisepill), depressive symptoms, and global functioning.

Results: At post-treatment, the CBT-BISC condition showed substantial improvement in body image disturbance (B = -13.6, SE = 2.7, 95% CI: -19.0, -8.3, $p < .001$; d= 2.39), depressive symptoms (B = -4.9, SE = 2.8, 95% CI: -10.6, .70, p = .086; d= .87), ART adherence (B = 14.7, SE = 4.9, 95% CI: 5.2, 24.3, p = .003; d= .94), and global functioning (B = 12.3, SE = 3.2, 95% CI: 6.1, 18.6, $p < .001$; d= 2.91). Results were generally maintained, or improved, at 6-month follow-up.

Conclusions: CBT-BISC shows preliminary efficacy in the integrated treatment of body image disturbance and HIV self-care behaviors among sexual minority men living with HIV.

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B146 6:00 PM-7:00 PM

CURVILINEAR ASSOCIATION OF DEPRESSION WITH SEXUAL RISK BEHAVIOR AMONG HIV-INFECTED MEN WHO HAVE SEX WITH MEN

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Depression is highly prevalent among HIV+ men who have sex with men (MSM) and may contribute to risky health behaviors. However, research linking depression to sexual risk among HIV+ MSM has yielded mixed findings, and has focused primarily on documenting the linear association of depressive symptoms to elevated rates of unprotected anal intercourse (UAI). In this study, we test the hypothesis that depressive symptoms will show a curvilinear association to UAI, such that depression will be more strongly linked to risky sex in HIV+ MSM with moderate levels of depression. HIV+ MSM recruited during outpatient medical care (*N* = 96*, M* age = 44, 57% Caucasian) completed the Center for Epidemiological Studies – Depression Scale (CES-D) and self-report measures of sexual risk behaviors. The primary study hypothesis concerning the nonlinear association of depression to sexual risk was tested using logistic regression models in which CES-D scores were entered into Model 1, and both CES-D and squared CES-D terms were included in Model 2. Participants reported high levels of depressive symptoms (*M* = 20.15, *SD* = 12.94), and 34% reported at least one instance of UAI in the last three months. Neither model explained any variance in UAI with a primary partner. For encounters involving a casual partner, CES-D scores were not associated with UAI at the last occasion of sex in model 1. However, CES-D (*b* = .28, *SE* = .12, *p* = .02) and squared CES-D terms (*b* = -.005, *SE* = .002, *p* = .04) in model 2 were significantly associated with UAI at the most recent sexual episode. Similarly, CES-D scores were not associated with any instances of UAI for the previous three-months in model 1. However, when CES-D (*b* = .21, *SE* = .09, *p* = .02) and squared CES-D terms (*b* = -.004, *SE* = .002, *p* = .03) were entered into model 2, both were significantly associated with instances of UAI. Further, a comparison of model chi-square values indicated that model 2 fit the data better than model 1 with regard to UAI at the most recent sexual episode (c^2= 2.32, *p* = .13 versus c^2= 7.98, *p* = .02) and for the last three months (c^2= .04, *p* = .53 versus c^2= 7.30, *p* = .03). In this sample of HIV+ MSM, findings confirm a curvilinear relationship between depression and sexual risk-taking. Treating depressed mood in HIV+ MSM may not only improve mental health functioning, but also lead to reductions in sexual transmission risk.

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DEVELOPING AND EVALUATING EHEALTH VIDEO TO INCREASE HIV TESTING AMONG HARLEM AREA PATIENTS WHO INITIALLY DECLINE

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Undiagnosed HIV remains a significant problem in the United States. Many of those most at risk may have limited access to primary care, testing, and related health education. Despite federal recommendations of routine HIV testing in all healthcare settings, many emergency department (ED) patients are not offered HIV testing, and among those who are offered testing far more decline compared to those who accept.

In a recent trial of a tablet-based eHealth intervention designed to increase HIV testing among ED patients who declined HIV tests offered by hospital staff (N=300), roughly 30 percent agreed to an HIV test after watching a brief (< 2 minute) video. The videos were developed in accordance with the Information, Motivation, Behavioral Skills model, and the intervention randomized participants into groups shown different videos to examine which would be more efficacious. Videos depicted either a young, male African American doctor describing the importance of HIV testing to an African American male patient, or a young male African American community member who discloses that he is HIV positive on camera and urges participants to test. Although test rates did not differ by treatment group or participant race, qualitative interviews with patients (n=40) in the Harlem-are hospital where data were collected indicate differing responses to the videos. Most interviewed participants responded strongly in favor of the community member, yet some White and Asian patients used words like “stereotypical” to describe the community member’s appearance (he wore his own clothing in the video and styled himself). African American and Latino participants spoke highly of the community member and largely did not mention his physical appearance. Results indicate patient populations may have very different reactions, by demographic group, to the same intervention video. Further research is warranted to optimize videos to further increase patient acceptance and to better facilitate behavior change (e.g. HIV testing among patients who initially decline) among those most at risk.

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IMPAIRED PERFORMANCE ON THE HIV-DEMENTIA SCALE PREDICTS SURVIVAL OVER UP TO THIRTEEN YEARS

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Objective: There is a lack of empirical evidence linking HIV-associated neurocognitive impairment (NCI) with mortality in the era of widespread antiretroviral (ARV) medication availability. This study sought to examine whether global NCI, as defined by the HIV-Dementia Scale (HDS), was associated with mortality among patients predominantly in the midrange of their illness.

Methods: Between 1997 and 2001,210 HIV-positive men and women (M_{CD4} = 323.02 cells/mm^3; M_{age} = 37.69; 72% male; 67% attending some college or more; 31% non-Hispanic White, 35% non-Hispanic African American, and 30% Hispanic) were recruited, administered the HDS, and followed for up to 13 years (1997-2010). Subjects were excluded if they had ever experienced an AIDS-defining illness or had baseline CD4 cell counts outside the range of 150-700 cells/mm^3, in order to capture individuals predominantly in the mid-range of their illness (92% had CD4 cell counts between 150 and 500 cells/mm^3). Subjects were dichotomously classified as either “impaired” (HDS$\leq$10) or “unimpaired” (HDS > 10). Cox proportional hazard regression analysis was used to test whether global NCI predicted survival.

Results: Thirty-six (17%) subjects scored in the impaired range at baseline, and 59 subjects (28%) died during the study’s follow-up period. Participants scoring in the impaired range at baseline were significantly more likely to die during the study period compared with their unimpaired counterparts (HR: 2.06; 95% confidence interval, 1.09, 3.90) controlling for age, sex, race, education, and baseline CD4 cell count, viral load, and antiretroviral medication status.

Conclusion: These findings demonstrate that the HDS can be utilized as brief screening measure that offers potential prognostic utility for assessing mortality risk in HIV-positive adults during the era of AVR availability. Subjects scoring in the impaired range on the HDS faced two times the risk of dying compared with non-impaired subjects during the 13-year study period. This was independent of demographics and key illness variables previously associated with mortality (i.e., disease status and ARV treatment status at study entry). These

data also add to the literature linking NCI with mortality in HIV, especially among patients in the mid-range of their illness, during the era of ARV medication availability.

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INCARCERATION, SEXUAL BEHAVIORS, AND HIV INFECTION AMONG WOMEN AT INCREASED RISK OF HIV INFECTION, 20 UNITED STATES CITIES

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Background: Women who are involved in the criminal justice system experience multiple risk factors that increase the likelihood of acquiring HIV infection. We evaluated the prevalence of incarceration and compared behaviors among women with and without a history of incarceration.

Methods: We used data from the 2013 National HIV Behavioral Surveillance system in 20 cities among heterosexuals at increased risk for HIV infection. Participants completed a survey and were tested for HIV infection. We evaluated the association between incarceration and the following past 12 months outcomes: exchange sex, multiple (≥3) casual sex partners, and multiple (≥3) casual condomless sex partners. We also evaluated associations of incarceration with HIV prevalence and with last partner characteristics (ever injected drugs, ever used crack/cocaine, ever incarcerated). Log-linked Poisson regression models, adjusted for demographics and clustered on recruitment chain, with generalized estimating equations were used to estimate adjusted prevalence ratios (aPR) and 95% confidence intervals.

Results: Of 5,154 women, 11% were incarcerated within the previous year, 36% were ever incarcerated but not in the past 12 months, and 53% were never incarcerated. Prevalence of exchange sex (aPR 1.32, 1.20 – 1.46), multiple casual partners (aPR 1.59, 1.2 – 2.1), multiple casual condomless partners (aPR 1.47, 1.07 – 2.03), and HIV infection (aPR 1.66, 1.09 – 2.52) were all higher among recently incarcerated women compared to those never incarcerated. Recently incarcerated women were more likely to have a last partner who injected drugs (aPR 2.05, 1.66 – 2.53), used crack/cocaine (aPR 2.08, 1.79 – 2.41) and had himself been incarcerated (aPR 1.39, 1.29 – 1.50).

Conclusions: Nearly half of women in our study had been incarcerated. Recent incarceration was associated with several sexual risk behaviors and partner characteristics that increase the risk of HIV. Incarcerated women were also more likely to be HIV-positive. HIV prevention, testing, and early treatment among women with a history of incarceration can maximize the effectiveness of the public health response to the HIV epidemic.

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LIPODYSTROPHY AND BODY CHANGE DISTRESS IN OLDER WOMEN WITH HIV

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Background: HIV and some antiretroviral drugs are associated with lipodystrophy, an abnormal redistribution of body fat marked by increased abdominal adiposity and/or loss of subcutaneous fat stores. Other risk factors include older age, genetic factors, and longer treatment duration, making this issue salient to those living with HIV for long periods. Lipodystrophy is associated with body image dysphoria, decreased quality of life, and lower adherence to HIV treatment.

Objectives: (1) To describe body change and related distress, and (2) to examine associations among body change distress, depression, and health among older women living with HIV.

Methods: Data were collected as part of a cross-sectional study examining psychosocial concerns of older women with HIV. Participants (*N*=64) completed a demographic survey and self-report measures of HIV-related body change, depression, and health status. Independent samples *t*-tests and Pearson's *r* correlations were calculated.

Results: Average age was 52.4 years (*SD*=6.3), 58.7% were African American/Black, and 34.9% had < high school education. Mean time since diagnosis was 13.6 years (*SD*=7.3). Among those reporting current HIV treatment (*n*=60), common body changes included increased belt/waist size (57.6%), decreased fat in the buttocks (35.6%) and arms/legs (30.5%), sunken cheeks (29.3%), and fat deposits in the neck (23.7%). Women reporting more body change distress reported significantly more depressive symptoms (*r*=.581, *p*r=.427, *p*=.001). Increases in belt/waist size were significantly associated with higher depression scores (*t*[57]=2.33, *p*=.023).

Conclusions: Fat redistribution, particularly increased abdominal adiposity, was common in this sample of older women living with HIV, and was associated with more severe depressive symptoms. Women endorsing body change distress also noted worse physical pain. It is imperative to develop interventions for this population given the growing number of aging women with HIV and the relation between lipodystrophy and health outcomes. Interventions

that combine aspects of depression/chronic pain management and physical activity promotion may hold promise.

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NATIONAL HIV BEHAVIORAL SURVEILLANCE AMONG MEN WHO HAVE SEX WITH MEN IN THE US:A COMPARISON OF WEB-BASED AND VENUE-BASED SAMPLES

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Objectives: To describe the difference in sociodemographic characteristics and risk behaviors between men who have sex with men (MSM) recruited using two different approaches: web-based (WB) and venue-based (VB) sampling.
Methods: We compared the 2012 Web-based HIV Behavioral Survey (WHBS), which recruited MSM online (e.g., direct marketing on Facebook), and the 2011 National HIV Behavioral Surveillance (NHBS), which sampled MSM from physical MSM venues. Chi-square tests were used to compare sociodemographic characteristics. Poisson regression with generalized estimating equations were used to estimate prevalence ratios for each behavioral outcome adjusting for sociodemographic characteristics.
Results: There were 3221 WB and 9256 VB sexually active MSM included in analyses. Compared to the VB sample, the WB sample was slightly older, less likely to be black or Hispanic and from the South, and more likely to have higher income, more education, and health insurance. WB MSM were *more* likely than VB MSM to self-identify as gay/homosexual (aPR=1.05, CI: 1.03-1.07), ever socialize on the Internet (aPR=1.19, CI: 1.15-1.24), have met their last partner online (aPR=2.41, CI: 2.24-2.59), have anal intercourse without a condom with last male sex partner (aPR=1.21, CI: 1.15-1.29). The WB MSM were significantly *less* likely to have multiple male sex partners (aPR=0.92, CI: 0.88-0.96), inject drugs (aPR=0.60, CI: 0.47-0.78), test for HIV in the past 12 months (aPR=0.82, CI: 0.79-0.85), report HIV-negative status (aPR=0.95, CI: 0.93-0.97), receive free condoms (aPR=0.86, CI: 0.81-0.92), and experience physical assault (aPR=0.86, CI: 0.81-0.92) than VB MSM.
Conclusions: WB MSM were less likely to be minority MSM and had higher SES status. We also found differences in sexual and drug using behaviors and HIV testing. The method for recruiting MSM into a behavioral survey should consider the segment of MSM to be reached.

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PATIENT-LEVEL BARRIERS AND FACILITATORS OF CERVICAL CANCER SCREENING AMONG HIV-POSITIVE WOMEN IN INDIA

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Although the risk of cervical cancer (CC) is higher in women living with human immunodeficiency virus (HIV), there is no national policy for CC screening in India. Thus, many women living with HIV in India do not get regular CC screening. Based on the Social Ecological Model, this novel qualitative study evaluated patients' and health care providers' perceptions of patient-level factors associated with receipt of CC screening among women living with HIV. Using a standardized guide, in-depth interviews were conducted with 25 women living with HIV (mean age: 37.2 years) and 15 health care providers (mean age: 36.1 years; 66.6% female) recruited from New Civil Hospital in Surat, India. Interviews were audio recorded, transcribed verbatim, translated if necessary, and analyzed using content analysis. Participants noted that women with HIV were generally motivated to stay healthy but had significant gaps in understanding of CC and CC screening. Fear of obtaining the Pap test and its results were also noted by some participants as barriers. Some participants indicated that it was difficult for women to take time away from family, work, or household responsibilities, and this made it difficult to get CC screening. Finally, most interview participants stated that women were very interested in learning more about CC screening. Results obtained from this study, combined with data assessing organizational, interpersonal, community, and societal barriers and facilitators to CC care, will be used to develop intervention strategies to assist women living with HIV in getting CC screening

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BEHAVIORAL HEALTH INTEGRATION IN 3 PRIMARY CARE CLINICS: QUALITATIVE EVALUATION & STORIES FROM THE FRONT LINES

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Background

Health care systems nationwide are implementing routine behavioral health screening, including screening for depression and substance use, in response to mounting evidence supporting benefits of integrating behavioral health in primary care. Between 3/2015 and 3/2016, 3 pilot primary care clinics in a large Pacific Northwest health care system sequentially implemented behavioral health integration [BHI]. This included routine screening and diagnostic assessment for depression, alcohol, marijuana and drug use, and same-day referrals to social workers [LICSWs] for patients with acute care needs (i.e. suicide risk, substance-use issues). Screening rates increased from 14-35% for depression and 5-13% for substance use, prior to BHI, to 60-82% for both, following BHI. This qualitative study evaluated the multi-pronged implementation strategy.

Methods

We used the Greenhalgh Model for diffusion of innovations to assess barriers to and facilitators to behavioral health screening and assessment, two key elements of BHI. The implementation strategy included: use of automated electronic health record [EHR] systems to prompt and document care, partnership between front line clinical operations and a leadership team, and tools that explicitly addressed frontline staff attitudes and skills. Research team members assessed barriers and facilitators to implementation in weekly formative evaluation meetings.

Results

Facilitators of successful implementation included: perceived value of the screening, diagnostic assessments and EHR tools/prompts by clinicians (*Innovation*), hands-on participation in implementation by frontline staff (*Linkage*), and use of LICSWs to provide same-day behavioral health care (*Resources*). Barriers included: fragmented clinic communication and work flow, clinic quality improvement process limitations (*Infrastructure*), and competing priorities for clinicians' time during the patient visit (*Readiness*).

A key facilitator was sharing stories from frontline staff *adopters* with new sites. For example, one MA described, "*When we were first approached about BHI, we all thought 'oh, more paperwork, more work for us…' it turned into this very powerful role, making us feel like it's not just about paperwork, it's us being allowed to get closer to the patient... I am able to be a big part of somebody's betterment. It's rewarding on such a deep level.*" Other stories included identification of heavy alcohol use by a diabetic man at risk of a second foot amputation, and acutely suicidal patients being treated for other common conditions (e.g. influenza, wart removal).

Conclusion

This study identified key facilitators and barriers of BHI implementation in 3 clinics in which these strategies were piloted. Findings were used to refine the implementation strategy for the health care system.

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SLEEP PROBLEMS ARE RELATED TO POOR MEDICATION ADHERENCE AMONG YOUNG ADULTS

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Suboptimal medication adherence is common among individuals with chronic medical conditions, and is also associated with poorer health outcomes, decreased quality of life, and increased morbidity and mortality. For emerging young adults, transition to college and corresponding increases in independence are associated with declines in medication adherence. College students are also likely to report insufficient and significantly disrupted sleep patterns, which has been shown to increase risk for medication non-adherence in middle-aged and older adults. The purpose of this study was to examine the relationship between sleep quality and daily medication adherence among a representative sample of college students. We sampled 785 undergraduates at a large state university (mean age = 18.89; 84% female; 28% non-white) who were prescribed a daily medication (including oral contraceptives) and had them complete an online cross-sectional survey assessing self-reported sleep patterns and medication adherence. Sleep was assessed using the Pittsburgh Sleep Quality Index, and medication adherence was assessed using the Morisky Medication Adherence Scale. Results showed that 78.4% of participants reported ‘fairly bad’ or ‘very bad’ sleep quality over the past month, and 72.6% reported problems with medication adherence. Pearson's correlation coefficients were calculated to determine the relationships between sleep quality, hours of sleep, and daytime functioning with medication adherence. We also conducted a series of hierarchical linear regression analyses predicting medication adherence from each of our sleep variables. Adherence scores were positively correlated with sleep duration ($r = 0.419$, $p < 0.001$), sleep quality ($r = 0.461$, $p < 0.001$), and daytime functioning scores ($r = 0.434$, $p < 0.001$). Longer sleep duration ($b = 0.143$, $p < 0.001$), and greater daytime functioning ($b = 0.099$, $p = 0.007$) significantly predicted better medication adherence, even after controlling for participant age, race, and gender. These results indicate that insufficient sleep and related daytime dysfunction were significant risk factors for poor medication adherence in our college sample. These findings also suggest that interventions that address poor sleep among college students may also have a positive effect on their medication adherence.

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ACADEMIC ACHIEVEMENT AND DEPRESSIVE-LIKE SYMPTOMS AMONG ADOLESCENT CAREGIVERS FOR GRANDPARENTS WITH AND WITHOUT DEMENTIA

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Alzheimer's disease remains the sixth leading cause of death in the United States, and rates are predicted to increase after age 65. Common symptoms include loss of interest in activities, trouble overcoming difficulties, self-harm, feelings of shame, and cognitive decline. However, little research has explored dementia as a developmental disease and examined the academic abilities and cognitive function of younger individuals who may be genetically predisposed by a family history of dementia. This study seeks to elucidate a link between a family history of dementia and cognitive functioning such as academic performance and depressive-like symptoms among adolescents by comparing those who report caregiving for a grandparent with and without dementia. Adolescents who reported caregiving for a grandparent with (n=19) and without (n=19) dementia, grades 9 through 12, were matched on demographics and were compared for differences in self-reported GPA, perceived stress, shame, and depressive symptoms. A paired samples t-test revealed no academic grade differences between the dementia and control group, p=0.27, nor was there a difference in overall stress or depressive symptoms, p=0.12. Given previous literature linking dementia with trouble overcoming difficulties, loss of interest in activities, and increased self-harm, an analysis of individual items concerning these topics were made. The dementia group (M=3.19, SD=1.28) reported more trouble overcoming monthly difficulties compared to the control group (M=2.13, SD=1.26), p=0.02. They also reported increased loss of interest in usual activities (M=0.94, SD=1.16) compared to the control group (M=0.22, SD=0.55), p=0.01. The dementia group (M=1.72, SD=0.75) showed a trend of increased shame compared to the control group (M=1.33, SD=0.41), p=0.05. Lastly, there was a trend such that the dementia group (M=0.76, SD=1.35) reported more frequent thoughts of self-harm compared to the control group (M=0.06, SD=0.24), p=0.05. These findings suggest that a family genetic predisposition of dementia may increase dementia related symptoms, such as experiencing trouble overcoming daily difficulties and a loss of interest in usual activities, at a younger age. Limitations of the present study notwithstanding, further research to increase our understanding of dementia as a developmental disease that may influence cognition and behavior as early as adolescence is recommended.

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CAREGIVER RELATIONSHIPS AND GENERAL SUPPORT RELATED TO DEPRESSIVE SYMPTOMS AND BMI

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Supportive relationships have been associated with decreased risk for poor mental and physical health outcomes (Holt-Lunstad et al., 2010; Oliveira et al., 2013). However, the relationship between specific sources of social support at different developmental time periods and health-related outcomes is less clear. Thus, we examined the linkages between support from caregivers early in life, current social support from friends, and current general support, and makers of physical health (i.e., total-body adiposity as a risk factory for a number of chronic diseases) and mental health (i.e., depressive symptoms) among young adults.

Undergraduate students (N = 103, M_{age}=19.91, *SD*=1.91) from diverse backgrounds (Asian American = 59, Latino = 21, Other ethnicity = 23) reported on their early caregiver relationships (e.g., During childhood and adolescence, my primary caregiver…" was affectionate to me"), current friend social support (e.g., "I could count on my friend when I needed to talk"), and current general support ("I have *someone* who understands my problems"). They also reported on their depressive symptoms (e.g., "you felt lonely"), and height/weight, which was used to calculated body mass index (BMI), a validated indicator of total-body adiposity.

Multiple regression analyses controlling for sociodemographic variables (i.e., ethnicity, parent education, and age) revealed that higher current friend support and general support were associated with lower depressive symptoms (*bs* = -.21, -.26, *SE* = .06, *p* < .001). By contrast, support from primary caregivers early in life was not associated with depressive symptoms (*b* = -.10, *SE* = .08, *p* = .24). When all three forms of relationship were entered into the same model, only general support (i.e, having *someone*), but not support from specific source, was associated with depressive symptoms (*b* = -.20, *SE* = .07, *p* = .01). In terms of physical health, friend and general support were only marginally predictive of BMI (*bs* = -.77, -89, -.26, *SE* = .46, .49, *p* < .10).

These results suggest that having a friend or someone else to rely on from support may decrease risk of depression and perhaps adiposity. Supportive relationships during childhood and adolescence may be less consequential. This may be due to the protective role of social

support in the effects of stress. Stressful events often precede depressive episodes, and support is known to be an effective coping mechanism. Current support may be immediately helpful for dealing with current stress whereas support in the past may be less relevant.

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COGNITIVE BEHAVIORAL THERAPY COMBINED WITH PHYSICAL EXERCISE FOR DEPRESSION IN ADULTS WITH CHRONIC ILLNESSES: A META-ANALYSIS

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Interventions combining cognitive behavioral therapy and physical exercise (CBTEx) have been shown to be efficacious at reducing depressive symptoms in various chronic illnesses. The objectives of this review were to systematically examine the absolute efficacy of CBTEx interventions, and then relative to usual care, CBT alone or exercise alone on depressive symptoms reduction in adults with chronic illnesses. Database searches identified randomized controlled trials of people with chronic illnesses (*e.g.*, cancer, heart failure, chronic fatigue) participating in CBTEx interventions compared with control (usual care, waiting list) or active comparators (*e.g.*, exercise, CBT alone). Relevant studies, published before July 2016, were traced through a systematic search of Pubmed, Embase, PsyInfo, Cinahl, SportDiscus and Cochrane Library databases. Standardized mean differences (SMD) were calculated for each intervention arm and control comparison. The pooled SMD associated to CBTEx (19 trials, 2190 participants) was -0.24 (95%CI: -0.43 to -0.06; I^2= 56%). When compared with usual care (11 trials, 1256 participants), the magnitude of effect was greater (SMD = -0.37, [CI: -0.58 to -0.17]); I^2 = 56%). The reduction in depressive symptoms was not statistically different between CBTEx and exercise (SMD = -0.26, [CI: -0.74 to 0.23], 7 trials, 623 participants) or between CBTEx and CBT (SMD = -0.08, [CI: -0.24 to 0.07], 10 trials, 845 participants). Findings suggest a short-term effect of CBTEx on depression in adults with chronic illness. However, CBTEx does not seem to be superior to exercise or CBT alone for decreasing depressive symptoms. Further research should investigate the potential moderators of interventional efficacy, such as participants' adherence, the methodological quality and selected sample characteristics.

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DISTRESS INTOLERANCE AS A MODERATOR OF THE BENEFIT OF PHYSICAL ACTIVITY: OUTCOMES FOR DEPRESSION

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Negative affect and distress intolerance (DI) are linked to a wide variety of negative health behaviors. For example, DI has been linked to overeating, underactivity, smoking, and illicit drug use behaviors (Otto et al., 2016). There is strong evidence from both laboratory and clinical studies that physical activity (PA) interventions are efficacious for both improving mood and rapidly reducing DI (e.g., Smits et al., 2008), and that PA may have particular efficacy for those with high DI. For example, Smits found that the benefits of a program of PA for smoking cessation were specific to smokers with high DI (measured by anxiety sensitivity; Smits et al., 2016). In the present study, we examine the role of PA as an adjunctive treatment for major depression, and likewise examine whether mood benefits were moderated by baseline level of DI (measured with the Distress Intolerance Index; DII, McHugh & Otto, 2012).

A total of 32 sedentary depressed outpatients (M age=33.7±13.4, 78% female) were randomized to receive 9 sessions of a behavioral activation treatment in combination with either PA (n=15) or a control treatment (stretching; n=17) over the course of 12 weeks. These augmentation strategies involved 6 weekly 30-minute sessions in which participants planned exercise/stretching for the week and received motivational interventions (Otto & Smits, 2011) to improve adherence to their respective regimens.

Analyses indicated the total sample was in the moderate range of depression (27.0±10.2) and distress intolerance (DI; 19.1±8.8) at baseline. Patients reported engaging in 359 metabolic equivalent (MET) minutes of vigorous and moderate intensity exercise at baseline (about 81 minutes of moderate intensity exercise). In a mixed effects linear regression, results indicated that regardless of PA condition, patients improved significantly with treatment ($p < .001$). Also, those in the adjunctive PA condition achieved a significantly greater reduction in DI ($p < .02$). In addition, the degree of benefit was moderated by baseline DII score; those with high DI who were treated with adjunctive PA achieved significantly more mood benefit over time ($p < .01$). These results are consistent with recent findings identifying DI as a transdiagnostic factor that may help explain comorbidity and may moderate the benefits of treatment for conditions ranging from depression and smoking to Type II Diabetes, HIV, and obesity.

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GENERAL AND MENTAL HEALTH SERVICE CONNECTION IN POST 9/11 VETERANS

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Despite the relatively high numbers of service-connected injuries among Post 9/11 veterans returning from Iraq and Afghanistan (OEF/OIF), predictors of service connection have only been minimally studied in this group of veterans. The present study aimed to explore differences among service connected and non-service connected OEF/OIF veterans and examine sociodemographic and military predictors of general service connection. Prevalence and predictors of service connection were assessed in 1193 OEF/OIF veterans registering with the VA San Diego Healthcare System. Veterans completed a self-report questionnaire that recorded service history, exposures while in the military, number of deployments, and combat experience. Descriptive statistics and chi-square and t-test analyses were conducted to explore differences in key variables between service-connected and non-service connected veterans. Multivariable logistic regression was used to identify predictors of service connection status. Over one-half of veterans were service connected for at least one condition (n = 641; 53.7%). A smaller subset of veterans (n = 251; 21.0%) were service-connected for at least one mental health condition. Modeling general service connection revealed that career branch was associated with general service connection but concerns about exposures, combat experience, number of deployments, and rank were not. Models for mental health service connection identified that perceived harmful exposures (OR: 1.67; 95% CI: 1.13, 2.45) and career branch (Army compared to Marines OR: 2.32; 95% CI: 1.22, 4.44) were statistically significant predictors. Improved understanding of predictors of service connected disability can inform strategies for prevention of such disabilities and interventions to improve support for returning veterans.

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LATINO VETERAN MENTAL HEALTH SERVICE UTILIZATION

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Latinos represent 18% of the 2.1 million US troops deployed to combat Post 9/11. Since 2001, 56.9 percent of the 1.1 million veterans who used VA healthcare received a mental health (MH) diagnosis. Research has identified disparities in health service utilization between Latinos and non-Latino White individuals. Given these disparities in non-veterans and the need for MH care among Post-9/11 veterans, the purpose of this study was to better understand the MH treatment seeking behavior of Post 9/11 Latino veterans. Aims were to: 1) examine differences in MH service utilization between Latino and non-Latino White veterans; and 2) examine the relationship between potential predictors of MH service utilization by using the Behavioral Model for Health Service Utilization (BMHSU). Previously collected data at VA San Diego Healthcare System were used to examine patterns of MH service utilization in a 740 Post-9/11 veterans with 35% Latino (n = 259) and 65% non-Latino White (n = 481). The sample was primarily male (84.9%) and aged 21 to 67 years (M = 30.48; SD = 7.31). Predisposing, enabling, and need factors from BMHSU were tested as predictors of MH service utilization. Stepwise logistic regression analyses were performed using significant variables from preceding univariate analyses to determine predictors of service utilization. No significant differences in MH symptoms (all p's > .05) or rate of MH service utilization (30.5% vs 29.0%, p = 0.68) between the groups emerged. All BMHSU factors were significantly related to utilization in both groups, but only need predicted utilization in Latino veterans. Further, a positive pain screen made MH service utilization 2.97 times more likely in Latino veterans only. Except for pain, patterns of MH service utilization were similar in both groups of veterans in San Diego. The BMHSU does not seem to fully apply to Latino or non-Latino White Post 9/11 MH care utilization. Findings reinforce VA policy to screen veterans regularly for symptoms of depression, PTSD, TBI, and pain. The relationship between pain and MH utilization in Latino veterans warrants further study.

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NEIGHBORHOOD CHARACTERISTICS AND ADOLESCENT SUICIDAL BEHAVIOR

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Prior research suggests that neighborhood characteristics may be related to rates of suicidal ideation and suicide attempt in adolescents, but no study has examined these associations using a comprehensive array of both objective and subjective neighborhood factors. In the current study, we used a population-based sample of adolescents (N=4,615 12-17-year-olds) from the California Health Interview Survey (CHIS 2011-2014) Adolescents' residential addresses were geocoded to the census tract level and linked to objective measures of local violent crime risk, property crime risk, and socioeconomic disadvantage. We also assessed adolescents' subjective perceptions of their neighborhood's safety and neighborhood cohesion. Our outcome variables were any report of past-year suicidal ideation, suicide ideation in the past two months, and past-year suicide attempt, reported by 8.4% of the sample. We found that adolescents who lived in neighborhoods objectively characterized by high levels of violent crime, property crime, or by socioeconomic disadvantage were no more likely than their peers to engage in suicidal behavior. In contrast, adolescents who perceived their neighborhoods to be less safe were 45% more likely to have suicidal ideation in the past year, 42% more likely to have suicidal ideation in the past two months and 40% more likely to attempt suicide in the past year compared to their non-suicidal peers. Further, adolescents who perceived their neighborhoods to be less cohesive were 21% more likely to have suicidal ideation in the past year and 24% more likely to have suicidal ideation in the past two months compared to their non-suicidal peers. In our population-representative adolescent sample from California, only subjective perceptions of neighborhood characteristics appear to be related to risk of suicidal behavior. Individual-level risk factors may exert a more powerful influence on psychologically vulnerable youths

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PHYSICAL ACTIVITY AMONG ADULTS WITH PSYCHOTIC DISORDERS: PREFERENCES, BARRIERS AND PERCEPTIONS OF ADVICES

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Introduction: People with serious mental illness are more likely to have a poor lifestyle including high sedentary behaviours and low physical activity (PA). Recent finding acknowledge that PA can be beneficial on several parameters and it has been suggested that considering PA preferences would facilitate its initiation or maintenance. However, few studies assessed the PA preferences of people with serious mental illness. The objective of the present study was to describe the PA preferences of people with serious mental illness.

Methods: Cross-sectional study. Participants with serious mental illnesses were asked to complete several questionnaires about their PA preferences and their preferred context for PA practice.

Results: Among the 114 included participants (men: 60.5%; mean age: 31.94 ± 10.86), 55.3% were physically inactive and 49.5% were overweight or obese. The preferred PA were walking (55.3%), cycling (46.5%) and running (33.3%). Participants did not have preferences on the mode of supervision (37.8%) or preferred supervision by a PA specialist (31.9%). Close to half of participants preferred outdoor PA (46.8%) or did not have preferences (20.7%). The main obstacle to PA was lack of motivation (45.5%). Most of participants highlighted that advices from different mental health professionals were important for them (nutrition: 69.2%; tobacco cessation: 56.1%; PA: 73%) and considered their physical health as important as the improvement of their mental health (64.3%).

Conclusion: These results can be useful to conduct future PA interventions aiming at maintaining PA over the long-term and underline the importance of involving mental health professionals in this process.

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PHYSICAL ACTIVITY AND SUICIDE IDEATION AMONG YOUTH: THE ROLE OF PHYSICAL ACTIVITY ENJOYMENT

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Physical activity and suicide ideation among youth: The role of physical activity enjoyment

Background: The suicide rate among children and adolescents in the United States has increased dramatically in recent years. Hence, a growing number of studies have been conducted to understand the underpinnings of suicidal ideation (SI) in youth. A few studies have suggested that engaging in physical activity (PA) may be protective against SI in youth. Yet, inconsistencies in the results of these studies indicate that there may be unexplored factors such as physical activity enjoyment (PAE) that can help us to better understand the mental health benefits of PA in relation to SI. Thus, this study aimed to investigate whether PAE is associated with SI, and whether PAE moderates the association between PA and SI in children.

Methods: This study used baseline questionnaire data from 185 mothers and their children enrolled in the Mothers' and Their Children's Health (MATCH) study. SI was assessed through mothers' reports on the Child Behavior Checklist (CBCL). Minutes per day of moderate to vigorous physical activity (MVPA) was assessed through the child-reported 3-Day Physical Activity Recall (3DPAR), and dichotomized by whether the child met the recommendation of at least 60 minutes per day or not. PAE was assessed through the child-reported Physical Activity Enjoyment Scale (PACES). Multiple logistic regression models were conducted to estimate the likelihood of SI as a function of PAE and engaging in at least 60 minutes of daily MVPA. The interaction of 60+ minutes of MVPA and PAE was included in a subsequent model controlling for age, gender, ethnicity, single parent status and receiving free lunch at school.

Results: MVPA was not associated with SI (OR= 1.782, 0.582-5.452), and PAE was associated with a reduced likelihood of SI (OR=0.485, 0.267-0.883). In the model with the interaction term, the interaction between MVPA and PAE was not significant (OR=0.388, 0.111-1.359).

Conclusion: The enjoyment of physical activity instead of physical activity behavior itself may

be more closely tied to lowered SI among children. Interventions that seek to boost children's enjoyment of physical activity in addition to increasing levels of physical activity behavior may be critical to children receiving the mental health benefits of physical activity, especially among those at risk of suicide.

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SEXUAL SATISFACTION, ANXIETY, AND ESTEEM WHILE PRESCRIBED PRE-EXPOSURE PROPHYLAXIS (PREP) AMONG GAY AND BISEXUAL MEN.

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Background: Once-daily PrEP is the most effective biomedical HIV prevention tool currently available. In addition to its protective effects against HIV, PrEP may have other benefits for gay and bisexual men (GBM), including improved mental health. The present study sought to investigate the association between PrEP use and levels of sexual anxiety, sexual esteem, and sexual satisfaction among PrEP users.

Methods: Within a larger U.S. national sample of 1,013 HIV-negative GBM, 580 (57.3%) reported recently engaging in sex with a casual partner. These men provided data on whether they were prescribed PrEP and completed the sexual satisfaction, sexual anxiety, and sexual esteem (multidimensional sexual self-concept) questionnaire.

Results: In total, 70 (12.1%) reported currently being prescribed PrEP and 510 (87.9%) were not currently prescribed. Adjusting for demographic differences (i.e. age, race, income), men currently prescribed PrEP reported more sexual satisfaction ($\beta = 0.30$, $SE = 0.14$, $p = 0.04$) and less sexual anxiety ($\beta = -0.28$, $SE = 0.12$, $p = 0.02$), but were not statistically different with regard to sexual esteem ($\beta = 0.25$, $SE = 0.14$, $p = 0.07$).

Conclusions: These results indicates that there may be benefits to taking PrEP for some GBM that go beyond (but may be due in part to) its protection against HIV acquisition. These findings suggest that being in PrEP may lead to reduced sexual anxiety associated and greater satisfaction though the directionality of these associations may also be reversed. Future longitudinal research is needed to better examine whether the health-protective effects of PrEP may also lead to psychological benefits.

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SUPPORT TO KINSHIP CAREGIVERS IMPROVES CHILD BEHAVIOR: RESULTS FROM THE KIN TECH RCT

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Background: One in 11 of all children and 1 in 5 African American children live with a grandparent at some point before the age of 18. While children raised by grandparents experience more risks of psychological difficulties than children in the general population, especially experiencing trauma at a young age, few studies have examined which interventions can improve psychosocial impairment for children raised by grandparents.

Purpose: This study identified psychosocial impairment using baseline, six month post test, and 12 month follow up self-report data on the Pediatric Symptom Checklist obtained from kinship caregivers enrolled in the KIN-Tech randomized controlled trial funded by the US Children’s Bureau. Descriptives and repeated measures ANOVAS were used to examine mean differences between and within treatment groups (Navigation, Extended Family Support, and Usual Care).

Results: Participants in this study included 1100 female kinship caregivers from low income households (m=$23,000), middle-aged (m=48), unmarried (70%), African American (47%) caring for multiple relative children (65% caring for more than one child). 48% (n=528) of caregivers earned at least a high school diploma. Participants in the navigator and extended family support programs reported a statistically significant reduction in their children’s conduct, anxiety and attention problems [Navigator Program, F(252,3)=3.58, p = .023] [Extended Family Support, F(849,3)=5.14, p = .000]. Participants in the usual care group reported an increase in conduct and anxiety problems, but a decrease in attention problems.

Conclusions: Participants randomly assigned to a kinship navigator program and an extended family support program showed reduction in the conduct, anxiety and attention problems that was significantly different than those assigned to the usual care group. Future studies should explore which specific program components are most beneficial for kinship caregivers

and help promote responsive and competent caregiving for the children living in non-parental care.

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THE MENTAL HEALTH SYSTEM IN NORTHERN TANZANIA: PROVIDER PERCEPTIONS OF THE PRESENTATION AND TREATMENT OF MENTAL ILLNESS

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The steady globalization of western models of mental health treatment is causing an influx of practitioners, ideas and resources to developing nations. One such country, the United Republic of Tanzania, is at a crucial stage in the development of its mental health system. As of 2009, there were 18 psychiatrists serving this nation of 51 million people and a gross lack of resources being dedicated to mental health treatment. However, as international organizations shift focus to noncommunicable diseases, there have been some signs of growth in the Tanzanian mental health system, including the establishment of new training programs and professional associations in psychology. As services continue to develop, there is a need for solid foundational research aimed at understanding the unique challenges and strengths of providing mental health care in this context.

We conducted interviews with 29 mental health providers in a variety of treatment settings in northern Tanzania to examine their perceptions of the treatment currently being offered, the characteristics of the patient population, and future directions in mental health treatment. Responses were analyzed using consensual qualitative research (CQR) methodology and offer a nuanced perspective of the characteristics, strengths, and challenges of the Tanzanian mental health system. Participants acknowledged that there is a widespread lack of mental health providers in the region, inadequate resources dedicated to mental health, very little coordination among providers, and major social, logistical, and cultural barriers that prevent all but the most severe patients from seeking or receiving care.

The research provides an important baseline of understanding to inform the ongoing development and improvement of mental health services in the region. In response to the concerns identified, we propose a three-part improvement plan consisting of (1) improving the availability and quality of care via investment in training programs and facilities, (2) Maximize existing resources via task shifting programs aimed at improved coordination of various types of care, and (3) Address barriers to seeking care via public education, stigma reduction, and improved cultural compatibility of care.

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USING ECOLOGICAL MOMENTARY ASSESSMENT TO EXAMINE RELATIONS BETWEEN PHYSICAL ACTIVITY AND AFFECT IN ADULTS WITH MENTAL ILLNESS

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Background: Adults with serious mental illness (SMI) engage in limited physical activity, which contributes to significant health disparities and premature mortality in this population. The need for basic research on physical activity mechanisms that can be translated into life style interventions for individuals with SMI is urgent. Individuals with SMI may experience different patterning of emotional experiences than individuals without SMI. This study aims to examine the interrelations between affective states and physical activity among the SMI population.

Methods: This study used ecological momentary assessment (EMA), a real-time data capture strategy to assess subjective positive and negative affective states in free-living setting up to 7 times per day across 4 days from 21 Latino adults diagnosed with SMI. Participants were equipped with an accelerometer which provided an objective measure of their moderate-to-vigorous physical activity (MVPA) during the study period. Multilevel modeling was used to test the bi-directional associations between affective states and MVPA across the day.

Results: Participants (49.0±13.1 years, 76.2% female) engaged in limited MVPA, with only 30.2% engaging in ≥1 minute of MVPA in the 30-minute prior to any given EMA prompt (median MVPA: 2.5 minutes, range 1-28 minutes). Participants who on average reported more positive affect than others in the study had a higher probability in engaging in some MVPA versus no MVPA during the study period. However, among participants who engaged in some MVPA during the study period, reporting more positive affect on average than others was associated with less MVPA on average. In addition, engaging more MVPA than one’s usual in the 30-minutes prior to an EMA prompt was associated with more negative affect at that prompt.

Conclusions: Engagement in more MVPA was generally associated with feeling less positive and more negative affect among individuals with SMI. This finding suggests that the types of physical activity performed in this population (such as active transportation) may not be

perceived enjoyable or pleasant. The results provide new insights into the unmet needs of individuals with SMI and offers new directions for future research.

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WE'RE GRAY, GAY AND HERE TO STAY: TRAUMA HISTORY, SOCIAL SUPPORT AS CORRELATES OF RESILIENCY IN LESBIANS AND GAY MEN OVER AGE 50

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Traumatic experiences have long-lasting effects, such as the development of psychopathology (Hatzenbuhler, 2009). Lesbians and gay men are more likely to experience trauma (Brown et al., 2011). Further, older cohorts of lesbians and gay men (LG+50) likely have larger cumulative trauma histories (TH; Hash et al., 2013). The dearth of research on TH in LG+50 requires examination of protective factors and trauma outcomes (Brown et al., 2011).

Social support (SS), a protective factor, may increase Resilience among sexual minorities, as it lessens the impact of discriminatory events (Kwon, 2013). Resiliency may be a preferential trauma outcome, as Resiliency is associated with brief dysregulation (Westphal et al., 2007). Additionally, Resiliency is more prevalent in populations that face adversity (Tomac, 2011). As LG+50 face dual discrimination, Resiliency is the ideal outcome in response to a traumatic event. Despite the prevalence of traumatic events for LG50+, little research explores SS and Resiliency. As both are relevant to LG+50, the aim of the current study is to examine the mediating effect of SS (UCLA SSI; Dunkel-Schetter et al., 1986) on TH (THQ; Green, 1996) and resilience (CD-RISC; Connor et al., 2003).

We recruited LG+50 (N = 100; n =71; M_{age} = 59, SD = 5.9), and excluded those who had not experienced a traumatic event. To test for mediation we entered covariates (gender, religiosity and HIV-positive status) into the first block of each analysis. HIV-positive status was the only significant covariate in indirect path a', showing that people living with HIV scored significantly lower on SS (β = -.42, p = .003). In the first step we examined direct relationship c' by regressing TH on Resilience (β = .03, p = .806). Though insignificant, we tested for full mediation. Indirect path a' between TH and SS (β = -.23, p = .039) and indirect path b', SS and Resilience (β = .44, p = .001) were significant. Additional Sobel analysis indicated full mediation (TS = 1.83, p = .003). This suggests SS is a mechanism that may help LG+50 develop Resilience. LG+50 with greater TH did not achieve resiliency, except though SS, reinforcing the importance of this developmentally and socially important mechanism.

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ARE SELF-EFFICACY MEASURES CONFOUNDED WITH MOTIVATION? AN EXPERIMENTAL TEST

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Self-efficacy (SE) is defined as confidence that one can perform a target behavior in the face of various obstacles. SE is highly predictive of a range of health behaviors and is a central construct in many theories of behavior.

Previous authors have argued that standard SE measures may actually tap respondents' motivation rather than their confidence that they can perform the behavior, particularly when the target behavior is under volitional control (e.g., physical exercise). This occurs because respondents tend to interpret the word "can" as willingness when asked whether they, for example, "can exercise even if they are not feeling well". If this is true, then priming respondents regarding the definition of the word "can" or to the contrast between "can" and "will", should increase SE ratings in the absence of any intervention.

In this study, 134 university students (65% female; 55% White) responded to a questionnaire assessing SE for exercise using a standard SE measure, behavioral intentions (BI) to exercise, and their definition of the word "can", as in "I can exercise today even though I am not feeling well". One month later participants were randomly assigned to complete either (a) the same SE and BI questionnaire as at baseline (i.e., control), (b) the same questionnaire but with presentation of each participant's definition of "can" prior to responding to the SE measure (i.e., definition priming), or (c) the same questionnaire but with SE items ("I can exercise . . .") placed side-by-side with BI items ("I will exercise . . .").

Generalized linear models were used to compare groups. Results showed increases in SE responses, relative to controls, for side-by-side ($b=12.08$, $SE=2.70$, $p < .01$), but not definition priming (ns). As expected, there were no effects of side-by-side priming, relative to control, on BI (ns), and the effects of side-by-side priming on SE ratings remained significant even when controlling for BI at times 1 and 2 ($b=8.87$, $SE=2.11$, $p < .01$), thus illustrating that SE ratings were manipulated by the side-by-side priming independent of BI ratings.

The results show that responses to SE items can be increased simply by placing them next to BI items. This suggests that responses to standard assessments of SE do not simply reflect respondents' confidence that they can perform the target behavior, but are confounded by their motivation to perform the behavior. Studies using standard assessments of SE should perhaps be reinterpreted in light of these findings.

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COMPARISON OF THE DIAGNOSTIC ACCURACY OF FOUR BRIEF DEPRESSION SCREENING INSTRUMENTS IN OVARIAN CANCER PATIENTS

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Objectives: We compared the diagnostic accuracy of 4 depression screening scales, using traditional and alternative scoring methods, to the gold standard Structured Clinical Interview-DSM IV major depressive episode (MDE) in ovarian cancer patients on active treatment.

Methods: At the beginning of a new chemotherapy regimen, ovarian cancer patients completed the following on the same day: the Center for Epidemiological Studies Depression Scale (CES-D), the Beck Depression Inventory Fast-Screen for Primary Care (BDI-FastScreen), the Patient Health Questionnaire-9 (PHQ-9), and a 1-item screener ("Are you depressed?"). Each instrument's sensitivity, specificity, positive predictive value (PPV) and negative predictive value were calculated with respect to major depression.

Results: One hundred and fifty-three ovarian cancer patients were enrolled into the study. Only fourteen participants met SCID criteria for current MDE (9%). When evaluating all patients regardless of whether they were already being treated with antidepressants or not, using a two-phase scoring approach with an alternate cutpoint of 6 on the PHQ-9 had the best positive predictive value (PPV=32%). Using a traditional cutpoint of 16 on the CES-D resulted in the lowest PPV (5%); using a more stringent cutpoint of 22 resulted in a slightly improved but still poor PPV, 7%.

Conclusions:

Using a two-phase scoring method for the PHQ-9, with an alternate cutpoint of 8 resulted in the best diagnostic performance among the four screening instruments. The traditional cutpoint of 16 on the CES-D and the one-item screener were among the worst methods and are not recommended as first-line screening methods in oncological settings.

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DEVELOPMENT AND VALIDATION OF AN AGENT BASED MODEL TO EXAMINE NEUROTICISM AND OBESITY

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The numerous, interacting factors involved in the etiological web of the obesity epidemic warrant examination with modeling methods that can realistically reflect these dynamics. Agent-Based Modelling (ABMs) is one of several complex systems techniques garnering interest among researchers in obesity research. ABMs use computer-generated algorithms to simulate the behavior of individual entities by assigning specific behavior rules, incorporating elements of stochasticity, heterogeneity, and non-linearity. They can also provide a blank canvas to explore potential interventions. Despite recent advances in computer processing and software that have broadened their accessibility, the novelty of this approach in the health field, combined with the wide range of possible techniques, makes navigating ABM construction challenging. Few studies exist that comprehensively explain the development process. A new approach for designing an ABM to examine the linkage between Neuroticism and obesity is presented in this study, providing a detailed description of the process for populating an ABM with real-world data, defining the behavior rules of the agents, structuring the model for future interventions, and validating the model. AnyLogic software (v. 7.6) was used to construct the model with data from two collection points (spanning 13 years) from the National Longitudinal Study of Adolescent to Adult Health (Add Health). The dataset (*N*=9176*)* was segmented by gender and cross-tabulated to define the starting or ending probabilities of weight classes (Under/Normal, Overweight, Obese) by Neuroticism score from the first wave of data collection. The data was randomly split into two equal groups, using half to construct the model, and reserving the rest to verify that no coding or structural errors existed. To validate that the simulated population did not differ significantly from the Add Health dataset, 1000 randomly-seeded Monte Carlo (MC) runs were performed, and a one-sample t-test was used to compare the mean counts in each weight class from the MC runs to the actual dataset means. No significant differences were found for starting weight (Under/Normal: p=0.16, Overweight: p=0.20, Obese: p=0.68), transitioning from starting weight (Under/Normal: p=0.32, Overweight: p=0.44, Obese: p=0.72), or ending weight (Under/Normal: p=0.95, Overweight: p=0.76, Obese: p=0.87), suggesting that the agents accurately reflect the real-world data. With the simulated population established, potential interventions to change Neuroticism scores can be implemented to identify the best feasible

solution for reducing obesity. The ABM construction process presented in this study serves as a modifiable template that may be used to explore relationships among other variables of interest in obesity research.

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EDUCATION, HEALTH LITERACY, AND NUMERACY: IMPLICATIONS FOR UNCERTAINTY ABOUT RISK

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Background: Uncertainty about risk, as operationalized by marking the “don’t know” response option for survey items assessing perceived risk of colon cancer, is related to sociodemographic characteristics (e.g., education), that have been associated with limited knowledge about colon cancer, limited cancer information seeking, and lower engagement in some cancer prevention and detection behaviors. Whether risk uncertainty is also associated with limited health literacy and/or numeracy has been hypothesized but not confirmed.

Objective: To examine whether uncertainty about colon cancer risk and diabetes risk are related to objective and/or subjective health literacy and numeracy.

Methods: Participants were recruited from the GfK Knowledge Networks Internet survey panel and answered questions regarding demographics, objective and subjective numeracy, and objective and subjective health literacy. They also completed items assessing perceived risk of colon cancer ($N = 999$) and diabetes ($N = 893$). Responses to risk perception items were dichotomized according to whether the participant did or did not respond “don’t know.”

Results: Unadjusted analyses indicated that don’t know responding (DKR) for perceived diabetes risk was lower among people with higher objective and subjective health literacy and numeracy ($ps < .05$). DKR for perceived colon cancer risk was lower among people with higher subjective health literacy and numeracy ($ps < .05$), but not higher objective literacy or numeracy. However, after adjusting for education, DKR for diabetes was only associated with subjective health literacy, and DKR for colon cancer was only associated with subjective health literacy and subjective numeracy ($ps < .05$).

Conclusion: Objective measures of health literacy and numeracy do not appear to account for significant variance in DKR above and beyond that accounted for by education. However,

subjective measures of health literacy and numeracy remain unique predictors of DKR. It is possible that these subjective self-report measures assess not only ability, but also confidence in understanding, engaging with, and using health information in a way that relates to people's levels of uncertainty about their risk of disease.

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ESTABLISHING CLINICAL CUTOFFS FOR THE SCREENING OF AVOIDANT/RESTRICTIVE FOOD INTAKE DISORDER

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Avoidant/Restrictive Food Intake Disorder (ARFID) is a new DSM-5 diagnosis intended to identify individuals who exhibit clinically significant restrictive eating problems (not primarily accounted for by shape or weight concerns), persistently fail to meet nutritional and/or energy needs, and experience psychosocial difficulties. Recent studies have indicated picky eating (PE; one manifestation of ARFID) can persist into adulthood and is associated with anxiety, depression, and OCD symptomology.

Two brief measures for ARFID symptoms and PE behaviors were recently developed to address a lack of measurement tools. The Nine Item ARFID Screener (NIAS) is a measure of rigid eating behaviors associated with ARFID, and the Adult Picky Eating Questionnaire (APEQ; Ellis et al., 2016) is a multidimensional measure of PE behaviors. The purpose of the current study was to assess the sensitivity and specificity of these measures to detect ARFID and establish a clinically useful cut score.

The current study included two samples: 1.) A general sample of 1219 college students who completed an online survey that included the NIAS and APEQ, and 2.) A sample of 450 adults selected for eating difficulties who completed the NIAS. Participants also completed the ARFID Symptoms Checklist (ARFID-cl). The ARFID-cl assesses cause, duration, and impairment and conforms to DSM-5 diagnostic criteria. It is meant to be used with people who meet a screening criterion. In the general sample 31 (2.5%) college students met criteria for ARFID; 65 (14.4%) in the selective sample.

Receiver Operating Characteristic (ROC) curve analyses were employed to establish cutoff scores for identifying a positive ARFID diagnosis. Area under curve (AUC) indicated that the NIAS ($AUC_{general}$= .87, $p < .001$; $AUC_{selected}$= .80, $p < .001$) and APEQ (AUC = .83, $p < .001$) were good screeners for ARFID. In the general sample, a cutoff of 44 on the APEQ and 24 on the NIAS both demonstrated good sensitivity (0.74) and specificity (0.84; PPV = 0.11; NPV = 0.99).

In the selective sample, a cutoff 28 on the NIAS demonstrated adequate sensitivity (0.71) and specificity (0.68; PPV = 0.69; NPV = 0.70).

The NIAS and APEQ are useful ARFID screeners but higher cutoffs need to be used in selective samples. This finding is likely due to medical and symptom complexity of the participants in the selective sample. Future research should investigate the utility of these measures in detecting symptom changes during treatment.

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FEASIBILITY OF USING ECOLOGICAL MOMENTARY ASSESSMENT WITH LOW-INCOME LATINO ADULTS EXPERIENCING SERIOUS MENTAL ILLNESS

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Background: People with serious mental illness (SMI) are more physically inactive and have higher rates of obesity, cardiovascular disease, and premature death compared to the general population. Emerging mobile technologies offer opportunities to examine how unique affective and environmental factors influence weight-related behaviors in this population and develop targeted real-time interventions. However, concerns about poor compliance, unreliable responses, and participant burden present potential barriers to implementation. The aim of this exploratory mixed-methods study was to test the feasibility of using smartphone-based ecological momentary assessment (EMA) methods to examine weight-related behaviors in low-income Latino adults with SMI.

Methods: Twenty-one adults (ages 21-63 years, 76% female, 95% Latino, 48% Spanish-speaking) were recruited from an integrated physical and behavioral healthcare clinic for low-income adults with SMI. After receiving instruction on how to use the study phone, EMA application, and waist-worn accelerometer, participants completed four days of activity, GPS, and signal-contingent EMA monitoring with up to 7 survey prompts per day. EMA surveys measured mood, weight-related behaviors, social and physical context, SMI symptoms, and substance use. Participants returned one week later to complete in-depth interviews that focused on study experience. An interactive GPS map of EMA responses was used to elicit information about how mood and context impacted physical activity using qualitative methods.

Results: Participants completed 82.9% of 520 EMA surveys overall, and provided an average of 3.67 valid days (>10 hrs/day) of accelerometer data. Participants reported being alone immediately before the prompt in 39.7% of surveys, physical activity in the past hour in 15.9% of surveys, psychotic symptoms in the past hour in 4.8% of surveys, and crying spells, poor focus or poor appetite in 10.6% of surveys. Qualitative analysis of follow-up interviews revealed almost half of participants experienced feelings of anxiety or stress using the EMA app. Reasons for reporting feelings of anxiety or stress included feeling a need to stay vigilant

to not miss surveys, lose the phone, or let the battery die, and from limited experience using smartphones.

Discussion: This pilot study demonstrates that although EMA can be effectively used to collect real-time physical activity data in low-income populations with SMI, measures should be taken to minimize undue participant burden due to low technological literacy and pressure to comply that may result in exacerbation of SMI symptoms (e.g., anxiety).

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IDENTIFYING BEHAVIORAL PATHWAYS TO SMOKING CESSATION: DECIDE2QUIT RANDOMIZED TRIAL

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Background: Understanding behavioral pathways through which technology-assisted tobacco interventions support smokers can inform improvements.
Methods: A randomized trial with complete follow-up on 369 smokers had previously demonstrated more quitting (OR = 1.7) among users of an interactive website with motivational messages (enhanced) than for those assigned to the website only. Here we explore patient-reported influences of the intervention on subsequent cessation. After 6 months of website use, we asked if users had quit smoking in the last 30 days and if they agreed using the intervention had influenced 8 smoking cessation behaviors (cutting down; quitting; setting a quit date; using nicotine replacement therapy; using behavioral strategies; making a list of reasons to quit; talking to a doctor; getting support for quitting). We compare perceived influence between randomized groups, and assess six-month cessation rates by each influencing variable, then examine 9 logistic regressions to predict quitting, controlling for age, sex, and baseline readiness-to-quit: 1 regression for each influence item alone and 1 with all 8.
Results: Most were female (63%) over age 45 (65%) and had been thinking of quitting (81.5%) at baseline. Most agreed that the intervention influenced them to cut down on smoking (61%), talk to a doctor (56%), use behavioral strategies (55%), and make a list of reasons to quit (53%). More smokers in the enhanced group endorsed the value of the intervention for each of the 8 questions (differences ranged from 2.8 to 11.8%; only 3 were significant at the $P < 0.05$ level). In the 8 individual regressions, influence on “quitting smoking” was positively associated with quitting (OR 3.01 (95% CI 1.76-5.15)), while influences on “cutting down on smoking” and “using nicotine replacement therapy” were negatively associated (ORs = 0.58 (95% CI, 0.34-0.98) and 0.44 (0.24-0.83), respectively); no other influences were associated with quitting (all $p > 0.20$). Findings from the combined regression were qualitatively similar.
Conclusion: Cutting down to quit is controversial, and was negatively associated with cessation. Our unexpected finding (re: NRT) could be due to residual confounding by severity of addiction, needs further exploration.

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MONITORING DAILY EXERCISE FOR 1 YEAR USING SMARTPHONES: VALIDITY OF ECOLOGICAL MOMENTARY ASSESSMENT

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Background: Accelerometers have been used in research to objectively quantify exercise for over two decades. However, these devices are expensive, are burdensome to participants, and the derivation of exercise bouts from their data is arduous. The purpose of this study was to calculate the agreement between smartphone-based ecological momentary assessment (EMA) and objective accelerometer defined exercise to determine the feasibility of using EMA in lieu of accelerometers in the long term assessment of exercise. **Methods:** Data were collected from an observational study of intermittently exercising, otherwise healthy adults (N=79; 43% male, mean age: 32±9 years) who were studied for 365 days. Smartphone-based EMA self-report of exercise entailed daily end-of-day response to the question: “Did you exercise today for 30 minutes or more at a moderate or vigorous level?” Participants also wore a Fitbit Flex to objectively determine exercise bouts. Within-subject Kappa statistics of agreement were calculated between objectively-determined exercise (24 mins of moderate to vigorous physical activity [MVPA] within 30 minutes) and EMA self-reported exercise. Predictors of agreement (i.e., sex, age) were also examined. **Results:** On average, participants provided 211±91 days of data. The average within-subject Kappa statistic for agreement between objective and self-reported exercise was κ=0.27±0.19 (range: -0.03-0.71). The average within-subject Kappa ranged from 0.16 to 0.27 when the definition of an accelerometer-based exercise bout was varied from 15 to 30 mins (of 30 mins) MVPA. In a multivariable adjusted model, gender was significantly associated with the level of agreement, being higher for women (κ=33.6±0.19) than for men (κ=19.2±0.17). **Discussion:** The agreement between objective (i.e., accelerometer) and self-reported (EMA) measures of exercise was fair. These findings suggest that smartphone-based EMA for long term exercise monitoring in lieu of an accelerometer may be feasible, but does not provide high reliability to an objectively assessed exercise bout.

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QUANTIFYING SUN PROTECTION MAINTENANCE AND ENVIRONMENTAL PROMOTERS IN INDIVIDUALS AT RISK FOR MELANOMA

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Achieving health behavior maintenance, while a gold standard outcome of behavioral interventions, is difficult to measure accurately and reliably, especially in quantifying the influences of habit and environmental promoters on behavior. We propose a Bayesian Hierarchical Linear Model (HLM) that clearly quantifies both influences.

Ecological Momentary Assessment (EMA) data were collected from 59 first-degree relatives of melanoma patients regarding sun protection behaviors (sunscreen use, shade seeking, hat and protective clothing) and the circumstances (e.g., weather and convenient availability of sunscreen), twice daily (1 pm; 5 pm) over 14 summer days (1,304 total assessments). A Bayesian HLM used random effects to represent habit and environmental promoters for determining whether each person's behaviors were primarily determined by habit or by environmental promoters.

Sunscreen use was influenced by environmental promoters, such as sunny and hot weather (OR=6.44, CI: 3.4,13.1; $p< 0.0001$), and also by person-specific habit (0.286; CI: 0.10,0.73; $p < 0.01$). Each person's habit was independent of propensity to use sunscreen in hot and sunny weather, shown in a non-significant correlation (rho=−0.14, CI: −0.82,+0.70). A gender moderating effect was observed. Sunny and hot weather exerted a greater promoting influence on men's than women's use of sunscreen (OR=3.80, p=0.040), but not when the weather was cool (OR=0.205, p=0.072). Men were less likely than women to wear long sleeve clothing (OR=0.18, p=0.03), more likely to wear a hat (OR=3.6, p=0.05), but equally likely to seek shade. The gender moderating effect was only present in sunscreen use, not the other behaviors. Bayesian HLM yielded a propensity of each person's sun protection behaviors being dictated more by environment than by habit, which showed that women were affected more by weather than habit (73% women vs. 50% men, p=0.096).

In conclusion, sun protection behaviors are mainly a function of weather and other environmental promoters rather than habit. The Bayesian approach to EMA data makes it possible to compare habit and environment in one coherent framework, a option not available by conventional methods. It informs the gender-specific strategies in future interventions.

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USING ECOLOGICAL MOMENTARY ASSESSMENT METHODS TO MEASURE STRESS AND WEIGHT-RELATED BEHAVIORS IN HISPANIC POST-PARTUM WOMEN

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Background Excessive gestational weight-gain and post-partum weight retention are associated with an increased risk of lifelong obesity and chronic disease, which disproportionately affects minorities and women of low socioeconomic status. Ecological Momentary Assessment (EMA) methods may provide dynamic and real-time insight on the social and contextual factors influencing weight-related behaviors and obesity risk during this critical period of women’s lives. However, barriers to EMA in this population, including concerns over time demands and participant burden, remain. Thus, this study examined the feasibility and challenges of using EMA methods in low-income, Hispanic post-partum women with young infants.

Methods Twelve low-income Hispanic mothers (mean age: 31 yrs, SD: 7 yrs; 58% Spanish-speaking), of young infants (age range: 6-31 weeks) completed the study procedures. Participants completed up to 5 randomly prompted EMA surveys per day by smartphone across four days. EMA prompting was customized to mothers’ sleep and wake times. EMA surveys assessed stressors, diet, physical activity and sedentary screen behavior. Exit interviews were conducted with each participant to further assess barriers and burden associated with the EMA procedures.

Results Overall, participants responded to 82.05% (range: 0 – 100%) of EMA surveys. Older mothers had higher compliance. Participants reported experiencing one or more stressors in 43.21% of prompts, and “tension with children” (25.6%) and “work at home” (15.4%) were the most frequently reported sources. Across all prompts, the percentages reporting specific weight-related behaviors were as follows: Intake of fruits and vegetables (7.8%), intake of high-calorie, low nutrient foods (25.63%), sedentary screen behavior (44.4%), and engagement in exercise or sports (1.8%). In exit interviews, mothers reported concern over the compatibility of EMA prompting schedule with their variable sleep times.

Discussion This pilot study provides preliminary evidence that EMA methods may be reasonable for use in low-income, Hispanic post-partum women with young infants and multiple competing time demands. Future studies may use EMA to examine time-varying

influences on weight-related behaviors in this population to understand factors contributing to post-partum weight retention.

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WHICH CONTROLS VARIABLES DID YOU INCLUDE? DOES IT MATTER? THE CASE FOR UNIFORM CONTROL LISTS IN PUBLIC HEALTH STUDIES

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One of the greatest threats to the validity and reliability of public health research is the selective inclusion (or exclusion) of control variables. Most studies include an in-depth explanation of both the model's independent and dependent variables, with only a cursory review -- sometimes as short as half a sentence -- of what other factors were controlled for in the model. However, controls represent major assumptions of the model, and without agreement on those assumptions, even high-quality research can easily be dismissed.

In this session, based on a 2016 publication in the *International Journal of Drug Policy,* I will show how researchers can find two contradictory conclusions simply by selecting a different vector of controls. For example, a recent study connecting strict alcohol policies to methamphetamine use captured media attention from prominent news outlets as the Economist and the Washington Post. And yet, with the addition of just one innocuous and reasonable control, I show that virtually all of the author's significant results disappear.

So how do researchers address this systemic issue? I recommend that expert panels in different disciplines of public health convene to create a list of uniform controls that should be considered in all relevant studies. Peer reviewers should make a point to question authors of the reasoning behind the inclusion or exclusion of those listed controls. This proposal would not coerce authors into including controls they feel are irrelevant -- rather, it would demand that researchers explicate the reasoning for their model's assumptions. In the meantime, I will discuss best practices for choosing appropriate controls in public health studies, based on research from Dr. Gary King.

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DEMOGRAPHIC PREDICTORS OF INDIVIDUAL DIFFERENCES IN COPING BEHAVIORS OF SOLDIERS

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Background: Most military personnel use dietary supplements (DS) and they are much more likely to use dangerous DS than their civilian counterparts. Given the prevalence and associated risks of DS use, it is important to understand specific trait characteristics of Soldiers when considering these health-related behaviors. *Purpose:* To assess coping behaviors associated with various demographic factors in a sample of active duty U.S. Army Soldiers and how they relate to DS usage. *Methods:* Demographic and behavioral questionnaires were administered to 289 Soldiers (83% male and 17% female, mean age ± SD 28±6y) at 3 installations. The validated Brief Cope Scale (dimensions: self-distraction, active coping, denial, substance use, emotional support, instrumental support, behavioral disengagement, venting, positive reframing, planning, humor, acceptance, religion and self-blame) was used to assess coping behaviors. One-way ANOVAs compared effects of gender, age, education level and marital status on various coping dimensions. A subset of Soldiers (n=128) participated in focus groups to better understand the motivation for use or non-use of DS. *Results:* Seventy-five percent of those sampled were DS users. No significant differences were found between DS users and non-users on coping scale dimensions. Males were more likely than females to use humor (*p*=.02) and acceptance (*p*=.03) while females were more likely to use emotional support (*p*=.02), religion (*p*=.03) and self-distraction (*p*p=.00) and self-distraction (*p*=.03) while older Soldiers were more likely to use religion (*p*=.00). Soldiers with higher levels of education were more likely to use active coping (*p*=.00), emotional support (*p*=.04) and planning behavior (*p*=.00); whereas Soldiers with lower levels of education were more likely to use more behavioral disengagement, self-distraction and denial (*p*=.00) strategies. Married

Soldiers were more likely to use religion (p=.00) while single Soldiers were more likely to use self-distraction (p=.01). In focus groups, Soldiers stated they use DS to address job pressures and meet the performance demands in their military roles to reach short-term goals, despite the known and unknown long-term consequences of DS consumption. *Conclusion:* Younger, less educated and single Soldiers use negative coping styles more frequently and may be more vulnerable to questionable DS claims. Negative coping styles reportedly can increase risk in stressful situations while it has been shown adaptive coping styles, such as emotional support, are protective in such circumstances. Training to encourage positive coping behaviors early in an individual's military career may improve resiliency, facilitate healthful behaviors and provide short and long term benefits.

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POSTTRAUMATIC GROWTH AND BIOMARKERS OF CHRONIC STRESS AMONG COMBAT VETERANS OF OPERATIONS ENDURING AND IRAQI FREEDOM

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Combat Veterans are at increased risk for cardiovascular disease (CVD) and chronic illness due to in-theater stressors. Growing evidence suggests that experiences of posttraumatic growth (PTG), or positive psychological change in the aftermath of trauma, may convey salutary health benefits; however, the relationship between PTG and Veteran health is currently unknown. The present pilot study sought to elucidate this relationship by examining the influence PTG on levels of inflammation and diurnal cortisol slope in Veterans of Operations Enduring and Iraqi Freedom. We hypothesized that greater levels of PTG would buffer against the adverse effects of stress as indicated by a steeper and more negative cortisol slope and lower levels of C-reactive protein (CRP; mg/L). Participants (*N*=33) focused on their combat experiences when completing self-report measures and provided saliva samples over the course of 2 days to assess CRP and cortisol. Separate hierarchical multiple regression analyses were run to predict CRP and the diurnal cortisol slopes from Day 1 and Day 2 of the study. Consistent with existing theory, significant positive relations were found between PTG and PCL scores ($r(33)=.83$, $p < .001$). The regression models predicting CRP and Day 1 cortisol slope were not significant. The regression model predicting Day 2 cortisol slope revealed a significant positive interaction between PTG and PTSD symptomology ($\beta=.001$, $p < .05$).

Examination of the simple slopes revealed a disordinal interaction between PCL and PTG scores such that the cortisol slope of veterans reporting a greater degree of PTG became increasingly positive as PTSD symptoms increased. Relatedly, the cortisol slope of veterans reporting a low degree of PTG became increasingly negative as PTSD symptoms increased. Results of this pilot study provide preliminary evidence that experiences of PTG may influence how Veterans respond to stress at a physiological level. The positive cortisol slope demonstrated by those Veterans reporting high levels of PTG with greater trauma symptoms may be a reflection of the processes by which one seeks to reconstruct their assumptive worldview in the aftermath of trauma. That those Veterans reporting lower levels of PTG with higher levels of trauma symptoms did NOT demonstrate higher levels of cortisol may indicate a sign of dysregulation or stress desensitization. Future work is warranted before causal assumptions can be made.

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PROGRAM OF COMPREHENSIVE ASSISTANCE FOR FAMILY CAREGIVERS: CAREGIVERS PERSPECTIVE ON PROGRAM VALUE

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The Caregivers and Veterans Omnibus Health Services Act of 2010 (P.L. 111-163) directed VA to provide sweeping supports for family caregivers of all Veterans within the Veterans Affairs (VA) health system. This legislation is an innovation in service delivery that acknowledges the important role of family caregivers in health care delivery. Stemming from this legislation, VA caregiver support greatly expanded, with formation of the Program of Comprehensive Assistance for Family Caregivers (PCAFC) and the Program of General Caregiver Support Services, and funding of a Caregiver Support Coordinator (CSC) at every VA medical center (VAMC). PCAFC provides services for caregivers of post-9/11 Veterans seriously injured in the line of duty, including a monthly stipend and required training, and optional services such as health insurance, mental health care, and respite care. We used mixed-methods to assess how caregivers use and value PCAFC services to improve the program's ability to refine and optimize services. We conducted a national web-based survey of caregivers (N=1,407) and semi-structured phone interviews with caregivers from 10 VAMCs (N=50). Caregivers rated all services as helpful, 7.9 to 8.8 on a scale of 1 to 10 ("most helpful"). They rated the stipend highest, valuing it for providing flexibility to be physically present for their Veterans; caregivers also valued trainings for instructing them on how to manage TBI/PTSD symptoms. However, caregivers reported low use of optional services; e.g., only 7% used respite care, with reports that Veterans with TBI/PTSD sometimes have difficulty with strangers in the home. Seventy-five percent of Caregivers reported interacting with their CSCs since joining the program, though for most (57%) less than once a month. A majority (59%) reported obtaining referrals and direct support from their CSC, for example to help navigate the VA health system. Almost two-thirds agreed/strongly agreed that the PCAFC has helped them to feel more confident in caregiving, know about resources to help their caregiving, and support their Veteran's progress and health care engagement. Overall, caregivers valued receiving VA support with particular gratitude for home support, PTSD/TBI symptom management, and assistance with navigating the VA healthcare system. Future work could better evaluate and guide use of optional services to support caregivers and Veterans, especially those with conditions that impose barriers to use.

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SMOKING IN U.S. MILITARY PERSONNEL DURING TRANSITION FROM ACTIVE DUTY TO VETERAN STATUS

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The prevalence of cigarette smoking has been consistently higher in the US military than in civilian populations. Although risk factors for smoking behavior among Service members has been studied, there is a gap in the literature on smoking behavior during transition from active duty military to civilian life. We sought to investigate any change in smoking among those transitioning from military to Veteran status.

Participants in the Millennium Cohort Study (longitudinal study of US military personnel) who separated from service prior to first follow-up or remained in service for at least two survey cycles were included (n=30,996). Using generalized estimating equations, we examined associations between smoking and separation status as well as demographic, military, health behavioral characteristics, and life stressors. Sixteen percent of participants reported smoking at baseline, and 32% subsequently separated from service. Multivariable analysis showed that Service members who separated were significantly less likely to be a current smoker (adjusted odds ratio: 0.89, 95% confidence interval: 0.83-0.95) than those who remained in service. Adjusted odds of smoking increased with higher number of life stressors (1 stressor: 1.05, 1.01-1.10, 2 stressors: 1.12, 1.06-1.19, 3 or more stressors: 1.25, 1.16-1.34 vs. 0 stressor). Higher odds of smoking were also found among those with greater alcohol consumption, being black non-Hispanic, not married, normal weight or underweight, Army, junior enlisted, and screening positive for post-traumatic stress disorder or depression.

In our study, separation from service was protective for current smoking. This finding is interesting as transition out of service might be stressful for some and result in maladaptive coping mechanisms. Although results seem to indicate that staying in the military may facilitate smoking behaviors, since the models were adjusted for life stressors, alcohol consumption, and other risk factors, the effect of separation from service may have been lessened. More research is needed to delineate modifiable risk factors and specific military and Veteran subpopulations for targeted smoking interventions.

Disclaimer:

This work is supported by MOMRP under work unit no. 60002. The views expressed in this abstract are those of the authors and do not necessarily reflect the official policy or position of the Department of the Navy, Department of the Army, Department of the Air Force, Department of Veterans Affairs, Department of Defense, or the U.S. Government. Approved for public release; distribution unlimited. Human subjects participated in this study after giving their free and informed consent. This research has been conducted in compliance with all applicable federal regulations governing the protection of human subjects in research (NHRC.2000.0007).

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SOCIAL SUPPORT AND MASTERY IN THE LINK BETWEEN FUNCTIONAL LIMITATIONS AND NEED FOR HELP AMONG ILL AND INJURED MILITARY MEMBERS

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Functional limitations (i.e., difficulties in conducting daily tasks) due to illness or injury tend to be associated with a high perceived need for the help of others in performing activities, such as meal preparation or personal hygienic care. However, other variables, such as one's perceived social support and/or feelings of self-efficacy or mastery, may influence this association between functional limitations and perceived need for help.

The present study investigated the moderating roles of social support and mastery in the association between functional limitations and perceived need for help among 164 ill or injured Canadian military members. Participants completed a paper survey measuring various aspects of health, as well as psychosocial variables, including social support and mastery. To assess functional limitations, participants were asked to report the general degree of impairment and frequency of limitations experienced in various tasks. For illness- or injury-related need for help, participants reported the frequency of requiring aid with various activities.

Two moderation analyses were conducted using Hayes' PROCESS macro for SPSS. Each analysis included functional limitations as the independent variable and perceived need for help as the dependent variable, while social support and mastery were included as the hypothesized moderating variables in their respective analyses. Both analyses were significant, and both showed the same effect on the positive association between functional limitations and perceived need for help. Specifically, when social support/mastery was low, this association was much stronger, while at high levels of social support/mastery, there was much less of an association between functional limitations and perceived need. In other words, at low levels of functional limitations, participants at all levels of social support/mastery reported relatively low need for aid. However, when functional limitations were high, those with low levels of social support/mastery reported high need for help while those with high levels of social support/mastery reported low need for help.

Though the patterns were similar, the findings for social support and for mastery may be interpreted differently. The results for social support were as expected: when social support is high, the perceived need for help was low, regardless of functional limitations. For mastery, however, results are potentially concerning, in that participants with high perceived mastery reported a relatively low need for help, even when their functional limitations were high. To the extent that their actual need for help exceeds their perceived need, such participants may be less likely to seek and receive help. The implications of these findings for ill and injured military personnel will be discussed.

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THE ASSOCIATION BETWEEN COMBAT AND LATENT TRAJECTORIES OF PHYSICAL WELL-BEING

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Combat exposure is associated with an increased risk of adverse mental and physical health conditions. Little research has examined whether trajectories of physical health over time within deployed service members can be separated into distinct classes or patterns and, if so, whether these classes differ by deployment combat exposure experienced. Using the Millennium Cohort Study, this investigation examined physical well-being assessed at four timepoints between 2001 and 2012 among 11 950 (6013 combat-exposed) military service members who deployed between their first and second assessment. Physical well-being was measured using the physical component scale score calculated from the Veterans RAND-36. Latent growth mixture modeling was used to estimate heterogeneous trajectories of physical well-being. Results indicated that five distinct trajectories of physical well-being existed (high-stable, low-stable, improving, delayed declining, worsening). Combat exposure was entered into subsequent models as a known class to compare trajectories of combat-exposed and unexposed service members. The shapes of trajectories between these two groups were highly similar. The high-stable class was the modal class among combat-exposed and unexposed participants (75.6% and 82.2%, respectively). However, chi-squared analyses indicated a larger proportion of service members unexposed to combat were in the high-stable class (*p*p’sp=.45). Results indicate that physical well-being surrounding deployment has several distinct trajectories. However, the shape of these trajectories does not vary much between combat-exposed and unexposed service members. Physical health differences between these groups are likely to be reflected by the larger proportion of participants with poorer physical well-being trajectories.

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TRANSLATING EVIDENCE-BASED PRACTICE GUIDELINES INTO PATIENT-CENTERED OBESITY CARE

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Background. Obesity, a leading cause of mortality, morbidity, disability, and rising healthcare costs, affects roughly one-third of the millions of Veterans seeking treatment at VA medical facilities. As such, expanded access to multidisciplinary specialty obesity care, including bariatric surgery, is of paramount importance. New obesity treatment guidelines suggest healthcare providers develop individualized weight loss plans incorporating diet, exercise, and behavioral interventions for all patients, and bariatric surgery for individuals with body mass index (BMI)$\geq$35 kg/m^2. For patients undergoing bariatric surgery, evidence-based clinical practice guidelines recommend multidisciplinary pre- and post-op management. However, little is known about how to implement such programs and whether patients are satisfied with the care. We developed an innovative approach to weight management that provides access to bariatric surgery care for Veterans from multiple VA facilities across the Western US.
Objective. We had two goals: 1) To describe the interdisciplinary MOVE TIME Clinic, which offers a patient-centered approach to weight management before and indefinitely after bariatric surgery in accordance with evidence-based guidelines. 2) To assess patient satisfaction with this clinic.
Methods. As a program evaluation activity, clinic patients (*N*=54 sequential Veterans) completed questionnaires assessing satisfaction with the clinic, satisfaction with functional status as a result of care received, and satisfaction with access to care.
Results. The sample was primarily male (76%), 50-70 years of age (81%), and white (66%). Almost all patients (98%) reported overall satisfaction with the clinic, with a majority (94%) reporting that MOVE TIME improved their quality of life, and with two-thirds (65% of pre-surgery patients and 74% of post-bariatric surgery patients) indicating that their health was better than the previous year. Most said they would recommend the clinic to others (94%).
Conclusion. Given increasing obesity rates and demand for bariatric surgery, access to interdisciplinary specialty care is essential in addressing the rising obesity prevalence among Veterans. MOVE TIME is a novel clinic that provides intensive and accessible patient-centered obesity care and is well-received by Veterans, with high rates of satisfaction and reports of

improved quality of life. This program can serve as a model for how to translate evidence-based obesity and bariatric surgery guidelines recommending multidisciplinary pre- and post-op management into patient-centered clinical practice. Such models are critical given the epidemic of obesity among Veterans and VA's increasing efforts to provide expanded access to multidisciplinary specialty obesity care.

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B188 6:00 PM-7:00 PM

UNDERSTANDING HOW OEF/OIF VETERANS CONCEPTUALIZE HEALTH DURING AND AFTER MILITARY SERVICE

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Objectives: Combat veterans returning from Operation Iraqi Freedom and Operation Enduring Freedom in Afghanistan have shown a high prevalence of readjustment problems that impact health behaviors. Approximately 40% of OEF/OIF veterans reported difficulty acclimating to civilian life on returning from deployment (5). Civilian life readjustment issues often manifest in difficulty with social relationships (56%), problems finding or keeping a job (25%), elevated drug and alcohol use (31%), divorce or separation (35%), and increased anger control problems (57%) .This study sought to understand how veterans conceptualize health from active duty to veteran status.

Methods: We conducted in-depth interviews with Operation Iraqi Freedom and Operation Enduring Freedom veterans. Fourteen participants were recruited through the Department of Veterans Affairs Mid-Atlantic Mental Illness Research, Education, & Clinical Center (VISN 6 MIRECC) Database for the Study of Post-Deployment Mental Health. We conducted a qualitative content analysis of telephone interviews that were recorded and transcribed. Codes were reviewed by a cross-disciplinary study team and themes across constructs were analyzed.

Results: We found that health was defined in four categories: Physical and mental health, appearance, and conduct. Participants enumerated challenges in the transition from military to civilian life, including maintaining healthy habits and resisting unhealthy behaviors less prevalent in the military. For the participants in this study, being healthy required either addressing mental health symptoms or being devoid of them, fitting the military appearance expectations of both weight and grooming, and following the conduct expected of them in the military, even while in the civilian world. These four constructs seemed to remain from active-duty service to becoming a veteran, even though participants had more difficulty maintaining

their health as civilians.

Conclusions: Findings from this study have policy implications for improving post-deployment health as well as providing important context for primary care providers working with veterans, their families and peers supporting veterans in efforts to retain healthy habits as civilians. The most important implications are that preventive measures can be taken during the transition from active duty to veteran status that will help maintain or improve a service member's health. Providers working with veterans need to understand what is considered healthy in the military setting and that a veteran's self-perception of their own health might not reflect clinical definitions of health. Providing guidance on maintaining structure in a way that can encourage the continuing of healthy behaviors might be valuable in creating a smoother transition from military to civilian life.

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VA TRUST AMONG US ARMY RESERVE/NATIONAL GUARD SOLDIERS WITH SUBSTANCE USE OR MENTAL HEALTH DISORDERS

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VA Trust among US Army Reserve/National Guard Soldiers with Substance Use or Mental Health Disorders

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Background: Trust in the healthcare system is an important factor in deciding to use healthcare. Long wait times are functional barriers that can negatively impact trust in the healthcare system. This can discourage individuals from seeking treatment. The objective of this study is to examine trust in the VA Healthcare System and to determine if substance use or mental health conditions impact soldiers' trust. Additionally, this work will examine the functional barrier of wait times on the basis of mental vs. physical health role limitations.

Methods: Data are from Operation: SAFETY (Soldiers And Families Excelling Through the Years), an ongoing longitudinal study of US Army Reserve/National Guard Soldiers and their partners. All soldiers were asked about their trust level in the VA Healthcare System. Mental health disorders (PTSD, depression, anger, anxiety) and substance use were also assessed. Soldiers who have had an appointment at the VA were asked about the length of wait time, a factor which could impact trust. We examined differences in wait time on the basis of emotional and physical health role limitations.

Results: At a trend level, trust scores were found to be lower among female soldiers who were currently using drugs or drinking at hazardous levels. Among male soldiers, trust levels were lower among those who were hazardous drinkers. Additionally, male soldiers who had higher anger scores were more untrusting of the VA healthcare system. However, anxiety,

PTSD, and depression were unrelated to trust among both male and female soldiers. In terms of wait times, female soldiers' findings are as one would expect: as functional limitations occurred for either physical or mental health conditions, wait times decreased. However, for male soldiers, functional impairment for either physical or mental health conditions was not related to wait times.

Conclusions: The current results suggest that mental health and substance use issues appear related to less trust in the VA healthcare system. This fact, coupled with structural barriers such as long wait times, could further impact trust and put our soldiers at risk for not receiving treatment.

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WOMEN VETERANS' PERCEPTIONS OF VA MENTAL HEALTH CARE

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Background: Women Veterans are the fastest growing sector of eligible Veterans Administration (VA) users and are increasingly accessing mental health services.

Objective: To assess women Veterans' perceptions of their VA healthcare and decision–making processes related to healthcare coverage, as well as healthcare experiences within VA.

Design: Nine discussion groups in California, Texas, and Florida across five facilities.

Participants: Women Veteran participants (n=49) currently utilizing VA services.

Approach: Interviews were audio recorded, transcribed and summarized for salient themes. Perceptions of women Veterans' mental healthcare needs and suggestions to improve related services within VA were assessed.

Key Results: Participantswere high utilizers of mental health services (68% saw a mental health provider in past year). The majority had service-connected disability (70%) and used VA exclusively for care (69%), though some dual-coverage participants sought care outside VA for specialty care, such as mental health. Mental healthcare was identified as an area needing improvement, e.g., a supportive infrastructure to better deliver services, including a service climate sensitive to women's needs and stronger patient-provider relationships. Women discussed desired improvements in mental health resources and program areas, including additional individual therapy options, increased appointment duration and frequency, gender-specific trauma-focused therapies, bereavement support, and childcare options during mental

health appointments. Desired improvements in service climate factors include streamlined phone triaging, clarity on patient advocacy support, extended service hours, and provision of transportation. Improvements were also desired in patient-provider relationships such as enhanced communication skills, opportunities for building trust with rotating providers (interns, residents), and ways to address privacy/confidentiality concerns especially for women Veteran employees.

Conclusions: Women Veterans' first-hand perspectives on desired improvements in mental health care provide stakeholders with targeted service areas for infrastructure improvement and greater healthcare engagement. These improvements may improve women Veterans' access to and sustained engagement in care. In an era where Veterans have expanded options for their healthcare coverage, it is incumbent upon the VA to continue to respond to patient-centered feedback on quality of care.

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"THE FRESHMAN FIFTEEN" AND BEYOND: A META-ANALYSIS

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The rising rates of overweight and obesity are concerning due to the increased risk for negative health consequences. Not surprisingly, the transition to college is associated with various changes (e.g., increased freedom to food choices, access to unhealthy foods, decreased physical activity, altered life schedules) that may contribute to additional weight gain in students compared to their non-student peers. The *freshman fifteen* is a colloquial term used to specify typical weight gain experienced by students during their first year of college and is concerning given that approximately 30% of college students are considered overweight or obese. The present meta-analysis examined body weight and adiposity changes over the first year as well as to the end of the senior year of college. A search of seven electronic databases resulted in 55 peer-reviewed studies (from 1985 to 2015) for inclusion in the meta-analysis, although only a subset of these were included because of missing data. Using random-effects models to assess change in weight, an overall mean weight gain of 0.74 kg (CI = 0.56 – 0.92, k = 27) was found for freshman year across all students. However, the average weight gain for only those students gaining weight was 3.43 kg (CI = 2.32 – 4.53, k = 4). Comparisons of five studies examining long-term weight change revealed a gain of 2.13 kg (CI = 1.02 – 3.25) by the end of the senior year. Weight change differences between males (1.47 kg; 0.90 – 2.05, k = 10) and females (1.31 kg, CI = 0.86 – 1.76, k = 19) were found during the freshman year and continued through the senior year with gains of 2.89 kg (CI = 0.78 – 4.99) for males and 1.42 kg (CI = 0.69 – 2.14) for females. When sufficient data were available for analysis, the findings with adiposity measurements generally paralleled the weight gain results. Although the research does not support the notion of the *freshman fifteen*, a considerable number of students gain weight in the first year. Cumulative weight gain throughout college is notable and of continued concern because of the potential harmful health behaviors and patterns that may carry into adulthood. These findings highlight the need for greater focus being paid to developing targeted strategies to prevent weight gain throughout students' experiences with college.

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A DYNAMICAL SYSTEMS MODEL FOR UNDERSTANDING HOW THE INTRAUTERINE ENVIRONMENT AFFECTS FETAL GROWTH IN AN INTERVENTION CONTEXT

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BACKGROUND: The underlying mechanism for how maternal perinatal obesity and intrauterine environment influence fetal development remains largely unknown. Dynamical systems modeling is used to develop a fetal growth model within the context of an intervention to manage gestational weight gain (GWG) that illustrates how maternal GWG and the intrauterine environment influences fetal growth and ultimately, infant birth weight.

METHODS: The Healthy Mom Zone (HMZ) intervention is an individually-tailored, intensively adaptive intervention aiming to manage weight gain among overweight/obese pregnant women (OW/OBPW). Intensive longitudinal data (ILD) is collected daily (weight, physical activity, self-reported dietary intake) and bi-weekly/monthly (sleep, eating/physical activity self-regulatory behaviors) using *mHealth* tools. ILD is also collected on indicators of fetal growth (six ultrasound scans per participant) and stress (bi-weekly urine). OW/OBPW (*N=30*) will be randomized to treatment and control groups from approximately 8-36 weeks gestation. Relying on this data and a previously developed maternal weight gain model, the parameters of a system of differential and algebraic equations based on the First and Second Laws of Thermodynamics are estimated to obtain a predictive model for fetal weight gain.

RESULTS: Estimated models from four completed participants allow contrasting model predictions to available measurements of fetal weight and placental volume. These models point to an acceptable goodness-of-fit (within the standard deviation of the measurements) obtained from a semi-empirical approach relying on fixed parameter values available from the literature (energy densities and efficiencies) with adjustable parameters estimated from the data (fetal growth rate, back-calculated energy intake, and selected conversion factors). Model enhancements (an improved equation for placental volume) and simplifications (a single first-order differential equation for fetal weight) are obtained from this analysis, in contrast to earlier models. The overall result is a parsimonious system of equations that

reliably predicts maternal GWG and fetal weight gain based on a sensible number of assessments.

CONCLUSION: Dynamical systems modeling developed from ILD on fetal growth is feasible. Findings from our dynamical models can be used in future studies to explore the underlying mechanisms for how maternal perinatal obesity "programs" fetal development, related metabolic disorders, and later obesity. Use of these models can inform the development of intensively adaptive interventions for preventing childhood obesity.

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B193 6:00 PM-7:00 PM

A NOVEL STEPPED-CARE APPROACH TO WEIGHT LOSS: THE ROLE OF SELF-MONITORING AND HEALTH LITERACY IN TREATMENT OUTCOMES

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Objectives: The aims of the current study were twofold: 1) examine the effectiveness of an innovative three-step, stepped-care behavioral weight loss treatment, and 2) examine factors that contribute to poor weight loss outcomes and the need for more intensive treatment.

Methods: The total sample for the study consisted of 53 individuals (87% female; 62% Caucasian, 34% African American, 4% Asian/Pacific Islander) with M_{BMI}=35.6, SD_{BMI}=6.4. Participants were recruited through a faculty and staff listserv email at a large southeastern university and through a community newspaper with the advertisement of a free weight loss program. A three-step, stepped-care treatment approach was implemented over six months. Step 1 included the Diabetes Prevention Program manual adapted for self-administration and the use of a Fitbit Zip® device with the associated application/website to self-monitor their diet, physical activity, and weight loss progress. Participants who were unsuccessful at achieving predetermined weight loss goals received stepped-up treatments in 2-month increments beginning at month 2. The stepped progression included the addition of meal replacement at Step 2 and individual counseling concurrent with meal replacement at Step 3. We assessed for contributing factors to poor weight loss outcomes using the following measures: The Newest Vital Sign, Center for Epidemiological Study of Depression, Universal Measure of Bias – FAT, Weight Bias Internalization Scale, and the Binge Eating Scale.

Results: Non-stepped and once-stepped participants lost a clinically significant amount of weight (8.7% and 6.0% weight loss over 6 months, respectively), while twice-stepped participants lost an insignificant amount of weight (1.0% weight loss over 6 months). Twice-stepped participants were significantly lower in health literacy (p = .03) and self-monitoring frequency (p = .02).

Conclusions: In this investigation, approximately 60% of the participants were able to lose a clinically significant amount of weight utilizing a minimally intensive intervention with little additional support. Regular self-monitoring and high health literacy proved to be significant correlates of weight loss success.

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B194 6:00 PM-7:00 PM

A SCHOOL-BASED HEALTH CENTER OBESITY PREVENTION PROGRAM

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Background: Approximately 34% of youth are overweight or obese. School-based health centers represent a system of care for providing health education and obesity prevention programs. The purpose of this study was to describe the obesity-risk behaviors of youth 5-12 years of age and the feasibility of a school-based health center obesity prevention program that was initiated by the school.

Methods: A one-group pre-post design was used to evaluate an obesity prevention program promoting 9 hours of sleep, 5 fruits and vegetables, less than 2 hours of screen time, 1 hour of physical activity, and 0 sugar-sweetened beverages/day. The program consisted of interactive health education provided by nurses during lunch; lesson plans provided to teachers; weekly health messages in morning announcements; and posters, bulletin boards, and newsletters for parents. Data were collected on obesity-risk behaviors with established measures by parents of youth 5-9 years and by students 10-12 years of age. BMI was calculated from height and weight measures. Descriptive statistics and t-tests were used.

Results: There were a total of 345 youth whose parents did not opt-out of the program evaluation. At the time of enrollment, youth in the school were 52% male, with 56% white non-Hispanic, and 48% of students eligible for free lunch. At baseline, 44% of youth were overweight or obese, 80% of youth ate < 5 servings of fruits/vegetables per day, with a mean of 2.7 days/week of moderate-vigorous exercise. The program was challenging to implement with competing responsibilities of nurses and teachers. The program did not improve obesity-risk behaviors over time and BMI increased significantly over time ($p < .01$)

Conclusions: High rates of overweight/obesity and poor health behaviors continue to be evident in youth of diverse race/ethnicity. School-based obesity prevention programs are challenging to implement. Designated program staff, family involvement, and school health policies may be necessary to ensure success with implementation and improvement in youth outcomes.

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B195 6:00 PM-7:00 PM

AN ECOLOGICAL MOMENTARY ASSESSMENT STUDY OF INTERNAL AND EXTERNAL WEIGHT STIGMA EVENTS IN A WEIGHT LOSS TREATMENT SEEKING SAMPLE

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Objectives: This study sought to explore temporal relationships between experiences of internal and external weight stigma and mood and coping in real time using ecological momentary assessment (EMA). Furthermore, we sought to explore cross sectional differences in binge eating, levels of internalized weight bias and lifetime history of experienced stigma between those individuals who reported instances of weight stigma during a 2-week pre-weight loss intervention EMA study and those who did not.

Methods: 51 BWL participants completed EMA assessments of weight stigma events as well as their emotional and coping responses. Participants were asked to report external instances of weight stigma, including hearing inappropriate/rude comments about their weight, encountering structural or physical barriers in their environment, or internal experiences or personal reminders that “made [you] feel bad about your weight” (eg. trying on clothes, looking in the mirror, etc.). Participants also completed random prompt entries assessing mood at various times not related to weight stigma events. In addition participants completed measures at baseline including the Binge Eating Scale (BES), Weight Bias Internalization Scale (WBIS) and the Stigmatizing Situations Inventory (SSI).

Results: 30 of 51 participants reported 80 instances of experienced weight stigma over the course of two weeks. The majority of stigma experiences were personal reminders of one’s weight (74%). Given the limited amount of observations per participant, responses were aggregated and between subjects differences were analyzed between those who reported weight stigma over the two week study period and those who did not. In those that experienced weight stigma, stigmatizing experiences were associated with lower levels of positive emotion (less happy $t(27)=6.75$, $p < .01$, less inspired $t(27)=4.51$, $p < .01$, less relaxed $t(28)=4.07$, $p<.01$) and higher levels of negative emotion (more depressed $t(27)=3.04$, $p=.01$, more ashamed $t(27)=2.61$, $p=.02$ and more frustrated $t(26)=-2.92$, $p=.01$). Participant coping style was also related to mood. Isolation and avoidance was significantly associated with higher levels of feeling depressed ($r=.40$, $p<.05$), feeling ashamed (r=.52, $p < .01$), and was inversely associated with feeling happy ($r=-.38$, $p < .05$). Furthermore, there was an inverse association between positive self talk and feeling numb ($r=-.37$, $p < .05$). Participants

reporting any weight stigma event over the two week study period were more likely than non-reporters to evidence higher levels of experienced lifetime weight stigma *t*(34.8)=2.54, *p*=.02, internalized weight bias *t*(53)=2.87, *p* < .01 and binge eating t(50)=2.71, *p* < .01.

Discussion: This study suggests that stigmatizing experiences have momentary impacts on psychological well-being and coping among participants with overweight and obesity.

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B196 6:00 PM-7:00 PM

AUTONOMY SUPPORT BY ROMANTIC PARTNERS IS ASSOCIATED WITH DECREASED CONTROLLED REGULATION FOR WEIGHT LOSS AMONG HIGH BMI WOMEN

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Background: Self-Determination Theory and ecological models strongly suggest that provision of autonomy support (AS) by existing social networks engenders successful health behavior change. This dual-study analysis examined the impact of romantic partners' autonomy support on women's reasons for weight control, particularly the extent to which women felt pressured or controlled to lose weight. **Methods:** *Study 1* participants (n=159) were couples from the general population (M_{ageM}= 44.1±13.1; M_{ageF} = 43.63±12.1 years; M_{BMI} = 26.5±5.3kg/m^2; 97.8% Caucasian; 61% married). Men self-reported their provision of autonomy support (AS). Controlled regulation (i.e., more externally motivated reasons for weight loss) was measured using the Regulation of Eating Behaviors Scale and was regressed onto: Step 1, women's mean-centered BMI and men's mean centered provision of AS; and Step 2, the product term for the women's BMIxMen's AS interaction. *Study 2* participants (N=62; 79% female, 86% Caucasian; M_{ageF} = 47.3±11.3 years; M_{BMI}= 36.7±6.2 kg/m^2) were females in a behavioral weight loss intervention that included modifications of the home environment. Participants completed perceived AS and Sallis Support Scales in reference to their partners' support. Controlled regulation (measured using the 12-item Treatment Self Regulation Questionnaire) was regressed onto: Step 1, women's mean-centered baseline BMI and increase in men's AS from baseline to 18 months; and Step 2, the product term for the women's baseline BMI×Men's increase in AS interaction. **Results:** *Study 1:* Women's BMI×partners' provision of AS interaction was significant (p = .0001). For high BMI women, men's provision of AS was negatively and significantly related to women's controlled regulation (p = .0002). *Study 2:* Men's increase in AS was marginally related to a decrease in women's controlled regulation (β = -.241, p = .064). Addition of the two-way interaction term (women's baseline BMI x partner's increase in AS) significantly increased explained variance ($F(1, 57) = 8.551$, p = .005, $\Delta R^2 = .123$)). Simple slopes analyses indicated that when women's baseline BMI is high, men's increase in AS is significantly related to decreased controlled regulation among women over 18 months (t(57) = -3.3361, p = .0015)). **Conclusion:** Greater

provision of autonomy support from male romantic partners, as rated from both male and female perspectives, is associated with decreased controlled regulation, and is particularly influential among the highest BMI women. Lower controlled motivation is expected to be associated with better emotional regulation and superior outcomes. Our results indicate that this pattern is reflected both in the general population and within a weight loss intervention.

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B197 6:00 PM-7:00 PM

COLD FEET AT THE THRESHOLD OF WEIGHT LOSS TREATMENT: PRE-RANDOMIZATION DROPOUT AMONG THOSE ELIGIBLE AND CONSENTING TO TREATMENT

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A minority (10-20%) of those screened for weight loss treatment research reach randomization to a study condition. Among those eligible and consenting to participate, we examined differences between individuals who dropped out prior to and those who proceeded on to randomization. Our aim was to understand bias and limitations to generalizability arising from late-stage pre-randomization study withdrawal. Participants were Chicago-area residents with a BMI of 25-40 who indicated interest in a weight loss study, attended an orientation session, gave informed consent, and were deemed eligible. All were offered 6 months of treatment with a smartphone app and calls from a health coach. Each participant was randomized to a combination of other helpful strategies to augment treatment; there was no inactive group. These analyses compared consented eligible individuals who proceeded to be randomized and begin treatment ("Randomized"), versus those who chose not to proceed ("Non-Randomized"). Individuals were compared on age, BMI, smartphone type (Android vs. iPhone) and self-reported exercise coded from 0 (do not exercise or plan to) to 5 (exercise 4+ days a week). We hypothesized that Randomized participants would have more motivation and fewer barriers to weight loss (i.e., older, lower BMI, more likely to report regular exercise) than Non-Randomized participants. We also examined differences in smartphone ownership (iPhone vs. Android). Study candidates who attended an orientation session and consented as of December 2016 [n=931, *m*age=36.51 yrs, *m*BMI=31.88 kg/m^2] were examined. Of these, 519 were Randomized and 412 were Non-Randomized. Independent-samples t-tests and Chi-square showed Non-Randomized participants were younger (*M*=33.96, *SD*=10.75) than Randomized (*M*=38.55, *SD*=10.81; p < .001). Non-Randomized (M=2.74, *SD*=.97) versus Randomized (*M*=2.96, *SD*=1.07) participants were less likely to exercise (*p*=.001). The groups did not differ on BMI (*p*=0.7) or smartphone type (*p*=.21). Treatment-seeking eligible and consenting weight loss volunteers who drop out prior to randomization tend to be younger and report less exercise than those who persist through randomization, but do not differ on BMI. Future studies should be aware of selective potential for dropout among these participants during screening and engage in participant-

centered retention methods. By further exploring these characteristics, researchers may enhance generalizability of weight loss study findings.

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B198 6:00 PM-7:00 PM

EFFECTIVE RECRUITMENT CHANNELS IN AN ONGOING SOCIAL MEDIA WEIGHT LOSS TRIAL FOR UNIVERSITY STUDENTS

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Examining the effectiveness of recruitment strategies utilized in intervention studies may lead to more efficient and cost effective recruitment strategies for future trials. University students initiated or completed an online screener to determine eligibility for a weight loss trial. Following initial online consent, students were asked to indicate how they heard about the study: email, flyer/poster, Facebook post, Facebook advertisement, in-person event, friend, other. A total of 898 (23.25±4.01 years old, 42% non-white, BMI 28.6±6.4 $kg^{.}m^{-2}$) students indicated how they heard about the study. Most participants (92.5%, n=831) indicated they heard about the study from only one source with the following rank order among the choices: email (77%, n=690), flyer/poster (16%, n=142), “other” (4.3%, n=39), a friend (4.0%, n=36), in-person event (3.7%, n=33), Facebook post (3.5%, n =31), and Facebook ad (0.7%, n=6). Approximately 13% (n=116) were randomized into the trial (22.26±3.5 years old, 54% non-white, BMI 31.7±3.87 $kg^{.}m^{-2}$). Among those randomized, most participants continued to indicate that they heard about the study from only one source (87%). The ways in which participants heard about the study were more distributed but retained their rank order: email (64.7%, n=75), flyer/poster (28.4%, n=33), “other” (8.6%, n=10), a friend (6.0%, n=7), in-person event (3.4%, n=4), Facebook post (2.6%, n =3), followed by a Facebook ad (0.9%, n=1). Results indicated that emails, either in the form of blast emails or emails distributed by professors, clubs, or organizations, were the most successful as well as cost effective method for reaching university students. It is recommended that researchers track and monitor recruitment efforts in real time so that they may realize increased cost effective participant yields in ongoing trials while also collecting useful data to inform recruitment efforts and cost estimates for future trials.

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EFFECTS OF HIGH-INTENSITY INTERVAL TRAINING ON WEIGHT LOSS AND BODY COMPOSITION IN OBESE POST-MENOPAUSAL WOMEN

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Many women experience weight gain as a result of menopause. Exercise can mitigate weight gain and associated cardiometabolic risks. This study examined the impact of high-intensity interval training (HIIT) among obese, sedentary, post-menopausal women in a 16-week behavioral weight loss program. Participants (*n*=11, M_{AGE}=59, M_{BMI}=*32*.0 kg/m^2) were assigned to one of two exercise groups (HIIT vs. Endurance). The HIIT group (*n*=6) engaged in 15 minutes of daily resistance exercises (DVD guided), progressing to a total of 75 minutes weekly. The E group (E; *n*=5) engaged in 15-50 minutes of aerobic exercise (e.g., brisk walking) at 65% of age-predicted HR_{Max}, progressing to a weekly total of 250 minutes. All participants wore a wristband physical activity monitor and were prescribed a restricted diet (1200-1500 calories). Measurements completed at baseline, mid- and end program included body composition (BC), body weight (BW), % body fat (%BF), fat mass (FM), fat-free mass (FFM), and anthropometric measures (size of waist, abdomen, hips, thigh, biceps). All participants received weekly behavior change information through an online platform and attended both weekly weigh-ins and monthly treatment group meetings. Across groups, average weight loss was 11.9 pounds (6.7% of baseline BW); average total inches lost was 22.4. Both groups significantly decreased waist circumference (*ps*F[2,8]=33.83, *p*F[2,8]=85.44, *p*F[2,8]=5.07, *p*=0.04). The HIIT group also showed a slight decrease in mean calories consumed and W/H ratio. Meanwhile, the E group showed an overall decrease in BMI; FFM and W/H ratio did not show significant change. Findings suggest that, relative to endurance exercise, HIIT may be more effective for weight loss and body composition change among obese, sedentary, post-menopausal women. Consequently, there is need for large-scale tests of the benefit of HIIT for reducing disease risk in this population.

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B200 6:00 PM-7:00 PM

EXAMINING THE DOSE-RESPONSE RELATIONSHIP IN THE VETERANS HEALTH ADMINISTRATION'S MOVE!® WEIGHT MANAGEMENT PROGRAM

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BACKGROUND: Clinical practice guidelines recommend intensive, multicomponent behavioral interventions for individuals who are obese or overweight with an obesity-associated condition. For more than a decade, the Veterans Health Administration (VHA) has offered MOVE!, an evidence-based comprehensive lifestyle intervention designed as a series of sessions.

OBJECTIVE: To inform VHA policy and planning, this VHA-wide study examines the relationship between MOVE! participation and weight outcomes.

DESIGN: A longitudinal observational study of Veterans across VHA who participated in the MOVE! Weight Management Program.

PARTICIPANTS: Veterans who initiated their most recent episode of weight management with MOVE! between 2004 and 2014 were included in this study.

MAIN MEASURES: Weight measurements were abstracted from VHA electronic health records. The primary outcome was the proportion of Veterans with clinically relevant weight loss. The predictor of interest was number of MOVE! contacts during the 12 months following MOVE! initiation.

KEY RESULTS: The cohort consisted of 237,577 Veterans (87.4% male; mean age 54.4 years), who had, on average, 5.3 contacts in the 12 months following initiation. Veterans with between 2 and 5 contacts had the same odds of achieving clinically relevant weight loss as Veterans with only one contact (Adjusted OR:1.00, 95%CI:0.98,1.03). Veterans with between 6 and 9, 10 to 13, 14 to 17, and 18 or more contacts had significantly higher odds of clinically relevant weight loss (Adjusted OR:1.17, 95%CI:1.13,1.20; Adjusted OR:1.53, 95%CI:1.47,1.59; Adjusted OR:1.84, 95%CI:1.74,1.94; Adjusted OR:2.21, 95%CI: 2.12, 2.31, respectively)

CONCLUSIONS: Veterans with 6 or more MOVE! contacts in the year following treatment initiation were significantly more likely to achieve clinically relevant weight loss than those with 1 contact, with participation increasing odds of clinically relevant weight loss. Further

characterization of key predictors of weight loss is needed to understand how contact frequency may modify weight change and associated implications for increasing engagement.

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B201 6:00 PM-7:00 PM

KNOWLEDGE AND AWARENESS OF METABOLIC RISK IN UNIVERSITY STUDENTS

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Background. The prevalence of young adults having one or more components of metabolic syndrome, (MetS); i.e., increased abdominal adiposity, high blood pressure, high fasting blood glucose, high triglycerides, body mass index [BMI] overweight/obese, is increasing. Understanding knowledge and awareness of risk is likely an important first step in preventing the numerous chronic conditions associated with MetS, including cardiovascular disease, diabetes, and stroke. ***Purpose.*** We examined the knowledge of metabolic risk in a sample of university students with BMIs in the overweight or obese range. ***Methods.*** Students (N=177; 79.7% female; age 22.1±3.6 years; BMI 31.7±3.6 kg/m^2) completed a 5-item measure assessing knowledge of metabolic risk, and self-perception or awareness of metabolic risk including knowledge of blood pressure, cholesterol, and blood glucose. ***Results.*** The majority (68.4%, n=121) of participants had never heard of the term metabolic risk, with 66% of obese (n=68) and 71.6% overweight (n=53) reporting being unfamiliar with the term. There were no significant differences in knowledge of metabolic risk by BMI status, sex, age, or academic year. Of those individuals who had prior knowledge of metabolic risk, 53.6% reported they were not concerned with their own metabolic risk factors. The majority of all participants reported knowing their blood pressure (66.1%) and having blood work done to measure cholesterol (52.0%), but only 41.7% reported ever having blood work to measure glucose levels. ***Conclusions.*** Although participants reported having components of MetS evaluated, a large proportion of students did not recognize the term metabolic risk, despite having elevated BMIs in the overweight and obese range. This disconnect is an important area of risk communication and information dissemination. Implications of these findings will be discussed such as leveraging university healthy lifestyle programming to educate young adults about metabolic risk and the benefits of forming long-term healthy eating and physical activity behaviors.

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METABOLIC SYNDROME MARKERS AND PHYSICAL ACTIVITY IN OBESE WITH AND WITHOUT PRADER-WILLI SYNDROME

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Introduction: Metabolic syndrome (MS) is defined as a group of cardiovascular and diabetes risk factors that occur simultaneously. Prader-Willi Syndrome (PWS) is a genetic disorder associated with obesity. To date, only one study showed that MS could be a health risk in PWS. In youth, physical activity (PA) is negatively associated to MS; however, youth with PWS appear to participate in less PA than other youth. Thus, the purpose of this study is to examine the relationship between MS and moderate-to-vigorous PA (MVPA) in youth with PWS compared to youth with non-syndromic obesity (OB).

Methods: Participants were 21 youth with PWS (ages 10.7 ± 2.6; 12 males, 9 females; body fat= 46.0 ± 8.9%) and 34 youth with OB (ages 9.6 ± 1.0; 17 males, 17 females; body fat= 45.4 ± 6.4%). MS markers (body mass index (BMI), blood pressure, triglycerides, high-density lipoprotein, and glucose) were obtained in each child and evaluated using the adolescent adaptation of the National Cholesterol Education Program. Accelerometry was used to measure MVPA for eight consecutive days. Cut-points formed by Evenson et al. (2008) defined MVPA. Chi-square analyses and independent t-tests compared frequency of meeting the MS criteria and differences in MS severity between PWS and OB youth, respectively. A median-split separated participants into four groups (PWS low PA, PWS high PA, OB low PA, OB high PA). An ANOVA determined differences in MS severity in relation to MVPA with a Bonferroni post hoc. Significance was set at $p < 0.05$.

Results The frequency of presenting BMI and glucose as a risk factor was lower in PWS (61.9% and 14.3%, respectively) than in OB (91.2% and 44.1%, respectively) (BMI χ^2=6.952, $p < 0.01$; glucose χ^2=5.247, $p < 0.05$). MS severity was lower in PWS (0.10 ± 0.81), than in OB (0.77 ± 0.63, $p < 0.01$). The PWS high PA youth had lower MS severity scores (-0.01 ± 0.71) than the OB low PA youth (0.83 ± 0.52, $p < 0.05$). There were no other significant differences.

Conclusion: The results indicate that the presence of PWS may have protective effects against MS risk factors in youth with obesity. The evidence also suggests PA may have a role in MS severity in youth with PWS and non-syndromic obesity. Further research should evaluate the role of exercise interventions on MS risk factors in youth with PWS.

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B203 6:00 PM-7:00 PM

PARENTING PROFILES ACROSS OBESITY-RELATED BEHAVIOURS THAT SUPPORT ADOLESCENTS' HEALTH BEHAVIOURS

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Objective: The family environment is important in shaping adolescent health behaviours. Parents can influence these behaviours directly through specific parenting practices (e.g., rules or routines). Further research is necessary to explore the extent to which parents use more supportive practices with respect to influencing health behaviours. We used qualitative methods to explore parenting practices in relation to adolescent health behaviours (physical activity (PA), nutrition, and screen time behaviours).

Methods: We conducted 28 semi-structured interviews with parents of grade 7 students (March-May 2016) in Surrey, British Columbia, Canada [68% mothers; ethnicity diverse: 11% Chinese, 32% South Asian, 14% Southeast Asian, 25% White; 54% had income < $60,000]. We asked open-ended questions regarding the environmental and behavioural factors that influence their child's health behaviours. Interviews were recorded and transcribed verbatim.Two staff and the principal investigator transcribed and coded the first five interviews, while the remaining interviews were coded and reconciled by two staff. A conceptual framework that grouped parenting practices under structure, control, and responsiveness guided our analyses. We used Nvivo 11 for all analyses.

Results: Parenting practices predominantly related to structure and control were observed across all health behaviours; differences also emerged across health behaviours. For PA, adolescent behaviours were structured using practices such as co-participation, modeling, and access/availability. In some cases, parents controlled their child’s PA by pressuring them to enroll in activities that they were not interested in. Other parents were responsive to their child and used practices such as encouragement, involvement, and autonomy support to

influence their child’s activity. In contrast, screen time and nutrition behaviours were structured through expectations (e.g., rules). As parents experienced difficulty in achieving certain behaviour for screen time, they sometimes resorted to controlling practices such as bribes or discipline. With nutrition, we identified more permissive practices. Parents acknowledged certain expectations around eating, but noted difficulty in maintaining these expectations both for their child and themselves.

Conclusions: Our findings suggest that parenting practices differ across adolescent health behaviours. They provide insight into the complexity of ensuring that parents utilize supportive practices—an aspect that needs to be emphasized in current interventions to encourage healthy behaviours.

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B204 6:00 PM-7:00 PM

POSITIVE EMOTIONS AND EATING IN OVERWEIGHT ADULTS

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Background: Recently, there has been increased interest in examining positive emotions as triggers for eating. Studies have concluded that eating in response to positive emotions may be a greater problem in normal or underweight samples than overweight samples. However, eating in response to positive emotions is frequently reported by overweight adults. The current study aimed to identify the positive emotions that trigger eating in this sample, and to examine differential associations of eating in response to positive vs. negative emotions with demographic and health outcomes.

Methods: Overweight adults (n = 188; BMI = 33.17 ± 6.98; age = 41.78 ± 13.61; 64.9% female) were recruited using Amazon Mechanical Turk. Eating due to positive and negative emotions was assessed with the Emotional Appetite Questionnaire (EAQ). Body mass index (BMI) was calculated from self-reported height and weight. Mental health symptoms (i.e., depression, anxiety, and somatization) were measured with the SCL-90R. Mean scores were calculated to identify positive emotions that most commonly trigger eating. Next, correlational analyses examined relationships between positive and negative emotional eating and outcomes.

Results: Of the positive emotions assessed, happiness was the eating trigger most commonly reported ($M = 5.2$, $SD = 1.7$). Of the 15 total emotions assessed, happiness was the fourth most common emotion reported to trigger eating, after boredom, loneliness, and depression. Eating due to positive emotions was unrelated to BMI, gender, and depressive symptoms, but significantly related to symptoms of anxiety ($r = .15$, $p < .05$) and somatization ($r = .15$, $p < .05$). Eating due to negative emotions was significantly associated with greater BMI ($r = .19$, $p = .01$), female gender ($r = .19$, $p = .01$), and symptoms of depression ($r = .32$, $p < .001$), anxiety, ($r = .22$, $p < .001$), and somatization ($r = .19$, $p = .01$).

Conclusions: Happiness frequently triggers eating in overweight adults. Despite this, eating due to positive emotions was unrelated to BMI, gender, and depressive symptoms, whereas eating due to negative emotions was significantly related to BMI, female gender, and a range of mental health symptoms. Among overweight/obese adults, eating due to positive emotions may be less problematic, as it is less closely related to weight and depressive symptoms than eating due to negative emotions.

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B205 6:00 PM-7:00 PM

RACIAL/ETHNIC REPRESENTATION IN LIFESTYLE WEIGHT LOSS INTERVENTION STUDIES IN THE UNITED STATES: A SYSTEMATIC REVIEW

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Objective: Despite efforts to enhance inclusion, underrepresentation of minorities in research has been documented. The primary aim of this review was to evaluate representation of racial/ethnic sub-group members in behavioral weight loss interventions conducted among adults in the United States. The secondary aims were to assess recruitment and study design approaches to include racial/ethnic groups and the extent of racial/ethnic sub-group analyses conducted in these studies.

Methods: PubMed, PsycInfo, and Medline were searched for behavioral weight loss intervention trials conducted in 2009-2015 using keywords: weight, loss, overweight, obese, intervention and trial.

Results: The majority of the 87 studies reviewed included a majority White sample. Across the included studies, 61% of participants were White, 18% were Black/African American, 9% were Latino/Hispanic, 2% were Asian and 1% were American Indians. An additional 7.8% were categorized as “other”. Nine of the 87 studies enrolled exclusively minority samples. More than half (59.8%) of the studies did not report an intention, approach or specific site/location to recruit a sample that was racially or ethnically diverse. Of the 54 studies that included more than one racial/ethnic group, 8 included sub-group analyses of weight loss outcomes by race/ethnicity.

Conclusions: Lack of adequate representation of racial and ethnic minority populations in behavioral trials limits the generalizability and potential public health impact of these interventions. Given persistent racial/ethnic disparities in obesity in the U.S., the high morbidity, mortality, and economic costs associated with obesity and obesity-related conditions among racial/ethnic minority groups, findings from this review emphasize the need to maximize representation of some underrepresented racial/ethnic groups in behavioral lifestyle weight loss trials.

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B206 6:00 PM-7:00 PM

REWARD-RELATED EATING IN OBESE AND LEAN ADULTS: A MULTIMETHOD CHARACTERIZATION

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Reward-Related Eating in Obese and Lean Adults: A Multimethod Characterization

Background: An obesity phenotype characterized by high reward-related eating (RRE) may be optimally assessed by combining self-report, neurocognitive, and biological measures. Consciously experienced symptoms of enhanced drive to eat can be assessed using the Reward-based Eating Drive (RED) scale. Less conscious dimensions of RRE may be characterized using neurocognitive assessments of selective attention to food cues. Moreover, selective attention to food cues may differ in a fasted state versus after glucose ingestion, because glucose (a primary source of fuel for the brain) can facilitate cognitive function.

Hypotheses: Compared to lean controls, participants with obesity will exhibit higher self-reported symptoms of RED (H1), and greater glucose-induced enhancement of selective attention to food cues (H2). Across all participants, greater blood glucose increases will correlate positively with glucose facilitation of selective attention (H3).

Methods: Participants with obesity (n=11) and lean controls (n=12) completed the RED scale before completing the N-Back neurocognitive assessment. The N-Back employed food and non-food stimuli, and participants completed it both in a fasted state, and 50 minutes after drinking 75g of glucose (Glutol). We assayed blood glucose before and 50 minutes after Glutol consumption. We calculated selective attention to food cues as the difference between food and non-food stimuli in 2-back correct identifications on the N-Back. We defined glucose facilitation of selective attention as the increase in correct ‘food’ relative to ‘non-food’ identifications from pre- to post-glucose ingestion.

Results: Participants with obesity had significantly higher RED scores (H1) and greater glucose facilitation of selective attention to food cues compared to lean controls (H2; all *p*’s *< .05).*

Greater increases in blood glucose correlated with greater increases in selective attention to food cues in the whole sample (H3; *r*=.51, p=.01).

Conclusions: People with obesity are more likely to have higher RED scores and greater attentional biases toward food, which characterize reward-related eating (RRE). Used in concert, self-report, neurocognitive, and blood glucose measures may comprise a brief battery that can identify individuals with high RRE. The RRE phenotype may contribute to a “vicious cycle” of overeating and resultant obesity.

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B207 6:00 PM-7:00 PM

STRESS IS ASSOCIATED WITH WEIGHT CIRCUMFERENCE IN HISPANIC ADULTS

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Introduction:
Waist circumference is a commonly used indicator of abdominal obesity. Individuals with abdominal obesity are at a greater risk for metabolic syndrome, cardiovascular disease and diabetes. Similarly, evidence also shows that greater perceived stress is related to poorer health outcomes. Moreover, perceived stress and waist circumference have been shown to be related as individuals often engage in unhealthy weight behaviors in response to stress. Minority groups may be particularly vulnerable because they are at an increased risk for abdominal obesity and higher stress levels. As there is little research on the link between perceived stress and waist circumference in minorities, the current study investigated this relationship in a sample of Hispanic adults *controlling for health behaviors.*

Methods:
The Heart Smart exhibition at the Miami Science Museum educated museum visitors about the importance of a heart healthy lifestyle. The exhibition invited visitors to take simple personal measurements (e.g., waist size and self-reported habits) using the exhibition's interactives. Visitors received personalized feedback, and, after consenting, could anonymously contribute their information to a research database. The exhibition reached a large sample of Hispanic adults in South Florida. Data from 12,272 consenting Hispanic visitors (18-90 years old; 59.6 % female) were analyzed in the cross-sectional analysis.

Results:
A multiple regression analysis showed that gender, age, perceived stress, fruit consumption, vegetable consumption, soda consumption, and physical activity accounted for significant variance in waist circumference (M = 32.85, SD = 6.94), adjusted $R^2 = .133$, F (2, 12,264) = 270.69, $p < .001$. Results indicate that, controlling for covariates, for every one-point increase in stress level, waist circumference increased by .17 inches 95% CI [.05, .28], p = .005. Interestingly, squared semi-partial correlations indicate that perceived stress explained just as much variance in waist circumference as health behaviors.

Discussion:
The current study’s findings show that higher stress levels are related to greater waist circumference in Hispanic adults, controlling for age, gender, and health behaviors. This is consistent with the view that stress hormones (i.e., cortisol) contribute to the accumulation of abdominal fat. These findings have important clinical implications. Stress reduction techniques are often briefly introduced in most evidence-based weight loss protocols designed to improve nutrition and increase activity. The present findings underscore the value of devoting additional attention to stress management strategies when implementing behavioral weight loss interventions.

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B208 6:00 PM-7:00 PM

THE IMPACT OF WEIGHT ON PSYCHOLOGICAL FUNCTIONING: THE ROLE OF WEIGHT DISCRIMINATION AND INTERNALIZED WEIGHT BIAS

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Obesity rates in the United States (U.S.) continue to rise with approximately 34.9% of adults considered obese and an additional 34% that are overweight. In addition to several health problems, obese individuals report greater psychological distress and are at a higher risk for experiencing negative psychological effects. With the increased prevalence of obesity, there has also been a rise in weight-based discrimination and weight bias in the U.S. The present study examined if weight bias internalization mediated the relationship between weight-based stigmatizing experiences and psychological functioning. Non-treatment seeking overweight and obese participants (*N* = 112) completed several questionnaires including the Weight Bias Internalization Scale (WBIS), Stigmatizing Situations Inventory (SSI), and Brief Symptom Inventory (BSI). Participant's height and weight was also measured to determine body mass index (BMI). As predicted, weight-based stigmatizing experiences was found to be a significant predictor of internalized weight bias, and weight-based stigmatizing experiences was a significant predictor of psychological functioning. Results indicated that the direct effect of weight-based stigmatizing experiences on psychological functioning was significant, indicating that weight-based stigmatizing experiences also affects psychological functioning in ways independent of internalization. Consistent with expectations, the indirect effect of weight-based stigmatizing experiences on psychological functioning was significantly greater than zero, indicating that individuals who have weight-based stigmatizing experiences were, on average, 0.040 units higher in their likelihood of experiencing psychological distress as a result of the effect of internalized weight bias. These results support the predicted hypothesis that weight bias internalization would mediate the relationship between weight-based stigmatizing experiences and psychological functioning. Results provide evidence for significant relationships between internalized weight bias and weight-based stigmatizing experiences and psychological functioning, as well as support the predicted hypothesis that weight bias internalization mediates the relationship between weight-based stigmatizing experiences and psychological functioning. Recommendations for future research based on these findings will be discussed.

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B209 6:00 PM-7:00 PM

THE USE OF THE LIFESTYLE QUESTIONNAIRE FOR WEIGHT MANAGEMENT TO IMPROVE WEIGHT MANAGEMENT COUNSELING.

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Abstract

Background: Productive counseling sessions for weight management in clinical settings can be challenging due to time-restraints and health-care providers' lack of comfort with counseling. Patients often feel frustrated due to a history of unsuccessful weight loss attempts which leads to hopelessness in future attempts. An instrument is needed to facilitate short and effective counseling sessions and to provide specific feedback to increase patients' likelihood of success. The *Lifestyle Questionnaire—Weight Management* (LQ-WM) is a brief instrument (27 items) regarding behavioral and emotional patterns and also estimates patients' likelihood of success quantitatively based upon responses by research participants. The instrument was recently piloted and showed concurrent validity in predicting weight loss success. The current investigation expanded the sample size, adjusted several items, and re-validated its ability to concurrently predict weight loss success. **Method:** 529 participants engaged in a weight loss attempt completed an online questionnaire covering their demographics, behavioral patterns, and weight management outcomes. Participants were recruited from college classes and a popular social networking site. **Results:** A *Lifestyle Score* was computed for each participant based upon their responses to healthy and unhealthy behavioral patterns. The average *Lifestyle Scores* between participants reporting successful weight management (n=300) versus unsuccessful weight management (n=228) were significantly different (m=28.6 & m=15.4, $p < .001$). Participants whose lifestyle score was in the top 10% had a significantly higher rate of reporting weight loss success versus those in the bottom 10% (83.8% & 35.7%, respectively. $p < .001$). **Discussion and Conclusion:** The *Lifestyle Score* from the LQ-WM showed concurrent validity in predicting weight loss success but with a larger and more diverse sample than the pilot study. The LQ-WM may provide utility in clinical scenarios to facilitate brief, yet effective, counseling interactions which provide the patient with specific feedback on their behavioral patterns and their likelihood of success. However, future research should investigate the performance of the LQ-WM longitudinally, use clinical samples, and employ more objective weight management measures besides self-report. The LQ-WM has the potential to facilitate more effective counseling interactions between providers and patients.

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B210 6:00 PM-7:00 PM

WEIGHT STIGMA AND WEIGHT CYCLING IN YOUNG ADULTS WITH OVERWEIGHT/OBESITY

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The negative effects of weight stigma on psychological and physical health in individuals with overweight/obesity are well documented. Less is known about weight stigma and weight cycling, especially among young adults who report high levels of weight stigma. The current study examined the influence of weight stigma on weight cycling in an ethnically diverse sample of young adult women with overweight/obesity. Participants were 91 young adult women (41.7% ethnic minority) aged 18 to 30 (*M* = 20, *SD* = 5.62), with an average body mass of 29.03 (*SD* = 3.80). Within the sample, 46.4% of participants indicated weight cycling at least one time. A hierarchical multiple regression analysis was used to determine the influence of weight stigma on weight cycling, controlling for age and ethnicity. The regression model accounted for a significant proportion of the variance in weight cycling frequency, $R^2 = .13$, $F(7, 83) = 1.81$, $p < .05$. Ethnicity was a significant independent predictor of frequency of weight cycling for Asian Americans, such that on average, Asian Americans reported 0.69 fewer incidence of weight cycling than Caucasians, $p < .05$. Weight stigma significantly predicted weight cycling, such that as the frequency of weight stigma increased by one-unit, there was a 0.17 increase in frequency of weight cycling, $p < .05$. These results suggest that young adult women with overweight/obesity who experience higher rates of weight stigma have an increased incidence of weight cycling. In addition, Asian Americans appear to be less susceptible to weight cycling compared to Caucasians. Future studies should examine weight stigma and factors associated with weight cycling to further inform interventions for obesity.

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B211 6:00 PM-7:00 PM

A FIRST LOOK AT MILD TRAUMATIC BRAIN INJURY (MTBI) SYMPTOM FREQUENCY AMONG U.S. FIREFIGHTERS

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Rushing into burning buildings and performing daring acts of bravery, fighting fire is a dangerous profession. Yet, over 1 million firefighters serve communities across the United States. The National Fire Protection Agency (NFPA) estimates that 65,880 U.S. firefighters were injured in the line of duty in 2013 alone. Often described as a ‘silent epidemic’, traumatic brain injury (TBI) has been observed in military, athletic and pediatric populations. However, gathering epidemiological data has been challenging due to debate on an adequate definition, differences in study methods and comorbidities. A recent statewide population-based survey by Whiteneck and colleagues (2016) revealed that out of 2701 adult Colorado residents, 37.7% reported a head injury but no TBI, 36.4% reported mild traumatic brain injury (mTBI) and 6.0% reported moderate-severe TBI. Further, an estimated 5.3 million Americans are currently living with a TBI-related disability (Langlois, Rutland-Brown, & Wald, 2006). However, the frequency of TBI among firefighters is completely unknown. Our anonymous Qualtrics survey of career firefighters (N = 60) reveals a first look at firefighter mild traumatic brain injury (mTBI) frequency. Due to the risky nature of their profession and their likely former athletic and military participation, we hypothesized that prevalence of post-concussive syndrome (PCS) symptoms and mTBI are inflated among firefighters. Basic descriptive statistics were analyzed using SPSS statistical software package. In conjunction with fire service, the majority of participants were Caucasian males between the ages of 27 and 67 (90.0% male; 80.0% Caucasian; M = 41.64; SD = 9.36). Though much debate has centered on an adequate definition of traumatic brain injury, we classified mTBI symptoms using the World Health Organization’s (WHO) preliminary screening criteria: a) loss of consciousness (LOC) for 30 minutes or less, b) posttraumatic amnesia for less than 24 hours and c) confusion or disorientation after sustaining an injury to the head resulting from external physical forces. Our initial review of lifetime head injury events revealed that 36.8% endorsed LOC for 30 minutes or less, 44.1% endorsed loss of memory, and 57.4% endorsed feeling dazed and confused after sustaining an injury to the head. Altogether 61.8% met lifetime criteria for one of the aforementioned mTBI symptoms. 25.0% of participants endorsed currently experiencing post-concussive symptoms that they thought might be related to injuries

experienced either in their career as a firefighter, athletic or military participation. Though no cure for TBI is available, useful treatments for TBI-related symptoms are readily available.Results from this study suggest further research in this area is warranted to inform development and improvement of firefighter policies and procedures.

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B212 6:00 PM-7:00 PM

SUN PROTECTION BEHAVIORS AMONG MALE HISPANIC OUTDOOR LABORERS

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Introduction: Individuals who work outside are at increased risk for skin cancer due to exposure to the sun’s ultraviolet (UV) radiation. Hispanic individuals in the United States are over-represented in several outdoor occupations that have high UV exposure. Little is known about the sun protection practices of Hispanic individuals who work outdoors. In this project, we examined Hispanic day laborers’ sun protection knowledge, beliefs, behaviors, and barriers.

Methods: 175 Hispanic men (47% Mexican, 26% Honduran; *M* age 35.1) were recruited at local outdoor locations where day laborers commonly congregate in New Brunswick, NJ. Participants were eligible if they were male, self-identified as Hispanic or Latino, and reported working outside in the past 3 months or the previous summer. Participants completed a 15-20 minute pencil and paper or interviewer administered survey in Spanish or English. Questions focused on demographic factors as well as sun protection knowledge, beliefs, behaviors, and barriers.

Results: Overall, knowledge of skin protection and skin cancer was modest (*M* = 3.9 correct items out of 7, *SD* = 1.11). Participants were most frequently incorrect (97%) about the recommended sun protection factor (SPF) of sunscreen. More than 90% of participants somewhat/strongly agreed that it was “important to protect my skin from the sun while working outdoors” (91%) and “if I don’t protect myself from the sun while working outdoors, my skin will be damaged” (93%). Only 11% of the sample felt that “there’s not much you can do to lower your chances of skin cancer." The reported rate of often or always engaging in sun protection behaviors when working outside was as follows: sunscreen, 17%; staying in the shade, 10%; wearing a wide-brimmed hat, 13%; wearing a long-sleeved shirt, 44%; wearing long pants, 89%. The top barriers to wearing sunscreen were forgetting to apply it and not knowing what kind to use. The top barriers for not wearing long pants and a long-sleeved shirt as well as wearing a wide brimmed hat were that they were too hot and uncomfortable to wear.

Conclusions: Hispanic day laborers do not sufficiently engage in many sun protection behaviors while working outdoors, despite believing in the importance of skin protection. Participants reported several factors that hinder their ability to engage in sun protection behaviors during outdoor work. Future research is needed to facilitate engagement in sun protection behaviors in this at-risk population.

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B213 6:00 PM-7:00 PM

THE PROVISION OF CLERGY HEALTH RESOURCES BY FAITH-BASED ORGANIZATIONS IN THE UNITED STATES

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The percentage of clergy classified as obese is reported to be as high as 41%. Additionally, clergy are disproportionately affected by several chronic diseases. Provision of health resources should be a priority for faith-based organizations (FBOs) that employ clergy, but little is known about the extent to which clergy health is prioritized and addressed among FBOs. The purpose of this study was to describe practices related to promoting clergy health among a national sample of FBOs. A total of 154 administrators from the largest religious denominations in the U.S. completed questionnaires on their beliefs and practices regarding clergy health promotion. Stress (64.7%), obesity (45%), and lack of exercise (41.2%) were identified as the top health-related issues facing clergy. The most commonly offered health-related resources were health insurance (86.7%), an employee wellness benefit provided by health insurance provider (61.3%), a health-related newsletter (61.3%) and a website with general health information (61.3%). Lack of financial resources (61.3%), lack of trained staff (46.7%) and lack of interest from clergy (47.4%) were cited as the most common barriers to providing health resources for clergy. Respondents indicated that their FBOs encourage clergy to lead healthy lives (91.2%), be physically active (65.4%), eat healthy (62.3%), and avoid smoking (66.9%). Although a majority of respondents thought that clergy must adhere to a healthy lifestyle to effectively encourage their congregation to do the same (88.5%), very few (29.4%) respondents thought clergy were prepared to be good role models for health to their parishioners. Additionally, few respondents (37.3%) thought their clergy were ready to face the challenges of health-related self-care while in ministry, with 78.0% indicating that clergy need more training related to health and prevention of chronic disease. Respondents indicated that the most appropriate ways for clergy to receive health education were through online training (41.9%) and special events (30.1%). The results of this study highlight potential priorities (e.g., stress, obesity, exercise, and education) and modes of delivery (e.g., online training) for FBOs interested in providing or enhancing resources aimed at promoting the health of clergy. Further research is needed to determine whether the provision of health-related resources is associated with more positive health and behaviors among professional clergy.

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B214 6:00 PM-7:00 PM

A SYSTEMATIC REVIEW OF SOCIAL SUPPORT AND PAIN IN PATIENTS WITH RHEUMATOLOGIC DISEASE

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Background: Pain is a significant quality of life concern in patients with rheumatologic disease. A biopsychosocial conceptualization of pain is widely accepted, with perceived social support being recognized as a potentially important factor in understanding pain in this population. The aim of this study was to summarize the empirical evidence of the link between social support and pain in rheumatology patients.

Methods: PRISMA guidelines were used to conduct the systematic review. Keyword searches of pre-defined terms of the PsycINFO and PubMed/MEDLINE databases were conducted. A standardized tool was used to extract and record study-level data. Social support was classified into four taxonomies (overall, emotional, instrumental/tangible, informational). Weighted correlations were aggregated using random effects models across each social support type.

Results: Of the 411 screened articles, 27 studies met the inclusion/exclusion criteria (N = 4,069). The majority was comprised of patients with rheumatoid arthritis, although osteoarthritis, lupus, and fibromyalgia were also represented. The pooled effect sizes from cross-sectional analyses suggested a small inverse association with pain for overall social support (r = -.15, 95% CI: -.09, -.21), emotional social support (r = -.18, 95% CI: -.09, -.18), and instrumental/tangible support (r = -.14, 95% CI: -.08, -.19). There were insufficient studies to evaluate the relationship between pain and informational social support, or any longitudinal relationships. Studies were most limited by substantial heterogeneity in the measurement of social support and pain, ambiguities with regard to how measures were used and reported, cross-sectional designs, and representativeness of the samples.

Conclusions: The results suggest that rheumatology patients with greater social support report lower pain, although the effect is small. These findings are consistent with research on the health benefits of social support in numerous populations.

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B215 6:00 PM-7:00 PM

PAIN EXPERIENCES AND PAIN MEDICATION USE AFTER SPINAL CORD INJURY: RELATIONSHIP WITH RISK OF MORTALITY

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Spinal cord injury (SCI) has long been associated with diminished longevity, particularly among those with more severe SCI. Lower income, less education, tobacco use, binge drinking, prescription medication use, physical health conditions (e.g., heart disease), and secondary conditions (e.g., pressure ulcer surgeries, depressive symptoms) have been associated with increased risk of mortality in SCI. Pain is a common secondary condition after spinal cord injury; however, there is no prior literature that examines pain and pain-related factors in relation to mortality in SCI. The current study examined the roles of pain intensity, pain interference, and pain medication use with risk of mortality, while controlling for biographic, injury, socioeconomic, and health factors.

Participants (n = 2535) with spinal cord injury, identified through records at a specialty hospital in the southeastern United States, completed self-report questionnaires. Predictor variables assessed included: patient characteristics (e.g., demographics and injury), health indicators (e.g., pressure sores, hospitalizations, broken bones, amputations, depressive symptoms, pain intensity, and interference of pain on daily functioning), and frequency of pain medication use. The outcome variable, mortality, was identified using the National Death Index and the Social Security Death Index.

There were 335 deceased participants who had an average of approximately 38 survival months, compared to approximately 73 months for those alive. The final stage of a three-stage hierarchical multivariate model (i.e., stage 1 = patient characteristics, stage 2 = health indicators, and stage 3 = pain medication use) using Cox proportional hazards modeling indicated that being male (HR = 1.42), and having greater injury severity (HR = 3.06) were risk factors for mortality, whereas, having a four-year college degree or higher was a protective factor (HR = .64). With the exception of pain interference, pain intensity, and having a broken bone, all other health indicators were predictive of increased risk of mortality. Those who reported daily use of pain medications were 61% more likely to be deceased compared to those who don’t use pain medication (HR=1.61).

Frequency of prescription pain medication use was significantly related to risk of mortality, even after controlling for all other predictors. It is important for providers to be cognizant of the potential contributory effects of pain medication use on mortality in individuals with SCI.

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B216 6:00 PM-7:00 PM

THE EFFECTS OF AN ANTI-INFLAMMATORY DIET IN THE REDUCTION OF PAIN SUBJECTIVITY AMONG VETERANS WITH CHRONIC PAIN

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Background:
Research has suggested a direct link between poor diet, systemic inflammation, and increased reports of subjective pain (Minihane et al., 2015). Newer approaches to pain management have incorporated behavioral treatments and a focus on managing biopsychosocial aspects of pain. Participants included in this study were veterans at VA medical Center who were actively involved in a multimodal, self-management integrative pain clinic. One aspect of this integrative clinic included following an anti-inflammatory diet, which targets the elimination of pro-inflammatory foods (i.e., pain inducing) and introduction of anti-inflammatory foods (i.e., pain reducing).

Methods: Participants (*N*=78) were predominately African-American (58%)male (70%) Veterans with a mean age of 56 years (*SD* = 10.66) who completed an 8-week anti-inflammatory diet group led by a registered dietician and licensed psychologist. One third of participants (*N* = 30) had completed data for pre-and post measures. Veterans completed the Pain Catastrophizing Scale (PCS) and Pain Outcomes Questionnaire (POQ) at intake and during the final group. Paired T-tests were conducted to assess differences between pre and post measures. Outcomes included total PCS scores, PCS subscale scores (Rumination, Magnification, and Helplessness), POQ total score, and POQ subscales (Pain, Mobility, Activities of Daily Living, Vitality, Negative Affect, and Fear).

Findings:When comparing pre-and post-group data, participants who completed the anti-inflammatory group had lower scores on the following subscales: PCS Helplessness, t(29) = 2.08, *p* < .05, POQ Mobility, t(29) = 3.08, *p.01, POQ Vitality, t(29) = 2.14, pp* < .05. No significant racial or gender differences were identified on outcome variables.

Conclusions: Results of the study suggest that multiple areas of pain subjectivity were significantly influenced after an 8-week anti-inflammatory diet group. While most veteran participants were involved in multiple treatment modalities for chronic pain management during the time of the group, this research suggests that diet modification, specifically the

incorporation of an anti-inflammatory diet, may play a significant role in pain reduction amongst veterans with chronic pain. Use of an anti-inflammatory diet may prove as an effective adjunctive treatment to pharmacological and other non-pharmacological management of pain, as well as help to improve overall quality of life and well-being.

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B217 6:00 PM-7:00 PM

YOGA TREATMENT FOR CHRONIC LOWER BACK PAIN IN THE MILITARY: WHO BENEFITS THE MOST?

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Background: To optimize treatment selection for patients with chronic pain, data must show why and for whom particular modalities are most effective. The present study examines the role of pre-treatment psychosocial characteristics on the effects of an 8-week yoga program for chronic lower back pain (cLBP) in a military health setting.

Methods: Participants (N=68) were randomized to a control group or the Restorative Exercise and Strength Training for Operational Resilience and Excellence (RESTORE) yoga group. The Patient Reported Outcomes Measurement Information System (PROMIS) was administered at baseline (BL), mid-treatment, and post-treatment (PT). Participants were stratified into “risk” groups (e.g. 1 SD from the norm on PROMIS scales) for Sleep Disturbances, Social Functioning, and Pain Interference. The independent and interactive effects of time, treatment, and risk groups on Physical Functioning were examined with generalized estimating equations. Sequential Bonferroni post-hoc tests compared group differences in BL to PT Physical Functioning changes for each treatment x risk group.

Results: From BL to PT, the control group retained BL Physical Functioning levels, across all risk groups. Participants in the RESTORE group with above average BL Sleep Disturbances and Pain Interference scores reported significant increases in Physical Functioning, while those in the RESTORE group with average scores did not change. Participants in the RESTORE group with below average Social Functioning retained BL Physical Functioning levels, while those with average Social Functioning reported increases from BL to PT.

Conclusions: For military service members with cLBP, yoga may be most helpful for individuals with elevated sleep difficulties and pain interference, but adequate social support. Given the

high prevalence of sleep disorders among service members, coupled with the need to combat the opioid epidemic with integrative pain management strategies, yoga is a promising avenue of treatment for cLBP. Future research is needed to determine whether preparatory interventions targeting social support can bolster functioning improvements in yoga-based therapies, as well as compare treatment moderators across other integrative pain treatments. By identifying and leveraging research regarding treatment moderators, providers can match the best-fitting treatments with each patient, increasing the likelihood of treatment success.

Disclaimer: The views expressed in this presentation are those of the authors and do not reflect the official policy of the Department of Army/Navy/Air Force, Department of Defense, or U.S. Government.

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A SYSTEMATIC REVIEW OF ADHERENCE TO RCTS INVOLVING PHYSICAL ACTIVITY INTERVENTIONS TARGETING THREE CHRONIC DISEASES

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The medical community has accepted physical activity as an effective behavioral medicine for the prevention and treatment of a variety of diseases and chronic conditions. Chronic conditions may vary in the extent to which they impact self-regulatory skills necessary for initiating and maintaining a physical activity program. However, insufficient evidence is available to make comparisons across chronic conditions regarding adherence to structured physical activity interventions overall, or across different settings. To explore potential differences, we conducted a systematic review and quantitative summary of randomized controlled trials using physical activity or exercise as a treatment for one of three chronic diseases. A total of 33 peer-reviewed scientific articles published between 2000 and 2016 (via PsychInfo, PubMed, CINAHL, Clinical Key, SCOPUS, and hand-picked articles) met our inclusion criteria (i.e., randomized controlled trial, at least one trial arm consisted primarily of aerobic and/or strength training, lasted three or more months, reported % of sessions or made data available). We targeted three clinical populations, i.e., cardiovascular disease [CVD] (n=10), diabetes (n=10), and cancer (n=13), and data from all studies were included in our analyses. Authors from 54.5% of identified studies confirmed data. Adherence rates varied considerably across samples: 85.03% (SD=13.77%), 77.76% (SD=14.56%), and 66.94% (SD=24.52%), respectively. Dropout rates showed a similar pattern (10.60%, 12.15%, and 12.42%, respectively). Interestingly, overall, adherence for center-based trials (75.00%[SD=21.77%]) did not differ from home-based trials (77.42%[SD=17.89%]). Although few differences emerged, substantial variability exists across studies and within each of the targeted conditions. Moreover, these findings imply that the average patient is not receiving 25% of their prescribed physical activity treatment. These findings underscore the need for novel approaches to maximize the reach and treatment uptake of structured physical activity interventions. It is important to note that many of these interventions preceded the "tech boom" and it is possible that mobile health technologies could be incorporated in an effort to increase participation motivation. Additionally, screening patients' self-regulatory capacity at the onset of intervention may facilitate touch points for “mini-interventions” designed to enhance their trial experience and optimize treatment adherence.

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B219 6:00 PM-7:00 PM

ACCULTURATION, PHYSICAL ACTIVITY AND SEDENTARY: ASSOCIATION OF ANTHROPOMETRIC VALUES IN A BINATIONAL MEXICAN POPULATION.

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Introduction: Increases in acculturation influence several health behaviors and can be a challengeamong individuals of Mexican origin. This pattern has been shown in large population studies based on people living in Mexico when compared to those living in the U.S. The current study examined the influence of acculturation on the association between physical activity, sedentary behaviors, and anthropometric measures of Mexicans and Mexican-Americans living in the U.S. and Mexicans living in Mexico.

Methods: We examined data from two national surveys, the National Health and Nutrition Examination Survey (NHANES) 2011-2012 and the National Health and Nutrition Survey of Mexico (ENSANUT) 2012. Using the self-reported moderate to vigorous physical activity (MVPA) and sedentary behavior (SB), we calculated 4 exclusive categories: a) physically active and low sedentary, b) physically active and high sedentary*,* c) physically inactive and low sedentary, and d) physically inactive and high sedentary. Anthropometric measures were body mass index (BMI) and waist circumference (WC). Acculturation was assessed through a combination of ethnicity, birth place, and country of residence: Mexican born & living in Mexico, Mexican born & living in the US and Mexican-American born & living in the US. Multiple linear regression models were conducted independently for BMI and WC, for each of the four exclusive categories of MVPA and SB, with acculturation as the independent variable. The models were adjusted by sociodemographic variables and health risk conditions.

Results: Among Mexicans living in the U.S., those “physically active and low sedentary” had a BMI 1.47 kg/m^2 higher, compared with Mexicans living in Mexico. The association remained significant after adjusting for sociodemographic factors and health risk conditions ($p= 0.028$). Mexican-Americans living in the U.S. who were categorized as “physically inactive and high sedentary” had higher BMI values 3.96 kg/m^2 ($p< 0.001$), than their Mexican counterparts living in Mexico or in the US, statistical significant in adjusted models. Even among those with the lower risk “physically active and low sedentary” group, the Mexicans and Mexican-

Americans living in the U.S. had higher WC values compared to Mexicans living in Mexico (p=0.01 and p=0.008 respectively).

Conclusion: According to these results, acculturation plays a role in the relationship between MVPA and sedentary behaviors and adiposity measures in adults, participants more acculturated have higher values of BMI and WC, even in categories of lower risk as physically active and less sedentary. However, more research is needed to understand the underlying mechanisms (e.g. dietary changes, occupation type) driving these relationships.

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ACCURACY OF LED-BASED HEART RATE MONITORING ON WRIST-WORN ACTIVITY TRACKERS

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BACKGROUND: Some wearable activity trackers now use light-emitting diode (LED) sensors to monitor HR during both rest and exercise. Unlike traditional monitors requiring a separate chest strap, wrist-worn models are unobtrusive and are appropriate for continuous long-term wear. By providing objective feedback on exertion, they may help individuals achieve federal physical activity guidelines. The objective of this study was to determine the validity of the HR monitoring function on wrist-worn activity trackers at rest and during moderate-intensity activity.

METHODS: This study used four wrist-worn trackers (Fitbit Charge, Fitbit Surge, Mio Fuse, and Basis Peak) with LED-based HR monitoring capability. Participants were 40 healthy adults aged 30-65 years. Participants were connected to an electrocardiogram (ECG) and the four trackers (two per wrist; location randomized). While sitting, participants' resting HR was recorded from each of the devices at 1-min intervals for 10 min. Next, participants exercised on a treadmill until their HR reached 65% of maximum HR. Once the targeted HR was achieved, participants exercised for an additional 10 min, with HR measured from each device at one-minute intervals. Analyses were performed in R.

RESULTS: Participants were 49.3 years of age (SD=9.5) with a body mass index of 25.1 kg/m^2 (SD=3.9); 50% were female. At both rest and 65% MHR, bias was minimal for all four trackers (range: -2.5, 2.8). At rest, the Fitbit Surge was most precise [device variance: 0.3; repeatability over 10 measurements: 1.3(LoA: -2.0,1.4)], the Fitbit Charge HR and the Mio Fuse were somewhat less accurate, and the Basis Peak was the least accurate [device variance: 7.0; repeatability: 6.1(LoA: -11.9,17.4)]. At 65% MHR, bias remained minimal but all devices exhibited substantially more error than at rest. The Mio Fuse performed the best [device variance: 7.4; repeatability: 7.5(LoA: -14.0,17.5)]. Position on the wrist (first vs. second position nearest to hand) did not affect accuracy.

CONCLUSIONS: At rest, all trackers produced relatively unbiased measures with high precision for some models. During moderate-intensity activity, the trackers still produced measurements with low bias, albeit with less precision. The data suggest that while

commercial activity trackers are not error-free, they may be accurate enough for general health promotion purposes, particularly if they are effective in motivating participants to engage in more moderate-vigorous vs. light-intensity activity. These devices also have the potential to provide individuals with a useful, unobtrusive tool that could be a feasible and convenient method of at-home continuous HR monitoring. More data are needed to address the accuracy of consumer-based trackers during vigorous-intensity activities.

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B222 6:00 PM-7:00 PM

BEING ACTIVE IN PREGNANCY: THEORY-BASED PREDICTORS OF PHYSICAL ACTIVITY AMONG PREGNANT WOMEN

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Objective: Although regular physical activity is recommended for pregnant women and has been associated with a range of physical and psychological benefits, research indicates that compared to pre-pregnancy, antenatal physical activity often reduces or ceases completely. The aim of the current study was to apply an integrative theoretical model to identify the motivational and social cognitive factors that predict physical activity participation in pregnant women. **Methods:** Participants were pregnant women aged 18 years and older (N=207, Time 1; M_{age} = 30.03, SD_{age} = 4.49). The study used a prospective-correlational design with a one week follow-up. At Time 1 (T1), participants completed an initial questionnaire assessing intrinsic motivation from self-determination theory, social cognitive constructs from theory of planned behaviour, and self-control from self-control theory. Demographic variables were also collected. At Time 2 (N=117, T2), participants completed a follow-up questionnaire assessing their self-reported physical activity behaviour in the previous week. **Results:** A well-fitting structural equation model, controlling for baseline age, BMI, and gestation age, accounted for 73% and 42% of the variance in intention and physical activity behaviour, respectively. There was a significant indirect effect of intrinsic motivation on intention mediated by attitude and perceived behavioural control, and significant direct effects of intention, perceived behavioural control, and self-control on physical activity behaviour. **Conclusions:** Current findings fill a knowledge gap in the empirical literature on the multiple processes that guide physical activity behaviour in pregnant women and add to the cumulative evidence advocating the use of integrative models in explaining health behaviour. The findings of the current study indicate important potential routes to behavioural performance that researchers and practitioners can use to ensure the design of future physical activity interventions for pregnant women that are efficacious in eliciting behaviour change. Future behavioural interventions aiming to promote physical activity during pregnancy, a period when physical activity levels typically decline, should consider the multiple processes advocated in the integrative model as necessary for motivated action.

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CHANGES IN PSYCHOSOCIAL FACTORS WITH PARTICIPATION IN A COLLEGE PHYSICAL ACTIVITY CLASS: AN EXAMINATION BY RACE/ETHNICITY

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Participation in physical activity declines with the transition to college but can be combated with participation in college physical activity (PA) classes. The impact of these classes on PA-related psychosocial factors could help with long-term maintenance of PA. Limited research has addressed how PA classes impact different student groups, therefore the purpose of this study was to examine how participation in a college PA class could impact PA-related psychosocial factors by race/ethnicity. Methods: Students enrolled in a college PA class were recruited to participate in an online survey at the beginning and end of their class. The survey included: demographics, PA participation, PA enjoyment, self-efficacy and exercise goal setting. Change from pre to post was calculated. T-tests examined differences in the change in psychosocial factors by race/ethnicity. Pearson correlations examined the relationship between a change in PA and psychosocial factors separately by race/ethnicity. Regression analyses predicted change in vigorous PA. Results: Students (n=838) were predominately Non-Hispanic White (NHW; n=634, 81.6%) and female (n=451, 57.7%). At baseline NHW students were more vigorously active than ethnic minority group (EMG) students (p=.004), had higher PA enjoyment (p < .001), PA self-efficacy (p < .001) and greater exercise goal-setting behavior (p < .001). At follow up EMG students had a greater change in moderate (p=.02) PA, PA enjoyment (p < .001) PA self-efficacy (p < .001) and exercise goal setting (p < .001) than NHW students. Among NHW, a change in vigorous PA was related to a change in PA enjoyment (r=0.16, p < .001), self-efficacy (p=0.15, p < .001) and exercise goal-setting (r=0.19, p < .001). For EMG students, a change in vigorous PA was associated with a change in PA enjoyment (r=0.67, p < .001), PA self-efficacy (r=0.42, p < .001) and exercise goal setting (r=0.37, p < .001). Among NHW students, psychosocial factor changes predicted 4.5% of the change in vigorous PA (p < .001) with PA enjoyment changes as a significant predictor (B=1.01, p=.04) while the regression model predicted 18.8% of the change in vigorous PA for EMG students with PA enjoyment (B=0.92, p=.05) and self-efficacy (B=1.97, p=.03) changes as significant predictors. Conclusion: College PA classes offer an opportunity to instill lifetime skills for active lifestyles, though may be received differently by race/ethnicity. Further research should examine how tailoring could impact this relationship.

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DAILY EXERCISE PRESCRIPTIONS ARE MORE INTUITIVE THAN WEEKLY EXERCISE PRESCRIPTIONS: IMPLICATIONS FOR GUIDELINE DEVELOPMENT

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Exercise guidelines recommended by scientific and governing bodies are typically framed as a “weekly” amount. For example, the guidelines from the American College of Sports Medicine, US Department of Health and Human Services, and National Health Service each include recommended minimum durations of aerobic activity per week, not per day. However, recent evidence suggests that reframing exercise requirements into daily amounts may be beneficial (Peetz et al., 2011). Understanding the most effective framing of exercise guidelines is important for creating exercise guidelines that will lead to superior behavioral outcomes (e.g., increased adherence). **Purpose:** This study was designed to determine if people intuitively create daily, rather than weekly, exercise prescriptions. **Methods:** Participants were recruited at the North Carolina State Fair; 381 people (57% woman, mean age: 34.37 ± 15.05 years) followed instructions and were included in the analysis. First, each participant described the person they felt closest to (“friend”, 58.5% woman, mean age: 38.42 ± 17.40 years, 65.1% normal weight) and then created an exercise prescription that their friend would be “(1) most likely to adhere to, (2) most likely to keep track of, and (3) most likely to benefit from.” To create the exercise prescriptions, each participant entered the number of minutes of aerobic exercise that the friend should do per [frequency] and then chose a frequency (day, week, or month). The frequently chosen was hypothesized to represent the intuitive framing of the exercise prescription (i.e., daily, weekly, or monthly). **Results**: Most participants recommended an amount of exercise per day (86.9%) rather than per week (12.6%), suggesting that daily exercise is more intuitive than weekly exercise ($p < .001$). This result was replicated on the Internet in a sample of 124 participants (50.8% woman, mean age: 38.30 ± 12.41 years), with the majority (76.6%) of participants recommending daily exercise ($p < .001$). **Conclusion:** These data suggest that recommending minimum durations of exercise “per day” may be more intuitive than recommending minimum durations of exercise “per week”. Future investigators should determine if daily exercise prescriptions are (1) more memorable and (2) result in better adherence than weekly exercise prescriptions. These data can inform the development of future exercise guidelines that may be more intuitive and more likely to be completed.

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B225 6:00 PM-7:00 PM

DEVELOPMENT AND RELIABILITY OF A STREETSCAPE OBSERVATION INSTRUMENT FOR INTERNATIONAL USE: MAPS-GLOBAL

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Objective: Relationships between several built environment factors and physical activity and walking behavior are well established. MAPS-Global is an observational streetscape audit instrument developed for international use with inter-observer reliability evaluated in several countries.

Methods: MAPS-Global was developed by compiling common concepts across 8 pedestrian and biking audit tools from numerous countries, including the original MAPS instrument which was developed in the US. Inter-rater reliability data were collected in neighborhoods selected to vary on GIS-derived macro-level walkability in 5 countries (Australia, Belgium, Brazil, Hong Kong-China, and Spain). MAPS-Global assessments (n=407) were completed along a 0.25 mile route from a residence toward the nearest non-residential destination, and a commercial block was also rated for each residence. Two raters in each country rated each route independently. A tiered scoring system was created that summarized items at multiple levels of aggregation, and positive and negative valence scores were created based on the expected affect on physical activity. Intraclass correlations (ICC's) were computed for scales using oneway random models.

Results: Overall, 89.2% of individual items, subscales and overall summary scores showed excellent agreement (ICC> .75); 7.2% showed good agreement (ICC=0.60-0.74); and 3.6%

showed fair agreement (ICC=0.40 to 0.59). Two items were too rare to compute ICC's. The median ICC was .94 with a range of .54-.99. Aesthetics and social characteristics showed lower ICC values than other constructs but the scales were still in the excellent range.

Conclusion: Evaluation of inter-observer reliability of MAPS-Global in 5 countries indicated virtually all items and scales had "good" or "excellent" reliability. The results demonstrate that trained observers from multiple countries were able to reliably conduct observations of both residential and commercial areas with the new MAPS-Global instrument. This instrument can now be used to collect comparable microscale data across countries to identify strengths and weaknesses of activity-supportive environments, identify microscale correlates of physical activity, and evaluate changes in built environments, especially those designed to improve physical activity and health.

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DEVELOPMENTAL TRAJECTORY PATTERNS OF VIGOROUS-INTENSITY PHYSICAL ACTIVITY FROM AGE 5 TO 19 YEARS: IOWA BONE DEVELOPMENT STUDY

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Background: At a population-level, physical activity decreases during childhood and adolescence; however, the developmental trajectory of physical activity is not homogeneous. In addition, researchers have hypothesized that at the same absolute volume, vigorous-intensity physical activity (VPA) may effect health outcomes differently than moderate- and vigorous-intensity physical activity (MVPA). A group-based trajectory analytic approach enables data to identify district trajectory patterns of an outcome of interest. This approach is a critical step in understanding differential effects of VPA and MVPA across the developmental years. Using the group-based trajectory approach, the authors have previously identified distinct developmental patterns of MVPA and sport participation from age 5 to 19 years.

Objective: We aimed to identify diverse trajectory patterns of daily minutes spent in VPA from age 5 to 19 years and examine the associations of these patterns with sex and sport participation trajectory.

Methods: Participants were Iowa Bone Development Study (IBDS) cohort members. They were asked to wear an ActiGraph accelerometer for four or five days at approximate ages 5, 8, 11, 13, 15, 17, and 19 years. Vigorous-intensity was defined as ≥4,012 ActiGraph counts per minute. VPA minutes from multiple assessment days were averaged. Sports participation was assessed using a questionnaire every six months. Group-based trajectory analysis was used to identify diverse patterns in VPA and sport participation.

Results: Based on the data from 537 IBDS participants (50% male, 95% White), four VPA trajectory patterns were identified: Group 1 (7.2%) = increasing from approximately 10 minutes/day at age 5 to approximately 35 minutes at age 19; Group 2 (75.3%) = consistently low below 10 minutes/day (unhealthy VPA pattern); Group 3 (13.7%) = increasing during preadolescence and decreasing during adolescence; Group 4 (3.8%) = consistently high above 20 minutes/day. The sex distribution was significantly different across the four groups (proportions of males: 66% in Group 1, 40% in Group 2; 90% in Group 3, and 85% in Group 4; $p < 0.01$). Compared to youth who dropped out of sport participation, youth who maintained sport participation were more likely to be in Group 1 or Group 4, as opposed to Group 2 ($p < 0.01$).

Conclusion: In our 14-year longitudinal follow-up, three-fourths of the participants followed an unhealthy VPA pattern. This study suggests that females may be missing distinct health benefits associated with VPA during the growing years. Research on health consequences, such as obesity, related to these VPA patterns should follow.

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MERITORIOUS AWARD WINNER

DIFFERENTIAL EFFECTS OF THE COMPANY OF MOTHERS VERSUS FATHERS ON PHYSICAL ACTIVITY AND SEDENTARY BEHAVIOR IN BOYS AND GIRLS

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Background: The company of parents is thought to increase children’s level of physical activity and decrease sedentary behavior. These effects, however, may differ for boys and girls. For example, compared to mothers, fathers have a stronger influence on their daughter’s physical activity. However, prior studies examining the role of parental influence on children’s physical activity and sedentary behavior have been limited by retrospective recall, and the failure to concurrently measure activity and social context. The aim of this study was to determine whether children's physical activity and sedentary behavior levels varied across different types of parental contexts (i.e., mothers, fathers, or both parents).
Methods: Children (N=192, ages 8-12, 53% female) wore accelerometers and answered Ecological Momentary Assessment (EMA) survey prompts by smartphone up to 7 times a day for 8 days. Each EMA survey prompt assessed whether one, both, or neither parents were present. Accelerometer data were used to summarized minutes of moderate-to-vigorous physical activity (MVPA) and sedentary behavior (SB) across the 30-minute window prior to each EMA prompt. Separate multilevel models were used to examine main effects of type of parental company girls’ and boys’ physical activity, disaggregating variance (between-subject [BS] and within-subject [WS]) and adjusting for age and ethnicity.
Results: WS findings show that girls engaged in more SB when neither parent was present than when they reported being with their mother or both parents (WS, z's=2.60 and 2.38, respectively; p's < 0.05). Overall, BS findings show that girls who reported being with their father more often than being with their mother, with neither parent, or with both parents, engaged in more MVPA (BS, z's=-3.63, -2.92, and -2.78, respectively; p's < 0.01). Additionally, boys who reported being with their mother more often than with neither parent or with both parents, engaged in less SB (BS, z's=-2.60 and -2.25; respectively, p's < 0.05).
Discussion: The findings are consistent with prior research suggesting that spending more time with fathers may promote physical activity to a greater extent in girls than boys. The results indicate that reporting being with mothers more frequently may reduce sedentary behavior more in boys. However, girls were less sedentary when concurrently with mothers or both parents. Future interventions targetting sedentary behavior and physical activity may

seek to vary or prioritize the amount of time spent with each parent differently for boys and girls.

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EFFECTS OF A COMMUNITY-BASED EXERCISE PROGRAM ON PHYSICAL FUNCTION AND EXERCISE-RELATED OUTCOMES IN OLDER ADULTS

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Fostering healthy aging reduces risks of diminished function and loss of independence. Exercise programs for older adults have led to improved function, yet few have been integrated into services provided by state and related agencies serving older adults. Community exercise programs have confirmed feasibility in their delivery and acceptance by older adults, yet many lack controlled studies examining their efficacy on desired outcomes. This study examined the efficacy of a community-based exercise program, using a controlled design.

Participants (N=169) were recruited from senior centers served by the County Area Agency on Aging, who offered exercise classes in 21 centers. Intervention participants (n=87, M_{age}=73.3±8.5) were recruited from new classes starting at 7 centers. Controls (n=82, M_{age}=74.9±7.7) were recruited from matched sites not offering classes. Classes emphasized physical function related to activities of daily living (ADL), met twice weekly, and were taught by trained instructors. Exercises were low-impact and focused on proper execution of movement, core stabilization, strength, balance, flexibility, and aerobic fitness. Validated measures of

physical function, exercise self-efficacy, and exercise behavior (outside of class) were administered at baseline and 6 months.

Mixed design ANOVAs revealed significant improvements in upper body strength ($p < .001$) as measured by the arm curl (24% increase), lower body strength ($p < .001$) as measured by the 30-second chair rise (21% increase), aerobic endurance ($p < .001$) as measured by the 6-minute walk (8% increase in distance), and mobility ($p < .004$) as measured by the 8-ft up and go (8% decrease in time) in the exercise, but not control group over time. Significant increases in exercise self-efficacy ($p < .002$) and moderate/vigorous intensity activity ($p < .05$), and days

of muscular-based training ($p < .005$) were found in the exercise group but not controls. No significant changes ($p > .05$) were found in flexibility training in either group.

These findings support the efficacy of a County-wide disseminated exercise program in improving ADL-related function, and exercise-related outcomes in older adults. Building an evidence base for community delivered programs should provide impetus for increasing dissemination through involvement of appropriate state and national agencies. This will increase the impact of programs on a growing population of older adults, and foster healthy aging initiatives.

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INTRINSIC MOTIVATION FOR EXERCISE AND PATTERNS OF HEALTH BEHAVIORS

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The value of intrinsic motivation (IM; being driven by enjoyment to engage in a behavior) for sustainable exercise has been documented in prior research. Given that most Americans fall short of physical activity (PA) guidelines, it is crucial to understand the prevalence of IM for PA. These analyses extend previous work by examining the relationship between IM and exercise in a nationally representative sample, identifying moderators of that relationship, and exploring whether IM for exercise is related to other health behaviors. The current study utilized the Health Information National Trends Survey (HINTS; 2012-2014). Respondents (*N*=7,307) indicated how much “getting enjoyment from exercise” influenced why they would start or continue exercising regularly. They also reported on their patterns of PA, sedentary behavior, fruit and vegetable (F&V) consumption, and sunscreen use, as well as their height, weight, and smoking history. As expected, respondents’ IM was associated with more PA in a typical week (β=62.07, p < .01). However, that association was moderated by gender and BMI, such that the relationship between IM and PA was weaker among women (β=-46.65, p=.02) and those with higher BMI (β=-4.01, p=.02). Additionally, IM was associated with less sedentary behavior (β=-0.33, p < .01), although that relationship was moderated by self-reported physical health, such that the link was stronger among those who reported that their general health was poor (β=0.30, p=.01) and those who reported having been diagnosed with a medical condition (β=0.30, p=.02). Finally, IM for exercise was also associated with other health behaviors, even controlling for PA, including: F&V consumption (β=0.55, p < .01), sunscreen use (β=0.13, p < .01), and non-smoker status (β=-0.16, p=.03). Collectively, these findings suggest that although IM for exercise is a robust statistical predictor of self-reported heath behavior – even beyond the domain of PA – its predictive power is variable. Although further study is needed, these results suggest opportunities to tailor IM-based interventions to participants, which could potentially impact the broader lifestyle beyond the immediate target behavior.

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LATENT CLASS ANALYSIS OF FACTORS ASSOCIATED WITH EXERCISE DEPENDENCE AND EATING PATHOLOGY

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Background: Exercise dependence is a multifaceted maladaptive pattern of exercise attitudes, cognitions, and behaviors that result in significant health detriments. Specifically, it has been identified as a key factor that may mediate the relationship among exercise and related psychopathology (e.g., eating disorders, behavioral addiction, etc.). Several factors have been associated with exercise dependence with and without comorbid psychopathology. However, few studies have included multiple factors that may clarify individual differences among exercise dependence. Classifying profiles of factors associated with exercise dependence and related eating pathology may identify individual differences that could allow for tailored interventions to maximize exercise-related benefits. Thus, the purpose of this study was to examine profiles of factors associated with exercise dependence and eating pathology. **Method:** Participants (N=1374; mean age = 28.24, SD = 10.20, 65.4% female) completed an online survey that included the Leisure-time Exercise Questionnaire (LTEQ), Exercise Dependence Scale (EDS), Positive and Negative Affect Schedule, Behavioral Inhibition/Behavioral Activation Scales (BIS/BAS), and the Eating Disorders Examination-Questionnaire (EDEQ). Latent class analysis was used to classify latent groups. We used multiple imputations to account for uncertainty for missing data then selected a final model which minimizes Bayesian Information Criterion to balance between model fit and simplicity. **Results:** Analysis identified four distinct profiles: group 1 (36%) displayed high levels of EDEQ, LTEQ, negative affect (NA) and EDS; group 2 (17%) displayed high EDS, LTEQ, BAS, and positive affect (PA), and low EDEQ scores; group 3 (22%) displayed high EDEQ, BIS, and NA, and low EDS scores; group 4 (25%) displayed low scores for all variables. **Discussion:** Results of this study suggest that relationships among exercise dependence, eating pathology, temperament, and affect may be more heterogeneous than previously conceptualized. This study may inform researchers and clinicians on how to identify who may benefit from exercise interventions, factors that should be considered when using exercise as behavioral medicine, and identifying risk for exercise-associated pathology.

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OVERALL EFFECTIVENESS OF INTERVENTIONS TO INCREASE PHYSICAL ACTIVITY IN AFRICAN AMERICAN WOMEN: A META-ANALYSIS

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African American women have one of the lowest physical activity rates and highest obesity rates in the United States. Consequently, they are at increased risk for and suffer disproportionately from related illnesses, such as cardiovascular disease and diabetes. Researchers have developed and tested interventions to increase physical activity in African American women, but their effectiveness lacks consistency, particularly over time. Two meta-analyses, utilizing pre-intervention and post-intervention data, were conducted to examine the overall effectiveness of physical activity interventions in African American women. Three bibliographic databases were searched, and nine studies were included in the final meta-analysis. The samples of the nine studies ranged from $N = 13$ to $N = 447$ African American women. The mean age ranged from $M = 21.2$ to $M = 60.1$ years. Intervention length ranged from 1.5 to 6 months. Five of the nine studies had data extracted from self-report measures, while the other four had data extracted from a monitoring device. The interventions included a range of components, including exercise training, motivational interviews, group exercise sessions, problem-solving to overcome exercise barriers, group sessions addressing exercise benefits, and pedometer use. The first meta-analysis extracted the baseline physical activity measurement as pre data and the end of the study physical activity measurement as post data. The second meta-analysis extracted the baseline physical activity measurement as pre data and the last physical activity measurement taken as post data. The meta-analyses yielded moderate aggregate effect sizes of $r = 0.52$ and $r = 0.49$, respectively. The results suggest that interventions significantly increase engagement in physical activity, but those effects may be slightly less strong in the long term. Additionally, whether the intervention design was individual-based, group/community-based, or a mix of the two was found to be a significant moderator in the second meta-analysis. Interventions targeting African American women are a promising way to increase the rate of physical activity in this population, however, it may be beneficial for researchers to focus on how to maintain their effects over time. Improving the long-term effects of these physical activity interventions may be helpful in addressing related health disparities negatively impacting African American women.

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PERCEIVED NEIGHBORHOOD ENVIRONMENT AND PHYSICAL ACTIVITY AMONG AFRICAN AMERICAN WOMEN IN RURAL NORTH CAROLINA:

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Background/purpose: More than 75% of Black women living in the US are overweight or have obesity, and more than 50% are not meeting current guidelines for physical activity. The potential effects that the built environment and community have on physical activity behaviors of Black women living in rural areas have not been thoroughly researched. To address this gap, we conducted a cross-sectional secondary analysis of baseline data from The Shape Program to explore how participants' perception of their environment influenced physical activity and sedentary time.

Methods: The Shape Program, a randomized control trial of a weight gain prevention intervention implemented in community health centers in rural North Carolina, was designed for socioeconomically disadvantaged Black women who are overweight or have obesity. Participants' perceptions of their environment were assessed using item from the Boehmer & Brownson instrument (e.g., seeing billboards encouraging physical activity, seeing trees along community streets, presence of sidewalks). The sample for the current study included participants with 10+ valid days of accelerometer data and valid survey data for perceived environment variables (n=159; 81.2% of Shape participants). Accelerometer data were aggregated into 1- minute bouts of moderate to vigorous physical activity (MVPA) and minutes of sedentary time. Assessed Boehmer & Brownson items were entered into an exploratory factor analyses, a Scree test was conducted, and identified factor scores were entered into log-linear ordinary least squares regression models examining MVPA and sedentary time.

Results: Participants had an average of 52 minutes (median = 34) of MVPA and 663 minutes (SD=173.2)/day of sedentary time. The exploratory factor analyses and Scree test identified 4 distinct perceived environmental factors: 1) facility of travel; 2) community aesthetic; 3) physical activity messaging, and 4) existing physical activity facilities. After adjusting for covariates, a 1 SD change in factor score for "community aesthetic" was associated with a

26.5% (95% CI: 7.9% - 45.1%) higher level of MVPA when measured. None of the examined factors correlated with sedentary activity.

Conclusion: Among this sample of socioeconomically disadvantaged Black women, none of the examined factors were associated with sedentary time and only “community aesthetic” was associated with physical activity. Our results suggest that no other environmental or community variables influenced physical activity.

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POST-EXERCISE AFFECTIVE RESPONSE: EXAMINING DIFFERENCES BETWEEN REGULAR AND INFREQUENT EXERCISERS

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Background: Exercise-related affect is a critical factor in understanding why some people exercise regularly and others do not. The vast majority of people report an improvement in core affect after exercise (i.e., “feeling better”), and although it is reasonable to expect that “feeling better” after exercising would reinforce exercise behavior, fewer than half of U.S. adults exercise regularly (Centers for Disease Control Prevention, 2013). It is important to examine the influence of post-exercise affect on exercise because post-exercise affect may play a unique role in influencing future exercise. The purpose of this study was to determine the extent to which specific *post*-exercise affective states (i.e., positive affect, negative affect, fatigue, calmness, relief) differ between regular and infrequent exercisers, thereby elucidating the “feeling better” phenomenon.

Methods: Regular (N = 32; > 75 minutes per week of vigorous exercise) and infrequent exercisers (N = 25; < 30 minutes per week of vigorous exercise) completed a 10-minute bout of vigorous exercise on a treadmill and reported their affective states at various time points during the bout and during a 30-minute post-exercise period.

Results: Consistent with previous findings, both regular (p = .004) and infrequent exercisers (p < .001) reported an improvement in core affective valence after the exercise bout (i.e., “feeling better”). However, infrequent exercisers reported a higher decrease in negative affect (p = .01) as well as a greater sense of relief (p = .003) immediately post-exercise than regular exercisers. Relief was more strongly correlated with changes in negative affect (r = .38) than with changes in positive affect (r = -.12). Regular exercisers reported a higher increase in positive affect (p = .01) immediately post-exercise than infrequent exercisers. Finally, there were no differences in post-exercise fatigue and calmness.

Implications: Both regular and infrequent exercisers experienced increases in core affective valence immediately post-exercise. However, for infrequent exercisers, “feeling better” appears to be due to a decrease in negative affect and a greater sense of relief immediately post-exercise. This study demonstrates how post-exercise affective states systematically differ between regular and infrequent exercisers, thereby elucidating the “feeling better” phenomenon

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PSYCHOSOCIAL FACTORS AS MODERATORS OF ASSOCIATIONS BETWEEN BUILT ENVIRONMENT AND ADOLESCENTS’ ACTIVE TRANSPORTATION

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Objective: Factors across different levels of influence (e.g., individual and environmental) may relate to active transport physical activity (PA) of adolescents, but the multiple levels are seldom studied concurrently. The primary aim here was to examine individual-level psychosocial variables as moderators of associations between objective built environment measures and adolescents’ reported active transport PA.

Methods: Mixed-effects regression models were examined in the Teen Environment and Neighborhood (TEAN) observational study (N=928, 12-16 year old adolescents). An index of active transportation to/from school and neighborhood destinations was the dependent variable. Explanatory constructs explored were from psychosocial and objective built environment domains. Seven psychosocial measures related to PA (self-efficacy, enjoyment, athletic ability, decisional balance, barriers to PA in the neighborhood, social support from peers and family) were self-reported by adolescents. Objective built environment measures included a neighborhood walkability index and count of nearby parks and recreation facilities derived from Geographic Information System (GIS) procedures, and an environmental audit of streetscape quality (MAPS tool). Covariates included demographic characteristics and study design factors.

Results: Three of 21 interactions were related to the active transportation index (p’s < 0.10): self-efficacy X GIS walkability index, barriers to PA X MAPS streetscape score, and self-efficacy X GIS count of parks and recreation facilities. Each interaction showed a synergistic pattern of higher active transport scores among adolescents with the combination of activity-supportive

built environment and pro-physical activity psychosocial characteristics. All 3 objective environment measures and 3 psychosocial variables (self-efficacy, social support from peers, and enjoyment of PA) also had significant positive main effects with active transportation (*p*'s < 0.056).

Conclusion: Results provided modest support for the ecological model principle of interactions across levels of influence, highlighted the importance of built environment and psychosocial factors in facilitating or hindering adolescents' active transportation, and suggested that strategies for improving adolescents' active transportation may be most effective when targeting multiple levels of influence in ecological models.

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PSYCHOSOCIAL PREDICTORS OF PHYSICAL ACTIVITY CHANGE AMONG COLLEGE STUDENTS IN AN OBESITY PREVENTION TRIAL

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Accumulating evidence shows the importance of moderate-to-vigorous physical activity (MVPA) for maintaining a healthy body weight, particularly among those at risk for weight gain. At present, however, little is known about psychological barriers to maintaining MVPA in at-risk groups. As obesity prevention programs involve multiple behavior changes, identifying individuals who specifically are unlikely to adopt or maintain MVPA in this context could improve weight control outcomes. In the present study, we examined predictors of MVPA in an obesity prevention trial targeted toward college students at risk for weight gain (n = 364; 72% female, M_{BMI} = 23.4 kg/m^2). Based on their proposed relations to self-regulatory abilities, predictors of interest were impulsiveness, cognitive dissonance regarding unhealthy behaviors, and perceived sociocultural pressure to be thin. Participants were randomly assigned to one of three intervention conditions and completed assessments at pre- and post-intervention, and at 6- and 12-month follow-ups. These assessments included measured height and weight, self-report measures of psychosocial experiences, and four days of waistband accelerometer wear. Of the total variability in MVPA minutes per day over 12 months, only 33% was attributable to between-person differences; across conditions, participants decreased their total MVPA minutes per day during this time (B = -5.48, p < 0.01). Baseline self-report scores for both impulsiveness and cognitive dissonance regarding unhealthy behaviors negatively predicted MVPA over time. Participants with elevated baseline impulsiveness scores (B = -7.36, p = 0.04) and dissonance scores (B = -3.89, p = 0.05) began the study with more MVPA minutes, but showed sharper declines over time. These differences (~5-30 minutes over four days) represent 3-22% of recommended MVPA per week. Sociocultural pressure was not related to MVPA change (B = -1.56, p = 0.36). Targeted MVPA-focused intervention for students who show elevated impulsiveness and cognitive dissonance may improve both MVPA and weight control outcomes for these individuals over the long term.

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RELIABILITY OF ACTIVITY MONITORS FOR TRACKING STEPS AND ESTIMATING ENERGY EXPENDITURE DURING A GRADED MAXIMAL TREADMILL TEST

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Background: Due to the increased awareness of the importance of exercise and physical activity (PA), individuals are more interested in their ability to track steps and energy expenditure (EE). It is expected that individuals as well as employers, insurers, and clinicians will begin to use activity monitors (AMs) more frequently in order to address health behaviors. To date, there have been mixed findings on the accuracy of various AMs during exercise and PA. Therefore, the purpose of this study was to (1) assess the accuracy of EE estimation and step tracking abilities of six AMs in relation to indirect calorimetry and hand counted steps and (2) assess the accuracy between high and low fit individuals.

Methods: Fifty participants (mean age: 25.84±8.10 years) wore the Basis watch, Fitbit Flex, Polar FT7, Jawbone, Omron pedometer, and Actigraph during a maximal graded treadmill test. Correlations, intra-class correlations (ICCs), and one-sample t-tests determined accuracy and agreement between AMs and criterions.

Results: All AMs were significantly correlated with the hand counted steps (overall ICC=0.994, $p < 0.001$, CI 95%=0.991-0.996). One sample t-tests revealed that the Omron, Fitbit, and Actigraph showed agreement with the steps standard ($p>0.05$), while the Basis and Jawbone significantly underestimated steps ($p < .05$). All fitness trackers were significantly correlated with the metabolic cart (overall ICC=0.934, $p < 0.001$, CI 95%=0.856-0.968). One sample t-tests revealed that no device showed agreement with the metabolic cart ($p>0.05$). When split by fitness categories, the low fit group showed better correlations compared with the high fit group. One sample t-tests revealed the Actigraph and Omron showed agreement to indirect calorimetry in the low fit group while the Polar FT7 and Basis watch showed agreement in the high fit group.

Conclusions: The Omron, Fitbit, and Actigraph were reliable for measuring steps. AMs were more reliable for measuring EE at low intensity exercise compared to high intensity. Future research on reliability of these devices as well as manufacturing and development of new AMs should account for the greater metabolic demand of higher intensity activities in order to improve EE estimates.

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RESPONSE PATTERNS AND PREDICTORS OF COMPLIANCE TO ECOLOGICAL MOMENTARY ASSESSMENT: RESULTS FROM THE MOVINGU STUDY

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Background: The transition out of high school represents a major life transition often associated with significant declines in physical activity behaviors (Bray & Born 2004; Kwan, et al., 2012). To date, the extant literature is largely based on cross-sectional or infrequent longitudinal designs, and are limited in our understanding of contextual and intra-individual factors impacting physical activity during this transitory time. Ecological momentary assessment (EMA) is an intensive data capture method that can address these limitations (Shiffman et al., 2008). The purpose of the current study was to describe the utility of EMA data in a sample of first-year university students, and to examine several time invariant and time-varying predictors of EMA compliance. **Method:** Current sample included 96 recent high school graduates (*M*age=18.30 $\underline{+}$.54;males=45%), whom were asked to wear a wrist-worn accelerometer and to complete EMA prompts 7x/day for a period of five days (Wed through Sun). Each prompt included a very-brief questionnaire assessing context, acute feeling and mood states, and social cognitions. **Results:** Overall, 68% of the sample met the minimal acceptable compliance (answered $\underline{>}$3 prompts on >3 days), of which only 26% were considered to have excellent compliance (answered $\underline{>}$5 prompts for >4 days). Results of logistic regression did not find any time-invariant factors being related to compliance; however, findings from the mixed effects logistic model indicates that there was a significant time of day (Coefficient= -5.10 SE=.75, pDiscussions: Overall compliance to EMA prompts were modest in our current sample, thus it was important to investigate for potential non-response biases. While socio-demographic or behavioural factors did not predict response compliance, our results found prompts being sent in the afternoons/early evenings were more likely to be answered compared to mornings and later evening. Findings also showed linear response pattern decline, suggesting that participants either became less inclined to respond over time or less likely to respond on weekend days. Understanding factors related to EMA compliance is an important step to recognize the potential biases for this data-intensive sampling strategy, and current findings suggest that future EMA studies may require a smaller sampling frame for the emerging adulthood population.

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RESULTS OF THE GUIDELINES FOR EXERCISE IN MULTIPLE SCLEROSIS (GEMS) PROJECT: A FEASIBILITY RANDOMIZED CONTROLLED TRIAL

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There is increasing recognition that exercise is an efficacious strategy for managing many consequences of multiple sclerosis (MS), yet this population engages in less exercise than the general population, and other chronic disease populations. The poor uptake of exercise among persons with MS might be associated with the lack of emphasis on translational and feasibility research. Additionally, most exercise studies completed in this population are center-based and supervised, and not easily translated into practice and widespread adoption. We conducted a randomized controlled trial in order to examine the feasibility of a 4-month, home-based exercise training program based on recent, MS-specific physical activity guidelines. Feasibility was assessed based on the four domains of process (e.g., recruitment), resource (e.g., monetary costs), management (e.g., personnel time requirements), and scientific outcomes (e.g., treatment effect). We recruited persons with mild-to-moderate MS who were randomized into an intervention or a wait-list control condition. Participants in the intervention condition received exercise equipment (i.e., a pedometer, resistance bands, DVD, training manual, calendars, and logbook), video coaching calls via Skype^{TM}, and newsletters based on principles of Social Cognitive Theory. Participants in both conditions completed home-based assessments before and after the 4-month period. Ninety-nine persons with MS were assessed for eligibility, and 57 were randomized. Fifty-one persons completed the study (90%). Total costs of the study were US$5331.03. Personnel time to conduct the study totaled 263 hours. Participants in the intervention group complied fully with 71% of all exercise sessions. There was a statistically significant time by group interaction on Godin Leisure-Time Exercise Questionnaire scores (F=6.94, P η_p^2 = 0.12); there was a moderate increase (d≥0.5) in self-reported exercise behavior for the intervention participants. Qualitative surveys and interviews indicated overall satisfaction with all aspects of the intervention. These results support the feasibility, efficacy and acceptability of a home-based exercise intervention based on the physical activity guidelines and supplemented with behavioral strategies for adults with mild-to-moderate MS. This is an important step towards providing adequate and

appropriate resources that can aid in the adoption of exercise behavior among adults with MS.

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REVISED MODEL FOR PREDICTING ATTRITION FROM EXERCISE

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Exercise behavior maintenance is challenging, particularly for people with many barriers. It would benefit researchers and practitioners to have an accurate method to identify individuals exhibiting characteristics associated with a high likelihood of dropout from an exercise trial. Using brief measures, serving as proxy measures of poor self-regulatory functioning, Mullen et al (2013) provided initial evidence for such a “profile for attrition from exercise” based on 4 variables (i.e., memory complaints, self-efficacy for overcoming barriers to exercise, left leg balance time, and stairs down time) in a sample of older adults (65+) involved in an exercise trial. In the current NHLBI funded study (n=133 middle-aged adults, 45-64 years; 3 values were imputed for 4 participants using EM algorithm imputation), we replicated the original model using discriminant function analysis (DFA); note the perceived memory item was taken from a different scale and a longer, 60s balance assessment was used. The DFA found that 71.3% were correctly classified vs. 72.22% of the original sample, however the memory complaint item was a non-significant discriminating variable (p=.68). Self-efficacy for overcoming barriers (66.74 vs. 56.14), left leg balance time (38.46s vs. 30.32), and stairs down time (5.61s vs. 6.65) all differentiated ($p < .05$) "completers" from "dropouts," respectively. Upon re-examination of theory and research, and given the age difference between samples, a revised model was tested. Current physical activity level (3-day average Fitbit step count) replaced memory complaints and the revised model (imputed data showed similar results, in parentheses) correctly classified 72.1% (71%) of the total sample (Wilk's Λ = .84, X^2 (4) = 22.57, $p < .01$, eigenvalue = .20, canonical correlation = .41). Classification results determined that the new model accurately classified 74% (72%) of those who remained for the entirety of the exercise trial, as well as 66.7% (69.7%) of those who officially requested to withdraw from the study or discontinued contact. These findings support using a brief battery for identifying middle-aged and older adults who may need some additional support to enhance their self-regulatory skills.

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SLEEP DURATION AND ITS EFFECT ON DAILY MVPA

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Background: Although physical activity is a key factor to a healthy lifestyle, much of today's youth are not getting the recommended amount of physical activity. Only 24.8% of adolescents in the U.S. engage in at least 60 minutes per day of moderate to vigorous physical activity (MVPA) and it is suspected that sleep duration may influence activity. Findings have been inconclusive with respect to this relationship.

Methods: Middle school students (N=182, mean age = 11.06 years) participated in this study. MVPA was objectively monitored for seven days with an ActiGraph. During the same 7-day period, sleep data were collected using a self-report log that documents wake and sleep time. Participants also completed a test of cardiorespiratory endurance (VO2peak) and a depression inventory and were assessed for height and weight to determine Body Mass Index percentile (BMI). Correlational and regression analyses assessed the relationship of average sleep duration with average minutes of MVPA per day.

Results: The participants' average sleep time was 9.55 hours per night (SD = 0.52 hours) and average MVPA was 49.05 minutes/day (SD = 22.47 minutes). After removing participants with incomplete data, correlation analysis (N = 151) showed no association between sleep and activity ($p > 0.05$). Results were the same for both males and females and for teens with relatively low versus higher scores on a depression inventory, and the association remained non-significant after controlling for VO2peak and BMI.

Conclusions: Average sleep duration had no correlation with average MVPA in this study, suggesting that young adolescents' participation in physical activity is not influenced by their usual amount of sleep. It is possible, however, that unmeasured aspects of the environment such as parental control of time to bed may have influenced self-reported sleep duration, thus obscuring the sleep-activity relationship. Using an objective measure of sleep duration would strengthen future studies.

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THE RELATIONSHIP BETWEEN SELF-EXPANSION AND FITBIT-MEASURED PHYSICAL ACTIVITY: DAILY DATA ACROSS 4 WEEKS

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Physical activity (PA) is related to the prevention of chronic diseases, however most Americans do not engage in sufficient PA. Translational research promoting PA behavior and adherence is recommended. One novel factor associated with health behaviors and adherence is self-expansion. The self-expansion model states that people are intrinsically motivated to enhance abilities to achieve goals by increasing perspectives, identities, and resources. Self-expanding activities are characterized by novelty, excitement, and interest or challenge (e.g., hobbies). Self-expansion has been associated with better outcomes in behavioral weight loss, including greater self-reported PA. This study is the first to investigate the link between self-expansion and objective PA and their relationship on a daily basis (past research has only examined pre-post). Community participants (n= 50, 72% female, 88% white, M_{age} = 39.96, SD_{age} = 12.14) completed baseline assessment, wore a Fitbit One$^{\text{TM}}$ and completed a daily survey for 4-weeks, and completed follow-up. Participants were not given PA directions as this was not an intervention. Retention was 100% and compliance was 99.29% for wearing the Fitbit and 96.86% for completing the 28 daily surveys. Baseline measures included general self-expansion (M = 74.12, SD = 15.5, max possible 98) and PA-specific self-expansion (M = 62.92, SD = 18.54, max possible 91). Daily surveys included short versions of the general and PA-specific self-expansion scales. Across the 4-weeks, participants averaged 8589 daily steps (SD= 5151). Baseline general self-expansion did not significantly predict steps taken over the 4-weeks, however baseline PA-specific self-expansion did ($t(48)$= 2.06, $p < 0.05$). At the daily level, repeated measures analyses showed that steps taken was significantly correlated with both general (rs .14-.17, ps ≤.01) and PA-specific self-expansion (rs .40-.49, ps < .001) across the 4-weeks. This data implies that self-expansion (particularly PA-specific self-expansion) may be a promising avenue to pursue for promoting PA. Additionally, the association with day-to-day variation of PA suggests that self-expansion may be well suited for real-time interventions.

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URBAN YOUTH'S PHYSICAL ACTIVITY EXPERIENCE, PHYSICAL ACTIVITY LEVELS, AND USE OF SCREEN BASED MEDIA DURING LEISURE TIME

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Urban Youth's Physical Activity Experience, Physical Activity Levels, and Use of Screen Based Media During Leisure Time

Introduction: Physical activity (PA) and sedentary behaviors are two important factors associated with childhood obesity. However, there is no guarantee that participation in PA will lead to decreased sedentary behaviors. If youth do not obtain positive experiences from PA, they may seek desirable experiences from sedentary activities, implicating the need for studying youth's affective responses to PA. Therefore, this study examined the relationships between youth's positive PA experience (LTPA-E), PA level (LTPA-L), and use screen-based media (LTUS) during leisure time.

Methods: The sample consists of 305 7th and 8th graders (47% female) from 4 schools in an urban, under-resourced area in the US. 90% to 95% of students in those schools were African or Latino Americans. LTPA-L was measured by asking participants to recall their LTPA in the last 7 days via 18 questions that addressed 3 domains: walking, jogging, and other physical activity. LTPA-E was measured by 5 items (e.g., *When you are doing physically active things in your free time, how often do you enjoy it*). Items were aggregated into 3 parcels for LTPA-E and LTPA-L. Three types of LTUS were included: watching TV/movie, using computer/Internet, and non-active videogame. Two questions (one for weekday use and the other for weekend use) were used to measure each type of LTUS and were aggregated. Multiple-group structural equation models were used to examine the relationships between LTPA-E, LTPA-LE and each type of LTUS for males and females.

Results: The measurement models had a good fit (non-significant χ^2; RMSEA = .045 to .051) and were equivalent across genders. The path coefficients were also equivalent between two genders except for the relationship of LTPA-E to LTUS-videogame. LTPA-E had a significant positive effect on LTPA-L. LTPA-L in turn had a significant effect on LTUS-TV/movie, but not on LTUS-computer/Internet and LTUS-videogame. LTPA-E directly had a significant negative effect on LTUS-videogame (only for males) and LTUS-computer/Internet.

Conclusion: LTPA-E predicts LTPA-L, and has an influence on LTUS-computer/Internet and LTUS-videogame that is independent of LTPA-L. The effect of LTPA-E on LTUS-TV/movie is mediated by LTPA-L. The findings suggest PA experience has an important role in promoting PA and thwarting use of screen based media among youth.

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VARIABILITY IN SLEEP AND PHYSICAL ACTIVITY RELATED TO BMI AMONG HEALTHY ADULTS

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Objectives: Variability in health behavior is receiving increased attention as a marker of health and health outcomes. However, little is known about the relationships between variabilities among different health behaviors and how these relate to measures of health, such as body mass index (BMI). This study assessed the relationship between variability in sleep and physical activity (PA) and tested the relationship between variability and BMI in a sample of healthy participants.

Method: Healthy participants with at least 6.5 hours habitual sleep duration were recruited from the greater Chicago area (N=75) as part of a larger study of circadian timing and health. Participants wore Actiwatch Spectrum wrist bands and SenseWear arm bands for 7 consecutive days to provide daily data on sleep duration (hours per night) and PA (minutes >3 METS). Linear regression analyses were used to assess the relationships among sleep and PA variabilities as well as BMI. Analyses controlled for age and sex.

Results: Two thirds of this sample were female (66%) with an average age of 26.8 years (*SD*=7.6). Participants had an average sleep duration of 6.7 hours (*SD*=1.5) and engaged in PA for an average of 147.2 minutes (*SD*=87.8) per day. Average BMI was 23.5 (*SD*=4.2). Sleep variability was not related to PA variability (*p*=0.71). Greater sleep variability was related to shorter sleep duration (*r*=-0.30, *p*=0.002). In contrast, greater PA variability was related to greater PA duration (*r*=0.73, *p*s>0.18). There was a significant interaction between PA variability and average PA related to BMI (*p*=0.021). At low levels of average PA, greater PA variability was related to lower BMI, whereas lower PA variability was related to greater BMI. At high levels of average PA, variability was unrelated to BMI.

Conclusion: Among healthy adults, variability was related to total levels of each behavior but variabilities in sleep and PA were not correlated. Results suggest that PA variability may be more related to health among those who are less active. Further research is needed to clarify relationships among variability in health behaviors in relation to cardiometabolic outcomes, such as BMI.

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WALK AND ROLL TO SCHOOL

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Background: Safe Routes to School (SRTS) is a federally-funded program partnering with states for the purpose of increasing community health by making walking and biking to schools safe for the nation's children. SRTS Louisiana funded a Tulane Prevention Research Center project in partnership with Bike Easy.

Purpose: To implement and evaluate safety education classes for elementary schoolchildren, assess attitudes of parents about children walking and biking to school, develop a crossing guard manual and provide safety equipment to school crossing guards for the purpose of increasing the number of children biking and walking to school.

Method: Bike Easy provided two one-hour courses "Safe Steppers" and "Bicycling Skills 123"to 4th and 5th graders in 10 New Orleans public schools. Classes were interactive with practice with bikes and helmets. Post-surveys were administered. Brief surveys were distributed to parents via the children. The crossing guard manual was developed through a literature search and review of manuals from other states.

Results: A total 335 4th and 5th graders completed the bike quiz and 332 completed the walking quiz. The bike training was the more successful with 15 of 19 classes obtaining a class mean of >70% correct responses, while only 5 of 19 classes achieved the same for the walking quiz. Parental response was low (14%). More than 50% of those responding lived more than 2 miles from school and child transport was via school bus or private vehicle (bus=65%; car=24%; walk=10%; public transit=1%). Generally, parents were not in favor of children walking or biking to school with distance to school being the most frequently identified barrier (53%), and sidewalk quality (20%), traffic (16%), and time (14%) also being cited as barriers. The crossing guard manual has been completed and is under review by the state.

Conclusions: Although the education classes were interactive and fun, learning from the walking class was limited and, though better for the biking class, was still not optimal. While these education classes probably will not contribute to increased walking and biking to schools because of the attitudes and barriers cited by parents, improving the safety of children wherever they bike and walk is a worthwhile public health effort.

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FAMILY COHESION, BURDEN, AND HEALTH-RELATED QUALITY OF LIFE AMONG PARKINSON'S DISEASE CAREGIVERS IN MEXICO

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Family cohesion is a known predictor of health-related quality of life (HRQOL) for family caregivers (CG) of someone with Parkinson's disease. Unfortunately, CG tend to experience numerous psychosocial stressors that can lead to CG burden and diminished HRQOL. Although past research illustrates these relations within samples in the US, little is known about the role of CG burden on the association between family cohesion and CG HRQOL in Mexico. The present study examines whether CG burden mediates the relation between family cohesion and HRQOL among Parkinson's disease CG in Mexico.

Method

The sample consists of family caregivers (N = 102; M_{age} = 50.34, SD = 14.02; 77% women, 23% men) of patients with Parkinson's disease from Mexico City, Mexico.

Outcome measures of the study include aggregate factors of mental and physical HRQOL from the SF-36 Health-Related Quality of Life (Ware, Snow, Kosinski, & Gandek, 2000). The Family Adaptability and Cohesion Evaluation Scale-Fourth Edition (FACES-IV; Olson, 2010) assessed family cohesion, and the Zarit Burden Inventory (Zarit, Orr, & Zarit, 1985) measured perceived burden.

Results

Perceived burden was hypothesized to mediate the relation between family cohesion and mental and physical HRQOL among caregivers. Results indicated that family cohesion significantly predicted perceived burden (b = -5.77, SE = 1.47, p = .0002 for the mental HRQOL model and b = -5.90, SE = 1.80, p = .002 for the physical HRQOL model), and that perceived burden was a significant predictor of mental (b = -.80, SE = .13, p < .0001) and physical HRQOL (b = -.73, SE = .13, p < .0001). Family cohesion, which significantly predicted mental HRQOL (b

= 6.98, *SE* = 2.23, *p* = .002), was no longer a significant predictor of mental HRQOL after controlling for perceived burden (*b* = 2.38, *SE* = 2.05, *p* = .25), consistent with full mediation. In terms of physical HRQOL, family cohesion remained a significant predictor, *b* = 6.88, *SE* = 2.31, *p* = .004, providing evidence of partial mediation. Approximately 14% of variability in mental HRQOL (R^2 = .14) and 10% in physical HRQOL (R^2 = .10) were accounted for by the predictors. Indirect effects were tested using bootstrap estimation with 1000 samples. Indirect coefficients were significant for mental (*b* = 4.60, *SE* = 1.56, 95%CI = 1.99, 8.04) and physical HRQOL (*b* = 4.33, *SE* = .2.04, 95%CI = 1.00, 8.92).

Conclusion

Identifying contributing factors to improved HRQOL among Parkinson’s CG is critical. Family CG are vulnerable to experiencing health deterioration. Present study findings provide support that caregiver burden is an intermediary variable for the relations between family cohesion and HRQOL among Mexican CG. Understanding these factors provides an opportunity to intervene and improve HRQOL of CG in this area. Important cultural implications will be discussed.

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INSTILLING THE ART OF HAPPINESS IN COMMUNITY DWELLING OLDER ADULTS

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The population of older adults is increasing exponentially as we know that by 2030 older adults will comprise 20% of the population. As the US population ages, late life depression becomes more of a public health problem. Depression is associated with increased mortality and decreased physical, cognitive and social functioning, which can impact the ability to maintain independence which is important to overall well-being.

Methods:

The Art of Happiness is an 8-week intervention based on the teachings of the Dalai Lama with the goals of enhancing happiness levels and overall mental well-being in older adults. The pilot program was conducted at 3 senior centers with 90 minute classes that examined a different weekly topic including; (1) defining happiness, (2) stress management, (3) reflecting on happiness, (4) compassion and human connection, (5) forgiveness, (6) transforming suffering, (7) mindfulness, and (8) humor. Participants were provided with *The Art of Happiness* by the Dalai Lama as well as a journal to complete homework assignments. Each session included lecture and discussion portions with homework that focused on that week's topic. Pre and post questionnaires were used to assess participant gratitude, life satisfaction, depression, stress, mindfulness, arousal states, subjective happiness, and general demographic and health information.

Results:

The 31 participants who completed the course were mostly married (43.8%), female (87.5%) and Caucasian (91%) with an age range of 53-93 years of age (mean age= 74 years). Paired t-tests (pre and post program measures) showed significant improvements in participant's subjective happiness (p

Conclusion:

This suggests that it is possible to influence the older adults' frame of mind in terms of outlook on life and improving quality of life. These types of programs which influence positive mental health in the older adult population may be a mechanism by which to improve the overall well- being in the older adult population

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PHYSICAL ACTIVITY, SELF-REPORTED PHYSICAL FUNCTIONING AND QUALITY OF LIFE IN STROKE SURVIVORS

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Background

Stroke is the third leading cause of death in the United States and the leading cause of disability among its survivors. Recent reviews in this population have shown that regular physical activity (PA) can lead to improved quality of life (QOL), functional capacity and mobility among stroke survivors. The goal of this study was to examine the relationship between PA levels in stroke survivors and their satisfaction with life (SWL) and overall physical functioning (PF).

Methods

Participants consisted of 31 stroke survivors who were at least 6 months post-stroke (mean age:61.97±11.17). PA was measured using an Actigraph accelerometer that was worn by participants during waking hours for 7 days. Using NHANES cut-offs, PA data was categorized by counts per minute as sedentary (0-100), light (101-2019), and moderate to vigorous (MV; ≥2020). The 36 Item Short Form Health Survey (SF-36) was used assess overall PF and the Satisfaction with Life Scale (SWLS) was used to asses perceived SWL.

Results

Correlation and regression analyses showed that light PA was correlated with SWLS (r=.404, p =.03, β=.40) and SF-36 PF (r=.454, p =.01, β=.45). MVPA was not significantly correlated with SWLS (p=.12) but was significantly correlated with SF-36 PF (r=.49, p =.009, β=.53). Sedentary time was not significantly correlated with either self-report measure.

Conclusion

Light PA consistently predicted self-reported PF and SWL in stroke survivors. MVPA was predictive of PF but comparable with light PA which may be more effective to adopt and maintain for this population.   Future research should examine light PA based interventions such as stretching and strengthening, yoga, tai-chi etc., and their efficacy in improving QOL among stroke survivors.

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THE INFLUENCE OF DIET, SLEEP AND PHYSICAL ACTIVITY ON WELL-BEING - PERCEPTIONS AND BEHAVIORS

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Background: The association between health behaviors and chronic diseases is well documented. Less well researched is the association between health behaviors and perceived wellbeing. This study examined the perceived influence of diet, sleep and physical activity on wellbeing and associations between self-reported behaviors and perceived wellbeing.

Methods: Participants were mainly older, well-educated women (n=222, mean age=59.2±0.7, years of education=16.7±0.2, women=90%) who reported good, very good or excellent health (88.3%) and wellbeing (91%). For the previous two weeks, participants reported: 1) the perceived influence of diet, sleep and physical activity on their wellbeing (none, positive or negative influence) and 2) measures of these behaviors.

Results: The reported influences of these behaviors on wellbeing were: diet : none=48%, positive=27%, negative=26%; sleep: none=38%, positive=27%, negative=35%; physical activity: none=64%, positive=16%, negative=20%. Comparing the groups of participants who reported no influence, positive influence or negative influence of these behaviors on their wellbeing, there were statistically significant differences in the reported behaviors by group. Those reporting a negative influence of these behaviors on wellbeing also reported eating more desserts and processed food daily and sleeping fewer minutes per night compared to those reporting no or a positive influence of these behaviors on wellbeing: mean servings of desserts/day (none=1.6±1.9, positive=1±1.3; negative=3.1±4.1; p

Conclusion: More than half of the participants in this study reported that diet and sleep positively or negatively influenced their wellbeing, and over one third reported that physical activity positively or negatively influenced their wellbeing. There was no association between reported physical activity and the influence of physical activity on wellbeing, but eating more

servings of desserts and processed foods per day and sleeping fewer minutes per night were negatively associated with perceived wellbeing.

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WELLNESS IN WOMEN: LONG TERM FREEDOM FROM A DIAGNOSIS OF INVASIVE BREAST CANCER

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Overestimates of health risks can impair decision-making and paradoxically reduce wellness. Records of 2,305,427 screened-symptomless women were used to estimate their risk of being diagnosed with invasive breast cancer over their next 25 years, and determine the percentage of women actually likely to remain free of invasive breast cancer.

Prior estimates of breast cancer incidence started with "Diseased Women' from cancer registries and used census population estimates. Our study intentionally did neither, thereby increasing accuracy in determining the likelihood of a woman's living free of breast cancer.

Method: Our systematic review identified 19 peer-reviewed published studies of 2,305,427 women meeting 5 stringent criteria. Incidence of first invasive breast cancer was estimated using logistic regression based on follow-up duration

Results: Over 25 years of follow-up, an estimated 94.55% of women will remain breast cancer-free (95% CI: 93.97, 95.13). The mean cumulative incidence rate of first invasive breast cancer increased by 0.2% for each year of follow-up (95% CI: 0.17, 0.23; $p < 0.01$; $R^2 = 0.90$). There was no evidence of an age-related increase; but there was evidence of a higher rate for those who became menopausal through surgery.

Conclusion: The vast majority (99.75%) of asymptomatic peri and postmenopausal women will not be diagnosed with invasive breast cancer each year, and 95% will live well – free of a diagnosis of invasive breast cancer. For those who avoid the 7 known risk factors for being diagnosed with breast cancer an even higher percentage will live free of invasive breast cancer.

Weight gain, inadequate exercise, excess alcohol, and inadequate solar radiation generating vitamin D deficiencies are the 4 major risks factors well documented to increase the risk of breast cancer. Hormonal declines following menopause and several specific hormonal therapy regimens are also associated with increased risk. Converging evidence suggests that we should now add mammography itself to our list of hazards.

Ever more sensitive scanning is increasingly likely to detect very early stage cancers, 30-50% of which we now know would be self-limiting and benign. However, once detected, such cancers usually prompt treatment and expose women to unnecessary iatrogenic harms.

The apparent success of screening depends heavily on inclusion of cases where treatment was directed at breast cancer that was most likely to never develop to clinical significance. Like prostate cancer, as many as 50% of women develop non-life threatening breast cancer before they die. Overestimates of one’s risk of developing deadly invasive cancer fuel this excessive fear and detrimentally drive women’s decision to undergo regular mammography screenings. A broad convergence of recent research shows that these decisions paradoxically compromise wellness.

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ACCULTURATION MODERATES THE EFFECTS OF POSITIVE EMOTIONALITY ON THE CORTISOL AWAKENING RESPONSE IN MEXICAN AMERICAN ADULTS

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Mexican Americans face unique acculturation-related stressors that affect the neurohormonal stress response. Previous research has shown that Mexican Americans with greater Anglo orientation evidence an attenuated cortisol awakening response (CAR) and that stress associated with the acculturation process may render some Mexican Americans more susceptible to adverse health outcomes. The tendency to experience positive emotions is a personality trait with particular relevance for examinations of resilience to the adverse effects of stress in this underserved minority group. Numerous studies have demonstrated a strong relationship between stress-induced alterations of the hypothalamic-pituitary-adrenal (HPA) axis and certain negative health outcomes, and suggest that extraversion is an important factor promoting psychological adaptation and resilience to the adverse effects of stress. Additional evidence suggests that highly resilient individuals proactively cultivate positive emotionality, a key facet of extraversion, by strategically eliciting positive emotions through the use of humor, relaxation techniques, and optimistic thinking. However, to our knowledge, no studies have examined the relationship between the tendency to experience positive emotions and the CAR in Mexican Americans.

In the current study, the effects of positive emotionality and acculturation on the CAR were examined in adults of Mexican descent. Salivary cortisol samples were collected at awakening and 30, 45, and 60 minutes thereafter, on two consecutive weekdays from 89 healthy Mexican American adult males (43) and females (46), ages 18 to 38 years. Results of general linear mixed modeling (GLMM) showed that lower positive emotionality was associated with an attenuated CAR. Stronger Anglo orientation was also associated with an attenuated CAR. Follow-up analyses showed that in Mexican Americans with strong Mexican orientation, positive emotionality was associated with a robust CAR, whereas in Mexican Americans with moderate or strong Anglo orientation, CAR was attenuated, and positive emotionality showed no effect. The current findings suggest that in less acculturated Mexican Americans with strong connections to traditional cultural values and behaviors, positive emotionality functions as a buffer against stress-induced alterations in the CAR. However, in more acculturated Mexican Americans with fewer connections to cultural values and traditions, the tendency to experience positive emotions may not be an effective buffer against stress-induced alterations in the CAR. It is possible that participation in cultural traditions and

behaviors facilitates a social milieu responsive to positive emotionality, fostering resilience to stress-induced alterations in the CAR.

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HISPANIC ETHNICITY AND PRIMARY CARE UTILIZATION AMONG MILLENNIALS

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Background: Hispanics are the largest ethnic minority in America, and experience racial health disparities on outcomes for various health measures. Using a primary care provider minimizes some of these outcome disparities. Persons aged 18-34 years old (“Millennials”) occupy an age range more likely to be uninsured than older and younger individuals. Implementation of the Affordable Care Act (ACA) in 2010 sought to increase preventive primary care access and utilization. There exists a gap in the literature of Millennial primary care utilization by ethnicity after the ACA.

Objective: This study examines the characteristics of primary care utilization among Millennials, exploring differences in this utilization by Millennial ethnicity.

Methods: Data are collected from the 2011-2012 National Health and Nutrition Examination Survey (NHANES). This study accounts for complex survey design and uses bivariate analysis and multivariate logistic regression to assess the relationship between ethnicity and routine health care utilization habits. Primary care utilization is defined as routine care provided at a doctor’s office, clinic, or Health Maintenance Organization (HMO).

Results: Among Millennials (N=1,794), Hispanics (N=397) have 1.75 times (95% CI 1.25, 2.46) the odds of not utilizing primary care compared to Non-Hispanic Whites. This relationship is not significant after adjusting for gender, citizenship status, health insurance status, and education level (OR 1.04; 95% CI 0.731, 1.48). Hispanic Millennials are 2.63 times (95% CI 1.64, 4.21) more likely to be uninsured than Non-Hispanic Millennials holding citizenship status, gender, and education level constant.

Conclusion: The unadjusted results of Millennial routine care utilization habits show Hispanic Millennials are 1.75 times as likely to not use primary care when compared to Non-Hispanic White Millennials. When adjusting for insurance utilization, this difference is no longer significant. This reinforces previous findings of health care utilization and access disparities by race and ethnicity, even among Millennials. This could explain the difference in primary care utilization among these two groups.

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B252 6:00 PM-7:00 PM

OUTCOMES OF ELEMENTARY AND MIDDLE SCHOOL REFUSERS IN JAPAN

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Background: Japan's modern education system is built on the principle that every child has equal educational opportunity. All schools are the same so every child gets the same education. However, children who are unwilling to attend school have few options to continue their education. In 2015, the Education Ministry reported that school refusers represent at least 1.5% of elementary and middle school aged children, but detailed data is unavailable. We provided behavioral approaches to school refusers and aim to describe the outcomes of elementary and middle school aged school refusers who received therapy at our institution.

Methods: Data were extracted from medical records of children with insurance codes including "school refusal", "psychogenic reaction" or "somatoform disorders". Data were analyzed if they underwent psychological therapy because of prolonged physical symptoms related to school activities or because of prolonged school refusal.

Results: A total of 118 children (boys, n=53) underwent therapy at a mean age of 12y. The most frequent concomitant physical symptoms were headache and digestive symptoms (nausea, vomiting, abdominal pain) related to school activities. The common trigger for school refusal was fear of other classmates, such as being talked about behind their back or being excluded from class activities. Of these, 31 (26%) were diagnosed with borderline mental retardation or a developmental disorder including autism spectrum disorder, attention deficit hyperactivity disorder and Asperger syndrome. Half of children improved after a mean of 10 months of cognitive-behavioral therapy and resolving problems with classmates. Twenty-three (21%) children quit psychological therapy at an average of 7 months and 87% had continued difficulty attending school. Children who quit therapy tended to be absent from school for longer periods, be totally absent from school and have a previous history of stopping therapy.

Conclusion: Most school refusers are triggered by difficulties with other classmates. They had headaches and digestive symptoms related to school activities, however, one-half had a good response to psychological therapy within a year. School refusers who did not have a good

response after 7 months of therapy, had decreased compliance with appointments and poor outcomes.

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B253 6:00 PM-7:00 PM

SOCIOCULTURAL AND ENVIRONMENTAL INFLUENCES ON BRAZILIAN MOTHERS' BELIEFS & PRACTICES RELATED TO CHILD FEEDING & WEIGHT STATUS

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Background: Length of residence in the United States (US), changes in dietary and physical activity behaviors, and economic and social barriers contribute to high childhood obesity rates among children from immigrant families in the US. Brazilians comprise a fast-growing immigrant population group in the US, yet little research has focused on health issues affecting Brazilian children in immigrant families. Understanding sociocultural and environmental influences on parents' beliefs and practices related to child feeding and weight status is essential to altering obesity trends in this group.

Methods: Qualitative study consisting of five focus groups with a convenience sample of 29 Brazilian immigrant mothers.

Results: Analyses revealed that the sociocultural and environment transitions faced by Brazilian immigrant mothers' influence their beliefs and practices related to child feeding and weight status. Additionally, acculturation emerged as a factor affecting mothers' feeding practices and their children's eating habits, with mothers preferring Brazilian food environments and that their children preferring American food environments. Mothers viewed themselves as being responsible for promoting and maintaining their children's healthy eating and feeding behaviors, but changes in their social and cultural environments due to immigration and the pressures and demands of raising a family in a new country make this difficult.

Conclusions: Health promotion interventions to improve healthful eating and feeding practices of Brazilian children in immigrant families must account for social and cultural changes and daily life demands due to immigration as well as potential variation in the levels of acculturation between mothers and their children.

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MERITORIOUS AWARD WINNER

THE ROLE OF RABBIS IN DECISION-MAKING ABOUT BRCA TESTING AMONG ORTHODOX JEWISH WOMEN

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BACKGROUND The prevalence of founder mutations in the BRCA1 and BRCA2 genes is 1 in 40 among Ashkenazi Jews. Despite the potential benefits of BRCA testing to inform cancer screening and risk-reducing surgeries, there are still concerns about adverse psychological and social consequences, which may vary by cultural and religious backgrounds. Orthodox Jews often consult with Rabbinic and communal authorities in medical decision-making, which is consistent with their religious values. The aim of this study was to examine whether Rabbis have a role in medical decision-making about BRCA genetic testing among Orthodox Jewish women.

METHODS We applied a mixed-methods approach to analyze quantitative survey data and qualitative transcripts. We distributed a survey via community-based and religious email listservs in Upper Manhattan in New York City. We collected data on demographics, breast cancer risk factors and religious/cultural factors influencing a decision to undergo BRCA genetic testing. Survey participants were re-contacted to participate in two focus groups separated into single (n=8) and married (n=10) women. The sessions were audio-recorded and transcribed. For the qualitative approach, a content analysis was conducted using Atlas.ti software. The Scott’s Pi value for the inter-rater reliability of two coders was 0.7091.

RESULTS Of 505 Orthodox Jewish women invited to participate in the survey study, 269 (53%) completed the survey. The median age was 25 years (range, 19-86) and 67% identified as Modern Orthodox. Sixty-six percent stated that they were moderately to very likely to consult a Rabbi to make a significant medical decision. However, less than half (46%) thought that their Rabbi was moderately to very medically informed. When making an important medical decision, 88% replied that they were moderately to very likely to seek advice from a primary doctor/family physician and 43% said that they would consult with a Rabbi or Rebetzin (Rabbi’s wife). Themes that emerged from qualitative analysis confirmed the results we obtained from the survey. While some participants said that they would consult a Rabbi, some preferred discussing health decisions with their doctors. By analyzing the transcripts, we

found that Orthodox Jewish women tend to seek medical advice from Rabbis especially for the halachic implications (Jewish law or code of ethics).
CONCLUSION A key finding from our study is that Rabbis and health professionals influence medical decisions about genetic testing in the Orthodox Jewish population. Therefore, educating Rabbis on the medical aspects of BRCA genetic testing, including cancer risk and risk reduction strategies, will be crucial. We believe that education and decision support tools for both Rabbis and health professionals will be important to disseminate information on BRCA testing in the Orthodox Jewish community.

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B255 6:00 PM-7:00 PM

UNDERGRADUATES' DESIGNATED ORGAN DONOR STATUS ON THEIR DRIVER'S LICENSE: AGE, RACE/ETHNICITY, GENDER, AND RELIGION MATTER

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On average, 22 people die each day waiting for an organ transplant and over half of the 119,967 people on the U.S. transplant waiting lists are ethnic minorities. Specifically, the proportion of Asian, Native Hawaiian, Pacific Islanders (**ANHPI**), on waiting lists exceeds their representation in the general population; thus, the need for ANHPI organ donors is high. The iDecide Hawaii Project was designed to educate ANHPI undergraduates about the decision to be a Designated Organ Donor (**DOD**) on their next (often an "adult" 21+ years of age) driver's license. The project used a gamified online eHealth intervention (e.g., Instagram, YouTube) to both educate and engage undergraduates in issues surrounding DOD status and incentivized student organizations to be DOD advocates via pledge contests with cash prizes. From 2014-2016, 2,138 students completed baseline surveys before the intervention was launched (M_{age}= 22.8 years ± 5; 76% female; 15% Hispanic, 3% African American, 4% American Indian/Alaska Native, 32% Asian, 17% Native Hawaiian/Pacific Islander, 31% White, and 9% multiracial (largely Asian/White). One-third (35%) were Protestants, 24 % Catholic, and 28% were not religious or were Agnostics/Atheists. Of those who had a driver's license, 59.6% were already a DOD; but, DOD rates were significantly lower for students with a < 21year license (57%) versus those with 21+ year license (63%) (p = 0.006). There were also differences by age with 58% of 18-24y/o, 59% of 25-29y/o, and 68% of 30+ y/o being a DOD (p = 0.0001). Significantly more females (62%) were DODs than males (54%; p = 0.003). There were significant differences by race with 74% of Whites, 56% of Native Hawaiians/Pacific Islanders, 44% of Asians, and 65% of multiracial persons reporting being a DOD on their license (p=0.0001). There were significant DOD differences within Asians: Filipinos= 38%, Koreans=62%, Japanese=63%, Asian/White multiracial= 70% (p=0.001). There were significant differences by religion with 53% of Protestants, 46% Catholics, and 62% not religious/Agnostics reporting being DODs on license (p=0.0001). Thus, prevalence of DOD was higher for students who were older, female, not religious, or White; but, within Asians, DOD prevalence ranged from 38% to 70%. Changes in knowledge, attitudes and

actions/engagement of both DODs and non-DODs exposed to our eHealth, gamified intervention will be assessed via post-test surveys. Moderator analyses will determine any differential impact by age, race, gender or religion. Engagement in the gamified eHealth intervention varied by site and contest; but, hundreds of undergraduates entered the DOD pledge contests and the Instagram picture contests that followed an organ donation-related theme. Examples of contest winners will be displayed.

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B256 6:00 PM-7:00 PM

ASSOCIATIONS BETWEEN PHYSICAL ACTIVITY, SEDENTARY BEHAVIOR, AND SLEEP HABITS AMONG AN ATLANTIC CANADIAN COHORT

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Background: Lack of sleep and poor sleep quality has been linked to many poor physical and mental health outcomes. Engaging in regular PA has been linked to changes in sleep circadian rhythms, thermogenic regulation, body weight, physical fitness, anxiety, depression, and pain; any of which could be a possible mechanism by which PA impacts sleep. The goal of this study was to determine any associations between physical activity or sedentary behaviour (SB) and sleep duration or quality among a cohort of Atlantic Canadians.

Methods: 31,173 participants, aged 35-69 years, living in Atlantic Canada (Nova Scotia, New Brunswick, Newfoundland & Labrador, and Prince Edward Island), completed a series of assessments. Domain-specific physical activity and sedentary behaviour was assessed using the International Physical Activity Questionnaire-Long Form (IPAQ). Sleep duration and sleep quality were measured with two items; first asking participants to report in hours and minutes "On average, how many hours per day do you usually sleep, including naps?" and then, "How often do you have trouble going to sleep or staying asleep?" on a 5-point scale from "never" to "all the time". Objective measures were used in Physical Activity Level (PAL) calculations if available; in cases where they were not, self-report measures were used.

Results: 18,258 participants had both PA measures and sleep data. PAL computation revealed 59.7% of the sample was inactive with a further 14.5% in the 'low active' category. 25.7% of the sample were considered 'active' or 'very active'. Participants averaged 5.8 hours of SB per day with most of the sample sedentary between 4-7 hours per day (37.7%). Most (65.5%) reported getting between 7-9 hours of sleep per night with an actual average of 7.2 hours per night. Most of the sample reported having sleep troubles 'some of the time' or less frequently (77.5%). As sleep duration increased, the percentage of those inactive also increased. U-shaped trends emerged with sleep disturbances either 'none of the time' or all of the time' at higher levels than 'some of the time' among those classified as very active. An inverse linear relationship was found for sleep quality and SB.

Conclusion: As sleep duration increased, so did the proportion of those classified as inactive. This is contrary to research that shows a u-shaped relationship between sleep duration and PA. Results also showed that a higher proportion of those who slept more than 11 hours and

had sleep disturbances ‘all the time’ were those who were sedentary for more than 7 hours. There is less research on SB’s link to sleep quality but what literature there is indicates a link similar to PA. More research is needed to confirm a link between SB and sleep duration and quality.

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B257 6:00 PM-7:00 PM

ASSOCIATIONS OF CHRONOTYPE WITH ALCOHOL AND MARIJUANA USE IN A NATIONAL SAMPLE OF U.S. HIGH SCHOOL STUDENTS

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Changes typifying adolescence have profound effects on adolescent sleep patterns with implications for health and well-being. Research has demonstrated relations between poor sleep quality and increased alcohol use. Preferred sleep period, or chronotype, has emerged as potentially useful in understanding this association. This study examined adolescents' chronotype in association with alcohol and marijuana use.

Data come from the NEXT Generation Study, a national cohort of US 10thgrade students (2009-10). Latent class analysis using data from the first 3 years of the study (W1-W3) identified chronotype classes by preference for 1) earlier sleep period (21%), 2) later sleep period (16%) and 3) middle sleep period (61%). W3 weekday and weekend sleep durations were categorized as short (< 7 hours per night), inadequate (7-8 hours), optimal (8-9.5 hours) and long (> 9.5 hours). Logistic regression models examined the associations of chronotype class and W3 sleep duration with W3 30-day alcohol and marijuana use. Models adjusted for design variables, gender, race/ethnicity, and W2 substance use.

Participants (n=2168) were 59% (weighted) female, 62% white, 13% African American, and 19% Hispanic. 30-day reports of W3 alcohol use were: 38% any use, 27% binge drinking, 25% drunk, and 7% blackout from alcohol; 19% reported any W3 30-day marijuana use. In adjusted logistic regressions, compared to members of the mid-type class, the early chronotype class had lower odds of drinking (odds ratio=0.48, 95%CI=0.32-0.71), binging (OR=0.44, CI=0.29-0.67) or being drunk (OR=.0.37, CI=0.23-0.61); the late chronotype class had higher odds of binging (OR=1.87, CI=1.17-2.99) and being drunk (OR=1.68, C=1.06-2.67). Odds of marijuana use were lower for those reporting long sleep duration on unscheduled days (OR=0.44,CI=0.29-0.67); marijuana use was not associated with chronotype.

Three distinct classes of chronotypes were identified in US adolescents, with late chronotype associated with alcohol use but not marijuana use, which was positively associated instead with long sleep duration. Research is needed to differentiate the psychosocial, behavioral and biological causes of associations between chronotype, sleep duration and substance use.

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B258 6:00 PM-7:00 PM

ASSOCIATIONS OF MULTIPLE SLEEP PROBLEMS WITH AFFECTIVE AND COGNITIVE VULNERABILITIES

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Recently, there have been calls for additional research examining the combined influence of cognitive and affective factors on sleep problems. Past research has demonstrated that increased rumination is associated with poor sleep, but less research has examined other cognitive vulnerabilities. Furthermore, although studies have examined the influence of depression/anxiety (as broad classes) on sleep, very little research has examined the association of specific symptoms of depression/anxiety with sleep problems. This is an important limitation because depression and anxiety are heterogeneous constructs comprised of multiple symptoms, each of which might demonstrate differential associations with sleep problems. In this cross-sectional study, college students (N = 611) completed measures assessing a variety of sleep problems (sleep quality [WHIIRS], daytime sleepiness [ESS], and insomnia [IDAS]), cognitive vulnerabilities (trait rumination [RSQ], automatic thoughts [ATQ], fear of negative evaluation [BFNE], dysfunctional attitudes [DAS]), and ten symptoms of depression and anxiety (IDAS, with items referencing sleep removed). Results indicated that cognitive vulnerabilities (including rumination) demonstrated limited incremental validity over symptoms of depression and anxiety for all sleep problems (ΔR^2 = .00 - .02). In contrast, the depression and anxiety symptoms demonstrated significant ($p < .01$) incremental validity over and above all of the cognitive vulnerabilities for each sleep problem (WHIIRS: ΔR^2 = .10; ESS ΔR^2 = .09, IDAS ΔR^2 = .35). Interestingly, each sleep problem was predicted by different symptoms of depression and anxiety, indicating unique associations between specific types of sleep problems and specific symptoms. Given that between 15 – 56% of the variance in sleep problems was accounted for by symptoms of depression and anxiety, our results suggest that they are more important for sleep problems than cognitive vulnerabilities, which appear to have limited influence across the included sleep problems. Because quality sleep is integral to physical and mental health in clinical and nonclinical populations, sleep interventions may need to place more emphasis on improving affect.

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B259 6:00 PM-7:00 PM

INFANT SLEEP TRAINING AND MATERNAL HEALTH BEHAVIORS

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Background: Women are vulnerable to excess weight gain and retention during their childbearing years. This study explored the relationships between infant sleep training, maternal physical activity levels, and weight loss during the first postpartum year by comparing mothers who reported successfully sleep training their infants with those who did not. Group differences were examined in 1) quantity of maternal sleep, 2) quantity of infant sleep, 3) maternal physical activity and weight loss, 4) psychosocial variables including postpartum depression and perceived social support and 5) mothers' preference for potential weight loss and infant sleep training interventions.

Methods: Mothers of 6-12 month old infants (N=150, M_{age}=32.24, M_{BMI}=27.07) were recruited with study flyers both online and in the community. Participants completed questionnaires online, including item 8 from the Paffenbarger Activity Questionnaire, the Postpartum Depression Screening Scale, and the Brief Infant Sleep Questionnaire. Participants also answered questions about how they had engaged with various sleep training methods with their infants. Two groups were established: Sleep Trainers were those who endorsed successfully sleep training their infants, and Non-Sleep Trainers who did not endorse the item. Data was analyzed using chi-square and independent t-tests.

Results: Sleep Trainers slept more than Non-sleep Trainers ($p < .05$) and woke up significantly fewer times overnight ($p < .01$). The children of Sleep Trainers also slept significantly more overnight (p < .01), and their mothers reported higher levels of perceived social support ($p < .05$). There were no significant group differences in physical activity levels, but differences in weight retention approached significance ($p = .10$) with mothers who successfully sleep trained indicating that they were closer to their prepregancy weight. Mothers in both groups endorsed the highest level of interest in online interventions. Non-Sleep Trainers were

significantly more likely to express interest in potential sleep training interventions, with most expressing interest in an online format.

Discussion: These results suggest that interventions targeting postpartum weight retention should take the mother-infant dyad into account in study design. Infant sleep modification presents a possible target for intervention with potential benefits for both mothers and infants.

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B260 6:00 PM-7:00 PM

INFLUENCES OF INSOMNIA SUBTYPES ON SUBSEQUENT ANXIETY AND DEPRESSION: A POPULATION-BASED LONGITUDINAL COHORT STUDY

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Background: Though prior studies have investigated the associations between insomnia and mental health, research assessing the causal relationships using population-based study with long-term follow-up is still lacking.

Objective: To examine the causal influences of insomnia on the onset of depression only, anxiety only, depression or anxiety, and depression and anxiety during the 4-year follow-up.

Methods: Participants were identified from the National Health Insurance enrollees in Taiwan during 2002~2009. The study included 19,273 subjects with insomnia (52.1±16.0 years old) and 38,546 matched subjects without insomnia (51.2±16.0 years old).

Results: Compared with non-insomniacs, insomniacs had a higher risk of developing anxiety only [adjusted hazard ratio (HR) =8.83, 95% CI=7.59-10.27)], depression only (adjusted HR=8.48, 95% CI=6.92-10.39), either anxiety or depression (adjusted HR=9.90, 95% CI=8.83-11.1), as well as both anxiety and depression (adjusted HR=17.98, 95% CI=12.65-25.56). When breaking down into insomnia subgroups, individuals with a relapse of insomnia (adjusted HR=10.42-26.80) had the highest risk of anxiety only, depression only, either anxiety or depression, and both anxiety and depression, followed by persistent insomnia (adjusted HR=9.82-18.98) than remission of insomnia (adjusted HR=4.50-8.27) in comparison to the non-insomniacs. When comparing the 4-year cumulative incidence between insomniacs to non-insomniacs for anxiety only, depression only, either anxiety or depression, and both anxiety and depression, we found that the relapse group (p-value for log-rank test

Conclusions: Insomnia is a strong predictor for developing depression and anxiety. Patterns of insomnia should be monitored to help treating and controlling subsequent psychiatric disorders.

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B261 6:00 PM-7:00 PM

SLEEP AND HEALTH BEHAVIORS AMONG AFRICAN AMERICAN CONGREGATION MEMBERS

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Sleep disorders are often comorbid with a broad range of medical and psychiatric conditions that have a negative impact on health, mood, and quality of life. African Americans (AAs) report higher rates of extreme sleep behaviors, including hypersomnia and hyposomnia, and are at an increased risk for related consequences, including cardiovascular disease, diabetes mellitus, and respiratory issues. Research has demonstrated that there is a reciprocal relationship between sleep and these health issues–thus, health conditions impact sleep and sleep subsequently impacts health outcomes. The Black church is an integral part of the AA community, as AAs have the highest rate of church attendance compared to all other racial and ethnic groups in the United States. The Black church has the ability to address health concerns affecting members, as well as their communities through outreach ministries. However, previous studies have not examined the sleep behaviors of AA church-affiliated persons. The purpose of the current study was to examine the demographic, social, and health factors associated with lack of sleep among AA church-going populations. This study used baseline data from Project FIT (Faith Influencing Transformation), a health promotion intervention piloted in AA faith-based settings. The study participants (N = 352) were predominantly female (n = 240, 69.4%), with an average age of 53.6 years (SD = 13.1). Results showed that 30% of participants had less than 6 hours of sleep a night, 70% received 6 to 10 hours of sleep a night, and 1% received over 10 hours of sleep a night. Findings indicated that income (r=.159, p=.008), stress levels (r=-.163, p=.007), and gender (r=.140, p=.017) were significantly correlated with sleep. In addition, diagnoses of heart disease (r=-099 p=.067) and polycystic ovarian syndrome (r=.160, p=.008); previous screening for mental health (r=-.159, p=.018) and level of education completed (r=.176, p=.004) were also significant sleep predictors. Linear regression analyses revealed that income (β =.155, p=.020), polycystic ovarian syndrome (β =.165, p=.012), stress levels (β =-.120, p=.068), and gender (β =.133, *p*=.039) together were able to predict sleep behavior. Sleep behaviors and their subsequent impact on health should be further explored among the African American church-going populations.

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B262 6:00 PM-7:00 PM

SLEEP PROBLEMS IN A LARGE SAMPLE OF CANCER PATIENTS BEFORE INITIATING TREATMENT

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Background: Sleep problems are common in adult cancer patients and have significant health consequences. However, few studies have examined multiple disease sites, or captured sleep function at the critical time post-diagnosis, but prior to initiating treatment. This study sought to address these limitations by exploring the prevalence of sleep problems and its correlates in a large sample of cancer patients.

Methods: 5,702 cancer patients (67.5% female; 76.9% White, 17.2% Asian, 5.5% Black) completed a routine electronic distress screen, including a question on sleep problems, following diagnosis and prior to initiating cancer treatment. Patients across 8 different cancer diagnoses (breast, gastrointestinal, gynecological, head and neck, hematological, lung, prostate, urinary) were included. Patients endorsing “Severe” or “Very Severe” sleep problems-related distress were classified as having a sleep problem.

Results: 12.5% of patients reported sleep problems, though significant differences in the proportion of patients with sleep problems were seen across diagnoses (4.3-13.8%; $p < .001$), with prostate cancer patients least likely and gastrointestinal cancer patients most likely to experience sleep problems. Logistic regression analyses indicated demographic factors (lower household income and female gender; not race, education, or marital status) were associated with greater prevalence of sleep problems. A logistic model adjusted for demographic variables revealed anxiety and depression, but not concerns about potential treatment-related side effects, were associated with sleep problems ($p < .001$).

Conclusions/Implications: A sizeable proportion of cancer patients already report major problems with their sleep, before any treatment has occurred, and this is an issue across racial groups and educational levels. Key demographic and mood factors are associated with sleep problems. This can have important implications for identifying and treating patients at greatest risk for sleep problems during a vulnerable period early in their cancer trajectory.

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SLEEP, RESILIENCE, AND PSYCHIATRIC DISTRESS IN UNITED STATES MILITARY VETERANS

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Sleep problems are a common symptom of several mental health conditions, including depression, PTSD, and anxiety. However, roughly two-thirds of Veterans without an active mental health diagnosis also complain of poor sleep. Left untreated, sleep problems may be associated with psychiatric distress that could contribute to a subsequent mental health diagnosis. Few studies have examined the clinical correlates of sleep problems in Veterans without current mental health diagnoses. Identifying risk and protective factors related to poor sleep and increased psychiatric distress could strengthen pertinent prevention efforts. Research suggests psychological resilience, defined as positive stress-coping ability, protects against poor mental health outcomes in Veterans exposed to stress or trauma. However, the relationship between sleep and resilience has not been previously studied. Utilizing data from the Study of Post-Deployment Mental Health, a volunteer research registry housed at the Mid-Atlantic VA's Mental Illness Research, Education, and Clinical Center, this research examined the demographic, health, sleep and resilience characteristics of post-9/11 military Veterans with one or more deployments who did not meet past-month criteria for a DSM-defined Axis I mental health disorder (N=1,117). Hierarchical linear regression and moderation analyses were used to examine the relationship between poor sleep quality (Pittsburgh Sleep Quality Index) and psychiatric distress (Global Symptom Index, Symptom Checklist-90) and to test whether psychological resilience (Connor-Davidson Resilience Scale) moderated this relationship. Results revealed Veterans with poor sleep quality had worse physical and psychological health, lower resilience, and endorsed more lifetime traumatic events. Controlling for health and demographic characteristics, poor sleep quality was associated with greater psychiatric distress [F (5, 1111) = 84.7, R^2=0.159, $p < 0.0001$]. Both factors of resilience – adaptability and self-efficacy – were found to have a significant buffering effect between poor sleep quality and greater psychiatric distress (p's < 0.05). Additional research is needed to better understand the relationship between sleep and resilience in Veterans, and how

interventions targeting each may help to curb psychiatric distress and ultimately reduce risk of subsequent mental health diagnoses.

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ARE THERE RACIAL DISPARITIES IN THE SOCIAL INTEGRATION/MORTALITY ASSOCIATION?

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Objective: Social integration, as indicated by being married, having recent contacts with other people, participating in group activities, etc., is strongly and inversely associated with mortality. However, there is little data evaluating whether this association is consistent across racial groups. **Method**: In a representative US sample we examined the presence and form of the association of social integration with all-cause mortality within non-Hispanic Blacks (n = 4,201) and non-Hispanic Whites (n = 20,217). Vital status was ascertained ten years following the baseline assessment. Social integration scores ranged from zero to eight. The two lowest categories were combined and this single social integration variable was entered as a predictor in Cox regression models. We statistically controlled for age, sex, chronic disease prevalence, received emotional support, socioeconomic status (education, employment, home ownership) and smoking. **Results**: After multivariate adjustment social integration was inversely related to ten-year survival for both groups. Among Whites each unit increase in social integration was associated with a 10% reduced risk of dying over ten years, hazard ratio [HR] = 0.90, 95% confidence interval [CI], 0.87-0.92. A similar association was observed among Blacks, HR = 0.92, 95% CI, 0.86-0.98. There was no evidence of heterogeneity across the two hazard estimates (z = -0.64, p = 0.52). **Conclusions**: These data provide evidence that the social integration/mortality association is evident for both Whites and Blacks.

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CHRONIC DISEASE PREVENTION AND TREATMENT AMONG MEXICAN MIGRANTS: FINDINGS FROM A BINATIONAL PROJECT

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Background: Circular Mexican migrants represent a socioeconomically disadvantaged population and are more likely to experience limited access to health care in both the U.S. and Mexico.The situation may worsen if the new administration implements stringent immigration and health policy reforms that target immigrants. Guided by the Andersen health care utilization model, this study aims to 1) examine the levels of preventive and treatment services receipt for chronic diseases, including hypertension, hypercholesterolemia and diabetes, across the migration phases; and 2) identify predisposing, enabling, and need factors that were associated with the receipt of preventive and treatment services for each migration phase, among Mexican migrants that converged in the border city of Tijuana, Mexico.

Methods: We used data from a 2013 cross-sectional survey of Mexican migrants conducted as part of Project Migrante, a binational collaboration between the U.S. and Mexico (N=2115). Based on spatial trajectories and migration history, Mexican migrants were categorized into five migration phases: pre-departure, return, transit, destination, and interception. We conducted multiple logistic regressions to model receipt of preventive and treatment services for chronic diseases within each migration phase and to compare receipt levels across migration phases.

Results: Overall, 23.0% of Mexican migrants represented by our sample self-reported at least one type of chronic diseases. The age- and gender-standardized prevalence rates of any preventive services receipt ranged from 23.0% among return migrants to 29.2% among transit migrants; and the standardized rates of any treatment services receipt among those with any chronic diseases ranged from 39.5% among migrants in the interception phase to 54.5% among those in the destination phase. After statistical adjustment for other factors, destination (AOR=1.49) and interception migrants (AOR=1.84) were more likely to receive preventive services than their pre-departure counterparts. In contrast, receipt of treatment

services did not vary significantly across migration phases. Different sets of predisposing, need, and enabling factors were associated with the receipt of preventive and treatment services for different migration phases.

Conclusion: Mexican migrants had suboptimal levels of receipt of preventive and treatment services for chronic diseases across all migration phases. Tailored intervention programs should be provided to Mexican migrants at different migration phases to increase health care receipt and reduce the burden of chronic diseases.

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COUPLE EMOTION REGULATION SKILLS AND PARTNER SUPPORT OF PHYSICAL ACTIVITY IN ADULTS WITH OSTEOARTHRITIS

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Physical activity is crucial to management of osteoarthritis (OA). Even small increases in activity can improve health and well-being. Getting social support for physical activity (e.g., encouragement, working together) from a partner is a robust predictor of physical activity, making it a potentially useful target for couples-focused interventions to promote OA management. Yet, social support involves complex, skill-based interpersonal interactions, so partner support for physical activity is most likely to be beneficial when both members of a couple have adequate support-related skills. We propose that benefits of partner support depend on the emotion regulation skills of both members of couples (i.e., ability to understand their own and each other's emotions and respond adaptively to discordance). In 169 couples that included a person with OA (PWOA) who was insufficiently active and wanted to increase activity and that person's partner (Partner), we investigated associations between couples' emotion clarity (i.e., their ability to understand their own emotions) and partner support received by PWOA after a couples-focused OA and physical activity class. We hypothesized that the association between PWOA emotion clarity and partner support would be moderated by partner emotion clarity. After controlling for PWOA gender, findings from hierarchical linear regression analyses partially supported our hypothesis: PWOA emotion clarity was positively associated with positive partner support for physical activity ($\beta = .25$, $p = .029$) when partners had better emotion clarity. However, when partners had poorer emotion clarity, PWOA emotion clarity was not associated with positive partner support ($\beta = -.10$, $p = .349$). PWOA emotion clarity was negatively associated with partner unsupportive behaviors (e.g., criticism, minimizing the importance of physical activity; $\beta = -.20$, $p = .010$), but this association was not moderated by partner emotion clarity ($\beta = .02$, $p = .842$). Findings suggest that efforts to leverage partner support to promote PWOA physical activity may be optimized by helping each couple member attain or improve emotion regulation skills such as emotion clarity.

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FORGIVENESS & GRATITUDE VS. SHAME DUE TO HETEROSEXISM & DEPRESSION IN OLDER GAY MEN AND LESBIANS

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Older lesbians and gay men (LG) are at greater risk for depression and shame due to heterosexism (SDH) because of a lifetime of victimization (Fredriksen-Goldsen et al., 2013). SDH is associated with negative mental health outcomes, is positively correlated with age and more prevalent in older LG that live alone (Meyer, 1995; Grossman, D'augelli & O'connell, 2002). However, forgiveness of others may help older LG combat depression and shame because forgiveness is empowering (Cass, 1984). According to Cass (1984) forgiveness of others is associated with self-acceptance and lower mental distress (Kim & Enright, 2014). Forgiveness of others is also associated with increased gratitude and greater life satisfaction (McCullough, Tsang & Emmons, 2004). Gratitude is associated with positive mental health (Snyder & McCullough, 2000) and lower depression (Musick & Wilson, 2003). Through a minority stress (Meyer, 2003) lens, we hypothesize that SDH is positively associated with depression, forgiveness of others and gratitude are negatively associated with depression and that SDH, forgiveness of others and gratitude account for a significant proportion of variance in depression. Participants (M_{age} = 58.99, *SD*= 6.48) were 50% gay men, 50% lesbians and self-identified as 68% European American, 17% African American and 15% other ethnicity. A hierarchical regression analysis (*F* [10, 89] = 7.12, $p < .001$) indicated that, in aadition to gratitude (β=-.34, $p < .001$) and forgiveness of others (β=-.22, $p < .05$), being single (β=.42, $p < .001$) was also a significant predictor, accounting for approximately 38% of the variance in depression (adjusted R^2=.38, $p < .001$).

Our findings suggest that depression is positively associated with SDH and negatively associated with gratitude and forgiveness of others. SDH is negatively associated with gratitude and forgiveness of others. Being single is negatively associated with forgiveness of others and positively associated with SDH. Because depression in older adults is associated with a decrease in physical, social and cognitive function and increased mortality (Blazer, 2003), therapeutic priorities should focus on the aspects of life to be thankful for, while encouraging older LG to use forgiveness as a coping strategy to counteract SDH and depression.

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GENDER DIFFERENCES: IMPACT OF VIOLENCE EXPOSURE ON DRUG USE AND HIV RISK BEHAVIORS AMONG YOUNG ADULT AFRICAN AMERICANS

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BACKGROUND: This presentation provides baseline preliminary analysis of data collected in a longitudinal study from 440 African Americans young adults ages 18-25 living in Washington DC. OBJECTIVE: One component of the study is designed to test the effects of social and environmental stressors such as exposure to community violence (including homicide) on alcohol, tobacco and other drug (ATOD) use and sexual risk behaviors that may render African American young adults more vulnerable to contracting HIV/AIDS**.** The objective here is to understand how exposure to violence impacts ATOD use and HIV risk behaviors, and to determine if the strengths of the associations vary based on violence type and gender. METHODS: We first conducted a factor analysis of the exposure to community violence scales to identify domains or types of violence. We then conducted a series of regression analyses to assess the various community violence types (e.g., witnessing a murder) on the dependent variables representing ATOD use, and knowledge and perception of HIV risk factors. RESULTS: Our data showed that as children, 33% of the participants reported seeing a parent get hit by another parent or a boyfriend/girlfriend, and 42% said someone close to them was murdered. As adults, 66% have seen other people using or selling drugs in real life, and 36% have actually been asked to get involved in aspects of selling or distributing illegal drug. Women and men differed in the types of violence to which they were likely to have been exposed. Women were significantly more likely to have been exposed to personal violence and attacks, which explained a mean of 75 percent of the total variance in lifetime ATOD use and age of first ATOD use for women. Men, in contrast, were more likely to have been direct victims of violence. Experiencing gun use or seeing violent deaths explained 51.6 percent of the total variance for men and 69 percent of the total variance in the model for male marijuana use. CONCLUSION: The results suggest that a large percentage of young African American adults are exposed to community violence, that community violence has a strong impact on ATOD use and HIV risks behaviors, and that African American women and men are exposed to different kind of community violence.

NOTE: "The views here do not necessarily represent the Bureau of Justice Statistics or the Department of Justice "

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GREEN SPACES AND GROCERY STORES: URBAN ENVIRONMENTAL DETERMINANTS OF WEIGHT AMONG MEXICAN-AMERICAN YOUTH

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Latino children have the highest rates of obesity of any racial/ethnic group in the U.S. (Ogden, Kit, Carrol, & Flegal, 2014), and are therefore at increased risk for the many negative sequelae of child obesity. Several studies have demonstrated that neighborhood factors, such as the distance to or density of grocery stores or other food outlets, as well as the distance to or density of green spaces and parks, are associated with obesity and related risk factors among Latino youth (e.g. Chaparro et al., 2014, Hsieh et al., 2014). Studies of these relations among Latino youth have suggested that these factors may be differentially impactful by gender (e.g., Hsieh et al., 2014). This study will examine these neighborhood factors and their impact on obesity among Mexican-origin immigrant youth, and whether these effects have differential significance for girls and boys.

Data were collected in the homes of 104 Mexican-origin immigrant families with a child aged 6-11 years (*M*=8.91, *SD*=1.34), in which at least one parent was a first-generation immigrant and whose household income fell at or below 150% of the poverty line. A sample of 89 participants with valid zBMI data was used for initial analyses. Parents provided child/family demographic information. Anthropometric measurements were used to calculate child zBMI based on CDC growth charts (Kuczmarski et al., 2002). Address data was used to plot the participants' home locations in a Geographic Information System (GIS). Data derived from the City of Chicago Public Data Portal were used to plot grocery store and park locations. ArcGIS was used to conduct geospatial analyses of participants' home locations and their relation to the stated neighborhood factors.

There was substantial variation in child zBMI (*M*=1.01, *SD*=1.07). Overall, 44.9% of children were normal weight, 14.6% were overweight, and 40.4% were obese, demonstrating a heavier sample than the overall US Hispanic child population (Ogden et al., 2014). A map of participants' locations and weight statuses revealed no geographic clustering of participants falling into the overweight or obese categories. Contrary to previous research, preliminary analyses revealed that proximity to the nearest park was negatively associated with zBMI, such that the greater distance between the participant's home and the nearest park, the lower the participant's zBMI (β=-.07, *p*=.01). However, there was no direct association between proximity to grocery stores and child weight. These preliminary findings suggest that home distance to parks and green spaces may have unique effects among this population.

Future analyses will confirm this finding by examining density of parks and grocery stores (rather than distance) and will explore the moderation effects of gender on these relations.

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HEALTH-RELATED SELF-EFFICACY: THE ROLE OF SOCIAL SUPPORT IN CANCER, DISABILITY, AND MULTIMORBIDITY

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Background: Self-efficacy consistently has been shown to play a role in health behavior, and social support is associated with health-related self-efficacy. Our study provides population estimates of disability, multimorbidity, social support, and health-related self-efficacy in adults ever diagnosed with cancer and adults with no cancer history, and examines the relationship between social support and health-related self-efficacy in the context of cancer, disability, and multimorbidity. **Methods:** Data were from the National Cancer Institute's cross-sectional Health Information National Trends Survey (HINTS) 4, Cycle 2 (2012-2013). Multivariable logistic regression models were employed to assess the probability that cancer, cancer plus the presence of any disability, cancer plus the presence of any comorbid condition, and social support are independently associated with two measures of health-related self-efficacy (confidence in ability to take care of own health, confidence in ability to get advice about cancer) in the overall sample (N=3,266) and the subsample of individuals ever diagnosed with cancer (N=422). **Results:** Those with a cancer diagnosis and cancer plus a comorbid condition were no more or less likely to be confident that they could take care of their health or get advice or information about cancer compared to those never diagnosed with cancer or those without cancer and multimorbidity (OR 0.93, CI 0.66-1.32 and OR 0.71, CI 0.49-1.04, respectively). In contrast, those who had been diagnosed with cancer and also experienced a disability were significantly less likely to report being confident in their ability to take care of their health (OR 0.30, CI 0.16-0.56). Social support was independently and significantly associated with health-related self-efficacy: those reporting that they had some type of social support (emotional, informational, instrumental) were more than twice as confident on both measures of health-related self-efficacy across all health conditions under

study. **Conclusion:** Social support may play an important role in bolstering health-related self-efficacy among cancer patients, particularly in the context of multimorbidity and disability.

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PRESSURE ULCER DEVELOPMENT AMONG ETHNICALLY DIVERSE, COMMUNITY DWELLING ADULTS WITH SPINAL CORD INJURY

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Background:

Medically serious pressure ulcers (MSPUs) are the most prevalent secondary complication for individuals with a spinal cord injury (SCI), compromising physical health and quality of life.

Purpose:

The objective of this study was to identify the life circumstances that lead to MSPU development while people with SCI participated in a lifestyle-based pressure ulcer prevention program, and to provide recommendations for future intervention design.

Methods:

This study entailed summarizing baseline co-morbidity data and a qualitative thematic analysis of 1800 treatment notes from the Pressure Ulcer Prevention Study (PUPS), a randomized controlled trial evaluating the efficacy and cost-effectiveness of a multifaceted lifestyle-based intervention in reducing incidence of MSPUs. Participants were ethnically and socio-economically diverse community-dwelling adults with SCI recruited from a major rehabilitation facility in Los Angeles County. Of the 83 participants enrolled into the 12-month PUPS intervention, 25 developed an MSPU during the course of the intervention and are the focus of this sub-study.

Results:

In total, 25 patients enrolled in the intervention developed 40 unique MSPUs. Analysis of data from eligible PUPS participants revealed themes that captured the range of circumstances that led to MSPU development during study participation. The six factors that describe MSPU development are as follows: 1) circumstances unrelated to the intervention, 2) lack of rudimentary knowledge pertaining to wound care, 3) equipment and supply issues, 4) co-morbidities, 5) non-adherence to prescribed bed rest, and 6) passivity.

Conclusions:

Many factors may contribute to the development of MSPUs in ethnically diverse adults with SCI. These conditions, especially when compounded by limited financial resources, seemed to have undermined the effectiveness of a multifaceted intervention program. Several programmatic modifications have potential for increasing the intervention's effectiveness for individuals similar to those in the sample we studied, including a focus on addressing equipment needs, and tailoring the intervention to the health literacy levels of participants.

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RELATIONSHIP BETWEEN CROSS-CULTURAL AND SEXUAL MINORITY SPECIFIC-CULTURAL COMPETENCE: A STUDY OF HEALTHCARE PROVIDERS

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Background: Cross-cultural competence (CCC) improves health care providers' (HCPs) skills for providing culturally competent healthcare to racial/ethnic minority patients. It is not known how CCC relates to HCPs' cultural competence in treating sexual minority patients (lesbian, gay, and bisexual patients; SMP). Given the pervasive influence of homophobia and heterosexism, associations between CCC and SMP specific cultural competence (SMPCC) may be moderated by HCPs' attitudes about SMP.

Methods: HCPs recruited from a Southeast region completed a self-report questionnaire including measures of CCC, SMP-specific cultural competency (SMPCC), and attitudes toward SMP. Descriptive statistics were calculated on each measure. Nested multivariable linear regression was calculated to test for associations between CCC and SMPCC. Attitudes toward SMP were tested as a moderator of this relationship. Analyses were adjusted for HCP age, number of years of practice, prior sexual minority training, and gender.

Results: Mean SMPCC scores ($\bar{x}$ = 2.47, SD = 0.54) indicated low SMPCC whereas mean CCC scores ($\bar{x}$ = 2.88, SD = 0.32) indicated average CCC. Mean attitudes toward SMP scores ($\bar{x}$ = 14.84, SD = 2.16) indicated neutral attitudes toward treating SMP. CCC was associated with SMPCC; for every unit increase in CCC, SMPCC increased 1.72 units (b = 1.72, t(17) = 4.27, p < .001). HCP attitudes about SMP moderated the association between CCC and SMPCC (b = 0.23, t(17) = 2.28, p = .04).

Discussion: While CCC and SMPCC were generally associated, HCPs' attitudes toward SMP moderated this association. At high CCC, HCPs evidenced high SMPCC regardless of attitudes toward SMP. At low CCC, HCPs with negative attitudes towards SMP had significantly lower

SMPCC than HCPs with positive attitudes toward SMP. It is unclear whether negative attitudes towards SMP exacerbate low CCC, leading to significantly lower SMPCC, or whether positive attitudes towards SMP make providers more competent in caring for these patients, even in the context of low CCC. Future research should examine HCPs' experiences with CCC and SMPCC, elements of CCC associated with SMP cultural competency, and how HCPs reconcile attitudes toward SMP with CCC and provision of SMPCC.

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ROLE OF RACIALIZED POLICE VIOLENCE IN REDUCING BLACKS' MENTAL HEALTH: #BADGEONBLACK CRIMES

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Research has shown that members of stigmatized groups experience chronically high levels of stress and poor health due to experiences of prejudice and discrimination. Experiencing racialized police violence and police (mis)conduct arguably raise stress levels among marginalized individuals. While these incidents usually directly involve only a few people, they are not isolated events. Social media and national media attention allows such events to affect communities across the country, not just those directly involved. As such, racialized policing events are potentially a major concern to public health, especially for those who are most similar to the victims. Using data from the Center for Disease Control's Behavioral Risk Factors Surveillance System, the current study examines how the Michael Brown and Eric Garner incidents related both to Black and White individuals' mental health. These events are of particular interest because they gave national attention to the Black Lives Matter activist movement, which has provided a platform to campaign against violence and racism targeting Black people. Results demonstrated that in the thirty days following the shooting of Michael Brown in Ferguson, MO, there were significant increases in the mean number of days Missouri residents aged 18-24 and 35-44 reported stress, depression, or overall poor mental health, compared to those polled outside the state, p=.009. Within Missouri, Black respondents also reported an increase in the mean number of days they experienced poor mental health, compared to Whites, p<.01. Similar trends emerged regarding the death of Eric Garner in Staten Island, NY. Thirty days following Garner's death, New York respondents aged 25-34 reported more stress, depression, or overall poor mental health compared to residents of other states, $p < .01$. Although not significant, similar trends were seen for respondents not living in New York. Mirroring the Michael Brown analyses, Black respondents in New York also demonstrated an increase in the mean number of reported days where they experienced poor mental health, compared to White New Yorkers, $p < .01$. Additional analyses examine trends for mental health one year following each event and limitations and implications are discussed.

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UNDERSTANDING THE SOCIAL DETERMINANTS OF HEALTH IN UNDERSERVED COMMUNITIES

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There is growing recognition of the strong correlation between social determinants and community health outcomes. Despite efforts to address these issues, Delawareans living in underserved communities continue to experience poor health outcomes. The *Healthy Neighborhoods Project,* a partnership between Westside Family Healthcare and the Delaware Center for Health Innovation, provides a formal approach for organizations to develop and implement strategies that improve community health. As part of the community planning process, a neighborhood-level community needs assessment was conducted in the urban areas of Wilmington and Claymont, Delaware to identify the strengths and resources available within specific neighborhoods. Guided by the precede-proceed model, this investigation helped communities prioritize their health targets and determine barriers that hinder meeting these targets. A survey was administered to residents in the communities to understand concerns from a local perspective, and a resource library was developed that identified all available community health promotion activities. Activities were divided into themes including maternal/child health, chronic disease prevention/management, and mental health/addiction. Programs were divided among these themes, with 255 locally available programs and an additional 56 that could be accessed statewide. The locations of each program were mapped using a Smartsheet feature that allows for visualization of programs by theme. Community health indicators for the Wilmington and Claymont neighborhood revealed poor health outcomes with an increased prevalence of obesity (29.7%), smoking (18.9%) and infant mortality (6.9 per 1,000 live births). Although there are many programs targeting the Wilmington and Claymont neighborhood, community health indicators are poor. It is important to understand how this community utilizes health promotion programs and determine current unmet needs. Understanding the social determinants of health from a unique community-based perspective will aid in developing health promotion programs to successfully meet the goals of this initiative.

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DO LONELINESS AND SELF-ESTEEM ALTER THE INFLUENCE OF SELF-AFFIRMATION ON STRESS RECOVERY?

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Recent research has illustrated that self-affirmation can ameliorate damaging physiological stress responses. What has gone unstudied, however, is the possibility that some individual differences interact with forms of affirmation to determine whether these benefits are present or absent. Since self affirmation often focuses on esteem enhancement and affirming on important social relationships, we examine the relationship between trait loneliness (an important determinant of social perceptions) and self-esteem in the context of different forms of affirmations and how these variables relate to physiological stress recovery. One hundred and ten undergraduates (59% female, Mage=19.4) were randomly assigned to one of three conditions: a non-social self-affirmation group (n=33) who wrote about an important personal value, a social self-affirmation group (n=42) who wrote about an important relationship, or a control group (n=35) who wrote about daily activities. Participants then completed two stress tasks (a speech and a math task). Blood pressure was recorded approximately every two minutes during the study. Trait self-esteem and loneliness were assessed via self-report at baseline. Within the non-social self-affirmation condition, both self-esteem, $b = .494$, $t(28) = 2.215$, $p = .035$, and loneliness, $b = -.627$, $t(28) = -2.963$, $p = .006$, significantly predicted recovery diastolic blood pressure after controlling for age, sex, and ethnicity. Within the social self-affirmation condition, only loneliness significantly predicted recovery diastolic blood pressure after controlling for age, sex, and ethnicity, $b = -.622$, $t(37) = -2.44$, $p = .02$. Within the control condition, neither self-esteem nor loneliness predicted recovery diastolic blood pressure. Neither self-esteem nor loneliness predicted recovery systolic blood pressure in any of the conditions. The different rates of diastolic blood pressure recovery indicate that the benefits derived from self-affirmation exercises may be contingent upon psychosocial variables. For example, individuals who report being more lonely may benefit from affirming the existence of strong social relationships, and individuals who report higher levels of self-esteem may benefit from affirming the existence of strong personal values. Future research incorporating self-affirmation manipulations should focus on

investigating similar individual differences because they may play an important role in how stress interventions work.

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EXPERIENCES AND IMPACTS OF STRESS RELATED TO PARENTING CHILDREN WITH LEARNING DISABILITIES: A QUALITATIVE ANALYSIS

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Background: There is growing literature on the increased levels of parental stress associated with caring for children with learning disabilities (LD). High levels of parental stress are associated with clinical depression, low levels of self-efficacy in caregiving, maladaptive parenting practices, decreased social support, and poor perceived health. This qualitative study explored the perspectives of parents of LD and experts working with these parents to identify 1) sources and impacts of parental stress, and 2) resources available to parents; this study also informed development of a targeted mind-body resiliency program for parents of children with LD.

Methods: From June-July 2016 individual and focus group in-depth interviews were conducted with 5 clinicians, 2 organizations and 4 focus groups of parents of children with LD (N=25). Content analyses were conducted using NVivo 11 software; reliability of kappa = 0.93 was achieved.

Results: Results from expert and parent interviews demonstrated high levels of parental stress associated with caring for children with learning disabilities. Sources of stress were primarily navigating the educational system to advocate for the child's needs and communicating with other parents, family members, and the child. Both parents and experts identified impacts of stress on emotional and physical exhaustion, strained familial relationships, and social isolation. Experts identified heightened guilt and concerns about stigma as main stressors, whereas parents additionally revealed being burdened by feeling misunderstood. Experts identified many informational resources available to parents, but most parents were not aware of these resources. Moreover, no skills-based psychosocial programs were revealed.

Conclusions: Parents caring for children with LD experience high levels of stress, particularly affecting relationships, leading to high levels of social isolation. Parents also utilize few emotional or informational support systems. A skills-based resiliency intervention could provide useful skills for parents to manage their stressors and provide support to their children and family.

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FINDINGS OF A MIND-BRAIN-BODY INTERACTION STUDY OF HYPERTENSION IN BLACK MEN

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Findings of a Mind-Brain-Body Interaction Study of hypertension in Black Men. PROBLEM Hypertension, a well characterized inflammatory illness response to the stress of racialized social and economic inequities, is a prevalent population health problem in Black men. AIM We assessed the interaction of mind, brain, and body factors with racial stress and blood pressure in community Black men. METHODS Over 3 study visits, 2-3 weeks apart, a diverse sample of right-handed, adult Black men (N = 20), age 24-64, completed surveys and were assessed for biomarkers of stress reactivity. Participants responded to self-report measures of daily racial micro-aggressions, civilian Post Traumatic Stress, resilience, positive thinking, daily life stress, depression, childhood stress, incarceration, days of poor physical-mental health, and interoception (self-awareness and self-observation of body sensations). At visit 2 Electroencephalography (EEG), using a 19-sensor cap, was used to produce 2 10-minute (eyes-open/ closed) maps of brain electrical activity (frequency and aptitude). Following the EEG, participants were assessed for heart rate variability (HRV) using a 3-lead computerized electrocardiogram (ECG) program and completed measures of positive and negative affect and daily spirituality. A brief third study visit was used to obtain a venous blood sample to test non-fasting plasma level of high sensitivity C-reactive protein (hs-CRP), body weight, and digital blood pressure readings. ANALYSES Structural equation modeling (SEM) is used to estimate parameters of racial social stress related to mind-brain-body interaction and hypertension. The brain score used in the model is the EEG estimate of Left-Right prefrontal cortex asymmetry (F3 minus F4) or greater left (social challenge) relative to right (social threat) reactivity to perceived social rejection. Body variables in the model are the RMSSD (Square Root of the Mean Squared Difference between Adjacent Normal to Normal Beat Intervals) estimate of HRV and plasma hs-CRP as an estimate of autonomic nervous system interaction linking cognitive perception and blood pressure. RESULTS Our results present a SEM test of mind-brain-body x environment interaction of stress related hypertension in adult Black men. DISCUSSION Findings are discussed relative to their contributions to symptom science and neurofeedback training in stress self-management for Black men.

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HAIR BIOMARKERS AMONG MIDDLE-SCHOOL CHILDREN IN RELATION TO SCHOOL STRESS AND ASTHMA

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Background: Children and adolescents with chronic exposure to disruptive events have prolonged physiological and health consequences. Given the extensive time spent at school, it is possible that school social and physical environments strongly impact students through the effects of stressors such as school-based conflict, discrimination and violence, as well as academic and social demands. There has been little research examining the role of chronic school stress and asthma status on hair biomarkers among low SES children and adolescents.

Methods: In this feasibility study, 52 children were recruited from a large, low socioeconomic status, majority-Latino middle school. On two study visits, participants completed a self-report questionnaire including perceived chronic school stressors (CASE), asthma outcomes, and demographics and provided hair samples to test for cortisol and dehydroepiandrosterone (DHEA). We examined the effects of predictors on cortisol and DHEA. A separate linear mixed model was run on outcome variables for each predictor of interest. Each model included the given predictor and visit as fixed effects and participant as a random intercept.

Results: High overall school stress was reported, with slightly increased stress during the second visit (P=0.103). On the second visit, which corresponded to final school examinations, average cortisol (marginal mean 4.0 vs. 6.5, $P < 0.001$), but not DHEA (marginal mean 14.5 vs. 15.7, P=0.316), was significantly higher. Neither overall stress, nor any of ten domain-specific stress questions were correlated with higher cortisol or DHEA levels. Self-reported asthma status was also not correlated. Females showed significantly lower cortisol (4.4 vs. 6.4, P=0.049) but not DHEA (14.9 vs. 15.3, P=0.858) than males.

Discussion: Middle-schoolers reported high perceived school stress, but questionnaire responses did not correlate with hair biomarker measures. Chronic stress may induce hyporesponsiveness of the hypothalamic-pituitary adrenal axis and result in a blunted cortisol response. This preliminary study demonstrated feasibility of collecting hair biomarkers in a school setting and lower reported levels among females but found no correlation with self-

reported measures. Future research can examine these associations in larger samples among asthmatic children, to better understand mechanisms mediating chronic stress and asthma relationships.

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SELF-ENHANCEMENT AND EMOTIONAL EXPERIENCE AMONG PATIENTS WITH THALASSEMIA AND MULTIPLE SCLEROSIS

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Self–enhancement (SE) is the tendency toward overly optimistic or unrealistic self-serving biases. It has been shown to be a useful disposition under circumstances of extreme diversity with different populations such as patients with chronic illnesses (e.g., HIV; Stein et al., 2011; cancer; Zsuzsanna et al., 2012). While SEers show resilience and good adjustment in managing threatening events, SE has potential social costs too (Bonnano et al., 2002). For example, SEers have difficulty forming or maintaining friendships (Fraley & Bonanno, 2004; Yan & Bonanno, 2015), which may conflict or undermine the benefits. Although there is evidence of regulatory benefits to SE following threatening situations, little is known about the beneficial effects of SE on different emotion response dimensions (especially emotion facial behavior). This study examines emotional responses in a sample of chronically ill adults (Thalassemic/MS patients). Thalassemia: an inherited blood disorder causing severe anemia that may lead to frequent complications due to transfusion-transmitted infections and iron overload (Galanello & Origa, 2010). Multiple Sclerosis (MS): a kind of autoimmune disease—usually diagnosed between 20-50—, which involves abnormal response of the body's immune system against the central nervous system leading to unpredictable exacerbations (Goretti et al., 2010).Participants were 27 adults with transfusion-dependent thalassemia, 41 adults with MS, 73% female. Mean age= 35, SD= 8.86 years. They were recruited from medical centers in the Northeastern USA.They completed questionnaires and were interviewed in private in the medical exam room or in the lab. Multiple regression analyses, controlling for psychological distress, age, and disease burden were conducted to examine whether SE could significantly predict positive or negative affect or facial behavior and how the nature of the relationship between SE and emotion changed as a function of the type of illness. Results showed that higher SE was associated with lower levels of psychological distress, r=-0.38, p=.001 and higher reported positive affect, r=0.47, p < .001 across both samples. There was an interaction of SE with the patient group when predicting negative and positive facial emotion, β=.32, p=.04, β=-.39, p=.004, respectively. Moreover, there was an interaction of SE with the patient group when predicting close informant's social attributes and the availability of the close informant to the participant, β=.27, p=.05, β=.43, p=.002, respectively. These results indicate the importance of illness history in the development and influence of self-enhancing biases and show that SE has different impacts on the regulatory responses of emotion.

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B280 6:00 PM-7:00 PM

THE ACCURACY OF BRIEF STRESS MEASURES IN PREDICTING ILLNESS

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Medical and psychological theories indicate stress to be an etiological factor in a variety of illnesses; therefore, stress measures hold promise for the prediction of imminent pathology. However, most stress measures are too lengthy to be used for rapid diagnosis, and too cumbersome to be imposed on distressed individuals. The present study examined two brief measures, the popular 10-item Perceived Stress Scale (PSS-10) and the recently published 10-item Stress Overload Scale-Short (SOS-S), in terms of their accuracy in identifying symptomatic persons. A demographically diverse sample (*n* = 249) was drawn from two different community sites, which were purposefully selected to yield a wide range of stress levels. Survey packets included the PSS-10, the SOS-S, and the Patient Health Questionnaire (PHQ-15), which assesses somatic symptoms common to physical and psychiatric disorders, in counterbalanced orders. Participants completed these packets on site, with full anonymity of response. Partial correlations showed PSS-10 and SOS-S totals to inter-correlate, and to correlate significantly with PHQ-15 symptoms. However, a test comparing the magnitude of these correlations revealed the SOS-S to be a significantly stronger predictor of PHQ-15 scores than the PSS-10. Next, categories were constructed from stress scores to divide participants into High Risk vs. Low Risk groups for each measure. ANOVA tests showed significant differences in the number of symptoms reported across risk categories for the PSS-10 and for the SOS-S. In short, both total scores and categorical scores, on both short stress measures, worked to differentiate highly symptomatic from other participants. It was concluded that brief stress scales, which are well suited to urgent situations and/or distressed victims, are indeed viable diagnostic tools for assessing the risk for stress sequelae. Moreover, having been tested in a general population at community venues, the PSS-10 and especially the SOS-S appear to be good choices for use across a broad demographic spectrum and a variety of contexts.

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THE ROLES OF STRESS EATING AND MINDFULNESS IN THE RELATIONSHIP BETWEEN RECENT LIFE STRESSORS AND INDICATORS OF OBESITY RISK

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Research has established a link between stress and increased risk for obesity. This study examined whether stress eating mediates the relationship between recent life stressors and indicators of obesity risk, including body mass index (BMI) and waist circumference. We also explored whether mindfulness moderates the relationship between recent life stressors and stress eating. Cross-sectional data were examined from 4963 adults in the Midlife in the U.S. study (MIDUS II). Hierarchical regression analyses indicated that recent life stressors were associated with higher BMI and waist circumference, even after controlling for age, race, gender, education level, and annual household income. Using a nonparametric bootstrapping approach, we found that stress eating partially mediated the association between recent life stressors and BMI/waist circumference. Both recent life stressors and mindfulness were independently associated with stress eating; however, their interaction was not significant. These results provide further evidence of the contributions of psychosocial factors to obesity risk and suggest that stress reduction and mindful eating techniques might be beneficial components to obesity-related interventions.

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A COMPARISON OF TRAUMATIZED AND NON-TRAUMATIZED INJURED PATIENTS WHO SCREENED POSITIVE FOR HEAVY DRINKING

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Health care settings are regularly accessed by non-treatment-seeking heavy drinkers. Thus, Screening, Brief Intervention, and Referral to Treatment (SBIRT) has been implemented as a public health approach to address the unmet need for alcohol treatment. The purpose of the current study was to examine potential differences between two groups of heavy drinking trauma patients: those who experienced their injury as traumatic and those who did not experience their injury as traumatic.

Exploratory analyses were conducted using baseline data from a multisite randomized controlled trial of brief intervention to reduce drinking in the trauma care setting. Participants were 596 injured patients from three urban Level I trauma centers who screened positive for heavy drinking. Participants completed questionnaires that assessed sociodemographics, injury history, and alcohol-related variables. Univariate analyses were conducted to assess potential differences between traumatized and non-traumatized patients. Statistical differences between the groups included gender ($\chi^2[1] = 7.55$, $p < .01$), ethnicity ($\chi^2[3] = 27.95$, $p < .001$), intent of injury ($\chi^2[1] = 8.19$, $p < .01$), and readiness to change alcohol use ($\chi^2[2] = 7.91$, $p < .05$). A multivariate logistic regression (0 = non-traumatized; 1 = traumatized) assessed potential predictors of injury-related trauma. Correlates that met the criteria of $p < .25$ in the univariate analyses were simultaneously entered into a logistic regression model. Gender ($OR = 0.46$, $\beta = -0.78$, $p < .01$ [reference group was female]) and identification as African American and Hispanic ($OR = 2.70$, $\beta = .99$, $p < .001$ and $OR = 3.14$, $\beta = 1.14$, $p < .001$, respectively) were statistical predictors in the model.

The results of the current study suggest that women and ethnic minorities were more likely to experience their injuries as traumatic. Admission to a trauma care center provides an opportunistic moment for alcohol intervention, and those who experience an injury as traumatic may be more receptive to healthy behavior change. Understanding the characteristics of traumatized and non-traumatized patients provides insight into potential avenues for tailoring intervention.

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CHARACTERISTICS OF COMORBID MARIJUANA USE AND INTERNET GAMING DISORDER

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The current study explored the association between Internet Gaming Disorder (IGD) and comorbid marijuana use. Internet gaming addictions are highly prevalent in adolescents, affecting about 3% of persons under age 20 (Muller at al., 2015, Ferguson, Coulson, & Barnett, 2011). Similar etiological pathways have been found between IGD and substance use addictions, with both disorders linked to negative psychosocial consequences (Van Rooij et al., 2014) and co-occurrence (Castro-Calvo et al., 2016). In particular, IGD appears to co-occur with substances that are expand the user’s sensory experience, like marijuana, and it has been posited that behavioral addictions like IGD activate cannabinoid receptors in the brain (Lopez-Moreno et al., 2008) and comorbid use has been linked to IGD severity (Van Rooij et al., 2014). However, few studies have provided more analysis of marijuana use among individuals with IGD. The present study sought to explore two primary hypotheses concerning Internet gaming and marijuana use: i) individuals who use marijuana while playing internet games would show more IGD symptoms than those who abstained while gaming and ii) individuals who reported using marijuana to enhance gameplay would have an increased severity of IGD symptoms related to mood modification. Concurrent cannabis and video game users (*n* = 68, **63**% male) were recruited from Amazon's Mechanical Turk as part of a larger study related to Internet gaming and substance use. Participants completed a survey that included questionnaires regarding domains of IGD, substance use, and psychological functioning. As expected, individuals with simultaneous use had significantly greater IGD scores relative to conjoint users (t (61) = -2.94, p < .01). Overall frequency of marijuana use and using marijuana to enhance gaming experience failed to predict IGD (F(1, 61) = 2.35, p = 0.13 and F(1, 61) = 2.59, p = 0.11, respectively). This study provides preliminary evidence that the link between marijuana use and IGD can be differentially affected by how and when individuals administer marijuana. The present study has implications for future treatment of comorbid behavioral and substance use addictions, as when and how individuals are using both can help inform evidence-based treatment.

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B285 6:00 PM-7:00 PM

EPIDEMIOLOGY OF SUBSTANCE USE AMONG YOUNG AFRICAN AMERICAN WOMEN IN NEW ORLEANS, LOUISIANA

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Background: While studies exist describing differences in substance use across racial/ethnic and gender groups, patterns of substance use and for correlates of substance use for late adolescent African American women are not well understood.

Purpose: Few studies have examined the epidemiology of substance use among young African American women, including potential correlates of substance use patterns within this group.

Methods: Young African American women, ages 18-19 yrs, were recruited from a community college, historically black universities, and community sites to participate in a randomized controlled trial for online teen pregnancy prevention. At baseline participants reported lifetime and past three-month alcohol, marijuana and other illicit drug use. Respondents also reported indicators of health and well-being, characteristics of sexual partnerships, and family background characteristics. Latent class analysis (LCA) and multivariable multinomial logistic regression determined the association between potential risk factors and latent classes of substance use.

Results: Of 459 participants, 60% reported drinking alcohol, 24% reported binge drinking, and 32% reported marijuana use in the past three months. LCA results suggested four latent typologies of substance use: recent abstainers (31%), recent drinkers (30%), marijuana users (8%), and polysubstance users (31%). In multivariable analyses, factors found to be significantly associated with increased risk of substance use was higher maternal education, early sexual initiation, and having a recent male sexual partner.

Conclusions: A substantial proportion of late African American adolescents exhibited one or more recent substance use behaviors, with nearly a third evidencing use of two or more substances. Future analyses should examine how substance use behaviors change over time, as well as the consequences of longitudinal patterns of use for this group.

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EXAMINING CHARACTERISTICS AND CLINICAL TREATMENT OF SMOKERS IN A SUBSTANCE USE DISORDER TREATMENT CLINIC

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Individuals with a substance use disorder (SUD) diagnosis are more than twice as likely to smoke cigarettes as the general population. Emerging research has suggested that treating a substance use disorder simultaneously with tobacco use leads to a higher rate of treatment success for both substances. Despite this, substance use treatment protocols tend not to focus on tobacco use; in fact, traditional substance use treatments discourage patients from attempting to quit smoking. One rationale is that patients may not be motivated to quit smoking. In the current study, data from Veterans enrolled in outpatient treatment for a SUD were examined to assess for general characteristics of smokers as compared to non-smokers as well as to examine motivation to quit smoking. Baseline (i.e., pre-treatment) data from 278 Veterans were used. Charts of smokers in the SUD clinic (SUDC) were reviewed to assess how smoking is handled by SUDC providers, and if smokers to attempt cessation. Of 278, 163 SUDC patients reported that they currently smoke cigarettes (M = 16.3 cigarettes per day, SD = 11.1). Smokers in the clinic reported greater general impairment than nonsmokers, $F(1,248)=10.2$, $p=.002$, as well as greater specific impairment: Physical Problems, $F(1,258)=14.8$, $p=.000$; Interpersonal Problems, $F(1,262)=6.7$, $p=.010$; Intrapersonal Problems, $F(1,260)=7.2$, $p=.008$, and Social Responsibility, $F(1,262)=16.5$, $p=.000$. Smokers in the sample were marginally more anxious than their non-smoking counterparts as measured by the GAD=7, F(1,254)=3.8, p=.053, though they were not significantly more depressed (p=0.193). On a 1-10 scale, smokers reported moderate levels of importance (M=5.4, SD=3.1), readiness (M=5.6, SD=3.2), and confidence (M=5.0, SD=3.0) regarding quitting smoking. Review of smokers' medical records reveal that while SUDC providers assess tobacco use at intake (90%) and offer treatment (86.5%), a substantially small portion of smokers attempt cessation (41.1%) while enrolled in SUDC. No patients enrolled in smoking-specific treatment in SUDC with a behavioral health provider, though 78 patients did obtain nicotine replacement or another smoking cessation medication (41% were prescribed by a SUDC provider).These preliminary analyses demonstrate that, contrary to the belief that treatment-seeking

substance users are not motivated to quit smoking, Veterans were at least moderately ready to quit smoking while they were enrolled in substance use treatment though a majority do not attempt to quit smoking. Further, there is evidence that those who are smokers have greater impairment caused by substance use, suggesting that this subgroup is of particular high need. Specific treatment recommendations will be discussed, including how behavioral health providers in SUD clinics may be better able to capitalize on patients' moderate motivation to quit at intake.

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INITIATION INTO INJECTION DRUG USE AND CROSS-BORDER MIGRATION AMONG PEOPLE WHO INJECT DRUGS IN TIJUANA, MEXICO

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Background: People who inject drugs (PWID) play a key role in facilitating the entry of others into this behavior. In Tijuana, Mexico, recent findings suggest that the initiating of others into injecting is associated with reporting short-term residence (i.e., 1-5 years) in the United States. However, the nature of the association between cross-border migration and injection initiation of others and own remains unexplored. **Methods:** *Preventing Injecting by Modifying Existing Responses* (PRIMER, NIDA DP2-DA040256-01) is a mixed methods multi-site study assessing social and structural factors associated with PWID initiating others into drug injection. For the present qualitative study, PWID enrolled since 2011 in a prospective cohort study in Tijuana (*Proyecto El Cuete IV*, NIDA R01-DA019829)were purposively sampled for the qualitative component of PRIMER according to sociodemographic factors and drug use behaviors indicating their initiation of others into injection drug use. Semi-structured interviews were performed during June- August 2016, which explored the context and characteristic of individuals' own injection initiation events as well as their initiating others into drug injection. Thematic analysis was used to develop recurring and significant categories in the data. **Results:** Twenty-one participants were interviewed (women=8, men=13) with a median age of 40 years (Interquartile Range: 36 – 46). Migration between Mexico and the United States was core in participant narratives on their own and others injection initiation. The majority of participants that lived in the United States (66.7%) reported that they had initiated their injection drug use there. Migration from Mexico to the United States was linked to participants' own initiation into injecting, which seems to be related to the normalization of injection in social networks as well as underlying social and economic alienation and marginalization. Additionally, participants reported on a 'moral code' whereby the initiation of others into injecting was highly stigmatized. However, participants also reported that increases in economic, social and physical insecurity after returning to live in Mexico made them more susceptible to initiating others. **Conclusion:** This is the first study to qualitatively investigate the initiation of injection drug use in Mexico. Migration stressors appear key to individuals' own initiation and their initiation of others. Further research is needed to analyze the social normalization and expansion of injection drug use among migrant populations in

the Mexico-U.S. border in order to address the unacceptably high burden of injection-related harms among this vulnerable population. The impact of migration should be considered within binational injection prevention and social programs.

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MEDICAL MARIJUANA DISPENSARY ROLL-OUT: BASELINE MEASURES OF MARIJUANA USE AMONG ADULTS AND YOUTH IN HAWAII FROM 2010-2014

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BACKGROUND: Medical marijuana has been legal in Hawaii since 2000. Dispensaries became legal in 2015, were permitted as of July 2016, and are expected to open in December 2016. With rates of prescription drug use without a prescription stable in Hawaii, monitoring and prevention of non-medical marijuana use should be a focus among these changes in access.

PURPOSE: To provide baseline marijuana use among adults and youth in Hawaii prior to the launch of dispensaries.

METHODS: The National Survey on Drug Use and Health data regarding adult and youth marijuana use for years 2010-2014 was examined. Rates for past year and past month marijuana use are presented for youth (12–17), young adult (18–25), and adult (26+).

RESULTS: Youth marijuana use remained stable from 2010-2014. Past year use rates were: 2010–2011: 14.95% [95%CI: 12.54–17.73], 2011–2012: 16.6% [95%CI: 14.04–19.54], 2012–2013: 15.33% [95%CI: 12.82–18.23], 2013–2014: 13.9% [95%CI: 11.61–16.57]. Past month use rates were: 2010–2011: 8.29% [95%CI: 6.54–10.46], 2011–2012: 9.69% [95%CI: 7.74–12.06], 2012–2013: 9.55% [95%CI: 7.69–11.81], 2013–2014: 7.65% [95%CI: 6.04–9.65].

Young adult marijuana use remained stable from 2010-2014. Past year use rates were: 2010–2011: 29.53% [95%CI: 25.87–33.47], 2011–2012: 31.51% [95%CI: 28.05–35.19], 2012–2013: 31.27% [95%CI: 27.69–35.09], 2013–2014: 27.32% [95%CI: 23.75–31.2]. Past month use rates were: 2010–2011: 17.58% [95%CI: 14.65–20.95], 2011–2012: 18.15% [95%CI: 15.42–21.25], 2012–2013: 18.84% [95%CI: 15.94–22.13], 2013–2014: 15.87% [95%CI: 13.07–19.14].

Adult marijuana use remained stable from 2010–2014. Past year use rates were: 2010–2011: 8.79% [95%CI: 7–10.97], 2011–2012: 10.14% [95%CI: 8.17–12.53], 2012–2013: 10.35% [95%CI: 8.28–12.87], 2013–2014: 10.13% [95%CI: 8.18–12.48]. Past month use rates were: 2010–2011: 5.13% [95%CI: 3.86–6.8], 2011–2012: 5.69% [95%CI: 4.31–7.48], 2012–2013: 6.91% [95%CI: 5.28–8.99], 2013–2014: 6.68% [95%CI: 5.12–8.66].

CONCLUSIONS: The data suggests a fairly low level of use in youth and adults but higher use in young adults. Relatedly, other data indicates young adults have the lowest perception of great risk about marijuana use. With recreational marijuana use illegal in Hawaii and change in access to come, it is vital to monitor marijuana use.

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MEN'S AND WOMEN'S PERCEPTIONS OF TREATMENT OUTCOMES IN A CLINICAL TRIAL OF INJECTABLE OPIOIDS FOR SEVERE OPIOID USE DISORDER

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Background: Studies of opioid use disorder and clinical trials of treatments for severe opioid use disorder consistently suggest that treatment outcomes rarely differ by gender. The present study aims to explore whether men and women have differing perceptions of treatment effectiveness.

Methods: Baseline characteristics and six-month treatment outcomes were analysed by gender. Participants were asked to share their reasons for perceived treatment effectiveness. A thematic analysis was carried out using an inductive approach and themes and relationships across participant comments were developed using the strategy of constant comparison.

Results: Women in treatment presented with a number of vulnerabilities as compared to men. These included higher rates of HIV (22.6% vs. 11.4%), having ever engaged in sex work (83.9 % vs. 22.1%), and significantly worse health. After six months of treatment, the only outcome that differed by gender was physical health, with men having a significantly better score. Themes surrounding perceptions of treatment effectiveness were similar for men and women, the most common of which were improved health and improved quality of life, however men's and women's descriptions surrounding these themes differed.

Conclusions: The collection of participant perceptions of effectiveness provides an opportunity for understanding the patient experience that cannot be revealed with the use of standardized tools and researcher defined health measures. The systematic use of information collected from participants' perceptions of effectiveness has strong clinical significance, and can work to ensure clinical practice is designed in a way that can effectively meet individual patient needs.

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SOCIAL DESIRABILITY BIAS AND SELF-REPORTS OF MENTAL HEALTH, DRUG USE, AND HEALTH SERVICE UTILIZATION AMONG SUBSTANCE USERS.

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Social desirable response bias may lead to inaccurate self-reports and erroneous study conclusions. We examined the relationship between social desirability bias and self-reports of substance use, mental health, and health service utilization among a community sample of 591 inner-city substance users who were enrolled in a behavioral change intervention to address HIV risk behaviors and depressive symptoms. The study was conducted Baltimore, Maryland from 2009-2013. Modified items from the Marlowe-Crowne Social Desirability Scale were included in the survey, which was conducted face-to-face and using Audio Computer Self Administering Interview (ACASI) methods. Less than half (44%) the participants were female, 54% had less than 12 years of education, 61% reported main partners. The median age was 45 and 95% reported that they had been unemployed within the last six months and 24% homeless. There were highly statistically significant differences in levels of social desirability response bias by levels of depressive symptoms, drug user stigma, subjective health status, recent drug use, and size of social networks. There were no associations between health service utilization measures and social desirability bias. In multiple logistic regression models, even after including the CES-D, as a measure of depressive symptomology, social desirability bias was associated with drug use stigma, drug use duration, and network size. We also found that social desirability bias was not associated with enrollment in prior research studies, indicating that "professional subjects" do not appear to provide more socially desirable responses. These findings suggest that social desirability bias is associated with key health measures. These associations are not primarily due to depressive symptoms and research methods are needed to reduce social desirability bias. Such methods may include the wording and prefacing of questions, clearly defining the role of "study participant", and assessing and addressing motivations for socially desirable responses.

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YOUNG ADULTS RIDING WITH A MARIJUANA-, ALCOHOL-, AND DRUG-IMPAIRED DRIVER

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Purpose: Examine the prevalence and correlates of young adults riding with an impaired driver (RWI) due to marijuana (MJ), alcohol (ALC), or illicit drug (ID).

Methods: Data were from the NEXT Generation Health Study waves 4 and 5 (W4&5 [2013-14], 1 and 2 years after high school, with N=1979 at W4 and N=2142 at W5). W5 data was specified for ALC-, MJ-, and ID-related RWI in a vehicle that was driven by a young or older adult. Multinomial logistic regressions estimated the association of W5 substance-specific RWI with W5 binge drinking, MJ use, and environmental status variables (i.e., school-, residence-, and work- status). Overall W4 RWI and demographic variables were included.

Results: The prevalence of W5 RWI was 33% (n=694). Specifically, 17% of participants reported riding with a young ALC-impaired driver and 4% with an older ALC-impaired driver; 21% reported riding with a young MJ-impaired driver and 2% with an older MJ-impaired driver; and 5% reported riding with a young ID-impaired driver and 0.7% with an older ID-impaired driver. The adjusted models included residence and work status separately so two adjusted odds ratios [OR] were reported. W4 RWI was associated with W5 ALC- (OR=2.6-4.3, p < .05).

Conclusion: The results show that RWI is prevalent in young adults two years after high school, with 33% of participants reporting RWI at least once in the past year. MJ-related RWI prevalence was greater than ALC-related prevalence, and occurred more often with an impaired young driver than with an impaired older driver. MJ use was associated with all ALC-, MJ-, and ID-related RWI. The findings support the reduction of early RWI, substance use, and heavy drinking as strategies to reduce impaired driving in young adults.

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AURORA SMOKING AND HEALTH SURVEY: A COMMUNITY-BASED SURVEY ON STRESS, COPING AND SMOKING STATUS

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SIGNIFICANCE: The community-academic partnership project was designed to assess smoking patterns, coping skills, knowledge, motivation to quit smoking and barriers to cessation including chronic life stressors in a low socioeconomic status (SES) population. We hypothesized that stress levels would be similar among smokers and non-smokers and coping self-efficacy would be associated with smoking status. METHODS: The cross sectional survey respondents were English and Spanish speaking adult smokers and non-smokers recruited through recreation centers, a local food bank program, multi-unit housing complexes and a public library in the targeted neighborhood. The survey instrument included validated measures and a stress instrument of 6 domains comprised of life stressors, stress related to work, relationships, neighborhood, unfair treatment and finances. Each stress domain score was standardized into a Z-score distribution. Coping was measured using the Coping Self-Efficacy instrument. RESULTS: A total of 405 individuals were surveyed including 295 current smokers (72.8%) and 110 non-smokers (27.2%). Respondents were 48% male, 42.6% African American and 31.4% Hispanic and 45.8% were single and only 11% of the population completed college or higher. Three fourths of the respondents were not working. The majority had some type of health insurance (79.4%) with most reporting Medicaid as their insurance (72.4%). Most respondents smoked cigarettes (95.6%) compared to cigars (8.8%). A third of respondents reported smoking their first cigarette within five minutes of waking up (35.4%). Regarding past quit attempts, respondents who did use evidenced based treatments reported NRT (26.6%), and QuitLine (18.3%) use. Those more likely to be smokers were men with less than college education and non-Latinos. Those experiencing higher levels of stress due to discrimination were at higher odds (aOR 1.82, 95% CI 1.25-2.67) of being a smoker than those with lower stress levels after controlling for demographic and other stress variables. Higher levels of stress across the 6 stress domains were associated with smoking (aOR 1.37 95% CI 1.07-1.76) even after adjustment. Those with higher levels of coping self-efficacy were more likely to be non-smokers (OR 0.99 95% CI 0.985-0.996). CONCLUSION: Different types of stressors and the coping skills to handle them are an under-researched area

for smoking cessation interventions. Assisting the low SES smoker to quit and adhere amidst chronic stressors will be essential to further reduce smoking prevalence.

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CIGARETTE SMOKING AND ELECTRONIC CIGARETTE VAPING PATTERNS AS A FUNCTION OF E-CIGARETTE FLAVORINGS

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Objective: The present study examined the influence of flavoring on the smoking and vaping behavior of cigarette smokers asked to adopt e-cigarettes for a period of six weeks.

Methods: Subjects were 88 current male and female smokers with no intention to stop smoking, but who agreed to substitute e-cigarettes for their current cigarettes. Upon intake, subjects were administered tests of taste and smell for e-cigarettes flavored with tobacco, menthol, cherry, and chocolate, and were given a refillable e-cigarette of their preferred flavor or a control flavor. Subjects monitored their daily cigarette smoking for 1 week, and were then asked to adopt e-cigarettes for a period of 6 weeks. Subjects completed daily logs of cigarette and e-cigarette use and were followed each week.

Results: Analyses over days indicated that, during the 6-week e-cigarette period, cigarette smoking rates dropped from an average of about 16 cigarettes/day to about 7/day. E-cigarette flavor had a significant effect on smoking, such that the largest drop in cigarette smoking occurred among those assigned menthol e-cigarettes, and the smallest drop in smoking occurred among those assigned chocolate and cherry flavors. These results were confirmed by weekly CO readings. E-cigarette vaping rates also differed significantly by flavor assigned, with the highest vaping rates for tobacco and cherry flavored e-cigarettes, and the lowest rates for those assigned to chocolate. These results persisted regardless of preferred flavor, whether the subject was a menthol smoker, or the level of nicotine in the e-cigarette.

Conclusions: The findings suggest that adoption of e-cigarettes in smokers may influence smoking rates, and that e-cigarette flavorings can moderate this effect. E-cigarette vaping rates are also influenced by flavorings. These findings may have implications for the utility of e-cigarettes as a nicotine replacement device, and for the regulation of flavorings in e-cigarettes for harm reduction.

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ELECTRONIC NICOTINE DELIVERY SYSTEM (ENDS) USE DURING SMOKING CESSATION: A QUALITATIVE STUDY OF 40 OKLAHOMA QUITLINE CALLERS

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Objectives: Approximately ten percent (40,000 each year) of U.S. quitline enrollees who smoke cigarettes report current use of Electronic Nicotine Delivery Systems (ENDS); however, little is known about callers' ENDS use. Our aim was to describe why and how quitline callers use ENDS, their beliefs about ENDS, and the impact of ENDS use on callers' quit processes and use of FDA-approved cessation medications.

Design: Qualitative interviews conducted 1-month post-registration. Interviews were recorded, transcribed, double-coded, and analyzed to identify themes.

Setting: Oklahoma Tobacco Helpline

Participants: 40 callers aged ≥18 who were seeking help to quit smoking, were using ENDS at registration, and completed ≥1 program calls.

Results: At 1-month post-registration interview, 80% of callers had smoked cigarettes in the last 7 days, almost two-thirds were using ENDS, and half were using cessation medications. Nearly all believed ENDS helped them quit or cut down on smoking; however, participants were split on whether they would recommend cessation medications, ENDS, or both together for quitting. Confusion and misinformation about potential harms of ENDS and cessation medications were reported. Participants reported using ENDS in potentially adaptive ways (e.g., using ENDS to cut down and NRT to quit, and stepping down nicotine in ENDS to wean off ENDS after quitting) and maladaptive ways (e.g., frequent automatic ENDS use, using ENDS in situations they didn't previously smoke, cutting down on smoking using ENDS without a schedule or plan to quit), which could impact the likelihood of quitting smoking or continuing ENDS use.

Conclusions: These qualitative findings suggest quitline callers who use ENDS experience confusion and misinformation about ENDS and FDA-approved cessation medications. Callers also use ENDS in ways that may not facilitate quitting smoking. Opportunities exist for quitlines to educate ENDS users and help them create a coordinated plan most likely to result in completely quitting combustible tobacco.

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IDENTIFYING PREDICTORS OF SMOKING IN THE SMOKEFREE.GOV ADULT TEXT-MESSAGING SMOKING CESSATION PROGRAM

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Background: Text-based smoking cessation programs are effective, however, many users fail to initiate their quit attempt or quickly relapse. A more thorough understanding of predictors of early failures can help inform program changes targeted to improving treatment outcomes. **Methods**: Items were included on the program registration page of a cessation text program to assess: time to first cigarette, cigarette cravings, frequency of smoking reminders, frequency around smokers, external and internal motivation to quit, confidence in the quit attempt, and long-term intention to be smoke free. Associations between each characteristic and smoking status were evaluated using logistic regression modeling (n=6226). Two outcomes were considered: smoking on the quit day (yes/no) and smoking one week into the quit attempt (yes/no). Smoking on the quit day was included in all models of smoking at one-week. **Results**: Three user characteristics were associated with smoking on the quit day. Users who smoked within five minutes, or between six and 30 minutes of waking up were 1.63 and 1.54 times more likely to smoke on their quit day, respectively compared to users who smoked after more than 30 minutes (95% CIs: 1.20–2.21, 1.14–2.10). Compared to users who had low confidence in their quit attempt, users with high confidence or some confidence were 50% and 40% less likely to smoke on their quit day, respectively (ORs: 0.50, 0.60; 95%CIs: 0.33-0.75, 0.40-0.89). Users who had low long-term smoke free intention were 1.79 times more likely to smoke on their quit day compared to those with high long-term intention (95%CI: 1.11-2.88). Two user characteristics were associated with smoking at one-week. Users who were often around smokers were 2.04 times more likely to smoke at one-week compared to users who were infrequently around smokers (95%CI: 1.36-3.09). Users who reported high external motivation to quit smoking were 1.52 times more likely to smoke at one-week compared to users with low external motivation to quit (95%CI: 1.04-2.23). **Conclusions**: Within a short time window, the predictors of smoking differed, which suggests that the relevance of specific messages might change over the course of the quit attempt. Quit success might be increased if messages early in a program focus on preparing users for withdrawal symptoms, and building confidence in quitting, and by saving messages about handling cravings and maintaining motivation to stay smoke free until after the quit day.

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IMPULSIVITY AND ALTERNATIVE TOBACCO USE AMONG YOUNG ADULT NON-DAILY SMOKERS

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Introduction: Impulsivity has been prospectively associated with cigarette smoking behaviors among young adults, but little is known about how impulsivity affects alternative nicotine and tobacco product (ANTP) use. One possibility is that impulsive individuals find nicotine particularly reinforcing, and thus may be vulnerable to rapid progression of tobacco use. The purpose of the present study was to examine the association between impulsivity and ANTP use over time.

Method: Participants (n = 392, 52% male) aged 18-24 were recruited for a longitudinal study of tobacco use. Eligibility criteria included non-daily cigarette smoking for ≥ 6 months with no history of daily smoking. Five components of impulsivity (lack of premeditation, lack of perseverance, sensation seeking, and negative and positive urgency) were measured at baseline, and participants reported recent tobacco use at baseline and follow-ups at 3, 6, and 9 months. Assessments were conducted online or via mobile app.

Results: Across the 4 assessments, 37-55% of participants reported recent ANTP use. Frequency of use did not vary significantly over time. Sensation seeking and lack of premeditation prospectively predicted frequency of ANTP use, such that participants higher in those aspects of impulsivity used ANTPs more often. This association did not change over time.

Conclusion: Findings suggest a high prevalence of ANTP use among young adult non-daily smokers. Data also indicated that those who lack premeditation and/or are prone to sensation seeking may be more likely to use ANTPs.

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JOB SEEKING SMOKERS: SCREENING & ELIGIBILITY IN A TOBACCO TREATMENT TRIAL

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Background/Objective: While the US adult smoking prevalence has declined greatly over the past 4 decades, disparities exist for those with less education, lower socioeconomic status, and the unemployed. In California, 1.4 million adults are unemployed and seeking work and 16% are smokers, compared to 12% of employed Californians. Our prior research has found unemployed smokers have a significantly lower likelihood of reemployment and a lower hourly wage compared to nonsmoking jobseekers. The current study summarizes screening and recruitment strategies of the Total IMPACT study, a randomized controlled trial testing a smoking cessation intervention for unemployed smokers with the objective of increasing abstinence and aiding re-employability.

Methods: Jobseekers presenting to three Employment Development Departments (EDD) in the San Francisco Bay Area were approached about the study and screened for eligibility. Pro-active face-to-face recruitment and reactive methods (e.g., flyers) were used and reasons for ineligibility and refusals were coded. Eligibility criteria included unemployed < 2 years, currently job seeking, smoking > 1 cigarette per day, with a carbon monoxide breath reading > 7 ppm, able to read and write in English, and currently residing in the Bay Area.

Results: Of the 1,934 adults approached between October 2015 and August 2016, 37% were current smokers (n = 720). Those ineligible were nondaily smokers (23%), currently employed (23%), or non-job-seeking (16%). Among eligible smokers (n = 231), 67% declined. Key reasons for declining enrollment were the length of time needed to complete the study (21%) and lack of interest (67%). To date, 144 participants have enrolled into the study. Participants are predominantly men (73%) and ethnically/racially diverse with 52% non-Hispanic African American, 30% non-Hispanic White, 8% Hispanic, and 4% Asian/Pacific Islander. Among those eligible, men were more likely to enroll than women (43% vs. 29%) and African American individuals were more likely to enroll than other ethnic/racial groups (49% vs. 38%), p-values < .05.

Conclusions: While integrating a tobacco cessation intervention into EDD settings offers

opportunity for reach and engagement of under-served and racially/ethnically diverse smokers, recruitment is challenging and points to the need for flexibility in criteria (i.e., broadening to include nondaily smokers) and minimizing study time demand.

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METHODS OF CESSATION AND ROLE OF ELECTRONIC CIGARETTES AMONG CURRENT AND FORMER SMOKERS: A CROSS-SECTIONAL SURVEY OF US ADULTS

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Background: Electronic cigarettes (EC) are increasingly used by smokers as cessation or harm reduction tools without FDA approval. We examined smoking cessation methods of current and former smokers, EC use with nicotine, perceived influence on craving, and attitude toward continued use of EC.

Participants: Nationally representative 2015 cross-sectional survey of U.S. adults. Respondents were current (n=1,280) and former smokers (n=341; within five years of quitting cigarette use).

Methods: Main exposure was EC use to substitute for or complement cigarettes. Outcome measures were weighted adjusted odds ratios (AOR) for successful quitting based on reported smoking status.

Results: The most commonly reported method to quit smoking was gradually reducing cigarettes among current smokers (64%) and completely giving up cigarettes among former smokers (80%). Respondents who reported having tried switching completely to EC while trying to quit were more likely to report having a successful quit attempt compared to those who did not [AOR=1.53, 95% confidence interval [CI], 1.07-2.19]. Respondents who had completely switched to EC during their last quit attempt were more likely (AOR=2.81, 95%CI, 1.28-6.15) to report having a successful quit attempt. Compared to respondents who did not use EC as cigarette substitutes, those who did were less likely to report a successful quit attempt (AOR=0.33, 95%CI 0.17-0.64). About 100% of current and 95% of former smokers who used EC daily included nicotine. Almost 35% of current smokers and 80% of former smokers reported that EC helped reduce cigarette cravings. Daily EC users intend to use EC for a long time.

Conclusions: Switching completely to EC may help smokers successfully quit; however, using EC to substitute for some cigarettes was less likely to support quitting. Thus, EC use during quit attempts may have positive and negative effects on population trends in quitting.

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PSYCHOLOGICAL FACTORS AMONG COPD PATIENTS: RELATIONS WITH SMOKING STATUS AND COPD SYMPTOM IMPACT

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Background: Chronic obstructive pulmonary disease (COPD) is a tobacco-related disease associated with several comorbid conditions, including elevated rates of depression and anxiety. Psychological factors that commonly underlie nicotine dependence, depression, and anxiety may represent novel treatment targets, but have not yet been examined among COPD patients. We assessed three psychological factors – anxiety sensitivity (AS; fear of anxiety-related sensations), distress intolerance (DI; inability to withstand distressing states), and anhedonia (Anh; diminished sense of pleasure or interest) – in relation to smoking status, COPD symptom impact, and negative response to COPD symptoms.

Methods: We conducted a single-session laboratory assessment with 40 COPD patients (20 current smokers and 20 former smokers). All participants completed self-report measures of psychological factors (Anxiety Sensitivity Index, Distress Intolerance Index, and Snaith-Hamilton Pleasure Scale, respectively), COPD symptom impact (COPD Assessment Scale), response to COPD symptoms (Breathlessness Catastrophizing Scale), and general anxiety and depression symptoms (PROMIS-Depression and Anxiety short forms).

Results: Participants were older adults (66.7 ± 6.8 years; 21 men, 19 women) with moderate levels of COPD symptom impact (CAT score 16.6 ± 6.7). Current vs. former smokers reported higher levels of AS (19.0 vs. 9.9; *p*=.01) and marginally higher levels of DI (16.1 vs. 11.5; *p*=.07). In univariate regression models, AS, DI, and Anh were each associated with greater COPD symptom impact (*β*'s .31-.64; all *p's*β's .36-.67; all *p's*β=.36, *p*=.03) and breathlessness catastrophizing (*β*=.31, *p*=.04) after adjusting for general depression and anxiety symptoms.

Conclusion: Preliminary findings show that AS and DI are higher among current vs. former smokers and all three psychological factors are positively associated with COPD symptom impact and negative response to symptoms. AS showed unique associations with COPD functioning even after adjusting for general depression and anxiety symptoms, perhaps because it specifically indexes risk for negative reactions to bodily sensations such as shortness of breath. AS may be an important target for behavioral interventions to improve symptom burden and quality of life among COPD patients.

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RACIAL AND GENDER DIFFERENCES IN SMOKING, SECONDHAND SMOKE AND RELATED FACTORS FROM THE 2009 CALIFORNIA HEALTH INTERVIEW SURVEY

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Background: Lung cancer is the number one cause of cancer-related death in the U.S. and worldwide. Overall lung cancer incidence and mortality rates have decreased for all races over the past 20 years, however, racial differences still persist. When looking at smoking rates by race, Asians and Hispanics have the lowest prevalence of smoking. The data is consistent in that Asians and Hispanics also have the lowest lung cancer incidence and mortality rates. When these racial groups are further divided by ethnic subgroups, however, there are large disparities in trends for lung cancer between subgroups. Particularly, large disparities persist in Asian American ethnic groups. The purpose of this study is to examine the prevalence of current smokers and secondhand smoke by race, Asian American ethnicity, and gender. The study also examines the risk factors for smoking.

Methods: We used data from the 2009 California Health Interview Survey (CHIS) and performed univariate analysis to examine racial/ethnic and gender differences in prevalence of current smokers as well as racial differences in prevalence of secondhand smoke exposure. We also looked at related factors for smoking among residents of California. A multivariate logistic regression model was conducted with weighted analyses using svy from STATA version 13.

Results: Among 47,614 California adults, the prevalence of current smokers was 13.57% (95% CI 12.83-14.34%). American Indian / Native American (26.64% 95% CI 18.61-36.58) and African Americans (16.22%, 95% CI 13.55-19.3%) had the highest rate of current smoking while Asian Americans had the lowest among all races (10.58%, 95% CI 8.45-13.17%). When Asian Americans are disaggregated, however, rates of prevalence are different among subgroups. Among Asian Americans, Vietnamese (30.96%, 95% CI 16.1-51.17), Korean (20.37%, 95% CI 9.13-39.42%), and Filipino (19.35%, 95% CI 12.13-29.42%) men and highest prevalence rates for current smokers. In Asian American women, Korean (19.74%, 95% CI 10.26-34.6%) have the highest prevalence of smokers. Asians had the highest prevalence of secondhand smoke exposure (10.39%, 95% CI 8.12-13.19%), measured by whether or not smoking was allowed in the home, of all the races. In multivariate analysis, factors associated with current smoking were acculturation, gender, age, general health perception, marital status, education, and alcohol consumption.

Conclusion: Results dispel the notion that Asian Americans are not high risk groups ideal for intervention programs. This has a significant implication in increasing awareness of lung cancer screening since lung cancer screening rates are low in Asian Americans despite high smoking prevalence in certain ethnic groups. Moreover, the study shows that both men and women in specific Asian American groups can greatly benefit from culturally integrated cessation programs.

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B301 6:00 PM-7:00 PM

SUPPORTING SMOKERS WHO ARE NOT PREPARED TO QUIT PERMANENTLY: PRACTICE QUIT AND DAILY CHALLENGES TEXT MESSAGING PROGRAMS PILOT

Kisha I. Coa, PhD, MPH[1], Amy Sanders, M.A.[1], Jessica Havlak, BA, MPH Candidate[2], Tessa Heydinger, BS [3], Augustson Erik, PhD, MPH[4], Meredith Grady, MPH[4]

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Background: Observations from research and clinical settings indicate that the challenges of successfully sustaining cessation often leave smokers discouraged, demotivated, and ambivalent about trying again, leading to long lags between attempts. These ambivalent smokers are typically not the target of smoking cessation programs which often build the intervention around a selected quit date. Such smokers may benefit from interventions that provide motivational enhancement and skills training without the need to commit to long term cessation. The current project is a preliminary analysis of two text messaging programs designed to engage and support smokers not yet ready to make a sustained quit attempt.

Programs: *Practice Quit* (PQ) supports smokers through a time-limited (1, 3, or 5 day) quit attempt. *Daily Challenges* (DC) is designed for smokers who are not ready to quit for a full day and includes texts that suggest one cessation-related activity (e.g., resist a craving for 10 minutes) each day for 7 days. Both programs include texts which provide skills training and values clarification.

Methods: 760 users enrolled in the programs between April and June 2016. Program data were available for all users, and descriptive analysis were calculated.

Results: Users were primarily female (74.6%), daily smokers (95.7%), and a mean age of 37.3 years. Most users (71.6%) selected the DC program. Of those who selected the PQ program, the 5-day option was chosen most frequently. Dropout rates were relatively low (15.9% of users). At the end of each program attempt, users were given the option to complete another attempt, and 24.7% of users chose to complete more than one attempt. There was some indication of passive disengagement evidenced by declining response rates to program assessment questions over time. 42.7% (day 1) to 8.3% (day 7) of users responded to the daily text indicating whether they completed the daily challenge (DC), and 38.1% (day 1) to 8.7% (day 5) responded to the daily text indicating whether they had smoked (PQ).

Conclusions: The results of this pilot study have established feasibility and user interest in these programs. User data also identified areas for enhancements to improve the resources before a larger scale evaluation is launched. If successful, this type of approach may have significant value for broadening the reach and engagement of cessation interventions.

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B302 6:00 PM-7:00 PM

THE CLINICAL UTILITY OF DEPRESSION AND WEIGHT-RELATED SUBTYPES AMONG WEIGHT-CONCERNED WOMEN SMOKERS

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Weight concerns and depression symptoms are barriers to quitting smoking among women. Weight-concerned and depressed women smokers are more likely to drop out of treatment and have poorer cessation outcomes in treatment. However, extant research has not examined subtypes of women who may have different symptom profiles that are amenable to more specialized intervention. Thus, we aimed to examine whether a group-based analysis could meaningfully capture individual differences on symptom measures of depression, body esteem, and eating behaviors, and demonstrate clinical utility.

Weight-concerned women (*N* = 349; 86% white) received smoking cessation counseling and were randomized in a double-blind, placebo-controlled trial to one of two adjunctive counseling components and one of two medication conditions. At baseline, women completed measures of depression, body esteem, and eating behaviors (restraint and disinhibition). Women also completed measures to assess BMI, nicotine dependence, number of cigarettes smoked per day, age, and education. Latent profile analysis (LPA) was used to identify subtypes of weight-concerned women smokers based on dimensions of depression, body esteem, and eating behaviors. ANOVA was used to characterize baseline differences among identified subtypes.

Results supported a three-profile model: LP1 (14% of the sample; high depression and restraint, low body esteem), LP2 (35%; moderate on all measures), and LP3 (51%; low depression, high body esteem and disinhibition). Entropy for the model was .79 and average latent class probabilities ranged from 90% to 91%. Groups did not differ on age, education, or nicotine dependence. All groups differed significantly on BMI: LP1 (*M*= 30.55); LP2 = (*M* = 24.75), and LP3 (*M* = 28.21). Groups also differed on number of cigarettes smoked per day, with women in LP1 smoking significantly more cigarettes (*M* = 24.14) than the other two groups: LP2 (*M* = 19.67) and LP3 (*M* = 20.47).

Among weight-concerned women smokers, heterogeneity in the symptom presentation of depression, body esteem, and eating behaviors was captured by three distinct groups. These groups demonstrated clinical utility, as the “high-risk” group (14% of the sample) consisted of obese women who smoked over a pack of cigarettes a day. These women may need more specialized, intensive intervention. Thus, identifying groups with distinct symptom profiles can lead to more personalized medicine strategies to improve smoking cessation outcomes among women.

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B303 6:00 PM-7:00 PM

THE INTERACTION BETWEEN DEPRESSION AND SOCIAL ANXIETY AS A PREDICTOR OF MOTIVATION AND CONFIDENCE TO QUIT SMOKING

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Medical University of South Carolina, Charleston, SC

Background: Smokers with elevated depressive symptoms are at heightened risk for poor cessation outcomes, including a decreased likelihood of initiating a quit attempt and an increased likelihood of relapsing. Social anxiety (SA) is highly comorbid with depression and may convey singular or iterative risks for poor cessation outcomes. Despite this comorbidity, little is known about the interaction between depression and SA for predicting cessation-related outcomes. Both motivation to quit (or to remain quit after initiating an attempt) and confidence to quit (or remain quit) are robust predictors of sustained cessation. Thus, the present study examined the interaction between depression and SA as predictors of motivation to quit/remain quit (MTQ) and confidence to quit/remain quit (CTQ).

Methods: Participants included 543 smokers (28% female, 76% white, Age M(SD)=34.4 (8.7) recruited nationally for an online survey who either recently quit (n=242) or planned to quit in the next month (n=301). Depression was assessed via the Patient Health Questionnaire-8, SA was assessed via the Social Phobia Inventory, CTQ and MTQ were assessed via contemplation ladders (0-10) and nicotine dependence was assessed using the Heaviness of Smoking Index.

Results: Moderation analyses were performed using PROCESS bootstrapping procedures (10,000 samples). Covariates included nicotine dependence and group (current smoker, recent quitter). For MTQ, there were significant main effects of depression (b = -0.04, SE = 0.02, $p = 0.03$) and of SA (b = -0.07, SE = 0.03, $p = 0.03$), though the interaction between the two was not significant. For CTQ, there was a significant interaction between depression and SA (b = -0.02, SE = 0.01, $p < 0.001$), which was then probed at high and low levels of SA. Depression significantly predicted CTQ at both high (b = -0.25, SE = 0.03, $p < 0.001$) and low (b = -0.12, SE = 0.03, $p < 0.001$) levels of SA. The negative relationship between depression and CTQ was stronger for those with high levels of SA than those with low levels of SA.

Conclusions: Results highlight the importance of symptoms of depression and SA for predicting MTQ and CTQ. Depressed smokers and socially anxious smokers may be at heightened risk for low MTQ. In contrast, smokers who experience both elevated depressive symptoms and SA may be at comparatively higher risk for low CTQ than depressed smokers without SA. Thus, to promote sustained cessation, interventions should consider targeting both symptoms simultaneously.

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B304 6:00 PM-7:00 PM

UNDERSTANDING ADULT HOOKAH SMOKING THROUGH PATTERN IDENTIFICATION, 2016.

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Introduction: The prevalence of hookah use has been increasing in U.S. adults; however, little is known regarding correlates and patterns of hookah use in this population. The current study examines correlates and the frequency of different patterns of hookah use in a national sample of U.S. adults.

Methods: Data were drawn from Wave 10 (November 2016) respondents aged 18–44 years from the Truth Initiative Young Adult Cohort Study (n =4,091). Respondents were asked about past hookah use; those who reported someday or everyday use were queried about number of days used in the past 30 days and if they had ever or currently used hookah regularly (i.e., at least once a week, for at least a month). Weighted bivariate analyses were used to estimate correlates and frequency of ever and past 30–day hookah use, and differences between current and non-current ever hookah users on past 30-day alcohol, marijuana, drug use, and use of other tobacco products.

Results: Of the 21% of the sample who had ever used hookah, 9% used hookah in the past 30 days. Ever hookah users were significantly more likely than never users to report alcohol, marijuana, and other drug use in the past 30 days ($p < 0.005$). Additionally, respondents who had ever used hookah were significantly more likely to report past 30-day use of any other tobacco product and e-cigarettes than those who had never used hookah ($p < 0.01$).

Compared to non-current ever hookah users, past 30-day users were also more likely to have used other tobacco products and e-cigarettes (p’s < 0.01). Few ever hookah users (8%) reported having used hookah “regularly”, while 36% of past 30-day users reported “regular” use ($p < 0.0005$). Forty percent of ever hookah users described themselves as presently using hookah “regularly”; this was also higher in past 30-day users than in ever users (68.0% vs. 6.8%, $p < 0.001$). The majority (68%) of past 30-day users reported hookah use on fewer than five of the past 30 days and 42% engaged in a single hookah session on those days.

Conclusions: Ever and past 30-day hookah use is significantly associated with concurrent tobacco, e-cigarette, and substance use. While most ever hookah users did not report frequent (> 5 days/month) hookah use, past 30-day users describe themselves as regular users more often than ever hookah users do. This suggests a difference in patterns of use and uptake between potential experimenters and regular users. Identifying ways to curb regular or weekly use may be one method to counteract the progression from experimentation to regular use.

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B305 6:00 PM-7:00 PM

WHEN LESS IS MORE: SUPPORTIVE POSTPARTUM SMOKING RELAPSE PREVENTION IS MORE EFFECTIVE AND LESS COSTLY THAN AN ENHANCED VERSION

Rachel P. Kolko, PhD[1], Rebecca Emery, MS[2], Jennifer Grace, MS[3], Andrea Kass, PhD[4], Rachel H. Salk, PhD[3], Lisa J. Germeroth, PhD[2], Yu Cheng, PhD[2], Michele D. Levine, PhD[5]

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Postpartum smoking is linked to deleterious outcomes for women and their infants, leading to increased health care costs for individuals and society. Behavioral interventions for smoking are effective but can be costly to implement; therefore, it is beneficial to understand costs to achieve efficacy for behavioral interventions, given the implications for adoption of services. We aimed to assess the incremental cost-effectiveness of two empirically-based interventions designed to increase rates of sustained postpartum smoking abstinence among women who quit smoking during pregnancy.

Women (*N*=300) were randomized to an intervention condition prior to delivery and received treatment through 24-weeks postpartum. We compared two interventions (matched for time and attention) that were adapted for the postpartum period and addressed behavioral smoking relapse prevention. One intervention comprised an enhanced cognitive-behavioral intervention with additional specialized focus on women's postpartum concerns about mood, stress, and weight (STARTS).The other intervention involved a supportive behavioral intervention (SUPPORT). Biochemically confirmed smoking abstinence was assessed at 52-weeks postpartum. Costs to deliver the interventions from the payer, participant, and societal (payer + participant) perspectives were calculated for each intervention. The incremental cost effectiveness ratio (ICER) was derived to compare the interventions on the resources required (i.e., dollars) to obtain a unit of effectiveness (i.e., % achieving abstinence).

By 52-weeks postpartum, 21% and 27% of STARTS and SUPPORT participants, respectively, demonstrated abstinence (p=.28, number needed to treat=16.67). From the societal perspective, the mean cost per participant for STARTS was $971 (payer=$909, participant=$63) and for SUPPORT was $837 (payer=$760, participant=$77). Compared to STARTS, SUPPORT was dominant, meaning it was less costly and more efficacious (ICER=-$22.39 per % achieving abstinence).

Results show that SUPPORT yielded similar rates of smoking abstinence in postpartum women and was less costly than the more intensive STARTS intervention, suggesting SUPPORT may be well suited for dissemination. These results have clinical and policy implications for intervening in the postpartum period, as there is great importance in helping women to increase rates of sustained abstinence from smoking via interventions that reduce implementation costs while optimizing impact.

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Poster Session B 6:00 PM-7:00 PM

COMPARING CHANGES TO HEDONIC HUNGER FOLLOWING A SURGICAL AND NON-SURGICAL WEIGHT LOSS INTERVENTION

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Hedonic hunger is defined as a subjective state of hunger that is “prompted by exposure to food-related cues but by definition they do not occur in response to prolonged food deprivation." Previous research has shown a decrease in hedonic hunger following both bariatric surgery and non-surgical behavioral interventions. However, no research has directly compared changes to hedonic hunger for surgical and non-surgical interventions. The current study aimed to compare changes in hedonic hunger at 6 months, 1 year, and 2 years following bariatric surgery (N=148) and a non-surgical intensive medical intervention (N=180). Data utilized in this study come from an observational study (Heads Up) of obese participants undergoing either bariatric surgery (gastric banding, bypass or sleeve) or a non-surgical intensive medical intervention (IMI) composed of a liquid diet and behavior therapy to promote calorie restriction and increased physical activity). Participants completed the Power of Food (PFS) scale at baseline, 6 months, 1 year, and 2 years following intervention. A mixed effects regression model was utilized to estimate changes to hedonic hunger after adjusting for age, sex, race, and baseline BMI. Hedonic hunger decreased dramatically 6 months following both bariatric surgery and IMI. This decrease was significantly stronger for the surgical group compared to the IMI group but only for the aggregate PFS score and not for the subscale PFS scores. The change in Hedonic Hunger plateaued between 6 months and 1 year for both groups. However, hedonic hunger for participants in the IMI group slightly increased toward baseline levels 2 years following intervention while the decreased level of hedonic hunger for surgical patients was sustained. The findings in this study demonstrate 1) a greater initial decrease to hedonic hunger following bariatric surgery compared to a behavioral intervention and 2) sustained low levels of hedonic hunger for surgical patients compared to behavioral intervention participants. Further research will be analyzed to assess the implications of these findings for weight loss maintenance following surgical and behavioral interventions.

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Friday

March 31, 2017

8:00 AM-9:15 AM

Symposium 38 8:00 AM-9:15 AM

COMMUNICATING UNCERTAIN CANCER INFORMATION IN THE ERA OF PRECISION MEDICINE

Emily B. Peterson, PhD[1], Paul K.J. Han, MD, MA, MPH[2], Kimberly Kaphingst, ScD[3], Wen-Ying Sylvia Chou, PhD, MPH[4], Jennifer Elston. Lafata, PhD[5]

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Communication about cancer-related risk occurs frequently in clinical interactions across the cancer control continuum – from prevention, diagnosis, treatment, to end-of-life. These conversations inevitably contain uncertain and sometimes conflicting or confusing information. For example, consider a primary care provider recommending a mammography screening test, a genetic counselor reviewing the return of genetic testing results, and an oncologist discussing prognosis and treatment options: they must all navigate these discussions with the intent to facilitate informed decision making, despite the fact that the information they are communicating often contains caveats or may not be actionable. Evolving national/clinical guidelines and the emphasis on personalized risk factors, rapid advances in cancer treatment, and the promises behind the “Precision Medicine” movement in cancer suggest that communication about these issues will only continue to grow more complex and uncertain.

Our proposed symposium will highlight key research about this communication challenge with an overarching goal of developing a broad framework to understand communication about uncertain information in various cancer-related contexts. The panelists represent cutting-edge science in clinical communication about uncertain or complex information in three distinct but related domains, including cancer screening recommendations, genetic testing, and prognosis and goals of treatment for patients diagnosed with advanced cancer. The symposium will 1) review theories, frameworks and approaches that have been applied to communication about uncertain information; 2) identify research priorities in cancer communication in the era of Precision Medicine; 3) consider implications for health disparities. After individual presentations on diverse contexts of risk communication, ample time will be allotted for a discussion to unite the common characteristics of these areas and discuss the overarching implications of communicating complex and uncertain cancer information.

The learning objectives of this symposium are: 1) Understand the role of communicating about uncertain information on patient decision making and behavior; 2) Discuss current priorities and challenges in communicating complex information with leading experts; 3) Gain a broader understanding of issues related to communication about uncertain information that transcends a specific context or research area.

Symposium 38A

UNCERTAINTY IN THE COMMUNICATION OF GENETIC AND GENOMIC INFORMATION

Kimberly Kaphingst, ScD

Many types of uncertainty are embedded within genetic risk information, including uncertainty about penetrance (whether a gene variant will be expressed in an individual), clinical validity (strength of association between a gene variant and disease or condition) and clinical utility or implications for patient management. As exome and genome sequencing become more common in the clinical setting, more variants with uncertain clinical validity and utility and penetrance are being identified for each patient, raising the issues of what of this uncertain and complex information to return to patients and how. This presentation will first address these issues by presenting results from a case study. The case study was a survey of 1080 women diagnosed with breast cancer at age 40 or younger. The survey focused on preferences for the communication of secondary findings from whole genome sequencing, that is, findings not directly related to the breast cancer indication but that might still be of value to patients. The survey findings showed that women ranked their interest in results with more uncertain clinical implications (e.g., variants of uncertain significance) lower than their interest in sequencing results with clearer clinical implications (e.g., results with implications for prevention or medications). When asked about their preferences for timing of the delivery of results for variants of uncertain significance, about as many women never wanted to receive this information (32%) as women who wanted the information at or before the time of diagnosis with breast cancer (35%). Significant predictors of wanting to receive this type of uncertain result by the time of diagnosis included having less knowledge about the limitations of genome sequencing (OR = 0.93; 95% CI=0.86, 0.99) and being more health conscious (OR=1.35; 95% CI= 1.03, 1.77). The results from this case study will be discussed in the context of a scoping review of communication of genetic and genomic risk information across the cancer control continuum based on frameworks of uncertainty management and risk information processing. The presentation will summarize the current state of this science and discuss future directions for investigating uncertainty in the communication of genetic and genomic information.

Symposium 38B

COMMUNICATION ABOUT PROGNOSIS AND GOALS OF CARE IN ADVANCED CANCER CARE

Dr. Wen-Ying Sylvia Chou, PhD, MPH

One of the major challenges in caring for patients diagnosed with advanced or recurrent cancer concerns making decision about optimal treatment and care. One component of this challenge is that there are significant misalignments between providers and patients with regard to their understanding of prognosis (Prigerson et al. 2016, Gramling et al. 2016). This misalignment occurs in the context of well-publicized advances in cancer science which suggest the likelihood of life-prolonging treatment and which may lead patients to overestimate their chances of survival. There are numerous challenges in communicating prognosis, and the inevitable uncertainty associated with a patient's prognosis further complicated the clinical communication. Understanding and improving patient-provider communication about uncertainty when discussing prognosis and goals of care should be an urgent priority for cancer clinical practice.

This presentation describes two qualitative studies centered around the communication of prognosis in the context of advanced cancer. The first is a qualitative discourse analysis of transcripts of oncologist-patient conversations, in which dominant linguistic features in oncologists' language are identified. For instance, oncologists are frequently observed to use euphemisms, optimistic expressions, and ambiguous language in discussing the status of the disease and goals of treatment. Such expressions contribute to the limited and vague discussions of prognosis and the sense of uncertainty in patients. The second study, based on key informant interviews (N=19) members of multidisciplinary teams caring for patients enrolled in cancer clinical trials, describes the diverse range of perspectives on goals of patient care. The study findings highlight the need for communicating and managing uncertainty in caring for patients on cancer clinical trials, particularly in balancing patient's clinical goals with research goals. The presentation concludes with a summary of the current state of science and relevant theories in prognosis communication in cancer, with a focus on how to consider and manage uncertainty in caring for patients with advanced cancer.

Symposium 38C

UNSPOKEN RISK AND UNCERTAINTY: THE CASE OF CANCER SCREENING

Jennifer Elston. Lafata, PhD

Recent studies highlight the risk and uncertainties associated with common cancer screening tests, including screening mammography, prostate specific antigen (PSA), and low dose computed tomography (LDCT). Despite known risks and uncertainties, the US population remains enthusiastic about cancer screening in general, and many patients and physicians fail to understand the risk of overdiagnosis and other uncertainties related to cancer screening. Given the importance of physician recommendation to cancer screening use, particularly troubling is the void in risk and uncertainty discussion at the time of most physician recommendations for screening. As our understanding of the balance of screening risks and benefits increases, and as cancer screening capabilities are enhanced via genomics and other medical advances, cancer screening decisions are likely to become more complex and personalized.

Using data from audio-recorded primary care office visits joined with pre-visit patient survey data (N=415) and a national survey of primary care physicians (PCPs) (N=278), we highlight current challenges to supporting informed decision making in primary care. For example, while 86% of patients reported understanding testing pros and cons as important to their cancer screening decisions, only 5% of colorectal cancer screening conversations included any mention of a screening con, and only two patients explicitly asked a question about screening risks during the consultation. The presentation will describe when and how uncertainty was communicated when these risk conversations did occur. Furthermore, PCPs are more likely to report a discussion of cancer screening benefits than they are a discussion of cancer screening risks (79% vs, 64%, respectively). Likewise, PCPs are more likely to report that shared decision making is important in cancer screening contexts where there are less uncertainties (i.e., relatively more evidence that benefits of screening outweigh harms as determined by the US Preventive Services Task Force) compared to those where there is a high degree of uncertainty or when expected balance of harms and benefits is similar. Combined, these findings suggest that PCPs may view shared decision making as a tool to help convince patients to adhere to recommended screening, and not as a means to provide balanced information, including uncertain information, to patients. Ultimately, the lack of uncertainty discussions surrounding screening tests may lead to patient misunderstanding and unnecessary testing. Using these and other findings, an ecological framework for the challenges of discussing risk and uncertainty in the context of cancer screening will be presented, and the multi-levels of intervention needed for the inclusion of risk and uncertainty within cancer screening discussions highlighted.

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Symposium 39 8:00 AM-9:15 AM

EXPANDING THE HORIZONS OF BEHAVIORAL MEDICINE WITH QUALITATIVE AND MIXED-METHODS RESEARCH: VOICES OF DIVERSE CANCER PATIENTS

Tess Thompson, PhD, MPH[1], Lailea Noel, PhD[2], Tess Thompson, PhD, MPH[1], Kristi Graves, PhD[3], Krystal Warmoth, PhD[4], Qian Lu, Ph.D.[4]

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Breast cancer is the most commonly diagnosed non-skin cancer among African American, Latina, and Asian American women. This symposium examines how qualitative and mixed-methods research can allow researchers to better understand the experiences of diverse breast cancer patients in order to inform interventions, enhance treatment, and reduce health disparities. The four presenters will describe their approaches to qualitative and mixed-methods research and incorporate cross-cutting perspectives from disciplines including medicine, public health, and social work.

The first presenter will share data from a phenomenological study of the lived experience of African American women from a socially and economically isolated urban environment who delayed initiation of breast cancer treatment for more than six months after identification of a breast abnormality. This presenter will discuss how phenomenological qualitative methodology allows for rich, in-depth data to emerge about this vulnerable group of women. The second presenter will examine how face-to-face qualitative interviews were used to delve more deeply into specific themes with a subsample of participants from a randomized, controlled trial of a video narrative intervention. In this study, married African American breast cancer survivors described how they perceived cancer to have affected their social support, their marital relationship, and their spouse’s physical and mental health. The third presenter will describe the social needs and challenges of Chinese American immigrant breast cancer survivors based on an analysis of expressive writing from three writing sessions. The final presenter will discuss mixed-methods results from a study of Latina breast cancer survivors in which qualitative approaches were used to help design an intervention that was tested in a randomized controlled trial, collect evaluation information about the intervention, and measure the study team’s engagement with the intervention.

Based on these four presentations, we will discuss the challenges and rewards of using qualitative and mixed-methods techniques in diverse populations. We will address rationales for using qualitative methods, techniques for ensuring methodological rigor, and ways of communicating qualitative findings. The goal is to deepen researchers' and clinicians' understanding of the experiences of diverse breast cancer patients in order to support patients through diagnosis, treatment, and survivorship.

Symposium 39A

EXPLORING PARTICIPATORY HEALTH DECISION MAKING AND BREAST CANCER TREATMENT INITIATION FOR MEDICALLY MARGINALIZED WOMEN

Lailea Noel, PhD

African American women have a 42% higher mortality rate from breast cancer than White women. While there are many factors contributing to this disparity, the timely initiation of treatment is growing area of interest. An under-explored area of attention for scientific studies is how to identify and engage in care women who do not follow up with treatment following a breast abnormality. Often these are among the most medically marginalized women of our society who have some of the highest rates of mortality. This study explored the lived experience of eight African American women, living in a socially and economically isolated environment in a large metropolitan area. In all cases the initiation of treatment was delayed for more than six months from the identification of a breast abnormality, with a delay in the initiation of treatment of more than a year in four of the eight examples. In accordance with phenomenological qualitative methodology, the interviews were open-ended, allowing for rich, in-depth data to emerge relatively unbiased by the assumptions and expectations of the researcher. Key findings suggest that engaging patients in health care decision making necessitates a better understanding of the processes involved in treating breast cancer, the impact that the side-effects may have on her quality of life, and access to patient support services to counter these side-effects. The findings from this study highlight that most of the communication about treatment initiation occurred at the primary care level, prior to initiating contact with oncology services. Furthermore, the context within which they experienced the phenomenon is structured by underlying conceptualizations of chronic traumatic events coupled with community resource deserts. These results indicate that future interventions focused on engaging women in care decisions and decreasing socioeconomic barriers to the initiation of the treatment for breast cancer should take place between primary care providers, oncologists, and their patients and focus on de-mystifying the process of treatment. Incorporating this information, as a type of barrier-focused community-based intervention, or improved case management services to assist cancer patients in the primary care setting, may impact cancer mortality outcomes.

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Symposium 39B

“WE’RE IN THIS TOGETHER”: SPOUSAL SOCIAL SUPPORT IN AFRICAN AMERICAN BREAST CANCER PATIENTS

Dr. Tess Thompson, PhD, MPH

Social support provides health benefits both in cancer patients and in the general population. Spouses are often key sources of social support for breast cancer patients, and patients often provide their partners with support as well. Recent research has also shown small but significant effects of a cancer diagnosis on the physical and mental health of spouses of cancer patients. Less is known, however, about how cancer affects relationships in African American couples. This qualitative study examined how married African American breast cancer survivors perceived cancer to have affected their social support, their relationship with their spouse, and their spouse’s physical and mental health. We interviewed a subset of 15 married women who participated in a randomized controlled trial of a culturally tailored cancer communication intervention. We collected demographic data, and participants responded to semi-structured interview questions. Two coders coded interview transcripts independently and then reached consensus on codes in order to conduct a thematic analysis. At the time of interview, participants’ mean (SD) age was 60.2 (7.4) and mean length of marriage was 23.3 (12.4) years. All reported their spouses were African American. Eight had early-stage cancer, 11 received breast-conserving surgery, and 7 received chemotherapy. Eight participants believed their relationships stayed the same or became better after their diagnosis. Five reported marital problems, however, and 3 thought that their cancer had negatively affected their marriage. Most participants were uncertain whether their cancer diagnosis and treatment had affected their husbands’ physical and emotional health, often because husbands did not discuss their reactions to their wives’ cancer. Many participants reported their husbands provided both emotional and tangible support, and several said their husbands helped them adjust to sexual side effects of treatment and changes in body image. Many participants also reported providing support to their husbands, and many believed that clinicians could play an important role in helping couples adapt together to a cancer diagnosis and demands of treatment. Clinicians should take into account patients’ social context and provide referrals for couples with marital difficulties and for patients and partners who would benefit from psychosocial interventions.

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Symposium 39C

PATIENT-REPORTED OUTCOMES AMONG LATINA BREAST CANCER SURVIVORS FOLLOWING THE NUEVA VIDA INTERVENTION

Kristi Graves, PhD

Introduction: Few research studies have evaluated evidence-based psychosocial interventions to improve patient-reported outcomes among Latina breast cancer survivors and caregivers. Using strong community-academic partnerships and mixed methods approaches, we sought to examine patient-reported outcomes among a diverse sample of Latina breast cancer survivors following the Nueva Vida Intervention.

Method: We recruited Latina breast cancer survivors and their caregivers through 4 community based-organizations across the U.S. Following feedback from qualitative interviews with survivors and caregivers, we refined the intervention. We then conducted an RCT in which survivor-caregiver dyads were randomized to either an 8-session psychosocial intervention called Nueva Vida or to usual services (e.g., support groups, patient navigation). We completed quantitative assessments at baseline, immediately post-intervention and 6-months post intervention to measure patient-reported outcomes using the Patient Reported Outcomes Measurement Information System (PROMIS). We collected intervention evaluation data using brief exit interviews from study participants and intervention process surveys from interventionists. We measured team engagement using both quantitative and qualitative approaches.

Results: We randomized 135 Latina survivors and their caregivers to the Nueva Vida Intervention (n=70) or usual care (n-65). Latinas were diverse in terms of their country of origin (>80% immigrants) and years in the US. To date, 78 survivors have completed the 6-month follow-up. Compared to survivors in usual care, intervention participants reported statistically and clinically significant lower anxiety (t(75)=2.03, p<.05); trends were noted for less fatigue (p<.10) among intervention participants. Exit interviews with participants indicated a high level of satisfaction with the intervention; interventionists provided feedback on strategies to further tailor the intervention to their specific Latino population. Team members reported consistent and strong engagement through the study period.

Conclusions: Early results from the Nueva Vida Intervention trial indicate the ability to recruit, retain and improve specific patient reported outcomes among a diverse sample of Latina breast cancer survivors. Future efforts to evaluate evidence-based interventions with Latino families facing cancer will benefit from strong community-based partnerships and efforts to ensure cultural and linguistic relevance of the intervention.

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Symposium 39D

EXPLORING THE SOCIAL NEEDS AND CHALLENGES OF CHINESE AMERICAN IMMIGRANT BREAST CANCER SURVIVORS

Krystal Warmoth, PhD

Purpose: Little is known about the psychological wellbeing and social barriers among immigrant Chinese American breast cancer survivors. The aim of the present study was to explore the social needs and challenges of Chinese American immigrant breast cancer survivors.

Methods: This study used the expressive writing approach to explore the experiences among 27 Chinese American breast cancer survivors. The participants were recruited through community-based organizations in Southern California, most of whom were diagnosed at Stages I and II (33% and 48% respectively). All the participants had been living in the USA for at least 5 years (on average 19 years). Participants were asked to write three 20-minute essays related to their experience with breast cancer (in 3 weeks). Participants' writings were coded with line-by-line analysis, and categories and themes were generated.

Results: Emotion suppression, self-stigma, and perceived stigma about being a breast cancer survivor were reflected in the writings. Interpersonally, participants indicated their reluctance to disclose cancer diagnosis to family and friends and concerns about fulfilling multiple roles. Some of them also mentioned communication problems with their husbands. Related to life in the USA, participants felt unfamiliar with the health insurance and health care system, and they encountered language barriers.

Conclusions: Counseling services addressing concerns about stigma and communication among family members may benefit patients' adjustments. Tailor-made information in Chinese about diagnosis and treatment for breast cancer and health insurance in the USA, may also help patients go through the course of recovery.

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Symposium 40 8:00 AM-9:15 AM

USING E-HEALTH COMMUNICATION AND TECHNOLOGY TO REDUCE HEALTH CARE DISPARITIES

Charles R. Jonassaint, PhD, MHS[1], Linda Fleisher, PhD, MPH[2], Betina Yanez, Ph.D.[3]

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Racial and ethnic minorities are at an increased risk for poor health, yet receive lesser quality healthcare than their white counterparts. Despite the availability of evidence-based interventions, there are significant disparities in the reach and impact of these treatments for underrepresented minority groups.

Over the past decade, mobile technology ownership and Internet use has drastically increased, particularly among minority groups. The pervasiveness of technology across race, ethnicity and socioeconomic strata has led to excitement surrounding the potential for e-Health to bridge the disparities gap and deliver evidence-based care to underserved, hard-to-reach populations. However, there is limited literature examining the effectiveness of e-Health interventions among minority groups. Further, the majority of available e-Health interventions have not been developed with a focus on reaching underrepresented patients and may ignore the needs and sociocultural barriers faced by racial and ethnic minorities. Tailoring e-Health intervention for racial and ethnic minorities may improve their acceptability, effectiveness and future dissemination.

In this symposium, we first present a systematic review examining the feasibility and efficacy of cancer-related e-Health interventions among racial and ethnic minorities and highlight the needs and barriers to racial and ethnic minorities’ utilization of e-Health technologies. Next, we present data from a large, pragmatic e-Health intervention trial aimed at improving mental health outcomes among a racially diverse group of primary care patients. Finally, we review the process of designing a user-centered intervention to enhance clinical trial participation among African American cancer patients.

Overall, this symposium demonstrates that e-Health interventions have the potential to improve health among underserved groups and bridge the health care disparities gap. However, there are several critical issues to consider regarding the design and implementation of eHealth to ensure these interventions are maximally effective with underrepresented groups. Future e-Health research should adopt user-centered approaches to intervention development that take into account the specific needs of the target population.

Symposium 40A

ACCEPTABILITY AND IMPACT OF COMPUTERIZED COGNITIVE BEHAVIORAL THERAPY FOR DEPRESSED AND ANXIOUS AFRICAN AMERICANS AND WHITES

Dr. Charles R. Jonassaint, PhD, MHS

Background: Access to effective treatment fordepression and anxiety in primary care is often limited, particularly for minority patients who also experience racial disparities in treatment outcomes. Recent trials demonstrate that computerized cognitive behavioral therapy (CCBT) programs may help improve access to treatment. However, it is unclear if these programs are equally acceptable to African Americans (AAs) as Whites, and whether these groups experience comparable benefits. We examined these questions among patients enrolled in our NIMH-funded trial of online collaborative care for mood and anxiety disorders.

Methods: Patients aged 18-75 with current depression, panic and/or generalized anxiety disorder were referred to our trial from 26 Pittsburgh-area primary care practices. We randomized protocol-eligible and consenting patients who reported elevated levels of mood and/or anxiety symptoms (PHQ-9 or GAD-7 ≥10) with Internet access to receive their doctors' usual care or one of two other groups (1-3-3 ratio) that included 6-months of care manager-guided access to the U.S. version of the 8-session "Beating the Blues" CCBT program. Blinded assessor determined PROMIS depression and anxiety outcomes by phone at 6-months follow-up.

Results: Between 8/1/12 and 9/30/14, we randomized 91 AA and 499 White participants to our two CCBT study arms (mean age: 43 years; SD=14; range 18-75). AA patients, compared to Whites, had higher baseline PHQ-9 scores (14.4 vs. 13.1; *p*p=0.08 and 4.7 vs. 5.5; *p*=0.03, respectively). However, AAs showed a greater 6-month decrease in depression (-4.76 vs. -1.73; p=.024) and anxiety symptoms (-5.43 vs. -1.44; p=.083) compared to whites.

Conclusion: Internet-delivered and care manager-guided CCBT is an acceptable and effective means to provide depressed and/or anxious AA patients with access to mental health care at scale and potentially reduce racial disparities in treatment outcomes.

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Symposium 40B

BUILDING A BETTER E-HEALTH INTERVENTION: USING FORMATIVE RESEARCH TO GUIDE THE DEVELOPMENT OF AN E-HEALTH COMMUNICATION TOOL

Linda Fleisher, PhD, MPH

Designing salient and relevant e-Health interventions requires target audience insights throughout the development process and using formative research approaches can provide rigor and substance to those insights. Although best practice approaches and current efforts in patient engagement support patient and consumer input, a systematic approach that includes patients' perspectives on the eHealth tool in the concept phase (refining the problem), prototype development and testing and early pilot testing is often not actualized. This presentation will include an overview of formative approaches in e-Health intervention development and case study. *mychoice*, an e-Health tool to increase informed decision about clinical trials for African American cancer patients was developed using a systematic, patient engagement process to ensure that the intervention was relevant, appropriate and addressed the complex and emotional issues related to treatment trials. The formative research included 16 in-depth interviews with African American cancer patients who had and had not participated in clinical trials and a perceptual mapping survey to identify key messages with 41 African American cancer patients. The *mychoice* prototype was then shown to African American cancer patients for additional feedback and user testing. This presentation will provide practical approaches and describe in detail the methods, data collection strategies, recruitment approaches, the application of the formative research and user testing, and patient insights across the development and design of the *mychoice* communication tool.

Symposium 40C

A SYSTEMATIC REVIEW OF E-HEALTH INTERVENTIONS IN ONCOLOGY FOR DIVERSE INDIVIDUALS

Betina Yanez, Ph.D.

Background: The number of e-health interventions in oncology has been increasing over the past decade and research has demonstrated that these interventions are feasible and can yield favorable health outcomes. Although racial/ethnic minority patients are accessing the Internet and using technology devices at equivalent or higher rates of non-minority patients, it is not well documented whether e-health interventions are feasible, acceptable, and efficacious among these groups. Therefore, this systematic review sought to elucidate the use of e-health, oncology-related interventions in diverse populations. **Methods:** Using methods consistent with PRISMA guidelines, we identified 772 articles published between January 2000 and June 2016. Of these, 14 articles met inclusion criteria for this review. **Results:** Of these 14 articles, 86% included African Americans, 13% included Hispanics, and 7% included Asian Americans. Fifty-seven percent of the articles focused on cancer prevention, 29% on cancer control, and 14% on cancer survivorship. All articles evaluated a web-based computer or tablet intervention. Sixty-four percent of the 14 articles reported on the efficacy of the e-health intervention and thirty-six percent of the 14 articles only investigated usability, feasibility, acceptability, and technology use as outcomes. Four e-health interventions showed increased knowledge and cancer screening intentions, but did not increase cancer-screening behaviors relative to a control condition. All 3 of the efficacy studies focusing on cancer control and survivorship revealed a significant, favorable effect of the e-health intervention (e.g., decreased depression, quality of life) when compared to a control condition. The extent to which participants self-selected into, interacted with, and used various components of the interventions varied by race/ethnicity. **Conclusion:** Findings suggest that e-health interventions among minorities are feasible and acceptable. However, findings regarding the efficacy of e-health interventions among racial/ethnic minorities are equivocal, with interventions focusing on cancer control and survivorship demonstrating better efficacy than cancer prevention interventions. Although e-health interventions demonstrate the potential to reduce health disparities, more research is needed to delineate the mechanisms by which researchers can adapt e-health interventions to best serve the distinct needs of racial/ethnic minorities.

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Symposium 41 8:00 AM-9:15 AM

MODELS OF INTEGRATING BEHAVIORAL HEALTH SERVICES IN PRIMARY CARE: GOLD STANDARD OR SUBSTANDARD?

Sherri Sheinfeld Gorin, PhD, FSBM[1], Kathryn E. Kanzler, PsyD, ABPP[2], Jürgen Unützer, MD, MPH, MA, BS[3], Rodger Kessler, ABPP[4], Deborah Cohen, PhD[5], Jeffrey Goodie, Ph.D., ABPP[6]

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Most behavioral and mental health care occurs in the primary care setting. Psychosocial issues are involved in approximately 70% of primary care visits, with conditions such as depression among the most common complaints; these symptoms are often comorbid with other chronic diseases such as diabetes. While greater collaboration between behavioral health (including mental health and substance use) and primary care clinicians, as supported in the Affordable Care Act, could mitigate symptom-related negative outcomes for patients, collaborations are few in practice. Further, few of the existing integrated care programs are based on research evidence. The symposium will present major extant models of behavioral health in primary care, and review research and practice-based evidence for their uptake and effectiveness in diverse primary care settings. Presenter 1 will review the findings from RCTs, large-scale implementation trials, and practice evidence for the collaborative care approach. He will describe adaptations of the collaborative care approach for diverse primary care settings and populations, as well as in delivering its core components, for example, by tele-mental health. Presenter 2 will describe ***how*** to integrate behavioral health within the current fragmented health system, with the findings from a mixed methods study of 19 US based primary care practices and community mental health centers. She examines structures, processes, clinical workflows, and the interactional behaviors of primary care and behavioral health clinicians integrating care. Relying on research findings from national implementation trials and national expert panel consensus, Presenter 3 will focus on the gaps in current integration research. He will address the comparative effectiveness of different models and the degree of organizational integration. He will propose a framework for the future of research in integrated primary care settings.

Symposium 41A

MOVING FROM COLLABORATIVE TO STEPPED CARE: EVIDENCE AND TRANSLATION

Dr. Jürgen Unützer, MD, MPH, MA, BS

The evidence is mounting from RCTs and large-scale implementation studies for intervention approaches to caring for individuals with common mental disorders in primary care. The presenter will examine the evidence for collaborative care, an approach in which primary care providers are supported by a behavioral health professional and a psychiatric consultant to treat a population of patients with common mental disorders such as anxiety or depression in primary care settings. The presenter will also review adaptations of core components of the model for diverse primary care settings and populations and variations such as delivering core components of the care using tele-mental health care. Finally, the presenter will discuss the translation of research evidence to practice experience via implementation of evidence-based programs in diverse primary care settings. This presentation will explore barriers and facilitators to implementation from policy, regulatory, and cultural perspectives. Based on the current literature and clinical data, a stepped approach to integrating care will be proposed. A stepped approach to integrating care has the potential to reach and benefit a large number of individuals with common behavioral health challenges (e.g., mental health and substance abuse) in primary care.

Symposium 41B

WHY ARE WE TALKING ABOUT INTEGRATION POLICY WHEN WE DO NOT HAVE COMPELLING INTEGRATION METRICS?

Dr. Rodger Kessler, ABPP

Not much has changed in research and practice since the 2008 AHRQ report (Butler and Kane et al 2008) concluding that we know one effective model of care for treating depression and anxiety in primary care. While, in fact, there are a number of exemplar practices and organizations, we still know little about models of care. The current movement to put integrated practice into policy is premature due to lack of solid data and metrics. We cannot identify the key elements that contribute to positive patient outcomes, nor do we know the appropriate intervention dose(s) for specific patient populations and, at what cost. Further, the prevalent research paradigm does not address between-model comparative effectiveness nor does it address necessary elements or dose(s) of organizational integration. We are further hindered by a proliferation of checklists and data collection tools that have no psychometric validation and thus, no standardized comparative metrics. This presentation will discuss the findings from national and local trials and national expert panels to identify research gaps and to suggest a framework that will allow us to move past Butler and Kanes' observed limitations into the future.

Symposium 41C

FITTING THE INTEGRATION APPROACH TO THE LOCAL PRACTICE CONTEXT

Dr. Deborah Cohen, PhD

Compelling research evidence, provider and patient needs are driving the integration of health care. What is urgently needed now is empirical data on ***how*** to integrate physical, behavioral, emotional, and substance use care (hereafter referred to as behavioral health) within the current fragmented health system. We studied 19 US based primary care practices and community mental health centers that varied with respect to type, size, ownership, and location. Using mixed methods, including direct observation, interviews, surveys, assessment of expenditures, and Reach (e.g., RE-AIM), we comprehensively examined structures, processes, clinical workflows, and the interactional behaviors of primary care and behavioral health clinicians integrating care. We also evaluated the impact of practice integration efforts on expenditures to implement innovations, Reach, and patient outcomes. Our findings show that 5 key organizing constructs (integration REACH, establishing care pathways for a range of patient illness, approaches to patient transitions, location of workforce, and mental model for integration) intertwine to produce locally adapted approaches to integrating care. We observed significant decreases in adjusted mean PHQ-9 among patients. This finding was corroborated by accounts of patients’ experience of care, where they reported the benefits of receiving integrated care such as acquiring skills to cope with adverse situations. Additionally, we show that average start-up and ongoing effort expenses for integrating care are non-trivial. These results, together with a robust body of evidence from RCTs, makes a compelling case for practices to adopt integrated care and for payers to make this model feasible through finance reform.

Symposium 42 8:00 AM-9:15 AM

LEVERAGING TECHNOLOGY TO SUPPORT VULNERABLE AND DISADVANTAGED PEOPLE WITH DIABETES: A REVIEW, EXAMPLES, AND RECOMMENDATIONS

Lindsay S. Mayberry, MS, PhD[1], Courney R. Lyles, PhD[2], Monica E. Peek, MD, MPH, MSc[3], Brian Oldenburg, BSc, MPsychol, PhD[4], Chandra Y. Osborn, PhD, MPH[5]

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Technologies are being used to engage, educate, and support people with self-care. Hard-to-reach, low-income, less-educated, and/or racial/ethnic minorities who are often more affected by chronic health conditions, and, once diagnosed, experience more difficulty w/self-management, creating a cascade of costly health problems. Mobile self-care support can reach a wide audience, including the underserved. However, rigorous and novel methods are needed to design and evaluate mobile self-care support among vulnerable populations. A combination of limited access to certain types of devices (smartphones, smartwatches), unique barriers to self-care, and low engagement with self-care support are common among disadvantaged groups. These and other factors should be identified and addressed in the design, development, implementation and evaluation of mobile self-care support for vulnerable populations. This symposium will therefore provide:

- A case study of adapting tablet-collected patient experience data among persons with low-literacy
- An overview of a hybrid implementation-effectiveness approach to evaluating two mobile health (mHealth) interventions in community health clinics
- A review of the literature on internet and mobile interventions to improve diabetes control among disadvantaged and vulnerable people with type 2 diabetes

Each speaker will provide recommendations for improving the design and evaluation of technology-delivered tools for disadvantaged and vulnerable populations with diabetes.

Symposium 42A

BUILDING SUSTAINABILITY ALONGSIDE EVIDENCE FOR MOBILE HEALTH INTERVENTIONS IN UNDERSERVED PATIENTS

Dr. Lindsay S. Mayberry, MS, PhD

Background: Technology-based interventions are challenging among underserved patients and must reach end-users quickly to remain relevant and for evidence-based health technologies to keep pace with marketed ones. We used community engagement and iterative mixed-methods to understand and overcome implementation barriers throughout the design and evaluation of two diabetes support mHealth interventions in underserved populations.

Methods: The REACH study examines the effectiveness of two mHealth for improving self-care and glycemic control among adults with type 2 diabetes (T2D) receiving care from Federally Qualified Health Centers (FQHCs) in Nashville, Tennessee. The two interventions evaluated are REACH, a tailored, theory-based text messaging intervention, and FAMS, a family-focused intervention which incorporates phone coaching and text messages to a support person (e.g., friend or family member).We employed community-based strategies to develop a sustainable and implementable intervention: a) eliciting and incorporating input from FQHCs and patients before the evaluative trial to inform the content and form of the interventions; b) sustaining FQHC engagement throughout the trial; c) expanding to new clinics at each stage; and d) gathering information about barriers and facilitators to implementation at each stage.

Results: Through iterative mixed-methods (from intervention conception, pilot, refinement, usability/feasibility testing) we made intervention design decisions (eg, using resources patients and clinics already have; automating text messaging for minimal time, financial, or personnel costs) and trial design decisions (eg, an active control; not providing or paying for participants' cellphones/plans, allowing participants to self-tailor the intervention) to enhance clinic engagement and intervention sustainability. During the trial, we maintain community partnerships via clinic/community events and quarterly study newsletters tailored for patients and, separately, clinic staff. By expanding from two clinics (formative research and piloting) to four clinics (usability/feasibility testing) to seventeen clinics (for the trial), we created intervention elements likely to be preservable across settings. To sustain engagement and momentum generated by the initiation of the evaluative trial, we will conduct rolling focus groups with FQHC providers and administrators and participants completing the trial to discuss barriers and facilitators to sustainability should REACH and/or FAMS prove effective.

Conclusion: This presentation will discuss design decisions and provide a clear example of a hybrid effectiveness-implementation approach to mHealth among disadvantaged patients.

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Symposium 42B

IN-DEPTH CASE STUDY OF ADAPTING PATIENT EXPERIENCE DATA COLLECTION FOR DIVERSE PATIENTS USING TABLETS IN CLINIC

Courney R. Lyles, PhD

Background: Healthcare policy supports the inclusion of patient experience in quality measurement and reporting. However, response rates to the gold-standard, paper-based Consumer Assessment of Healthcare Providers and Systems (CAHPS) surveys are low (<25%), and differ by racial/ethnic and language subgroups.

Methods: We sought to 1) design and implement tablet-based CAHPS administration in safety net clinical practices in the San Francisco Department of Public Health, and 2) conduct formative qualitative work to create shorter, lower literacy patient experience items (informed by CAHPS) and explore broader concepts of patient experience among vulnerable patients. We created a visually attractive, simple-to-use tablet interface with multi-lingual questionnaires. Next, we completed 25 in-depth interviews with patients to validate a new literacy-appropriate tablet questionnaire and compare it to the paper version.

Results: Over 6 months, 400 patients completed tablet-based CAHPS questionnaires in 4 SF clinics. The overall response rate and representation of Latino, Black, and younger respondents was higher for tablet vs. paper-based collection. During the interviews, paper vs. tablet CAHPS versions performed similarly, but patients strongly preferred the tablet – even those without previous experience with using mobile technology. The final tablet application improved on the CAHPS items, by 1) reducing the number of items from 31 to 17 while preserving core domains, 2) reducing the reading level of survey questions from 7th to 5th grade, and 3) adding open-ended questions.

Conclusions: Federal policy supporting patient experience data collection is moving forward. This study provides clear next steps to ensure underrepresented and vulnerable patient perspectives are engaged and represented in this process.

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Symposium 42C

MHEALTH & INTERNET INTERVENTIONS FOR DISADVANTAGED PEOPLE WITH TYPE 2 DIABETES: CONSIDERATIONS & RECOMMENDATIONS FOR RESEARCH

Dr. Monica E. Peek, MD, MPH, MSc

Background: Mobile and Internet-based interventions are supporting patients' self-care efforts and, in turn, their glycemic control, but knowledge about the acceptance and benefits of technology-delivered interventions among disadvantaged patients with T2D is surprisingly limited.

Methods: We conducted a review of experimental or quasi-experimental studies evaluating the effects of technology-delivered interventions on the glycemic control (A1c) of disadvantaged adults with T2D from 2011-2015. We operationalized being disadvantaged as samples with ≥50% patients with low socioeconomic status (SES), living in rural settings, or racial/ethnic minority.

Results: Twelve studies were identified and summarized to characterize the state of knowledge with recommendations to advance the field in three key areas: the development and evaluation of technology-delivered interventions for (1) low SES and rural patients, (2) racial/ethnic minorities, and (3) patients with limited literacy and numeracy. Within-group improvements in A1c were consistently demonstrated in both mobile and Internet-based interventions, however, trials have not found between-group differences. Three studies report reductions in inpatient or emergency department use.

Conclusion: Current evidence suggests that mHealth interventions may be effective at improving diabetes outcomes within vulnerable populations. Novel study designs are needed to address questions of reach and cost. Future studies should identify best practices for developing and delivering effective content to disadvantaged patients, quantifying the reach of technology interventions to vulnerable patients, and evaluating cost-effectiveness.

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Symposium 43 8:00 AM-9:15 AM

FEASIBILITY STUDIES TO INFORM PHYSICAL ACTIVITY AND WEIGHT MANAGEMENT INTERVENTIONS IN WOMEN: THREE REAL-WORLD EXAMPLES

Scherezade K. Mama, DrPH[1], Danielle Symons Downs, Ph.D.[2], Danielle Arigo, Ph.D., Licensed Psychologist[3], Shannon L. Mihalko, Ph.D.[4]

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Feasibility studies are the foundation for intervention studies and are used to explore whether an intervention should move forward to efficacy testing. However, there are not set standards to guide the design and evaluation of feasibility studies in behavioral medicine. Feasibility studies are needed but are often overlooked as the first step in physical activity and weight management intervention development, where it may be necessary to test different recruitment and research strategies, such as intervention dosage, measurement methods and tools, and user acceptability of intervention approaches. This is especially important when working with hard to reach or underserved populations whom may require more tailored or targeted recruitment and intervention approaches. This symposium presents examples of physical activity and weight management feasibility studies among three distinct samples of women. The first presentation will explore the feasibility of a wearables-supported physical activity intervention for women. The second presentation will describe the feasibility of conducting an intervention to prevent weight gain in breast cancer survivors during active treatment. The third presentation will explore the feasibility of an adaptive intervention to manage weight in overweight/obese pregnant women and will describe how feasibility outcomes were used to inform the development of the efficacy study. The symposium will conclude with a discussion of the areas of focus of feasibility studies, feasibility study designs and outcomes, and how feasibility studies are used in a two-phased approach to inform the development of intervention efficacy and effectiveness studies.

Symposium 43A

INFLUENCE OF A FEASIBILITY STUDY ON THE DESIGN OF AN INDIVIDUALLY-TAILORED, ADAPTIVE INTERVENTION TO MANAGE WEIGHT IN OVERWEIGHT/OBESE PREGNANT WOMEN

Danielle Symons Downs, Ph.D.

Half of all pregnant women in the U.S. begin their pregnancies overweight or obese (OW/OB) and 60% of these women exceed gestational weight gain (GWG) guidelines. Despite focused prevention efforts, interventions have generated limited evidence to prevent GWG outside of the Institute of Medicine (2009) guidelines, suggesting an important need for innovative weight management interventions in this population. An individually-tailored intervention that promotes healthy eating, physical activity, weight management, and self-monitoring and adapts to the unique needs of OW/OB pregnant women over the course of pregnancy may be necessary to manage GWG. However, little to no past research has used an adaptive intervention to manage weight in pregnant women. We developed a 2-phase approach to effectively and efficiently manage GWG whereby phase I (feasibility study) directly informed the development of the phase 2 randomized control trial (RCT). The goals of this presentation are to: (a) describe the conceptual design of the adaptive intervention and explain the feasibility and RCT studies; (b) discuss findings and highlight key lessons learned from implementing the feasibility study; and (c) illustrate how the feasibility study informed the RCT. The feasibility study (*N*=22) OW/OB pregnant women randomized to 1 of 7 dosages over a brief 6-week period) tested user acceptability of components (education, goal-setting, self-monitoring, healthy eating/physical activity behaviors), dosages, and intensive data collection procedures. Key aspects of the feasibility study that informed the RCT design were subject inclusion criteria/recruitment strategies, user acceptability of dosage components and intensity, use of mHealth tools for real-time feedback, data collection procedures (timing/schedule of measures), and decision rules for adapting the intervention. The RCT (*N*=30 OW/OB pregnant women) is currently underway and preliminary findings from this study will also be discussed.

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Symposium 43B

TESTING THE FEASIBILITY OF FITBIT AND ONLINE PARTNERSHIPS TO PROMOTE PHYSICAL ACTIVITY AMONG WOMEN

Dr. Danielle Arigo, Ph.D., Licensed Psychologist

Regular physical activity (PA) reduces health risks, yet the majority of U.S. women fall far short of recommended PA levels. Women endorse unique barriers to PA, including lack of motivation and lack of social support. Wearable PA tracking technology, which shares users' PA data in online social networks, has the potential to address the need for scalable PA programs for women. However, two key aspects of this potential are not clear: (1) how best to use wearables to promote PA among women, and (2) whether women will use and respond to wearables as intended. This presentation will describe a series of studies designed to assess the feasibility and acceptability of a wearables-supported, online PA program for women. Novel features of this program were the use of Fitbit and an associated online social network, and the assignment of PA partners for support and accountability. Feasibility outcomes included the ability to meet recruitment targets, enrollment and retention, adherence to technology guidelines (Fitbit daily wear, number of posts to the online message board), frequency of partner communication, and perceived utility of/barriers to partner communication. Acceptability outcomes included ratings of participant satisfaction and willingness to recommend the program to other women. In Study 1, conducted entirely online, participants (n= 12, M_{Age}=46, M_{BMI}=32.60 kg/m^2) received a webinar to introduce behavioral PA promotion skills and communicated with partners via private message boards on the Fitbit social network. This study showed positive feasibility/acceptability outcomes (e.g., Fitbit daily wear=93%, retention=93%, M=2 partner contacts per week over 4 weeks) and identified key opportunities for improvement, which informed Study 2. Participants (n=20, M_{Age}=50, M_{BMI}=30.9 kg/m^2) attended a single face-to-face skills session, and communicated with their partner and with the group via Fitbit social network. Feasibility/acceptability outcomes were maintained or improved in Study 2 (e.g., daily wear=97%, retention=100%, M=2 partner exchanges per week over 6 weeks). Discussion of these studies will focus on their use in the development of an NIH R21 proposal to pilot test this PA program among women with elevated cardiovascular risk.

Symposium 43C

THE THRIVE STUDY: FEASIBILITY OF AN INTERVENTION TO PREVENT WEIGHT GAIN IN BREAST CANCER SURVIVORS DURING CHEMOTHERAPY

Shannon L. Mihalko, Ph.D.

The American Cancer Society estimated that more than 230,000 new cases of invasive breast cancer would be diagnosed among women in 2015. Weight gain, a common side effect experienced by breast cancer survivors receiving adjuvant chemotherapy, has been shown to negatively impact cancer outcomes, general health and morbidity, and positive well-being. Although weight gain can be prevented by healthy lifestyle behaviors, the task of adopting and maintaining physical activity and an energy-balanced diet is a daunting one for most adults and especially for women undergoing an intensive cancer treatment protocol. Consequently, the timing of successful weight management interventions is an ongoing debate. The primary objective of the Taking Health Realization into Valued Eating and Exercise (THRIVE) study was to demonstrate the feasibility of conducting an intervention to prevent weight gain for breast cancer survivors *during* active chemotherapy. This presentation will provide an overview of the theoretical framework and highlight findings from a preference survey that informed the design and timing of the intervention. Feasibility was determined by recruitment, accrual and adherence rates, perceived barriers, adverse events, and program satisfaction. Reasons for ineligibility and the need to reevaluate inclusion/exclusion criteria in this population will be discussed, as well as barriers to recruitment and retention. Thirty women participated in THRIVE with an average age of 51 years. The adherence rate to both testing and intervention sessions was greater than 90% with time constraint and distance the most often cited barriers to participation. There were no adverse events and participants reported an overall high program satisfaction (3.7 on 4.0 scale). This feasibility study will set the stage for a multi-center clinical trial to test the efficacy of weight gain prevention during chemotherapy that may lead to beneficial effects on recurrence of breast cancer, risk of comorbid conditions, and both stress reduction and improved quality of life in cancer survivors.

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Symposium 44 8:00 AM-9:15 AM

TARGETING HEALTH BEHAVIOR CHANGE AND CLINICAL OUTCOMES WITH MINDFULNESS-BASED MOBILE INTERVENTIONS

Jessica Chandler, PhD[1], Judson A. Brewer, MD/PhD[2], Ashley E. Mason, PhD[3]

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This symposium comprises presentations that detail, from start to finish, three mobile-delivered interventions targeting health behavior change and improved clinical outcomes using mindfulness-based intervention techniques. Each presentation reviews processes of trial conduct, spanning from participant recruitment to results. By reviewing the entire process of conducting such trials, presenters will maximize attendees' learning about how to conduct research testing the impacts of mobile-delivered interventions on health behavior change and clinical outcomes. Each presenter will speak about interventions that delivered mindfulness and meditation practices over smartphones with the goals of improving health behavior and health conditions, including pre-hypertension, cigarette smoking, or obesity. The first presentation will report on a smartphone-delivered breathing awareness meditation (BAM) that focused on reducing blood pressure among adults with pre-hypertension. The second presentation will report on a smartphone-delivered mindfulness program focused on engaging individuals who smoke cigarettes to complete ecological momentary assessments (EMA) about episodes of craving and cigarette smoking while they work toward complete smoking cessation. The third presentation will report on a smartphone-delivered mindful eating intervention focused on reducing craving-related eating and weight loss among overweight and obese individuals. All presentations will review lessons learned in conducting trials that test smartphone-delivered interventions that employ mindfulness and meditation practices in the service of improving health behavior and clinical outcomes. Presentations will also report on the effects of these interventions on metrics of health and health behavior, including change in blood pressure levels, cigarette craving and smoking, and craving-related eating and weight loss.

Symposium 44A

SMARTPHONE DELIVERED BREATHING MEDITATION FOR BLOOD PRESSURE CONTROL AMONG ADULTS WITH PREHYPERTENSION

Jessica Chandler, PhD

Background: Pre-hypertension (pre-HTN) affects ~33% of adults and is a primary risk factor for hypertension (HTN) and cardiovascular disease (CVD). Breathing awareness meditation (BAM) can reduce stress levels and blood pressure (BP) but the optimal dosage level has not been determined. Furthermore, dose adherence has often been based upon self-report. In this trial we tested the acceptability and efficacy signals of Tension Tamer (TT), an iOS and Android smartphone BAM app targeting reductions in BP. Methods: Tension Tamer (TT) uses text/audio instructions with proprietary embedded, validated reflective photo plethysmography software that captures real-time heart rate (HR) from a user's fingertip placed over video camera lens during meditation sessions. Users receive feedback graphs after each session showing their HR changes. TT time stamps all HR data, which provides an index of adherence to completing sessions. TT provides tailored reinforcement and motivational text messages along with educational information about benefits of BAM. Results: Participants were 62 adults (mean age: 35.7 years; 32 males; 33 White; 29 Black) with pre-HTN on 3 consecutive sessions (mean SBP 128.8 mmHg; 95% recruitment rate). They were randomly assigned to 5, 10 or 15 min sessions, twice daily for 6 months. Average adherence declined from month 1 through months 3 and 6 across dosage groups (ps<.001); 5 min (mth 1: 82% to mth 6: 78%), 10 min (mth1: 80% to mth 6: 70%) and 15 min (mth 1: 79% to mth 6: 53%). We observed clinically meaningful and statistically significant reductions in SBP at months 1, 3 and 6 for all 3 dosage groups (ps<.001): 5 min: -8.0, -6.4, -6.2; 10 min: -7.8, -7.6, -9.2 and 15 min: -11.1, -9.4, -9.8 mmHg. Conclusion: The TT app is acceptable and useful in objectively tracking adherence and shows promise in reducing SBP in people with pre-HTN. We will present additional quantitative and qualitative analyses of post-trial informant interviews, as well as TT refinements and dosage determination for our upcoming 12-month efficacy RCT.

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Symposium 44B

MINDFULNESS TRAINING FOR SMOKING CESSATION DELIVERED VIA SMARTPHONE

Judson A. Brewer, MD/PhD

Background: Digital Health interventions for smoking cessation have become more widely used, yet challenges exist in documenting their mechanism of action and efficacy. Further, randomized controlled trials in mHealth face new opportunities and challenges: Recruitment from a broader and “real world” population is more accessible, yet participant screening and protocol adherence are more difficult to assess. Methods: We evaluated recruitment, engagement and retention in a randomized trial of a 21-day smartphone app for mindfulness training for smoking cessation: Craving to Quit. The app uses experience sampling to query smokers’ behavior and experience in real time. Queries ask participants questions such as, “how much are you craving a cigarette right now?” and participants use a sliding scale to indicate craving level. This trial compared Craving to Quit to a 21-day control app that provided goal setting, reminders, and ecological momentary assessment of cigarette craving and smoking. Participants were randomized to experimental (n=247) or control (n=263). Results: Enrollment: 5300 people accessed online screening, 5% were excluded for not having a smartphone, and 509 were randomized to treatment. We randomized twelve participants per week to treatment over 42 weeks. Demographics: Participants were mostly female (70% female), and 50% of participants used iPhone, with the other 50% using Android. The mean age was 42 years. On average, participants reported smoking 17 cigarettes/day and 6 prior quit attempts. Of participants who started treatment (treatment starters), those randomized to Craving to Quit tended to complete more treatment days (133 treatment starters) relative to those assigned to the control app (186 treatment starters), p = .051. Among treatment starters, completion rates were higher for the Craving to Quit group (47%) relative to the control group (27%), X2=14.3, p<.001. High engagement in experience sampling was achieved and did not differ between groups (p=.74). Treatment starters checked-in on average 55.3 ± 48.5 times across the study, on more than 60% of treatment days (mean=14±8 days). The average number of check-ins per day was 3.6 ± 1.7 and did not differ across groups (p=.19). At 6-month follow-up, the experimental (78%) and control (74%) groups evidenced similar retention (p=.34) and retention was greater for treatment starters (85% overall). Conclusion: Craving To Quit effectively engages individuals who are attempting to quit smoking cigarettes to check in about their cigarette cravings and smoking behavior. Craving to Quit is a promising mobile intervention for individuals attempting to quit cigarette smoking.

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Symposium 44C

A MOBILE-DELIVERED MINDFUL EATING INTERVENTION TARGETING CRAVING-RELATED EATING AND WEIGHT LOSS

Dr. Ashley E. Mason, PhD

Background: Most weight loss interventions are handicapped by sampling biases due to requiring in-person meetings. Attrition rates are often high due to unrealistic expectations about abilities to adhere to diet and exercise prescriptions. In this study, we tested a 28-day self-paced smartphone-delivered intervention that targets craving-related eating using mindful eating practices. The intervention minimizes user burden by asking users to view daily lessons that are approximately 5 to 10 minutes at any time of the user's choosing, which facilitates easy incorporation into one's lifestyle. Methods: In total, 104 adult overweight or obese women (Mean age = 46.2 years, SD = 14.1 years; Mean BMI = 31.5, SD = 4.5) began the intervention. We recorded anthropometric data pre-intervention and one month after the participant completed day 28. We assessed participants' food cravings before, during, and after the intervention using ecological momentary assessment (EMA) delivered via text message (SMS). Results: Recruitment & Enrollment: Of 1,651 participants who completed an online screener, 170 completed the baseline SMS-based craving assessment, and 141 qualified by responding to at least 7 of 9 texts and endorsing at least 3 food craving experiences. Ninety-eight (94.2%) participants indicated how they learned about the study. Of these, 40.8% (n=40) learned about the study through Facebook, 25.5% (n=25) through campus email announcements, 18.4% (n=18) through a letter in the mail, 14.3% (n=14) through other means, and 1.0% (n=1) through Craigslist. Retention: Of the 104 participants who began the intervention, 6 withdrew due serious life events (e.g., death in family, overseas relocation). Seventy-six participants completed the 28-day intervention (73.1% completion rate), of which 72 attended an in-person follow-up visit one month after completing the intervention. Intervention effects: In per protocol analysis (intervention completion within 3 months) participants (N=61) lost 1.8 lbs (p = .019) and reported a statistically significant reduction in craving-related eating from pre- to post-intervention (Mean diff = -0.19, b=-.46, p<.001). In intention to treat analysis (intervention completion as of 7 months), participants (N=72) lost 1.0 lbs (p = .160) and reported a statistically significant reduction in craving-related eating (Mean diff = -0.20, b=-.42, p<.001). Conclusion: Mobile-delivered interventions that target mindful eating practices, rather than prescriptive diet and exercise recommendations, may represent a low-burden, low-cost method to reduce craving-related eating among overweight individuals.

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Symposium 45 8:00 AM-9:15 AM

USING ECOLOGICAL MOMENTARY ASSESSMENT (EMA) TO ADVANCE HEALTH BEHAVIOR THEORY

Jaclyn P. Maher, Ph.D.[1], Genevieve F. Dunton, PhD, MPH[1], Chih Hsiang Yang, MEd[2], Meg Bruening, PhD, MPH, RD[3]

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Health behavior theories serve as a guiding framework for understanding and intervening on weight-related behaviors (e.g., physical activiy, sedentary behavior, dietary intake). However, traditional health behavior theories such as the Theory of Planned Behavior or Social Cognitive Theory face growing criticism. Traditional health behavior theories are limited in that they often (1) consider behavior as static phenomena examined at a single time point, (2) overlook contextual influences on behavior, and (3) do not incorporate concepts such as stability or instability of behavior and relevant covariates. Ecological momentary assessment (EMA) is a real-time data capture strategy that can help to address the limitations of health behavior theory by intensively sampling behavior and other relevant factors as they occur in the context of everyday life. Specifically, EMA can be used to determine (1) the extent to which explanatory factors co-occur in time and space with health behaviors (i.e. synchronicity), (2) the temporal sequence of antecedents to and consequences of health behaviors (i.e., sequentiality), and (3) patterns of fluctuation and change in explanatory factors and behavior (i.e., instability). This symposium will address how EMA is stimulating advances in health behavior theory with specific emphasis placed on the role of EMA to address sequentiality. The first presentation will explore time-varying predictors of short-term physical activity intention formation and short-term physical activity intention-behavior coupling using data collected through EMA and ambulatory monitoring. The second presentation will explore the role of mothers' momentary stress on mothers' subsequent parenting practices regarding their child's physical activity, sedentary behavior, and eating. The third presentation will explore associations between momentary positive and negative affect and physical activity and sedentary behavior in college students. Overall, these presentations will reveal both the benefits and challenges of using EMA methods to advance our understanding of the processes underlying health behavior change. The discussant will address both the specific contributions of these presentations and the broader role of using EMA in the advancement and refinement of health behavior theory.

Symposium 45A

MOMENTARY ASSESSMENT OF PHYSICAL ACTIVITY INTENTION-BEHAVIOR COUPLING IN ADULTS

Jaclyn P. Maher, Ph.D.

Background: Research attempting to elucidate physical activity (PA) intention-behavior relations has focused on differences in long-term behavior forecasting between people. However, regular PA requires a repeated performance on a daily or within-daily basis. Intensive longitudinal data (ILD) collected through methods such as Ecological Momentary Assessment (EMA) and mobile sensors can examine within-person differences in PA intentions over shortened timescales to understand how they might predict variations in one's immediate behavior. This study used ILD collected through EMA to (a) describe the extent to which short-term intention-behavior coupling occurs and (b) explore time-varying predictors of intention formation and short-term intention-behavior coupling. Methods: Adults (n =116) participated in three separate four-day waves of EMA. Each day, participants received eight EMA questionnaires assessing short-term PA intentions (i.e., "over next few hours") and current affect and context (i.e., "right now"). Participants wore accelerometers at the same time as completing EMA to assess whether they engaged in ≥10 minutes of moderate-to-vigorous physical activity (MVPA) in the 3-hour period after each EMA prompt. Results: Participants reported having short-term intentions to engage in PA in 41% of EMA prompts. However, participants engaged in ≥ 10 minutes of MVPA following only 16% of the prompts that short-term PA intentions were reported. Participants were more likely to intend to be active in the mornings (OR = 2.16, $p < 0.01$), but less likely to intend to be active in the evenings (OR = 0.32, $p < 0.01$) compared to other times during the day. Participants were also more likely to intend to be active on weekend days compared to weekdays (OR = 1.69, $p < 0.01$). Odds of intentions followed by PA were greater on occasions when individuals reported higher levels of positive affect than was typical for them (OR = 2.20, $p < 0.01$). Conclusion: Results from this study are the first of its kind to indicate the possibility of time-varying factors predicting the formation and enactment of short-term PA intentions across the day. Understanding the role that these processes play in intention formation as well as intention-behavior coupling is necessary to determine the processes that regulate PA in the context of everyday life and ultimately develop more effective, tailored interventions for individual behavior change.

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Symposium 45B

MATERNAL STRESS AND WEIGHT-RELATED PARENTING PRACTICES: AN ECOLOGICAL MOMENTARY ASSESSMENT STUDY

Dr. Genevieve F. Dunton, PhD, MPH

Background: According to theories of ego depletion and self-regulation, psychological stress may compromise parenting practices related to children’s dietary intake and physical activity. However, past research in this area used retrospective measures of stress and overlooked within-person processes. This presentation will demonstrate how Ecological Momentary Assessment (EMA) can be used to examine micro-temporal sequences underlying maternal stress and subsequent weight-related parenting practices. Methods: Mothers (N = 194) (mean age = 41.0,48.5% Hispanic) of children 8-12 years old participated in 7 days of EMA with up to 7 randomly-prompted EMA surveys per day (every 2 hours) during children’s non-school time. EMA items assessed perceived stress (“right now”), exposure to stressors (i.e., work at home, family demands, spousal tension) (“over the past 2 hours”), and weight-related parenting practices (i.e., limiting of high fat/high sugar foods) (“over the past 2 hours”). Multilevel models examined prospective associations between maternal stress variables reported at any given prompt T and subsequent weight-related parenting reported at the next prompt T+1 (occurring 2 hours later), disaggregating within-subject (WS) and between-subject (BS) effects of stress and adjusting for relevant covariates (e.g., time of day, child age). Results: BS effects showed that mothers who experience greater stress from work at home (b=-0.33), family demands (b=-0.30), spousal tension (b=-0.50), and general perceived stress (b=-0.08), on average compared to other mothers, reported less limiting of high fat/high sugar foods (p’s <.05). However, WS effects showed that when mothers reported experiencing greater stress from work at home (b=0.37), family demands (b=0.32), and spousal tension (b=0.54) than their usual, they subsequently engaged in more limiting of high fat/high sugar foods in the next 2 hours (p’s<.05). Conclusion: Among mothers, overall levels of stress may deplete emotional and cognitive resources needed to successfully perform weight-related parenting. However, during times of family and home stress, mothers' vigilance toward weight-related parenting may be temporarily enhanced. The subpopulation of mothers who tend to experience the most stress may be in greatest need for interventions targeting weight-related parenting, and the effectiveness of such interventions could be maximized by enhancing parenting vigilance during situations with lower relative levels of stress. This presentation will conclude by discussing the strengths and challenges of using EMA to test and advance theories of ego depletion and self-regulation.

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Symposium 45C

AFFECTIVE ANTECEDENTS OF SITTING, STANDING, AND MOVING IN DAILY LIFE

Chih Hsiang Yang, MEd

Background: Cognitive processes feature prominently in theories of physical activity and sedentary behavior. The role of affective processes, such as stress, anxiety, and pleasure, has been less well developed. Affective processes can fluctuate rapidly throughout the day and these fluctuations cannot be captured adequately cross-sectional, prospective, and panel datasets. Affective experiences during physical activities predict adherence, presumably because people become conditioned to associated activity with a reward or punishment based on this affective experience. Affective experiences may also energize or inhibit proximal activity patterns but this association has not been established. We used an experience sampling research design to test hypotheses about the role of affective processes in predicting the odds of future sedentary behavior, standing, and physical activity of different intensities. Methods: Over 14 days, 158 university students responded to eight randomly-timed prompts to complete momentary self-reports using the Personal Analytics Companion (Paco) smartphone application. A total of 14,591 experience samples were collected (M=92/participant). Results: A series of logistic multilevel models found that, after controlling for gender, the time of the day, day of the week, and duration between momentary responses, within-person deviations in prior stress levels significantly predicted increased odds of reporting sitting (odds ratio= 1.07, *p*<.05), and decreased odds of reporting standing (odds ratio= 0.86, *p*<.01) in the following responses. The odds of engaging in vigorous physical activity were also negatively predicted by prior stress levels (odds ratio= 0.81, *p*<.05) and positively predicted by prior levels of anxiety (odds ratio= 1.19, *p*<.05) and pleasure (odds ratio= 1.23, *p*<.01). At the between-person level, average levels of stress, anxiety and pleasure did not predict the odds of sitting or engaging in light/moderate/vigorous physical activity. Interaction effects were further identified between the latency of responses and levels of momentary pleasure in predicting subsequent light (*p*<.01) and moderate physical activities (*p*<.01). Conclusion: These results supported the hypothesis that within-person affective dynamics influence proximal activity patterns. Thus, affect regulation interventions may be useful for reducing sedentary behavior and promoting physical activity. Further work with both ecological momentary assessment designs and experimental trials of affective regulation interventions is needed to elaborate the role of affective processes in regulating physical activity and sedentary behavior.

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Symposium 46 8:00 AM-9:15 AM

MECHANISMS OF TREATMENT CHANGE: RESULTS FROM ACCEPTANCE AND COMMITMENT THERAPY FOR CHRONIC PAIN, WEIGHT LOSS, AND BINGE EATING

Kevin E. Vowles, PhD[1], Evan M. Forman, PhD[2], Stephanie Manasse, MS[2]

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Psychosocial treatments for physical illness have amassed considerable evidence of effectiveness, yet the mechanisms by which they achieve this success remains unclear. Consequently, there are few data to guide treatment development and implementation efforts focused on these active processes, or mechanisms, of change. Recent calls from several research bodies, such as the NIH, have highlighted the need to address this issue. This symposium will present the results of several studies which specifically evaluate treatment mechanisms in one model of intervention, that of Acceptance and Commitment Therapy (ACT). Data from three representative health conditions, chronic pain, obesity, and binge eating, will be presented. The presentations will share a focus on treatment processes specifically targeted by ACT, that of increases in acceptance and awareness (e.g., of pain, current weight, and urges to binge) and engagement in valued activities and will evaluate how changes in these processes relate to treatment outcomes. Dr Vowles will first discuss the results of several Latent Growth Modeling analyses using data collected as part of an interdisciplinary program of ACT for chronic pain. Results indicated two distinct patterns of change in pain acceptance and engagement in valued activities, one of substantial improvement and one of no change. Distal outcome analyses, investigating the relation of trajectory of change in treatment mechanisms (i.e., improved/unchanged) with disability and pain-related functioning at three-month follow-up indicated that membership in the improved acceptance and values trajectory was associated with significantly greater improvements in disability and functioning. Dr. Forman will next describe mediational analyses conducted on a randomized clinical trial of an acceptance-based behavioral treatment versus gold standard behavioral treatment for obesity. Bootstrapping analyses indicated that the advantage of the acceptance-based treatment in the maintenance of weight loss through 3-year follow-up was mediated by earlier changes in eating-related psychological acceptance and autonomous motivation. Finally, Ms. Manasse will present the results from a preliminary investigation of cognitive and affective mechanisms of change in an ACT for binge eating disorder. Results indicated that improvements in emotion regulation and decreases in experiential avoidance were associated with improvements in eating pathology. Exploratory analyses also indicated that improvements in working memory and inhibitory control were associated with decreases in binge eating. These data provide guidance on active treatment mechanisms within one distinctive model of treatment and the overlap across

conditions suggests these processes may be generalizable across healthcare conditions, thereby providing a potential model for future work.

Symposium 46A

ACT FOR CHRONIC PAIN: WITHIN-TREATMENT TRAJECTORIES FOR ACCEPTANCE & VALUES PREDICT IMPROVED FUNCTIONING AT FOLLOW-UP

Dr. Kevin E. Vowles, PhD

A key issue in chronic pain treatment concerns the changes necessary for improved functioning. Traditionally, reducing pain has been viewed as a prerequisite for improvement - alternatively, Acceptance and Commitment Therapy (ACT), a behavior change approach, theorizes that pain reduction is not necessary for improvement, rather responses to pain must change, such that behavior become less restricted, more flexible, and more persistent in the pursuit of adequate activity.These improvements in functioning are hypothesized to result from improvements in pain acceptance and engagement in valued activity. Support for these two treatment mechanisms have been provided via correlational findings (e.g., pre-post changes in acceptance are significantly correlated with magnitude of improvement in functioning), but modern statistical methods allow for more nuanced and informative analyses which examine how specific aspects of change relate to treatment outcome. For example, Latent Growth Modeling (LGM) allows the examination of longitudinal data to determine if multiple trajectories of change occur (e.g., a trajectory of improvement and one of no change) and if aspects of these trajectories, including intercept and slope, are statistically predictive of improvement in key treatment outcomes, such as distress and disability. This presentation will detail a LGM analyses of trajectories of pain acceptance and valued action, as well as the relation of these trajectories to outcomes at a three-month follow-up, over the course of a 4 week program of interdisciplinary ACT for chronic pain. Pain acceptance and values were assessed weekly during treatment; distress and disability were assessed at treatment onset and follow-up. Results indicated two latent trajectories for both acceptance and values, one with no change and one with an increasing quadratic slope indicating significant improvement during treatment. Further, change trajectory during treatment was significantly related with improvement at follow-up, such that greater increases (i.e., positive slope) in acceptance and values during the four weeks of treatment were statistically predictive of larger improvement at follow-up. This pattern of findings provides support for the ACT model in chronic pain and suggests that the mechanisms identified in the theoretical model have a significant statistical relation with degree of improvement following treatment.

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Symposium 46B

MECHANISMS OF ACTION EXPLAINING THE SUPERIORITY OF ACCEPTANCE-BASED BEHAVIORAL OVER STANDARD BEHAVIORAL WEIGHT LOSS TREATMENT

Evan M. Forman, PhD

Acceptance-based behavioral treatment (ABT) has demonstrated superior weight loss to gold standard behavior treatment (SBT). However, the mechanisms of action that carry the effects of ABT are not well understood due to the fact that the treatment contains a suite of strategies (e.g., behavioral, tolerance of difficult internal experiences and loss of pleasure, mindful decision making and commitment to valued behavior), a paucity of data and measurement limitations. In a recent randomized controlled trial, 190 overweight or obese participants were assigned to 25 sessions of ABT or SBT over a 1-year period. At baseline, mid-treatment (6 months) and post-treatment (1 year), postulated mechanisms of action (autonomous motivation and eating-related psychological acceptance) were measured, and weights were taken at these points as well as at 1-year follow-up (2 years) Bootstrapping analyses indicated that the advantage of ABT at post-treatment and follow-up assessments was mediated by 6-month change in autonomous motivation and eating-related psychological acceptance (CIs>95%). In addition, change in eating-related psychological acceptance (but not autonomous motivation) from baseline to 6 months mediated the advantage of ABT during the maintenance period between years 1 and 2 (post-treatment to 1-year follow-up). Thus, some psychological mechanisms have effects long after they have been activated. Future investigations should work to develop and test methods of enhancing behavioral weight loss treatment on the strength of accumulating knowledge about the most (and least) potent mechanisms of action.

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Symposium 46C

AN EXAMINATION OF POTENTIAL COGNITIVE AND AFFECTIVE MECHANISMS OF CHANGE IN ACCEPTANCE-BASED TREATMENT FOR BINGE EATING

Stephanie Manasse, MS

Standard treatments for binge eating disorder (BED) produce significant improvements in eating pathology, but room for improvement remains. Strategies from acceptance-based treatments (ABTs; e.g., Acceptance and Commitment Therapy and Dialectical Behavioral Therapy) show promise for enhancing the treatment of binge eating disorder (BED) specifically by providing strategies for tolerating negative affect, and slowing down decision making processes. However at this time, it is unknown whether ABT works via its hypothesized mechanisms. Examination of mechanisms is critical for eventually developing more efficacious and optimized interventions.

As such, we conducted a preliminary pilot open trial (n=19) of ABT for BED and assessed whether pre-post changes in potential process measures were associated pre-post improvements in eating pathology. Specifically, we examined whether changes in emotion regulation and experiential avoidance were associated with changes in binge eating and global eating pathology after 10 weeks of treatment. Given that the focus of several ABT strategies is to slow down in-the-moment decision-making, as an exploratory analyses, we examined several executive functioning variables (i.e., cognitive control processes that govern goal-directed behavior) as potential treatment processes. Results indicated that changes in improvements in eating pathology were associated with increases in emotion regulation (*r*=.54) and decreases in experiential avoidance (*r* =-.41). In addition, improvements in working memory (*r*=.39) and inhibitory control (*r*=.54) were associated with decreases in eating pathology.

These preliminary results from our small pilot trial show promising support for increases emotion regulation and decreases in experiential avoidance as potential mechanisms of ABT. In addition, improvements in working memory were associated with treatment gains, perhaps because slowing down in-the-moment decision making impacts the ability to keep goal-oriented information in mind. ABT may also work to decrease impulsive tendencies via improving inhibitory control. Given the small sample size and correlational nature of analyses, replication with larger samples is necessary.

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Symposium 47 8:00 AM-9:15 AM

NEXT-GEN MHEALTH: INTEGRATING PHYSIOLOGICAL MEASURES WITH SMART TECHNOLOGY TO INFLUENCE HEALTH BEHAVIOR CHANGE

Yue Liao, MPH, PHD[1], Susan M. Schembre, MS PhD RD[2], David W. Wetter, PhD[3], Bonnie Spring, PhD[4], Tiffany Cvrkel, PhD[5]

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Advancements in wearable sensor technology now make it possible to assess, in real-time, physiological measures that influence or are influenced by health behaviors; representing an exciting and potentially transformative development in health behavior research. The utility of integrating objective measures reflecting a person's physiological state with traditionally used self-report measures as well as ubiquitous mobile and smartphone technologies has inciting implications on both the assessment of and intervention on health behaviors. In particular, this integrative approach enables the study of the acute effects that physiological states, such as stress, have on health-related behaviors, and reciprocally, how a person's behavior could affect physiological states that have important health consequences. Importantly, this approach has the greatest potential to proactively intervene at critical moments in peoples' natural environments in an effort to support health-related decisions. Areas of research enhanced by the integration of body sensor technology and health behavior change that will be discussed during this symposium include dietary intake and smoking cessation and relapse prevention. In the first talk we will discuss the feasibility and value of using continuous glucose monitors to objectively assess dietary intake and to provide proactive dietary decision support for weight control and healthy eating. Our second speaker will discuss how body sensors can be used to facilitate the real-time assessment of stress and smoking behavior by tracking physiologic and behavioral data. Our final speaker will discuss the translation of these objective assessment techniques to the development of a real-time adaptive stress reduction intervention that is triggered by sensed physiological stress with the aim of preventing relapse to smoking. During the session the speakers will discuss the challenges of this research related to big data analytics and intervention timing. The session will highlight the need for behavioral theories that integrate physiological measures with behavior change constructs and clarify the relationship between physiological state and perceived state. In addition, the discussant - a bioethicist specializes in emerging biomedical technologies will lead the discussion around the topic of the ethical challenges around mHealth, eHealth, and Big Data.

Symposium 47A

USING MOBILE GLUCOSE MONITORING AS BIOLOGICAL FEEDBACK ON DAILY EATING BEHAVIORS

Dr. Yue Liao, MPH, PHD

Background: A number of theoretical frameworks emphasize the importance of using feedback as a strategy for health behavior change (e.g., social-cognitive theory, theory of reasoned action). Real-time physiological feedback, objectively assessed by body sensors, has the potential to influence behavior change by informing health-related decisions at critical moments. This study aims to examine the feasibility of collecting continuous glucose monitoring (CGM) data from free-living individuals as real-time physiological feedback about short-term energy status (pre-meal glucose levels) and metabolic responses to dietary intake (post-meal glucose dynamics) to influence diet-related decisions that promote dietary behavior change for weight control. **Methods:** Ten healthy participants (M age=28.9, 70% female, 30% Hispanic, 60% overweight) have completed a 7-day monitoring period. Blood glucose (BG) levels were recorded every 5 minutes using the Dexcom G4 PLATINUM CGM system. Participants also completed diet records using MyFitnessPal and indicated perceived pre-meal hunger levels in the CGM receiver using a 10-point scale. CGM data from monitoring days 3 to day 7 were analyzed. In addition, diet data will be analyzed and presented for glycemic quality using Nutrition Data Systems for Research. **Results:** On average, participants reported 33.3 (SD=12.8) eating events across the 5 analytical days. Of these eating events, 61.7% (SD=.20) were initiated when a participants' pre-meal BG level was greater than 85 mg/dl (a standard fasting BG level) and 48.8% (SD=.19) were initiated when a participants' BG level was greater than their own fasting BG level. On average, participants had 2.9 (SD=3.0) hyperglycemic events (post-meal BG rise above 140 mg/dl). The average mean amplitude of glycemic excursions (MAGE), which indicates the BG variability from peaks to nadirs, for all eating events was 35.7 mg/dl (SD=10.3). Preliminary analyses showed that overweight participants reported more frequent eating above 85 mg/dl than normal weight participants (t=-2.22, p=.058). **Discussion:** Serial CGM data provides valuable physiological feedback reflecting eating behaviors and dietary glycemic quality in free-living settings. Findings provide early evidence that pre-meal BG levels could guide decisions about when to eat. Future studies testing the use of CGM data as physiological feedback in real-time interventions that promote dietary behavior change and weight control are warranted.

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Symposium 47B

ACUTE STRESSORS, DISCRIMINATION, AND SMOKING LAPSE LIKELIHOOD AMONG UNDERSERVED GROUPS

Dr. David W. Wetter, PhD

Several conceptual models posit that greater exposure to stressors is a key mechanism linking underserved status to lower rates of smoking cessation. Surprisingly, there are only a handful of studies examining the impact of acute stress on real time, real world cessation outcomes, and to the best of our knowledge, none that examine the acute effects of minority specific stressors such as discrimination. Two longitudinal cohort studies examined the influence of acute stressors on the likelihood of smoking lapse. In both studies, smokers received smoking cessation treatment (behavioral, patch) and were tracked both pre- and postcessation using Ecological Momentary Assessments (EMA). The first study included 364 predominantly low socioeconomic status smokers evenly split among African Americans, Latinos, and Whites. Participants reported the presence of a new stressor in 3%, an ongoing stressor in 10%, and both new and ongoing stressors in 31% of EMAs. The presence of any stressor (new OR=2.1, p<.001; ongoing OR=1.4, p=.003; both OR=1.8, p<.001) increased the likelihood of a lapse in the next 4 hours, even after controlling for smoking in the previous 4 hours. There was no synergistic effect of experiencing both new and ongoing stressors. The second study examined the impact of acute discrimination on lapse likelihood among 159 Spanish speaking Latino smokers. Participants reported that they were certain they had experienced discrimination in <1% of EMAs. The presence of discrimination increased the likelihood of a lapse in the next 4 hours (OR=6.1, p<.03), even after controlling for smoking in the previous 4 hours. The results from these studies suggest that acute stressors place underserved populations at greater risk for poor cessation outcomes. Ongoing research is building on these data using state of the science methodologies such as AutoSense and geographic positioning system (GPS). AutoSense tracks behavioral and physiologic data in real-time and can objectively detect when an individual smokes or encounters a stressor. GPS permits real-time spatial mapping, which can be paired with EMA and Autosense, and with relevant environmental exposures (e.g., tobacco outlets; area-level poverty).

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Symposium 47C

OPTIMIZING SENSE2STOP: A JUST-IN-TIME ADAPTIVE MHEALTH STRESS INTERVENTION TO PREVENT SMOKING RELAPSE

Prof. Bonnie Spring, PhD

Technical advances in the design of wearable sensors make it feasible to passively monitor changes in physiological state, creating the potential for real time adaptive intervention. The presenter will describe the development and implementation of a stress reduction intervention triggered by sensed physiological stress and with the aim of preventing relapse to smoking among recently quit smokers. She will describe how the interdisciplinary intervention team worked through intervention development challenges that included: 1. construct validation of the physiological stress indices, 2. translation between computer science and behavioral science metrics in operationalizing the physiological trigger for intervention, 3. designing stress –management interventions that can be triggered based on momentary physiological stress indices, 4. providing processing capacity to perform big data analytics needed to infer stress accurately and make intervention decisions in real time, 5. micro-randomization approach to developing evidence based decision rules about intervention timing, and 6. managing data quality and participant burden. The Sense2Stop development process highlights the need for a more dynamic theory of stress, one that clarifies the relationship between momentary physiological and subjective stress, pinpoints substrates for stress management intervention, and posits behavior change mechanisms underlying the optimal timing of intervention triggers.

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Symposium 48 8:00 AM-9:15 AM

MEASURING AND TAILORING WEIGHT MANAGEMENT TREATMENT FOR THE UNIQUE NEEDS OF VETERANS

Robin Masheb, Ph.D.[1], Lindsey Dorflinger, PhD[2], Phoutdavone Phimphasone, MA[3], Kathryn Godfrey, MS[4], Niloofar Afari, PhD[5]

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Studies show that Veterans have been disproportionately affected by overweight/obesity over the last decade, but few studies have examined eating behaviors and associated factors in this population. Given the high prevalence of binge eating among overweight/obese Veterans as well as the growing number of women Veterans, there is a pressing need to enhance assessment and better understand the unique treatment needs among Veterans seeking services related to weight and eating behaviors. The objective of this symposium is to enhance our understanding of eating behaviors, and correlates of eating disorders and obesity, among this vulnerable patient group. Data was collected from Veterans attending orientation sessions for the VA national weight management program utilizing measures of eating, weight, and psychiatric functioning, and the electronic health record. Each presenter will report on a timely and relevant aspect of eating and weight. The first presenter will discuss findings of the relatively new and controversial construct of food addiction. Pertinent to the inclusion of Binge Eating Disorder in DSM-5, the second presenter will introduce a new single-item screener for binge eating that is feasible for use in medical settings. Given the high rates of comorbid pain and overweight/obesity in the Veteran population, and the implications for the treatment of each condition, the third presenter will discuss the unique characteristics and needs of Veterans with overweight/obesity who meet criteria for clinical pain. Finally, the last presenter will examine weight reporting biases in this sample. The implications of these findings for assessment and treatment of weight management and associated eating behaviors in the Veteran population will be discussed.

Symposium 48A

FOOD ADDICTION AMONG VETERANS WITH OVERWEIGHT/OBESITY

Dr. Robin Masheb, Ph.D.

Objective: Obesity prevalence is higher among veterans compared to the general population. and thus places veterans at greater risk for morbidity, mortality, and compromised quality of life. The relationship between maladaptive eating and obesity within an addiction framework is an emerging field of study. The purpose of the present study was to investigate food addiction in a sample of veterans with overweight/obesity.

Methods: Participants were veterans with overweight/obesity who attended consecutive orientation session at VA Connecticut Healthcare System for the MOVE! program, VA's weight management program which has been implemented nationally. Veterans (n = 119, mean age 61.7 years, mean BMI 37.9, 90% male, 75% Caucasian) completed the Yale Food Addiction Survey; measures of eating behavior, including the Eating Disorder Examination-Questionnaire, Yale Emotional Overeating Questionnaire, Night Eating Questionnaire, and Questionnaire on Eating and Weight Patterns – Revised; and psychiatric screening questionnaires for depression (PHQ-2), posttraumatic stress disorder (PC-PTSD) and alcohol abuse (AUDIT-C).

Results: Twelve participants (11%) screened positive for Food Addiction (FA). Analyses of covariance (ANCOVAs) controlling for BMI were conducted to compare those who screened positive versus negative on FA. Veterans with FA had significantly higher scores on screeners for depression (F=8.18, p

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Symposium 48B

A SINGLE-ITEM SCREENING MEASURE FOR BINGE EATING

Lindsey Dorflinger, PhD

Binge eating disorder (BED) is rarely screened for or detected as part of standard medical care, largely because there are currently no assessment tools that are sufficiently brief and specific enough to make routine screening feasible. However, given that BED is associated with a number of medical and psychiatric issues, including cardiovascular disease, metabolic syndrome, depression, and anxiety, and because effective and accessible treatments for BED have been established, the identification of BED in medical settings could facilitate timely referral to treatment, and potentially subsequent improvement in comorbidities. Therefore, the present study sought to examine the validity of a single-item screening measure for binge eating among veterans, who have shown to have high rates of binge eating as well as associated medical and psychiatric comorbidities. Participants were 116 veterans referred to the MOVE! program, a primary care-based weight management program implemented throughout VA nationally. Participants had a mean age of 61.66 years (SD = 8.73) and mean BMI of 37.90 (SD = 7.35). The item, the VA Binge Eating Screener (VA-BES), was derived from the widely-used VA MOVE!23 and MOVE!11 surveys, which have been used as part of clinical care within VA to assess factors that affect weight and weight-related behaviors and tailor treatment to each veterans' needs. All participants completed the Questionnaire of Eating and Weight Patterns – Revised (QEWP-R) to assess for BED, the VA-BES, and measures of disordered eating and depressive symptoms. Patient responses to the QEWP-R showed a prevalence of BED of 7.76%, and that frequency of binge eating ranged from zero to 21 episodes per week. The VA-BES was compared to the QEWP-R to determine the sensitivity, specificity, positive predictive value, and negative predictive value for each cutpoint. One cutpoint (≥2 binge eating episodes per week) maximized these values, demonstrated excellent agreement with the QEWP-R ($\chi^2 = 24.79$, $p < .001$), and had significant associations with measures of disordered eating, emotional overeating, and depressive symptoms. The VA-BES appears to be a useful and valid measure of binge eating in veterans, and is brief and targeted enough to be routinely used in primary care and other outpatient medical settings in which the identification of binge eating and referral to treatment could ultimately have beneficial effects on the medical issues at hand. The VA-BES demonstrated good concurrent validity, sensitivity, and specificity in this sample of overweight and obese veterans; future studies should also assess its utility in other samples.

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Symposium 48C

VALIDITY OF SELF-REPORTED WEIGHT: MEASURING WEIGHT REPORTING BIAS IN VETERANS WITH OVERWEIGHT/OBESITY

Phoutdavone Phimphasone, M.A.

Understanding how individuals self-report height and weight is important given that measurement of objective heights and weights is not feasible or practical for many large-scale studies. Previous research has investigated reporting biases in US general populations and clinical samples, with participants generally under-reporting weight. To date, only one study investigated the accuracy of self-reported height and weight among Veterans.

This study investigated the accuracy of Veterans' self-reported weights compared to measured weights obtained from electronic medical record (EMR). Veterans (N=127) were recruited from a weight management program at VA Connecticut Healthcare System and completed a battery of self-report questionnaires at their orientation session. Veterans reported their current weight, and their weight 3, 6 and 12 months ago. The orientation session date was considered the index date. Measured weights were obtained from EMR from time points of interest (orientation, and 3, 6, and 12 months prior to orientation) with acceptable window of (+/- 30 days) from each time point. The Bland-Altman plot method was used to quantify the agreement between the self-report and EMR weights by constructing limits of agreement.

Analyses have been conducted on 88 Veterans for current and 3-month self-reported and EMR weights. Participants (n= 80 male; n = 8 female) had mean age of 62.03 (SD=8.9), average BMI of 38.03 (SD = 7.47), and 77% were Caucasian. For current weight, the average difference was -2.8lbs (0.91kgs, SD = 15.33) with Veterans under-reporting weight than EMR weight; limits of agreement -27.56 to 32.87. For 3-month weight recall, the average difference was -0.73 lbs (0.33 kg, SD = 11.76); limits of agreement -22.70 to 23.76. Linear regression analyses revealed that there were no significant proportional biases in weight recall; standard deviations were large indicating significant individual variability in recall. Final analyses will include the entire sample (N=127) and all four weight collection time periods (orientation, and 3-, 6,- and 12-months).

Preliminary analyses demonstrated that Veterans accurately recalled their current weight and their weight three months compared to EMR; they were also better reporters than the general population who significantly under-report their current weight by 6-13lbs (3-6 kg). Understanding biases in reporting of weights strengthens our confidence in studies that utilizes self-report methods for collecting weight and weight trajectory data.

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Symposium 48D

MODIFIABLE RISK FACTORS AMONG WEIGHT LOSS SEEKING VETERANS WITH PAIN

Kathryn Godfrey, MS

Rates of overweight/obesity approach 75% in some Veteran samples. Chronic pain is also highly prevalent among Veterans with up to 70% of Afghanistan and Iraq Veterans endorsing pain lasting 3 months or longer. Overweight/obesity and chronic pain frequently co-occur and demonstrate a reinforcing, bidirectional relationship. Individuals with pain and obesity often attribute weight gain to difficulty with exercise due to pain. However, less is known about how pain relates to other potentially modifiable factors, such as eating behaviors and psychiatric symptoms. This study examined the characteristics of Veterans with and without pain that were initiating weight loss treatment (MOVE!) at VA Connecticut. Veterans enrolling in MOVE! (N = 126) completed measures of psychiatric, eating, sleep, and pain symptoms. The sample was mostly male (90%), White (75%), and non-Hispanic (93%) with average age of 62 years (SD = 8.6) and average body mass index (BMI) of 38 (SD = 7.4). Mean self-reported pain rating was 4.11 (SD = 2.26, range = 0-10). Moderate to severe pain, defined as a current pain rating of 4 and above, was endorsed by 57% of the sample. BMI was not significantly different between Veterans with and without pain; however, Veterans reporting pain reported higher levels of weight concern (p = 0.017), emotional overeating (p = 0.030), and night eating (p = 0.033). They also had significantly higher scores on measures of depression (p = 0.002), post-traumatic stress disorder (p = 0.005), and insomnia (p < 0.001).For Veterans seeking behavioral weight loss treatment, moderate to severe pain is associated with more severe mental health problems, disordered eating symptoms, and sleep disturbance, all of which may negatively impact weight loss outcomes. A better description of the clinical characteristics of Veterans with pain who participate in MOVE! can highlight their unique needs and improve treatments to address chronic pain in the context of weight loss treatment.

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Symposium 49 8:00 AM-9:15 AM

PEER SUPPORT: GLOBAL DISSEMINATION AND LESSONS LEARNED

Edwin B. Fisher, Phd[1], Henriette Curtz Jansen, Master of Sports Science[2], Yuenxing Liu, PhD[3], Guadalupe X. Ayala, Ph.D. MPH[4], John Elder, PhD, MPH[4]

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Abundant evidence supports the value of peer support interventions including involvement of community health workers, *Promotores de Salud,* coaches and others. Despite their strengths, implementation of such programs presents numerous challenges. Who will be the peer supporters? How will they be trained? Will they work with groups, individually, by phone? Who will supervise them? How will quality be assured? In what organization will they be based? Will they be part of clinical teams or community based? If dealing with complex diseases, what are the limits of their roles and the linkages with professionals? This symposium presents the lessons learned from peer support programs in Copenhagen, Shanghai, and along the California-Mexico border. In Copenhagen's *Health in Your Language,* peers carry out dialogue based meetings and varied activities to address risks for noncommunicable diseases and HIV among varied immigrant groups. *Men in Copenhagen* promotes strengthened social relations and mental health among unemployed, mostly unmarried men with limited education and who are at risk for type 2 diabetes. The Shanghai Integration Model (SIM) brings together specialty/hospital and primary care for diabetes. Drawing on training that has led to over 35 programs in China and successful models for peer support in Community Health Centers, programs in Shanghai have addressed how to place peer supporters in Community Health Centers, link them with hospital-based clinical and training resources, and deploy them to facilitate self management as well as planned care within the SIM. In southern California, an academic-community partnership led to the development and implementation of peer support programs to promote healthy eating, diabetes control, and asthma control, and to prevent and control childhood obesity in the US Hispanic/Latino community. Program structures have varied from stand-alone programs to integration into clinical care. Across all of these programs, the *continuum of peer support* – from community to clinic, mutual help to highly trained peer coaches, individual to group, general health to disease-specific objectives – emerges as both a challenge of peer support and the base of its vitality.

Symposium 49A

PEER SUPPORT IN THE COPENHAGEN MUNICIPALITY HEALTH DEPARTMENT

Mrs. Henriette Curtz Jansen, Master of Sports Science

Copenhagen Municipality has initiated three innovative peer support approaches as part of a strategy to curb inequality in health and reach populations at special risk and hardly reached by traditional health services. The respective target groups are:

1. Ethnic minority groups at risk for noncommunicable diseases (especially immigrants from Middle Eastern countries)

2. Ethnic minority groups experiencing high rates of HIV (especially from sub-Saharan Africa, Eastern Europe, Thailand and the Philippines)

3. Men at risk of type 2 diabetes (especially unemployed single men with limited education, over the age of 45).

For the two first target groups the program Health in Your Language emphasizes peer education and role modeling. Trained peer health advisors, recruited from relevant ethnic groups, facilitate dialogue-based meetings on health topics in everyday settings. Peer health advisors also facilitate activities with professional health workers, bridge building citizens and municipal staff. In 2015 more than 6000 people attended activities facilitated by peer health advisors. Based on Health in Your Language, a special team of ethnic minority health advisors from sub-Saharan Africa, Thailand and the Philippines offer tailored activities such as health advice, health quizzes, checks and on-site HIV tests.

For men at risk for diabetes, a program starting in March 2016, Men in Copenhagen addresses health in a broader perspective. Here, peers facilitate informal social activities (walks and talks, social networking, games, social cooking etc.) to the target group and when needed bridge build to health related services such as smoking cessation classes, etc. To facilitate access, there are no requirements of registration to attend activities. In contrast to Health in Your Language, the focus is not primarily on delivering health advice and knowledge, as it is assumed to create distance to the target group. Rather social relations and mental health is strengthened as a pathway to improved health. All initiatives seek to “meet participants where they are,” thus working with religious and voluntary institutions, housing areas, shelters etc. Peers are paid by the hour and continuously guided and trained.

Organizational strengths of working with peers in these programs are:
1) Continuous generation of knowledge about hardly reached groups through their interactions with peers

2) Peer workers' ability to navigate easily in settings where health professionals, even those focused on community outreach, cannot.

Organizational challenges include supporting and maintaining peer teams which can be time consuming and challenging.

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Symposium 49B

PEER SUPPORT IN THE SHANGHAI INTEGRATION MODEL

Yuenxing Liu, PhD

In China, recent government reforms to establish community health centers (CHCs) as the principal providers of primary and routine health care have led to a need for innovative approaches to care of chronic conditions like diabetes. New approaches aim to redefine the model of chronic disease care in China by reversing the underutilization of CHC-based primary care, linking CHCs with hospital-based specialty care, and strengthening the capacity of CHCs through the training of care teams. Shanghai has been a national leader in the modern era of healthcare reform. The Shanghai Integration Model (SIM) brings together primary and specialty/hospital care for diabetes through shared treatment algorithms, patient education, referral plans, and information systems as well as extensive training of CHC clinicians in diabetes care. It encourages those with diabetes to receive routine care through CHCs near where they live, relying on specialty/hospital care for complex problems and complex medical treatment. Peer support can facilitate this transition, promoting excellent care as a collaboration with CHC primary care to promote daily management and quality of life, backed up by appropriate specialty/hospital care. Our previous collaborations have documented the benefits of peer support through CHCs and trained over 500 professionals, resulting in over 35 ongoing peer support programs. Applying this experience to peer support in the SIM, objectives include: 1) expand the capacity of CHCs to provide ongoing diabetes self-management support, 2) strengthen linkages between primary and specialty care, 3) improve the efficiency of healthcare utilization, and 4) improve patient outcomes and quality of life. Peer support in the SIM encourages regular care through CHCs, promotes active management of diabetes, extends the education provided to patients by professionals, works with CHC staff to provide individualized care, and reinforces referrals to specialty/hospital care as well as the return to CHCs for regular care. How to organize this is challenging. Hospital-based staff and resources assist CHCs with program development and resources for training peers. CHCs recruit and supervise peer supporters and provide their base of operations. Collaboration among CHCs and hospital staff includes common peer support protocols, materials, and monitoring procedures to provide standardization while also encouraging tailoring to individuals and communities served. This approach harmonizes the strengths of both sectors, CHCs and hospitals, in extending integration of care to integrated support for those with chronic disease.

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Symposium 49C

PROMOTING HEALTH THROUGH PEER SUPPORT IN THE US HISPANIC/LATINO COMMUNITY: VARIATIONS ON A THEME

Dr. Guadalupe X. Ayala, Ph.D. MPH

Over the past 10 years, an academic-community partnership between the Institute for Behavioral and Community Health and *Clinicas del Salud del Pueblo*, Inc. has developed and evaluated a number of peer support programs to reach predominantly Mexican-origin individuals and families to prevent and control a variety of chronic diseases. Among several considerations to program development have included the extent to which the peer supporters are integrated into clinical care and whether or not they are paid for their efforts. The inception of this work began with a stand-alone model of peer support to promote healthy eating through a family-based program. Using a video based on edutainment principles, community health workers or *promotoras* from the clinic conducted home visits with families to promote the adoption of healthy eating behaviors such as family meals. This study resulted in improvements in mothers and children’s dietary intake, mothers’ parenting behaviors, and in the healthfulness of the home environment. A recent innovation involved the integration of community health workers into a clinic-based obesity care model to prevent and control childhood obesity. In this study, pediatric patients and their families were referred to a Family Wellness Program organized by the clinic’s Outreach Department to extend healthcare into the community. Community health workers led the Family Wellness Program which provided parents and children with the skills to modify their behaviors, relationships and environment to promote healthy eating, physical activity, water consumption and quality sleep. This study resulted in significant decreases in child BMI, as well as healthier eating behaviors. In addition to testing approaches that vary on level of integration, we have also considered the ongoing challenges of sustaining such models of care without adequate health care funding. As such, the team has evaluated volunteer models of peer support, including within the context of diabetes control. These efforts have resulted in improvements in glucose control as measured by glycated hemoglobin and improvements in fitness as measured by a step-test. However, sustainability remains a challenge despite the volunteer-status of the peer supporters. Peer support models can vary on a number of dimensions, including those discussed here. Researchers and practitioners need to consider the models that are most suited for the specific problems, groups, and settings programs address.

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Symposium 50 8:00 AM-9:15 AM

THE IMPORTANCE OF THE FAMILY CONTEXT IN PREVENTING AND TREATING CHRONIC HEALTH CONDITIONS IN DIVERSE CHILDREN

Sarah Domoff, PhD[1], Michelle Eakin, PH.D.[2], Kristi E. Gamarel, PhD, EdM[3], Daniel Mello, N/A[4], Elizabeth Towner, PhD[5]

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Chronic health conditions, such as asthma, obesity, diabetes, and HIV, disproportionately affect low-income and racially/ethnically diverse children and their families. Understanding and intervening on the social and contextual determinants of health may facilitate efforts to eliminate health disparities. Addressing the cross-cutting themes of the Society of Behavioral Medicine 38th Annual Meeting (i.e., addressing health disparities and the social context and health behaviors), this symposium will present four papers that evaluate the role of family contextual factors in health conditions salient to racially/ethnically diverse children. The first paper will examine how family routines associate with asthma management in preschool-age children recruited from an inner city Head Start. The second paper will characterize how mealtime TV viewing associates with family functioning and mother engagement with child mealtime behaviors in low-income families with school-age children. The third paper tests whether HIV stigma predicts mental health symptoms in parent-child dyads in South Africa. Finally, in a sample of late adolescents from impoverished neighborhoods, the fourth paper will evaluate the role of family relationship quality on diabetes management. Particular strengths of this symposium include multidisciplinary presenters (e.g., pulmonary medicine, child clinical psychology, public health, health psychology, and family medicine) and the utilization of diverse methodologies (e.g., home observations, dyadic analyses, biological assays). The discussant will facilitate conversation among presenters and attendees on how clinicians can intervene on family and other social contextual factors to reduce health disparities in ethnic/minority children.

Symposium 50A

TV USE DURING MEALTIME IN LOW-INCOME FAMILIES: ASSOCIATIONS WITH FAMILY FUNCTIONING AND MEALTIME INTERACTIONS

Dr. Sarah Domoff, PhD

Background: Mealtimes have been proposed as a family context that could be targeted to prevent childhood obesity. However, TV viewing during mealtimes (more prevalent in low-income households) may interfere with the psychosocial benefits of shared family meals, such as parent-child engagement. The aim of this study was to examine how TV use during mealtime associates with family-level functioning and maternal engagement among low-income children and their families. These behaviors are hypothesized to be important mechanisms through which family meals may be protective against child obesity risk.

Methods: This study is part of an ongoing longitudinal study of low-income mothers and their children, originally recruited from Head Start preschools. Family mealtimes were video-recorded by mothers when children were 4-8 years old (*M* age = 5.9 years, *SD* = 0.7; 48.2% female). The majority of children (53.4%) were non-Hispanic White, with 16.7% non-Hispanic Black, 17.1% Biracial, and 12.0% Hispanic. Of the 301 participants, 251 had videorecordings (83.4%). The primary variables examined here were collected through observational coding of family mealtime recordings. After achieving reliability ($\kappa > .70$), trained research assistants coded mealtimes for family-level functioning, mother-child engagement and affect, and mealtime TV exposure (i.e., duration of audible TV during meal) and mealtime TV engagement (i.e., amount of time child/mother directed eye gaze to TV). Linear regression analyses were conducted to test whether greater mealtime TV exposure and engagement predicted poorer family-level functioning and less maternal engagement or positive affect with child.

Results: After controlling for important confounders, analyses indicated that greater TV exposure during mealtime was associated with poorer family functioning during mealtime ($B = -.13$, $p < .05$) and less maternal positive affect ($B = -.23$, $p < .05$). Mothers of children who had greater TV engagement during mealtime engaged less with their child overall ($B = -.14$, $p < .05$), and engaged less with their child’s eating during the meal ($B = -.13$, $p < .05$).

Conclusions: Utilizing observational methodology to characterize family meals, this study elucidated potential mechanisms by which mealtime TV use may confer risk for child obesity in low-income families.

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Symposium 50B

MEDICATION ROUTINES ARE ASSOCIATED WITH HIGHER MEDICATION ADHERENCE AND WORSE ASTHMA CONTROL AMONG URBAN PRESCHOOL CHILDREN

Michelle Eakin, PH.D.

INTRODUCTION: Management of a child with asthma includes multiple behavioral and environmental strategies. Families of school age children who integrate these strategies into their routines report higher adherence but it is not known how these routines may impact asthma management behaviors and overall asthma control in an urban preschool population.

METHODS: Children with asthma were recruited from Baltimore City Head Start to participate in a randomized trial of asthma education. Families complete an in-home baseline assessment that included the Asthma Routines Questionnaire (ARQ), Family Asthma Management System Scale (FAMSS) and Test of Respiratory Asthma Control in Kids (TRACK).

RESULTS: 328 primary caregivers (94% African American, 63% reported earning less than $20,000/year) of a child with asthma (61% male, 3.5±0.7 years) completed the assessment. Medication routine burden was associated with higher asthma knowledge (r=0.16) symptom awareness (r=0.17), balanced integration (r=0.18) and medication adherence (r=0.19) on the FAMSS using Spearman correlations. However, there was a negative association between medication routines and asthma control (r=-0.15).

CONCLUSIONS: Preliminary results indicate that better medication routines were associated with higher self-reported adherence and asthma management skills but an inverse related to asthma control. Families with children with uncontrolled asthma are more likely to have to administer a daily medication and set up a medication routine, while families of children with mild asthma only manage it sporadically. It is important for clinicians to integrate targeted patient education about medication adherence, including the establishment of behavioral routines to reduce known asthma medication adherence health disparities.

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Symposium 50C

THE DYADIC EFFECTS OF HIV STIGMA ON THE MENTAL HEALTH OF CHILDREN AND THEIR PARENTS IN SOUTH AFRICA

Dr. Kristi E. Gamarel, PhD, EdM

Background: Evidence illustrates that HIV stigma – both ‘enacted stigma’ towards people living with HIV and ‘stigma by association’ towards their families – is linked with adverse individual mental health outcomes. However, questions remain unanswered with regards to family dynamics of HIV stigma, specifically whether parental experience of HIV adversely influence child mental health outcomes and vice versa. This study examines reciprocal impacts of HIV stigma on parent and child mental health in South Africa, a country with a large generalized epidemic.

Methods: Parent-child dyads (n=2477) in KwaZulu-Natal Province, South Africa participated in a cross-sectional survey. Parents and children completed measures of enacted HIV stigma, stigma by association, depressive symptoms, and anxious symptoms. Parents reported their HIV status, child orphan status, age, gender, food insecurity, and education. Analyses using structural equation modeling were used to examine the influence of HIV stigma on depressive and anxious symptoms.

Results: Accounting for sociodemographic characteristics, both parent's and children's reports of greater HIV stigma were independently associated with higher levels of anxious and depressive symptoms (all $p < 0.001$). Parents' reports of enacted HIV stigma were independently associated with children's greater depressive symptoms (p<0.01) and anxious symptoms (p<0.01). Similarly, children's reports of HIV stigma by association were independently related to parents' greater depressive and anxious symptoms (both p<0.01).

Conclusions: Findings provide support for a cross-over effect of HIV stigma on the mental health of families affected by HIV, such that each family members' experience of stigma negatively impacts their own and their family members' mental health. Future research and family-based approaches to stigma-reduction interventions to alleviate mental health problems will be discussed to guide programs to improve the mental health of parents and children affected by HIV in South Africa.

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Symposium 50D

FAMILY RELATIONS AND EXECUTIVE FUNCTION MEDIATE NEIGHBORHOOD DISORDER RISK IN ADOLESCENTS WITH TYPE 1 DIABETES

Daniel Mello, N/A

Characteristics of impoverished neighborhoods (e.g., % unemployed or receiving public benefits) are linked to poorer health (Chen & Paterson, 2006; Dulin-Keita, Casazza, Fernandez, Goran, & Gower, 2012), but the mediating processes remain unclear. Such characteristics contribute to family stress and parenting behaviors (Drew et al., 2011) that may undermine the development of adolescents' self-regulatory skills (Schroeder & Kelley, 2009), which support type 1 diabetes management (Berg et al., 2014). The current study examined whether the association of Neighborhood Disorder (ND; Dulin-Keita et al., 2012) to diabetes management during late adolescence was mediated by lower parent–child relationship

quality and its links to poorer executive functions. Late adolescents (*N* = 247; *M* Age = 17.8, *SD* = .40; 65% female; 75% non-Latino White) with type 1 diabetes completed measures of parental acceptance, executive functions (BRIEF; Guy, Isquith, & Gioia, 2004), and adherence; glycemic control was indexed by HbA1c assay kits. ND was captured by combining five U.S. Census-derived indicators (e.g., % youth living in poverty, number of vacant units). Mediation models revealed ND was linked to poorer HbA1c partially through lower parental acceptance and, in turn, poorer executive function (bias-corrected 95% confidence interval range for standardized indirect effects [ab = .006]: .001 – .021). ND was linked to poorer adherence only by full mediation through parental acceptance and executive function (bias-corrected 95% confidence interval range for standardized indirect effects [ab range = -.025 to -.015]: -.059 to -.003). Overall, family relationship quality may be a modifiable factor that underlies the risk of ND on diabetes management.

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Symposium 51 8:00 AM-9:15 AM

EMERGING ISSUES IN GENOMICS IMPLEMENTATION AND TRANSLATION

Barbara B. Biesecker, PhD, MS[1], Jennifer M. Taber, PhD[2], Catharine Wang, PhD, MSc[3], Colleen M. McBride, PhD[4]

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The landscape of genomics continues to evolve rapidly and has outpaced our understanding of how to best implement and translate genomic information to improve the health of populations. Conventional models to convey genomic information have been challenged as scientific discoveries occur and the demand for genetic services increases. Moreover, the changing nature of genomic information and the online availability of personal genomics testing underscore the need for evidence of clinical and personal utility. This symposium highlights research examining the translation of genomics within this changing landscape. Presentations on evidence from three endeavors will contribute to informing future implementation: 1) models to return carrier results, 2) re-contacting individuals to convey reinterpretation of variants and 3) interpretation of raw DNA. The first speaker will present outcomes from a randomized controlled trial of 446 participants examining the effect of receiving carrier results from a genetic counselor or through an online interface. This work tests the relative value of two models for conveying carrier status from genome sequencing. The second speaker will present qualitative and quantitative data from a study designed to assess the outcomes of conveying reinterpretation of variants to 29 individuals, in comparison to a matched control group (*n*=28). The third speaker will present results from two complementary surveys conducted with (a) 321 consumers and (b) 83 genetic counselors, to examine respective experiences with online raw DNA interpretation services, and describe outcomes of genetic counseling sessions with consumer clients. Finally, the discussant will consider the implications of these findings for genomics translation, highlight related emerging issues in ongoing precision (behavioral) medicine efforts, and offer insights into future genomics translation research priorities and how the field can build upon the findings presented in this symposium.

Symposium 51A

RESULTS FROM A RANDOMIZED CONTROLLED TRIAL COMPARING TWO MODES OF DELIVERY OF CARRIER RESULTS ASCERTAINED BY GENOME SEQUENCING

Dr. Barbara B. Biesecker, PhD, MS

A growing volume of genomic testing has fueled studies to identify alternative modes of results delivery that may be as effective as genetic counseling but more efficient. We conducted a trial of 461 adult participants enrolled in a genome sequencing study to assess equivalence between return of carrier results from a genetic counselor and a tailored web-based platform. All participants were randomized to delivery mode. Those in the genetic counselor arm had significantly higher formal education, but there were no other significant differences in socio-demographics. Follow up survey data were ascertained at one month and six months after receiving results. Primary outcomes were knowledge, psychological responses including uncertainty, and communication of results to children. Participants receiving results from the genetic counselor scored higher in knowledge of heredity concepts ($p<0.05$) at one month. There were no significant differences in knowledge domains between delivery modes at six monthds. No difference was seen in perceptions of positive responses to results or uncertainty at one month and at six months. Participants receiving results from the website had significantly higher distress at one month ($p<0.05$) but not at six months. The aggregate distress ratings at both times were <0.3 on the MICRA subscale (0-5). Responses to open-ended questions about results demonstrated misunderstanding about the implications of carrier results among 20% of participants who received results from the website, suggesting that harms may have been incurred that did not occur in the genetic counselor arm. Seventy-two percent and 78% of participants communicated the carrier results to their adult children with no significant differences between arms. Additional analyses of independent variables associated with outcomes, fidelity to the intervention, participant preferences and feasibility are underway. Early results suggest little difference in primary outcomes between the study arms. Yet there is qualitative evidence of misunderstanding that may be sufficiently high to suggest that even highly educated participants may not understand their carrier results as well after receiving them from a website and that equivalence was not attained.

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Symposium 51B

RESPONSES TO REINTERPRETATION OF A GENE VARIANT BY PARTICIPANTS IN A SEQUENCING STUDY

Dr. Jennifer M. Taber, PhD

As discoveries in genome science advance, people who received personalized genetic risk or carrier information may subsequently receive corrections. Little is known about the consequences of these corrections. We conducted an exploratory study examining participants' immediate and short-term responses to such a correction for one gene variant. Data were collected from participants (*n*=57, ages 50-70) in an NIH sequencing study (ClinSeq®). Some (*n*=29) originally learned they were carriers of Duarte variant galactosemia. However, the variant was later reclassified as benign and participants' sequences were reassessed. *Positive testers* (*n*=19) had a newly identified causative variant and were told they were carriers. *Negative testers* (*n*=10) were told they were not carriers. Data were also collected from 28 *controls* who had learned that they were carriers for a disease of comparable severity and had not received a correction. A survey was administered immediately after participants received corrected results. Controls received the survey after being reminded of their previous result. All participants completed a 3-month follow-up. When positive and negative testers were asked to recall the correction information, only 1 participant in each group indicated a misunderstanding or did not recall the information (for a total of 4 out 29 participants). All others demonstrated complete or partial recall accuracy. When asked how the information made them think or feel, most positive (63.2% at 3 months) and half of negative testers (50% at 3 months) indicated either positive (i.e., reassured) or neutral reactions. Positive testers reported lower intentions to share their results than negative testers (*p*=.016) and controls (*p*=.003; *F*(2)=5.46, *p*=.007). Positive (*p*=.026) and negative testers (*p*=.018) had higher intentions than controls to learn results for preventable disease in the future (*F*(2)=4.23, *p*=.020). Intentions to learn results for unpreventable disease showed a similar pattern (*F*(2)=3.39, *p*=.041). There were no differences among controls and positive and negative testers in perceived ambiguity, accuracy of the results, negative emotions (feeling upset, anxious, regret), or uncertainty about results' implications. Although it is unknown to what extent these results will generalize to actionable diseases and other samples as genome sequencing becomes more accessible, results suggest that informing people of corrections to personally relevant risk information may not have adverse effects.

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Symposium 51C

DO-IT-YOURSELF (DIY) GENOMICS: CONSUMER AND GENETIC COUNSELOR RESPONSES TO ONLINE RAW DNA INTERPRETATION

Catharine Wang, PhD, MSc

Online services are currently available to assist consumers in interpreting their raw DNA, yet little is understood about the utility of these services and the downstream implications, if any, on genetic service providers. To gain insight on these issues, complementary surveys were administered online to (1) 321 consumers of raw DNA interpretive services and (2) 83 genetic counselors. Surveys were designed to examine respective experiences with raw DNA interpretation services, and corresponding issues that may have arisen from counseling these consumers. The majority of consumers use one of five companies to interpret their raw DNA; 73% used more than one. Company choice was driven by the type of results offered (51%), price (45%), online reviews (31%) and recommendations by friends/family (15%). Only 5% sought advice from a medical professional before using a service. Among the 30% who shared results with a medical provider, 80% shared with their primary care doctor, 14% with a genetic counselor, and 25% with other specialist. Overall, 81.5% of consumers reported being satisfied or very satisfied with the information they received. Among the 18.5% who were less satisfied, qualitative reasons included confusion with the information presented and feelings that the information was incomplete. Among genetic counselors, 53% reported having ever been contacted by a consumer following the use of a service to interpret raw DNA data. Among counselors who had been contacted, 72% saw at least one or more cases. Patients requested counseling for the following disease specialty areas: cancer (52%), neurology (21%), metabolism (17%), pediatrics (10%), psychiatric (10%), hematology (7%), dementia (7%), other (14%). Counselors' quantitative ratings of patients' emotional state pre- versus post-counseling included worried (67% vs 12%, p<.001), confused (43% vs 27%, ns), upset (18% vs 31%, ns), ambivalent (11% vs 15%, ns), reassured (0% vs 27%, p=.006) and relieved (0% vs 31%, p=.003). Counselors' overall impressions of the session were mostly negative (48%) or mixed (20%) versus positive (32%). Challenges during counseling included patients' unrealistic expectations about what testing would tell them and overemphasis on the validity of results reported by these services. Counselor ratings of the clarity and informativeness of the DNA reports were low. In sum, although consumer respondents reported high satisfaction with online raw DNA interpretative services, genetic counselors expressed many challenges with counseling these types of patients. The downstream implications resulting from consumer efforts to interpret their raw DNA will be discussed.

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Symposium 52 8:00 AM-9:15 AM

EXPLORING INTERSECTIONALITY AND WOMEN’S HEALTH

Ariella R. Tabaac, MS[1], Veronica Njie-Carr, PhD[2], Ivy Ho, PhD[3], Jasmine Abrams, PhD, MS, BS[4]

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Conceptualized by theorist Kimberlé Crenshaw, Intersectionality is a framework that posits that people can belong to multiple social categories (e.g., race, gender, sexual orientation) that intersect and reflect differing forms of privilege or systemic discrimination (e.g., racism, sexism, heterosexism). From a public health perspective, this entails examining how people experience different forms of societal-level discrimination, barriers to care, or health risk behaviors in relation to the intersection of personal identities. In addition, it challenges how societal-level discrimination impacts health behaviors and patient outcomes from a multidimensional approach. Given the multidimensional and multi-level approach of the Intersectionality theory, it can be adapted to provide conceptual background for behavioral health research through the use of identity-based determinants of health and the interaction of health disparities and social injustice. The primary purpose of this symposium is to present behavioral health research from an Intersectionality perspective to address the following aims: 1.) To discuss how the Intersectionality can be applied to different populations and health behaviors in women’s health research, 2.) To showcase research projects that have taken an Intersectional approach, and 3.) Discuss challenges and next steps in applying Intersectionality to women’s health research. Individual presentations will focus on unique areas of identity and its intersection with gender and will include theoretical and empirical presentations. Themes will include the intersection of gender with sexual orientation, socioeconomic status, race and ethnicity, culture, and immigration status, and will incorporate micro- and macro- levels of determinants of health.

Symposium 52A

USING INTERSECTIONALITY AS A FRAMEWORK TO EXPLORE CERVICAL CANCER SCREENING DISPARITIES AMONG SEXUAL MINORITY WOMEN

Ariella R. Tabaac, MS

Sexual minority women (SMW; i.e., lesbian, bisexual, and queer women) are at a heightened risk for cervical cancer due to low rates of cervical cancer screening and a greater incidence of smoking and other cancer risk behaviors. Research has found that primary reasons for nonscreening include lack of provider, lack of provider referral, or misconceptions about susceptibility. Provider heterosexism is one barrier to cervical cancer screening, and can influence perceptions about susceptibility to human papillomavirus (HPV), the primary cause of cervical cancer development, or lead to health care avoidance due to anticipated discrimination. Research on screening has yet to account for how identification with multiple minority groups may amplify cervical cancer risk, screening behavior, or health care access. The goal of this presentation is to address current research on cervical cancer screenings in SMW, and to discuss how an Intersectionaly framework can be applied to cervical cancer research in this population. The intersection of sexual orientation, gender identity, race, age, and disability categories will be discussed.

Symposium 52B

THE INTERSECTION OF PSYCHOSOCIAL DETERMINANTS OF HEALTH AMONG SOUTHEAST ASIAN AMERICAN WOMEN

Dr. Ivy Ho, PhD

Southeast Asian American women, specifically those who are of Vietnamese, Cambodian, Lao and Hmong descent, face significant health disparities. For example, compared to their non-Hispanic white counterparts, Southeast Asian American women are more likely to die of cervical cancer and less likely to participate in cervical cancer screening. Breast cancer is also disproportionately common among Southeast Asian American women, and screening rates are low compared to White Americans. Although these cultural groups are distinct from one another, they share various historical and social similarities such as tumultuous history of political unrest, war, and genocide. The environmental and structural challenges of living for years in refugee campsunder harsh conditions exposed survivors to emotional and physical trauma and diseases. Refugees en route to the United States underwent a harrowing voyage, fraught with danger from pirates who robbed and murdered the refugees and raped the women. Contrary to the “model minority myth” that posits Asians Americans are successful, financially secure and well educated, Southeast Asian American families face multiple disadvantages. They are of among the lowest household incomes and educational attainment. Therefore, in this presentation, the intersectionality of historical, cultural, and social (socioeconomic and polical) is reviewed focusing on how immigration history, social class, gender and race intersect to influence health status among Southeast Asian American women. The presentation will include qualitative data, gathered from research on the Cambodian American community in Lowell, Massachusetts, to illustrate the psychosocial factors discussed. These data were gathered from interviews with healthcare providers who provided their perceptions of their Cambodian American female patients with regard to participation in preventative care, adherence, and health behaviors.

Symposium 52C

USING INTERSECTIONALITY TO UNDERSTAND GENDER ROLES AND HEALTH IMPLICATIONS FOR AFRICAN AMERICAN AND VIETNAMESE AMERICAN WOMEN

Jasmine Abrams, PhD, MS, BS

Discourse in Intersectionality provides dialogue relevant to racism and sexism to address and overcome dominant cultural hegemony. Underlying Intersectionality is the recognition that identity is experienced as a single, synthesized experience of many constructs. Numerous studies have applied the perspective of Intersectionality in understanding the divergence in gender roles found between African American women and White women. However, limited research has offered insight into how gender roles may differ across ethnic minority women. Indeed, research identifying similarities or disentangling differences in ethnic minority gender role beliefs has been largely absent in the literature suggesting need for qualitative exploration to increase our understanding of the phenomena. The purpose of this study was to explore and compare gender role beliefs among African American and Vietnamese American women. Thematic analyses were conducted with data gathered from eight focus groups with 44 African American women (mean age = 44) and four focus groups 47 Vietnamese American women (mean age = 42). Women were diverse in generational, religious, and educational backgrounds. Two similar primary themes emerged: (1) women's roles as chief caretakers and (2) women's responsibilities to fulfill multiple roles. There were also similar experiences of a need to convey strength and be self-sacrificial. Two distinct differences that emerged from the focus groups were beliefs about interpersonal interactions and perceptions of societal expectations. For example, women expressed contrasting views about perceptions of how a woman should act among others when in public (e.g., mild mannered versus openly strong and resilient). This study demonstrates that the conceptualization of gender role beliefs, while at times similar, diverges among culturally different groups. Health research and programming needs to account for these and other culturally nuanced differences via cultural tailoring. Implications for research and health related programming are discussed.

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Symposium 53 8:00 AM-9:15 AM

THE ROLE OF RELIGION AND SPIRITUALITY IN BEHAVIORAL INTERVENTIONS

Karen Yeary, PhD[1], Crystal L. Park, PhD[2], Aasim Padela, MD MSc[3], Ananya T. Banerjee, R.Kin PhD[4], Donna Jeffe, PhD[5]

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Faith-based interventions have been successful in changing multiple health behaviors, such as fruit and vegetable intake, cancer screening, smoking, and physical activity. However the majority of these interventions have been conducted with Protestant or other Christian religious affiliations, and studies engaging other faiths are necessary to more fully understand faith-based interventions. Further, given the prominence of religiousness and spirituality in the lives of many individuals, consideration of faith may also be relevant for non-faith-based interventions.

This symposium will present the results of two qualitative studies and one quantitative study to inform attenders of key factors to consider in designing health behavior interventions for Muslim groups and a general patient population. Aasim Padela et al. will describe the key facilitators at multiple levels of the socioecological model for successful participation in an exercise intervention for South Asian Muslim women. Ananya Banerjee et al. will report the important faith beliefs identified in their qualitative work with Muslims that were used to design a faith-based intervention to increase mammography screening in Muslims. Finally, Donna Jeffe et al. will present results showing of a randomized controlled trial designed to increase adherence to recommended treatment in newly diagnosed African American breast cancer patients, showing how religion/spirituality predicted dietary change over 2-year follow-up.

At the conclusion of the individual presentations, Karen Yeary will discuss important faith components to consider in developing interventions for diverse groups, future directions for faith-based interventions, and consideration of religion and spirituality in non-faith-based interventions.

Symposium 53A

A RELIGIOUSLY TAILORED GROUP EDUCATION INTERVENTION TO ENHANCE MAMMOGRAPHY UPTAKE AMONG MUSLIMS- DESIGN ELEMENTS AND OUTCOMES

Dr. Aasim Padela, MD MSc

Background: Faith-based health interventions adopt varied approaches to engage religious theology and faith leaders in program design. Insights into strategies and design elements that breed success will allow for greater theorization and model portability across faiths. This project fills a knowledge gap regarding religiously-tailored interventions among Muslims.

Objective: To describe the design of, and participant-level outcomes related to, a religiously-tailored peer-led group education program that addressed salient mammography-related beliefs of American Muslims.

Methods: A multi-disciplinary community advisory board worked with academicians to design an intervention project focused on cancer screening. Phase 1 involved focus groups and interviews with an ethnically-diverse group of women aged 40 and older sampled from Muslim organizations to identify salient behavioral, normative and control beliefs regarding mammography. Phase 2 involved interviews with the same target population to elicit ideas about intervention design. CAB members and staff used these data to design the curriculum and messaging for Phase 3 which involved peer-led education classes aimed to enhance mammography intention.

Results: The structural elements and messages of the classes addressed barrier beliefs in at least one of 3 ways (i) Reprioritizing- introducing another religious belief that has greater resonance with participants such that the barrier belief is marginalized, (ii) Reframing the belief within a religious worldview such that it is consistent with the health behavior desired, and (iii) Reforming- using a religious scholar to provide “correct” interpretations of religious doctrine. 50 Muslim women from diverse backgrounds completed both the program and surveys that recorded changes mammography intention and resonance with barrier and facilitator beliefs.

Discussion: This feasibility trial demonstrated that there is great potential for leveraging religion in designing health promotion messages, yet there is also risk for co-opting religious teachings in the service of biomedicine. As behavioral interventions move from being faith-placed to faith-based, dialogue over the theoretical bases and ethical justifications of religiously-tailoring health messages is needed.

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Symposium 53B

FACTORS INFLUENCING THE IMPLEMENTATION AND SUSTAINABILITY OF MOSQUE-BASED EXERCISE PROGRAMS FOR SOUTH ASIAN MUSLIM WOMEN

Dr. Ananya T. Banerjee, R.Kin PhD

Research shows that South Asian (SA) Muslim women have lower rates of physical activity participation and higher rates of mortality and morbidity from diabetes compared to the general population. A six-month mosque-based exercise intervention for SA Muslim women at high-risk for diabetes was implemented in Ontario, Canada. Our evidence demonstrated the exercise intervention was feasible, acceptable and sustainable. The purpose of our follow-up qualitative study was to examine the multi-level factors influencing successful participation in the exercise intervention among SA Muslim women. Key facilitators emerged from the direct content analysis of twelve semi-structured interviews and were classified at four levels based on the Socio-Ecological Model: personal, community, built environment and social. Participants identified improved personal health, Imam leadership, accessible and gender-specific spaces and social support from peers as pertinent factors for the implementation and sustainability of exercise programs in mosques. The findings have particular relevance for physical activity promotion and public health because they suggest factors necessary to design faith-based exercise interventions for ethnic communities at risk for chronic diseases.

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Symposium 53C

FAITH/SPIRITUALITY IS ASSOCIATED WITH DIET CHANGE IN NEWLY DIAGNOSED AFRICAN AMERICAN BREAST CANCER PATIENTS

Donna Jeffe, PhD

Few studies have explored associations between one’s faith/spirituality and health behavior change over the course of cancer treatment and recovery. We prospectively enrolled 227 African American breast cancer patients (stages 0-3; mean age 56 [range 33-81] years; 28% married; 52% >high school graduate) to a randomized controlled trial of a cancer-information intervention’s impact (vs. standard of care) on behavioral outcomes. At enrollment (baseline), a mean 6 days from first surgical post-op visit or start of neoadjuvant therapy, we collected demographic, psychosocial, and clinical data and administered the 15-item Systems of Belief Inventory (total scores 0-45) and the 4-item Concerns about Recurrence Scale (mean scores 1-6); higher scores reflect greater levels of faith/spirituality and concerns about recurrence. At 2-year follow-up, we asked patients if a doctor/health professional advised them to make changes in their diet “since completing breast cancer treatment to improve prognosis” and if they changed their “eating habits to improve overall health” over the past two years. Multivariable logistic regression analysis identified independent predictors of diet change (yes/no) at 2-year follow-up among baseline factors significantly associated with diet change. A greater proportion of patients who were advised to make a diet change actually changed their diet compared with the proportion of patients who were not advised to make a diet change (69/76 [90.8%] vs. 87/114 [76.3%], respectively; p=.011). Higher baseline levels of faith/spirituality (mean 41.0 vs. 37.3; p = .001) and of concerns about recurrence (mean 3.2 vs. 2.5; p = .026) were reported by patients who changed their diet at 2-year follow-up compared with those who did not. Greater faith/spirituality (odds ratio [OR] = 1.07, 95% confidence interval [CI] = 1.01-1.15), being advised to make a diet change (OR = 3.97, 95% CI = 1.50-10.47), and use of endocrine therapy (OR = 0.19, 95% CI = 0.06-0.56) were independently associated with diet change, but not study arm or concern about recurrence. Studies examining African American breast cancer patients’ faith/spirituality in association with change in other health behaviors are warranted to design targeted behavior change interventions.

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Symposium 54 8:00 AM-9:15 AM

THE PRESIDENT'S CANCER PANEL ON CONNECTED HEALTH: IMPLICATIONS FOR BEHAVIORAL MEDICINE RESEARCH

David K. Ahern, PhD[1], Bradford W. Hesse, PhD[1], Paul Jacobsen, PhD[1], Ellen Beckjord, PhD, MPH[2]

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The President's Cancer Panel is an external advisory committee authorized by the National Cancer Act of 1971 with a chairperson and members appointed directly by the President of the United States. The Panel's charter calls for it to review all facets of the National Cancer Program and then to issue reports directly back to the President on any "blockages or delays" hindering the rapid execution of the program writ large. From 2014 to 2015, this external advisory panel convened a series of workshops on one such blockage: the discontinuities in care that occur when patients lack personal data for self-management or when communications between patients and their care teams are jumbled or missing. The purpose of the series was to evaluate the potential of using "connected health technologies" to address these discontinuities and by so doing to improve support for proactive patient engagement, for improved communications, and for accelerated discovery in research. Connected health technology, in this context, refers to the broad array of mHealth, eHealth, patient portals, wearable devices, and wireless sensors that allow for greater support to patients away from the clinic. Although there have been significant improvements in cancer prevention, early detection, and treatment over the past several decades, cancer care delivery will face significant challenges in coming years as the U.S. population ages, the oncology workforce shrinks, the costs of cancer care continue to grow, and medical advances expand treatment options. Technology-based approaches have been proposed to address these challenges in cancer care but research is urgently needed to identify effective and scalable solutions. As Chair, David Ahern will provide an overview of the workshop series and the recommendations of the Report. Brad Hesse will highlight and review the recommendations regarding research priorities. Ellen Beckjord will discuss the relevance of the key findings and report recommendations from the perspective of SBM's Digital Health Council (DHC). Finally, as Discussant, Paul Jacobsen will review and discuss the implications of the Report for behavioral medicine research on cancer prevention and control.

Symposium 54A

THE PRESIDENT’S CANCER PANEL (PCP) REPORT ON CONNECTED HEALTH: RESEARCH PRIORITIES

Dr. Bradford W. Hesse, PhD

The President’s Cancer Panel offers recommendations to the highest levels of authority for work that is critical to accomplish across multiple levels of influence in order to accelerate progress against the disease. These recommendations frequently provide guidance to policy makers and to administrative heads of government, but they also provide guidance to the biomedical community for areas of high priority research and funding – a point of keen interest to the scientific membership of the Society of Behavioral Medicine. The specific text for recommendations will be released in the last quarter of 2016, well before the 2017 SBM annual meeting. Although the specific details of the recommendations will not be available until that time, it is safe to infer from publically available materials that research will be needed to gain a better understand of how connected health applications can serve to support patient engagement as well as individuals’ pursuit of healthy behavior. Given the topic of connected health, there will also likely be an emphasis on tool development for consumers, with a scientific focus on collecting evidence for the efficacy and effectiveness of tools in practice. Because of the implications of what happens when healthcare is not connected, there will also be a need for communication research aimed at bolstering continuity in care. Another area of likely interest from the report stems the Panel’s stated interest in fostering a learning healthcare environment – an objective shared by the Vice President’s Cancer Moonshot initiative – with data from connected devices informing a new generation of discovery and translational research. In this talk, Dr. Hesse will describe the specific recommendations for research articulated by the President’s Cancer Panel in detail, highlighting their relevance to behavioral medicine. Parallels will be drawn from the ways in which connected health research in cancer apply to more general applications across diseases.

Symposium 54B

THE PRESIDENT’S CANCER PANEL (PCP) REPORT ON CONNECTED HEALTH: PERSPECTIVES FROM SBM’S DIGITAL HEALTH COUNCIL (DHC)

Dr. Ellen Beckjord, PhD, MPH

The PCP Report on Connected Health calls for creation of a learning healthcare system for cancer that will improve prevention, detection, treatment, and survivorship. High priority research in several areas could help achieve the goal of establishing a learning health care system and increase the benefits of connected health for cancer. Better tools and interfaces could be developed if more were known about how healthcare providers work together and the factors that enhance people’s engagement with their health and healthcare. Research also is needed to ensure that the vast quantities of data being generated can be used in meaningful ways to support person-centered care. Dr. Hesse will delineate and discuss the specific research priorities of the Report and their relevance to the field of behavioral medicine.

Paper Session 26: Enhancing Decision-Making in the Context of Prevention and Treatment
10:45 AM-11:00 AM

DIFFERENCES IN PERCEIVED BARRIERS TO HCV TREATMENT INITIATION IN METHADONE USERS VS. IVDUS: APPLICATION OF PERCEPTUAL MAPPING

Sarah Bauerle. Bass, Ph.D., MPH[1], Amy Jessop, Ph.D., MPH[2], Laurie Maurer, MA, Ph.D(c)[3], Mercedes Gutierrez, MD[3], Muhamed Gashat, MD, MPH[2], Elizabeth Carmody, N/A[3]

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Background: IV drug users (IVDUs) and those on methadone have a 67-96% HCV seropositivity rate and without treatment may develop liver cirrhosis or hepatocellular carcinoma. However, only about 11% initiate treatment. Despite increased access to new treatments, limited research has focused on the unique perceptions of treatment initiation in these populations.

Methods: A survey of barriers and benefits to HCV treatment was administered to 100 methadone clients at four centers and 50 active IVDUs who utilize a needle exchange in Philadelphia; all were HCV+. Perceptual mapping (multidimensional scaling) and vector modeling methods were used to create 3-dimensional maps to show how barriers and facilitators to HCV treatment decision making are related, and how message/intervention strategies can be tailored for a specific audience. These commercial marketing techniques, used to influence consumers toward product purchasing, can be used to understand the unique perceptions of a decision to enhance informed medical decision making.

Results: Perceptual maps show clear conceptual differences about barriers and benefits, beliefs about healthcare, and overall knowledge of HCV between methadone users and IVDUs. MMT clients believed that treatment was “worth it”, but also were concerned about the length of time it might take to get treated and tangible barriers such as transportation and paperwork. IVDUs’ self-concept of being a drug user was seen as a significant barrier to initiating treatment, and concern with insurance and ability to pay was also important. IVDUs also believed that treatment was not needed because their HCV was “not advanced” and they had “no symptoms”. These were not significant in the MMT clients, suggesting better awareness of HCV and its progression. Neither group saw significant benefits to treatments, although the concepts of being “cured” and “being in charge” were closest, indicating a significant message strategy for an intervention. No issues of trust in healthcare providers were observed, a significant finding.

Conclusions: These methods are useful in helping understand these at-risk groups' unique perceptions regarding HCV treatment and how messages might have to differ based on drug use. To increase informed decision making, interventions must include messages that address negative perceptions of treatment and promote their benefits, rather than focusing on mistrust of medical providers. But IVDUs would need better information regarding HCV in general whereas MMT clients need strategies to overcome tangible barriers.

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Paper Session 26: Enhancing Decision-Making in the Context of Prevention and Treatment
11:00 AM-11:15 AM

SHOW ME MY HEALTH PLANS: USING A DECISION AID TO IMPROVE DECISIONS IN THE FEDERAL HEALTH INSURANCE MARKETPLACE

Mary Politi, PhD[1], Marie Kuzemchak, BA[2], Abigail Barker, PhD[3], Kimberly Kaphingst, ScD[4], Jingxia Liu, PhD[1], Timothy McBride, PhD[5], Matthew Kreuter, PhD, MPH[3], Sydney Philpott, BS[1]

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Introduction: Since the Affordable Care Act was passed, over 12 million individuals have enrolled in the health insurance marketplace. Without support, many struggle to make an informed plan choice that meets their health and financial needs.

Methods: *Show Me My Health Plans (SMHP)* provides education, preference assessment, and annual out-of-pocket cost calculator with plan recommendations produced by a tailored, risk-adjusted algorithm incorporating age, gender, and health status. We evaluated whether SMHP compared to healthcare.gov improved health insurance decision quality and the match between plan choice, needs and preferences among 328 Missourians enrolling in the marketplace.

Results: Participants using SMHP had higher health insurance knowledge (LS-Mean=78 vs. 62; $p < 0.001$), decision self-efficacy (LS-Mean=83 vs. 75; $p < 0.002$), confidence in their choice (LS-Mean= 3.5 vs. 2.9; $p < 0.001$) and improved health insurance literacy (OR 2.52, $p < 0.001$) compared to participants using healthcare.gov. Those using SMHP were 10.3 times more likely to select a silver-tier plan ($p < .0001$).

Discussion: SMHP can improve health insurance decision quality and can improve odds that consumers select an insurance plan with coverage likely needed to meet their health needs. This study represents a unique context through which to apply principles of decision support to improve health care choices.

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Paper Session 26: Enhancing Decision-Making in the Context of Prevention and Treatment
11:15 AM-11:30 AM

FEASIBILITY AND PATIENT PERCEPTIONS OF VIDEO DECLARATIONS REGARDING END-OF-LIFE DECISIONS BY HOSPITALIZED PATIENTS

Lisa M. Quintiliani, PhD[1], Jessica Murphy, MD[1], Pablo Buitron de la Vega, MD[1], Katherine R. Waite, BA[2], S. Emily Armstrong, BA[2], Joseph Davenport, BA[3], Lori Henault, MPH[2], Angelo Volandes, MD MPH[4], Michael Paasche-Orlow, MD MA MPH[1]

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Patients are asked to complete advanced directive forms, but may benefit from additional ways to express themselves. A videotaped declaration could be a supplemental opportunity and a source of information for family and clinicians. Our aim was to evaluate the feasibility and patient perceptions of ‘video declarations’, the term we use to describe the process of patients videotaping themselves describing their wishes. We approached hospitalized patients at an urban safety-net hospital with attending referral. After a baseline survey, we showed a brief video on an iPad describing 3 approaches to end-of-life care (i.e., life prolonging care, limited care, and comfort care). We then invited participants to video themselves with the iPad, making their own declaration about their wishes if they were very sick and asked participants about the usefulness of this process. Videos were transcribed and coded by a team, with multiple stakeholder input. There were 16 participants; mean age was 60 (SD=14) years, the majority (62%) reported being either Hispanic or Black or African American and having a high school education or lower. One participant declined. Out of 15 video declarations, the majority were able to express their wishes about CPR (n=12) and intubation (n=13). Nine video declarations had directives that were judged to be unclear. Participants also frequently discussed their family structure (n=11), religious/spiritual well-being (n=8), legacy/dignity issues (n=6), and physical symptoms (n=6). Average video length was 3:10 minutes. The majority (66%) thought this process was quite a bit or extremely helpful, and 73% would be quite a bit or extremely likely to recommend this to others. These findings show that asking hospitalized patients to make videos describing their end-of life-care goals was feasible and acceptable. While the majority of participants were able to describe their wishes around CPR and intubation, a fair amount of uncertainty remained. Further research is needed to better understand how to support patients in describing their wishes clearly. Additional work is also needed regarding embedding video declarations into the EMR and other platforms for maximum impact.

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Paper Session 26: Enhancing Decision-Making in the Context of Prevention and Treatment
11:30 AM-11:45 AM

SHARED DECISION MAKING IN THE UNITED STATES: PREDICTORS AND DISPARITIES

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Background: Effective communication between patients and providers is essential to achieving positive health outcomes and high quality of care. Shared decision making—collaborative processes involving agreed-upon approaches, goals, and expectations by both the patient and healthcare provider—is a key element of patient-centered health care. Although research supports the value of shared decision making in clinical practice, more evidence is needed to better understand the factors which may influence patient involvement in health decisions. The objective of this study is to describe the national prevalence of shared decision making in the United States (U.S.) and identify differences across patient-level sociodemographic, health and risk perception characteristics.

Methods: Nationally representative cross-sectional data from the 2012 and 2014 iterations of the Health Information National Trends Survey were analyzed. Administered biennially by the National Cancer Institute (NCI) to U.S. adults 18 years and older, HINTS monitors changes in the evolution of health communication. HINTS 4 Cycles 2 (2012) and 4 (2014) data were collected via self-administered mailed questionnaires. Descriptive statistics and multivariable regression analyses were conducted to examine associations between patient characteristics and shared decision making behavior.

Results: Among survey respondents reporting at least one non-emergency visit to a healthcare provider (N=5,631), most were Non-Hispanic (NH)-white, female, aged 35-64 years, and college educated. A majority of respondents also indicated being diagnosed with at least one chronic disease (e.g., diabetes, hypertension, cancer) and having a regular healthcare provider (73.7%). Slightly more than half (53.5%) of survey respondents reported "always" engaging in shared decision making with a healthcare provider. After adjustment for confounding factors, respondents perceiving themselves as completely confident in their self-care ability, as well as those with a regular provider (odds ratio [OR], 1.62; 95% confidence interval [CI], 1.27-2.07), were significantly more likely to indicate always participating in shared decision making; while there was a lower odds of shared decision making among Hispanics (OR, 0.73; 95% CI, 0.54-1.00), compared to NH-Whites.

Conclusion: Patients' involvement in shared decision making varies across sociodemographic and health-related factors. These findings may inform efforts aimed at improving patient-provider communication, increasing the uptake of shared decision making and achieving higher quality of care.

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Paper Session 27: Understanding the Role and Impact of Physical Activity among Cancer Survivors 10:45 AM-11:00 AM

CHANGES IN MUSCLE GENE-EXPRESSION, STRENGTH AND CANCER-RELATED-FATIGUE IN PROSTATE CANCER PATIENTS

Karen Mustian, PHD, MPH, MS[1], Michelle Janelsins, PhD, MPH[1], Charles Kamen, PhD, MPH[1], Ian Kleckner, PhD[1], Matthew Asare, PhD, MBA, CHES[2], Calvin L. Cole, PhD[2], Luke J. Peppone, PhD, MPH[3], Charles E. Heckler, Ph.D., M.S. [1]

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Background: Radiation therapy (RT) and androgen deprivation therapy (ADT) impair muscular, mitochondrial and immune function resulting in weakness and fatigue in prostate cancer patients. We investigated the influence of an exercise intervention (EXCAP©®) on expression of muscle genes, muscular strength, and cancer-related-fatigue.

Methods: Prostate cancer patients (N=58; mean age=67), receiving RT (47%) or ADT (53%), were randomized to 6 wks of EXCAP©® (7 days/wk) or standard care (RT or ADT with no exercise) in this phase II clinical trial. RNA was isolated from muscle biopsies for microarray analyses of 4825 mitochondrial and nuclear genes. Physical strength was assessed using multiple repetition maximum testing (chest press and leg extension). Cancer-related-fatigue was assessed via the Brief Fatigue Inventory (BFI). Assessments were pre- and post-intervention. Robust multi-array average normalization was used. Analyses included analyses of covariance (ANCOVA), correlations, and partial least squares (PLS) with cross-validation.

Results: MYH8, MYL5, ACTN3, XIRP1, MTTM, and HLA-DQB1 were significantly correlated with muscle strength and cancer-related-fatigue (all p≥2-fold down regulation in MYH8 and XIRP1 in the exercise group, no ≥2-fold changes in expression in the control group, and a ≥2-fold difference between groups on MTTM where MTTM was down-regulated ≥1.5-fold in controls with no change in exercisers (all $p \leq 0.05$). ANCOVAs revealed a trend for group differences in strength (all $p \leq 0.10$) with significant group differences in fatigue ($p \leq 0.05$): exercisers improved while controls worsened. PLS suggested down-regulation of 3 novel biomarkers, MYL5, ACTN3, and HLA-DQB1, may predict increases in cancer-related-fatigue among prostate cancer patients.

Conclusions: Results suggest that exercise influences muscle's expression of genes that regulate muscular, mitochondrial and immune function and are linked to inflammatory muscle disease in prostate cancer patients; these gene expression changes may mediate

changes in cancer-related-fatigue in prostate cancer patients due to cancer, RT or ADT, and exercise. Further research is needed to validate these novel findings, to expand our knowledge regarding the role of these biomarkers in the development of cancer-related-fatigue, and to understand the influence of exercise on these biomarkers in prostate cancer patients receiving RT and ADT. ClinicalTrials.Gov: NCT00815672 Funding: DOD PC061518, NCI CA102618B, NCI CA189961.

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Paper Session 27: Understanding the Role and Impact of Physical Activity among Cancer Survivors 11:00 AM-11:15 AM

REPLACING SEDENTARY TIME WITH PHYSICAL ACTIVITY: EFFECTS ON CANCER-RELATED COGNITIVE IMPAIRMENT

Diane Ehlers, PhD[1], Jason Fanning, PhD[2], Elizabeth Awick, MS[3], Susan Aguiñaga, PhD[3], Josh Cosman, PhD[4], Joan Severson, MS[5], Arthur Kramer, PhD[6], Edward McAuley, PhD[7]

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Cancer-related cognitive impairment (CRCI) is recognized as a high priority in clinical research due to its significant, often long-term impact on daily functioning and quality of life. The influence of lifestyle behaviors, such as sedentary and physical activity behaviors, on CRCI is largely unexplored. Recent research has emphasized the important health implications of reducing sedentary time in cancer survivors. The purpose of this study was to examine the cognitive effects of substituting 30 minutes of sedentary behavior with 30 minutes of light activity or moderate-to-vigorous physical activity (MVPA) in breast cancer survivors. Using an iPad-based platform, 307 breast cancer survivors aged 57.29±9.82 years completed questionnaires assessing their demographics and breast cancer history, and cognitive tests assessing their executive function and processing speed (Task-Switch, Trail Making, Swap). Participants also wore an accelerometer for seven consecutive days to assess their sedentary and activity behaviors. Isotemporal substitution was used to analyze the data. The substitution of sedentary time with MVPA was associated with better reaction time on the Task-Switch stay ($\beta=-0.19$, $p=0.007$) and switch ($\beta=-0.19$, $p=0.006$) trials, and on the Swap task ($\beta=-0.15$, $p=0.04$). A positive association was also observed between light activity and Task-Switch stay reaction time ($\beta=0.16$, $p=0.05$). The substitution of sedentary time with MVPA was marginally associated with better total time on Trails A ($\beta=-0.13$, $p=0.06$). Positive associations with total time on Trails A ($\beta=0.22$, $p=0.005$) and Trails B ($\beta=0.18$, $p=0.02$) were observed when substituting sedentary time with light activity. All effects were evident independent of age and months since last chemotherapy treatment. Substituting 30 minutes of sedentary time with 30 minutes of MVPA may help ameliorate impairments in executive function related to breast cancer treatment. Interestingly, substituting sedentary time with light activity resulted in slower times on measures of executive function and processing speed. Additional research investigating moderators and latent classes of breast cancer survivors may illuminate further information to explain these relationships between physical activity and CRCI.

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Paper Session 27: Understanding the Role and Impact of Physical Activity among Cancer Survivors 11:15 AM-11:30 AM

EXERCISE-INDUCED STRENGTHENING OF THE INFLAMMATORY CYTOKINE NETWORK IS ASSOCIATED WITH REDUCED FATIGUE IN 348 CANCER PATIENTS

Ian Kleckner, PhD[1], Calvin Cole, PhD[1], Charles E. Heckler, Ph.D., M.S. [1], J. Philip Kuebler, MD[2], Amy Brockmeyer, MD[3], Rezwan Islam, MD[4], Michelle Janelsins, PhD, MPH[1], Shelli Kesler, PhD[5], Karen Mustian, PHD, MPH, MS[1]

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Background. Chemotherapy is hypothesized to cause fatigue partly via dysregulation of the inflammatory cytokine network; namely, by weakening the normal co-regulatory couplings between concentrations of pro- and anti-inflammatory cytokines. Although preliminary research suggests that exercise treats fatigue in cancer patients by favorably influencing individual markers of inflammation, no studies have examined whether exercise influences the co-regulatory couplings between concentrations of pro- and anti-inflammatory cytokines. The purposes of this study were to assess how regulation of the inflammatory cytokine network is (1) affected by exercise and (2) related to fatigue.

Methods. We performed simple network analyses (i.e., correlations matrices) on data from 348 cancer patients enrolled in a randomized trial of chemotherapy plus 6 weeks of moderate-intensity walking and resistance exercise (N = 173) vs. chemotherapy alone (N = 175) in mixed-type, early/mid-stage cancer patients (mean age = 56, 93% female). At pre- and post-intervention, patients (1) provided blood to assess concentrations of IL-1β, IL-6, IL-8, IL-10, IFNγ, and sTNFR1 via ELISA and (2) reported fatigue using the multidimensional fatigue symptom inventory.

Results. Compared to chemotherapy alone, exercise plus chemotherapy strengthened the normal co-regulatory couplings between changes in concentrations of several pro- and anti-inflammatory cytokines; specifically, between IL-6 and all other cytokines ($p < 0.05$) and between IL-10 and all other cytokines ($p < 0.05$). Among exercise participants, decreased fatigue was associated with strengthened co-regulatory coupling between changes in concentrations of IL-6 and IL-10 ($p = 0.08$).

Conclusions. Exercise strengthened the regulation of the inflammatory cytokine network via strengthened co-regulatory couplings between concentrations of pro- and anti-inflammatory cytokines. The strength of co-regulatory coupling between IL-6 and IL-10 may mediate the beneficial effects of exercise on fatigue, considering that IL-6 and IL-10 are known to contribute to the physical conditioning effects of exercise. Our novel methods to analyze cytokine data may complement traditional analytic approaches in the investigation of immune-mediated phenomena beyond this study.

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Paper Session 27: Understanding the Role and Impact of Physical Activity among Cancer Survivors 11:30 AM-11:45 AM

PHYSICAL ACTIVITY AND SEDENTARY BEHAVIOR IN OLDER AND YOUNGER BREAST CANCER SURVIVORS

Gillian Lloyd, BA[1], Elizabeth Awick, MS[2], Whitney A. Welch, Ph.D.[3], Edward McAuley, PhD[2], Siobhan Phillips, PhD, MPH[1]

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Physical Activity and Sedentary Behavior in Older and Younger Breast Cancer Survivors

Gillian R. Lloyd[1], Elizabeth A. Awick[2], Whitney A. Welch[1], Edward McAuley[2] & Siobhan M. Phillips[1]

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Background: Approximately 72% of breast cancer survivors (BCS) are over the age of 60. The combination of treatment side-effects and comorbid conditions increases older BCS' risk for frailty, disability and premature mortality. Reducing sedentary behavior (SB) and increasing physical activity (PA) may prevent or delay these adverse outcomes, however little is known about how these behaviors may differ between older and younger BCS. The purpose of this study is to examine whether SB and PA differ between older and younger BCS, overall and in various contexts (i.e. work, leisure).

Methods: Participants (N=375) wore an accelerometer on their non-dominant hip for 7 consecutive days and self-reported their time spent in PA and SB in various contexts. We used general linear modeling analyses to examine whether differences existed between older [≥ 60; n=157; M_{age}=65.1 (SD=4.4)] and younger [age=50.5 (SD=6.8) BCS on total self-reported and accelerometer-assessed PA and SB and self-reported context-specific PA and SB when controlling for relevant covariates.

Results: Total average daily minutes self-reported and accelerometer-assessed SB were highly correlated (r=1.0; *p*p=0.003). Older BCS had higher levels of total daily average minutes of accelerometer-assessed [*M*$_{diff}$= 29.3 (SE=7.9); *p=0.001] and self-reported [M_{diff}= 29.4 (SE=7.8); p=0.001] SB. Younger BCS reported more time SB at work [M_{diff}=119.2, (SE=20.6); p=*M_{diff}=36.7

(SE=8.2); p=M_{diff}= 9.4 (SE=1.9); *p0.001] and light [M_{diff}=19.6, (SE=6.7); p=*M_{diff}=1.2, (*SE*=0.43); p=0.01].

Conclusions: Older BCS engage in more SB and less PA and report greater SB during leisure time than their younger counterparts. These findings suggest it may be important to consider age when designing PA promotion and SB reduction interventions so intervention strategies can be tailored toward relevant contexts. Future research should further explore the varying contexts of PA and SB in older BCS to further elucidate what specific activities they participate in during leisure time in order to target these behaviors through tailored interventions.

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Paper Session 28: Games for Health 10:45 AM-11:00 AM

ENJOYABLE, HIGHLY ACTIVE VIDEOGAMES DECREASED PHYSICAL ACTIVITY IN CHILDREN

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Several reviews suggest that merely providing an active videogame (AVG) to children will not increase their physical activity. Whether an AVG increases physical activity may vary depending on the AVG played since AVGs vary on the extent to which they are enjoyable and require full-body movement. We aimed to identify AVGs preferred by children that required full body movement and explore whether providing them to children increased their physical activity. Children aged 8-14 years (n=95; 61% male; 51% overweight/obese) listed the AVGs they played the most. The most popular games were dance-related games (e.g., Just Dance©) and adventure-related games (e.g., Kinect Adventures©). Trained research assistants who played >100 different AVGs also rated the dance- and adventure-related games as high in requiring vigorous movement. A subsample of participants (n=21, 52% male, 43% overweight/obese) who owned AVGs, logged their AVG use and wore a pedometer for one week at baseline . They then received their preferred choice from one of the dance- or adventure-related AVGs; 12 weeks later, to reduce novelty effects, they again wore the pedometer and logged minutes of AVG use for one week. Mixed models that controlled for age, BMI category (lean vs overweight & obese) and month the participant wore the pedometer (time-varying covariate), revealed a significant time x AVG minutes interaction (B = -2378.87; 95th CI: -4712.23, -45.50) for pedometer steps. At baseline, average minutes of AVG use was positively associated with steps (r=0.45, p=.10), but at time 2, AVG minutes was negatively associated with steps (r=-0.59, p=.03). AVG use increased over time (B=2.26; 95th CI: 0.50, 4.02). Contrary to our hypothesis, providing children with enjoyable AVGs that require full body movement decreased physical activity. AVG use may have supplanted non-AVG physical activity. Continued caution for using AVGs in the home to increase child physical activity is warranted. Integrating all of a child’s physical activity into the AVG (e.g., receive points in the AVG for going for a walk outside) may be more successful at increasing physical activity in children.

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Paper Session 28: Games for Health 11:00 AM-11:15 AM

IMPACT OF POKEMON GO ON PHYSICAL ACTIVITY: A PRE-POST ANALYSIS

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Background: In July 2016, a location-based augmented reality mobile game called Pokémon GO was released and quickly saw millions of players. Anecdotal accounts suggest the game can increase physical activity, as players follow prompts to move around outdoors. We sought to quantitatively evaluate whether the game has improved activity levels and wellness by analyzing behavior before and after starting play.

Methods: To identify Pokémon GO players and non-players, we utilized a proprietary platform (Achievemint.com) where members can connect trackers and apps to receive rewards for healthy behaviors. We distributed a single question survey to members who had an activity tracker connected asking whether they were playing Pokémon GO. Affirmative responders were sent a follow-up survey with questions such as when they started playing, general experience, and perceived impact of the game on activity and mood. We analyzed both survey responses as well as activity tracker step data for 30-days pre/post each player's start date. Those who responded that they were non-players composed a control group, using step data pre/post the game's launch date.

Results: Of the 1,721 people who responded to the single question survey, 597 (35%) reported playing Pokémon GO. Of those, 340 (57%) completed the follow-up survey. Prior to starting Pokémon GO, players were less active than non-players based on activity tracker step data (8,726 vs 9,430 average daily steps, $p=0.002$). After starting, players' daily average steps increased significantly by 906 ($p < 0.001$) in the first 2 weeks; however, in weeks 3 and 4, average daily steps significantly decreased from that peak by 477 ($p=0.015$). Users who reported a body mass index (BMI) higher than 30 increased their daily average step count by 890 more than those with BMI lower than 30 ($p=0.057$).

Conclusions: Pokémon GO players had significantly increased activity levels in the short-term after starting play, and the increase in steps was two times greater in obese players. However, the increase in physical activity waned over time. This analysis highlights the potential for augmented reality mobile game concepts to be utilized for improving physical activity and wellness in certain populations.

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Paper Session 28: Games for Health 11:15 AM-11:30 AM

MONSTER APPETITE: EFFECTS OF MESSAGE FRAMING ON NUTRITIONAL CHOICES IN A DIGITAL GAME ENVIRONMENT

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Americans' health has reached a dangerous epidemic of obesity and diabetes from over consumption and unhealthy food choices, one that creates disparities among race, ethnicity, region, and income. In response to this national health threat, a body of research on games for health that strive to motivate individuals to adopt healthy behaviors are growing. The most typical approach to many health games is to provide positive reinforcement for healthy behaviors. However, there exist other approaches that may have potential to further enhance health awareness and experience, for example, by rewarding players to make the conventionally unhealthy behaviors in a game environment to solidify their original belief in healthy behaviors, otherwise known as inoculation theory.

In this study, we explore two novel approaches to encourage healthy nutritional choices in real life by vicariously experiencing an unconventional, subversively-framed or inoculation-based calorie game, Monster Appetite (MA), through monster avatars. We developed MA, and an online snack shop, Snackazon, to test whether subversive or inoculation gameplay led to healthy snack shopping behavior. There were two treatment conditions: 1) subversive framing - MA's original goal to consume the highest-calorie snack items to keep their monster avatar overweight, sluggish, and inactive was maintained and the end-of-day pop-up messages were negatively-framed, and 2) inoculation-based framing: MA's goal was flipped (consume the lowest-calorie snack items to keep their monster avatar slim and active) and the pop-up messages were positively-framed. The two conditions with pre-existing information on participants’ food habits (snacking behavior) resulted in a 2 x 1 study design (N=225).

The study showed that even if participants indicated low behavioral intention to look up caloric information, on Snackazon both subversive and inoculation treatment participants showed statistically significant nutritional information seeking behavior (ISB) for the online snack items, and ISB was significantly correlated with what snack items they chose and the reasons they list for choosing those snacks. This result fit well with the Theory of Planned Behavior (TPB) as it emphasizes the progression from awareness and attention to a health issue, followed by intention to change, culminating in actual behavioral change. In addition, for the inoculation group, participants showed a statistically significant increase in healthier snack choices post-gameplay compared to pre-gameplay. However, while the subversive group did not choose healthier snacks, they provided statistically significantly healthier reasons for making their snack choices. The study shows promising results for unconventional approaches for nutrition game-based behavioral change studies as well as support for traditional theories such as TPB.

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Paper Session 28: Games for Health 11:30 AM-11:45 AM

DEVELOPMENT OF A MOBILE, AVATAR-BASED APPLICATION TO MONITOR TEENS' PERSONAL BODY SHAPE GOALS

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Background: During adolescence participation in physical activity decreases while concern about weight increases as teens get older. Using Internet-based healthy strategies with teens who need or want to make changes to their bodies may be a practical method to help them participate in physical activity to attain and maintain healthy bodies.

Objective: The purpose of this pilot test was to develop and assess acceptability and feasibility of an avatar-based, theoretically derived, mobile application entitled, Having A Positive Perception of You Application (HAPPY App).

Methods: The HAPPY App was engineered for teens to identify what they thought they looked like, what they wanted to look like, and what they actually looked like based on body measurements using three avatars.

Results: The HAPPY App was pilot tested with teens ages 15 to 18 to assess for acceptability and feasibility. A total of 42 students created and viewed their avatars. A majority of the students were female (67%), age 16 (38.1%), white (74%), non-Hispanic (86%), and in Grade 10 (47.5%). The students had positive reactions to the avatar application. Almost half thought it was good to be able to see their actual selves. Most of the students were comfortable creating and viewing the avatars (95.2%) and would use the application in the future to see how their bodies change over time (95.2%).

Conclusion: Avatar-based mobile applications, such as the HAPPY App, provide immediate feedback and allow users to engage with images that are personalized to represent their perceptions and actual body images. This pilot study adds to the increasing but limited research of using games to improve health outcomes among teens. There is a need to further adapt the HAPPY App and implore feedback from a larger number of teens including those from diverse backgrounds.

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Paper Session 29: Early Influences: Child Nutrition and Obesity 10:45 AM-11:00 AM

SOCIAL NETWORK INFLUENCES IN A HOME-BASED CHILDHOOD OBESITY PREVENTION PROGRAM

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Social Network Influences in a Home-Based Childhood Obesity Prevention Program

Social networks have been found to exert considerable influence on obesogenic behaviors and resulting obesity in observational studies, yet are rarely the focus of obesity prevention or treatment efforts. Social network characteristics likely to be important to the adoption and maintenance of a healthy weight and energy balance behaviors include: *social isolation*, because social connections provide support and resources needed to engage in healthy behaviors; and *weight and behavior norms,* because social connections are a source of influence via several mechanisms (e.g., normative influence, mimicry).

This study builds upon a childhood obesity prevention program called COPE (Childhood Obesity Prevention at homE), which is a new, add-on module for existing Home Visitation Programs (HVPs). HVPs provide in-home services to low-income mothers and their infants across the U.S.; a population with health and obesity disparities. Specifically, this 6-month pilot study assessed if mothers' social network characteristics were related to the focal outcomes of the COPE intervention (mother diet, physical activity, weight status; infant diet, weight trajectory), and tested if social network characteristics moderated the intervention effects. Fifty mothers and infants (70% Hispanic/Latino) were recruited through our community HVP partner and randomized to receive (1) the HVP core curriculum only or (2) the HVP core curriculum + COPE module, for six months. Assessments, conducted at baseline and post-intervention included: (1) mothers' social network characteristics, (2) mother/infant food intake and physical activity, and (3) mothers' postpartum weight retention and children's growth velocity.

Several features of mothers' social networks, including the proportion of females in their network, network density, and the proportion of network members who provided social support, were significantly associated with the intervention outcomes ($p < .05$), and moderated change in mother and infant outcomes. These findings suggest that family-based obesity interventions should consider the social networks in which families are embedded, and develop appropriate strategies to foster social connections that provide support and healthy social influence, to bolster healthy behavior and weight outcomes.

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Paper Session 29: Early Influences: Child Nutrition and Obesity 11:00 AM-11:15 AM

CITATION AWARD WINNER

SELF-RATED HEALTH AMONG CHILDREN: WHAT DOES IT MEASURE?

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Adults' self-rated health (SRH) has been a consistent independent predictor of morbidity and mortality, and has been associated with obesity and level of physical activity (PA) among both adolescents and adults. Little is known about SRH and children. The purpose of this study is to examine SRH by race/ethnicity, sex, and income (school free/reduced lunch status), and to determine its relationship to children's self-reported quality of life (PedsQL: physical, emotional, social, school and overall health), fruit and vegetable (F&V) consumption and PA. Participants were 3rd through 5th grade students (N= 427; 48.5% female) from lower-, middle or higher-income elementary schools in the Midwestern USA. Children ranged in age from 8 to 13 years (Mean: 9.7 ± 1.0) and were mostly African American (n=156; 37.3%), Caucasian (n=181; 43.3%) or multiracial/other (n=81; 19.5%). Demographic, PedsQL, F&V, PA and SRH data were collected via questionnaire during one classroom visit. Children self-reported their health as excellent (n=114; 26.7%) very good (n=171; 40.0%), good (n=111; 26.0%), fair (n=27; 6.3%) or poor (n=4; 0.9%), with a mean of 3.85 ± .92. SRH did not differ by school, sex, age, grade or race/ethnicity. There was a significant, small positive correlation between F&V and SRH (Fr: $r = 0.16$, $p = .001$; Veg: $r = .20$, $p < .001$) and PA and SRH ($r = 0.11$, $p = .022$) such that children who ate more F&V and engaged in more PA reported higher SRH. When looking at PedsQL variables, SRH was significantly positively correlated with physical ($r = 0.28$, $p < .001$), emotional ($r = 0.25$, $p < .001$), social ($r = 0.19$, $p < .001$), school ($r = 0.14$, $p = .004$), and overall ($r = 0.27$, $p < .001$) health. A multiple regression was run to predict SRH from F&V, PA and overall PedsQL health. The model statistically significantly predicted SRH, $F(4,415) = 11.824$, $p < .001$, adj. $R^2 = .094$. Only overall health and vegetable consumption significantly added to the prediction, $p < .05$. Findings from this study suggest that SRH can discriminate between self-reported quality of life in children as young as 8 years of age, and may be a valid and quick 1-iterm measure of overall health in children, especially related to diet behaviors. Future research on SRH in children is needed to understand how children qualitatively view health, and how SRH is related to objectively assessed health by a physician.

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Paper Session 29: Early Influences: Child Nutrition and Obesity 11:15 AM-11:30 AM

MERITORIOUS AWARD WINNER

MORE THAN JUST FOOD: A META-ANALYSIS OF FAMILY MEALTIME PRACTICES ASSOCIATED WITH CHILDREN’S NUTRITIONAL HEALTH

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Family meals can be seen as the cradle of eating behavior: by the age of 10, a child has eaten about 10,000 meals, most of them in a family setting. A higher frequency of family meals is known to be associated with better diet quality and lower body mass index (BMI) in children. But what aspects of family meals are healthy for children? This meta-analysis systematically summarizes studies on social, environmental, and behavioral attributes of family meals that have the potential to positively influence children’s nutritional health. Six frequently investigated family mealtime practices (43 studies, 57 effect sizes, 42,929 participants) were identified. Positive associations between the following practices and children’s nutritional health were consistently found in separate meta-analyses: TV off during meals (r = .08), food quality (r = .11), parental modeling (r = .11), positive atmosphere (r = .12), and longer meal duration (r = .20). Children’s involvement in meal preparation was associated with better diet quality (r = .08), but also with higher BMI (r = −.06). Mechanisms potentially underlying these effects are proposed, building on Herman et al.’s model of how the presence of others shapes eating behaviors (Herman, Roth, & Polivy, 2003). The generalizability of the identified mealtime practices is discussed, as are potential policy implications.

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Paper Session 29: Early Influences: Child Nutrition and Obesity 11:30 AM-11:45 AM

WEEKEND SLEEP DELAY IS ASSOCIATED WITH SEVERITY OF OBESITY AND INCREASED SCREEN TIME IN ADOLESCENTS WITH OBESITY

Jacqueline Hayes, MA[1], Myra Altman, MA[1], Katherine N. Balantekin, PhD, RD[2], Denise Wilfley, Ph.D.[1], C. Barr Taylor, Ph.D.[3], Joanne Williams, Ph.D.[4]

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Weekend Sleep Delay is Associated with Severity of Obesity and Increased Screen Time in Adolescents with Obesity

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Sleep duration is often linked to childhood obesity; however sleep patterns, specifically weekend sleep delay (e.g. later bedtimes on weekends than weekdays), have also been associated with behavioral and metabolic changes that promote obesity, independent of sleep duration. Given that adolescents commonly have later bedtimes on weekends than weekdays, this sleep pattern may play a role in adolescent obesity and obesogenic behaviors. This study assesses weekend sleep delay and its relation to relative weight as well as physical activity and weekend screen time (i.e., TV, computer, video games) in adolescents with overweight/obesity participating in an online behavioral weight loss study. At baseline, adolescents (n=189, mean age = 14.66±1.60, mean zBMI = 2.05±0.41) were weighed and measured, reported typical sleep and wake times on weekdays and weekends, and responded to questionnaires assessing typical physical activity habits and number of weekend hours engaged in screen time. Results showed that, on average, adolescents reported going to bed

1.38±1.07 hours later on weekends than weekdays. In a hierarchical regression model controlling for age, gender, and sleep duration on weekends and weekdays, greater weekend sleep delay was associated with greater severity of overweight ($\beta = .16$, $p < 0.05$). In similar follow-up models predicting behavioral outcomes, weekend sleep delay was not associated with any differences in physical activity; however, it was significantly related to greater weekend screen time ($\beta = .23$, $p < 0.01$). Thus, above and beyond sleep duration, weekend sleep delay is positively related to severity of overweight/obesity and time spent on the computer/playing video games in treatment-seeking adolescents with obesity. Reducing sleep delay on the weekends and promoting a consistent sleep schedule throughout the week may be a worthwhile treatment target to optimize behavioral and weight outcomes in adolescent obesity treatment.

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Paper Session 30: The Role of Affect in the Context of Physical Activity 10:45 AM-11:00 AM

CITATION AND MERITORIOUS AWARD WINNER

AEROBIC TRAINING IMPROVES AFFECTIVE AND COGNITIVE RESPONSES TO DAILY STRESSORS IN FAMILY CAREGIVERS

Adam M. Caplin, B.A & Sci[1], Jordan Weiss, BSc[2], Samantha J. Schilf, BA[3], Kirsten Johansen, MD[3], Ben A. Hives, BKIN[1], Elissa S. Epel, PHD[3], Eli Puterman, PhD[1]

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Introduction: Individuals differ in their cognitive and emotional responses to stressful events, with maladaptive responses predicting the development of physical and mental health conditions. Observational studies show that physically inactive individuals have worse mood and are more anxious in response to laboratory or daily stressors than those who are active. Here, we report a randomized controlled trial of the effects of aerobic training on measures of psychological reactivity to daily stressors in previously inactive caregivers.

Methods: Sixty-three informal family caregivers of patients with Alzheimer's disease or other dementia were randomized to either a 6-month exercise program (N=30) or a waitlist control (N=33) if they reported < 150 minutes/week [the Center for Disease Control and Prevention recommended minimum] of moderate-to-vigorous physical activity and high levels of psychological stress (≥0.5 SD above the national mean on Cohen's Perceived Stress Scale). Participants completed ecological momentary assessments 6 times/day for 7 days pre and post intervention. At each assessment, they reported whether a stressor occurred since their last assessment, and if so, answered questions on stress appraisals (perceived stress, perceived control), coping (rumination, positive reappraisal) and negative affective (NA) responses (mean of anger, anxiety, sadness, and shame). Intent-to-treat mixed model analyses were completed with random intercepts, fixed slopes, and restricted maximum likelihood estimation.

Results: Change over time (Δ) between exercise and control group caregivers was significantly different for perceived stress ($p = .015$) and NA ($p = .004$), and marginally significant for perceived control ($p = .089$). Although caregivers in the control group did not change in appraisals or NA, caregivers in the exercise group significantly increased in control [$\beta_0 = 39.95$, SE = 3.01, CI = 33.95, 45.96; $\beta_\Delta = 6.65$, SE = 3.22, CI =0.32, 12.98] and decreased in perceived stress [$\beta_0 = 75.10$, SE = 2.09, CI = 70.92, 79.29; $\beta_\Delta = -5.56$, SE = 1.89, CI = -9.27, -1.85] and NA [$\beta_0 = 43.44$, SE = 2.43, CI = 38.58, 48.31; $\beta_\Delta = -5.93$, SE = 1.96, CI = -9.78, -2.08] when a stressful event occurred.

Summary: The benefits of exercise are widespread and alter the ways individuals respond to stressful life events. We demonstrated novel findings showing that physical activity strengthens adaptive appraisals and reduces negative affect in response to stressors experienced by a previously inactive group of caregivers.

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Paper Session 30: The Role of Affect in the Context of Physical Activity 11:00 AM-11:15 AM

OUTCOME EXPECTANCY MEDIATES THE RELATIONSHIP BETWEEN AFFECTIVE AND PHYSICAL FEELING STATES AND NEXT-DAY PHYSICAL ACTIVITY

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Background: A growing number of studies have shown affective and physical feeling states as predictors of daily physical activity (PA) in free-living settings, yet little is known about the mechanism underlying such effects. This study aims to test social cognitive states as mediators of the relationship between affective and physical feeling response to PA and PA levels next day using ecological momentary assessment (EMA). **Methods:** The EMA protocol was administered via a handheld computer (PDA) for 7 consecutive days at baseline, and 5 consecutive days at 7 different time points across a 6-month period (42 EMA days total) among 99 endometrial cancer survivors participating in the Steps to Health Study. In the morning of each EMA day, the PDA prompted participants to record their self-efficacy (SE) for exercising that day (1 item), as well as expected positive (EPO; 6 items) and negative outcomes (ENO; 3 items) of exercising that day. Participants were also asked to record all exercise sessions using the PDA, and to complete the Exercise-induced Feeling Inventory (EFI; 12 items) and Somatic Sensations (SS; 10 items) both pre- and post-exercise. Difference scores were calculated to indicate feeling responses to exercise. Each feeling response was linked with the SE/EPO/ENO and the overall physical activity level (PAL; derived from a composite measure of accelerometer and EMA self-report data) the following day. Multilevel mediation models (1-1-1) were used to examine the within-person (WP) and between-person (BP) effects using EFI/SS as the predictor, SE/EPO/ENO as the mediator, and PAL as the outcome. **Results:** ENO mediated the effect of affective response to exercise (EFI) on next day PAL at the BP level (beta=0.176, SE=0.086, p=0.040), suggesting more positive affective response led to higher PAL through a decrease in ENO (beta=-0.036, SE=0.009, pConclusion: Affective and physical feeling responses to exercise predict daily PA level partly through their effects on individuals' negative outcome expectancy. Future interventions could consider targeting this mechanism for PA promotion.

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Paper Session 30: The Role of Affect in the Context of Physical Activity 11:15 AM-11:30 AM

MERITORIOUS AWARD WINNER

THE ACUTE BIDIRECTIONAL RELATIONSHIPS OF CHILDREN'S AFFECTIVE STATES AND PHYSICAL ACTIVITY: THE ROLE OF CHRONIC STRESS

Cheng K. Fred Wen, MPH[1], Yue Liao, MPH, PHD[2], Jimi Huh, PhD[1], britni R. belcher, PhD, MPH[1], Eldin Dzubur, MS[1], Adam Leventhal, PHD[3], Genevieve F. Dunton, PhD, MPH[1]

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Introduction: There is a growing literature suggesting that affective states are acutely and bi-directionally related to physical and sedentary behavior. Yet, these relationships and potential moderators of these relationships are rarely examined in children.

Methods: A sample of 180 children (mean age=9.6 years old, 51.7% girl, 53.9% Hispanic) and their mothers completed an ecological momentary assessment (EMA) study that examined parenting factors and obesity risk. Across 1 week, children wore accelerometers on waist to measure moderate-to-vigorous physical activity (MVPA) and sedentary behavior (SB), and received 3-7 EMA prompts/day by smartphones asking about their current positive and negative affective states. Perceived chronic stress, age, sex, and ethnicity were measured at baseline for children and mothers. Multilevel regression models tested the within-(WS) and between- person (BS) associations of: (1) time spent in MVPA or SB within the 60 mins before each EMA prompt predict affective states at that prompt and (2) affective states at each EMA prompt predict time spent in MVPA or SB in the 60 mins after that prompt. Interaction terms were created by multiplying the both the WS- and BS- versions of the main predictor of each model with children's and mothers' chronic stress scores. Models controlled for child sex, age, race, body mass index (BMI) percentile, and affective states and activity levels at the prior EMA prompt.

Results: When engaged in more SB than usual in the 60 mins before an EMA prompt, children reported lower positive affect at that prompt (WS; b=-0.01, SE=0.01, $p < 0.1$). In contrast, engaging in more MVPA than usual before a prompt was associated with higher positive affect at that prompt (WS; b=0.02, SE=0.01, $p < 0.1$). Mother's baseline chronic stress moderated this association (WS; b =-0.02, SE=0.01, $p < 0.05$), such that the positive affective response to MVPA was weaker for children of mothers with higher levels of chronic stress.

Conclusions: Promoting MVPA and decreasing SB may help acutely improve children's affective states. These acute effects may be impacted by mother's stress, underscoring the potential importance of modulating mother's stress and the need to further understand the mechanism underlying children's affective response to MVPA.

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Paper Session 30: The Role of Affect in the Context of Physical Activity 11:30 AM-11:45 AM

AEROBIC EXERCISE TRAINING IMPROVES AFFECT IN NORMAL HEALTHY YOUNG ADULTS

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Objective: Aerobic conditioning is associated with beneficial effects on affect but most data come from observational studies. Here we report the effect of a randomized controlled trial of aerobic training program on measures of affect.

Method: Normal healthy sedentary young (age 20-45 y) adults were randomized to a 12-week aerobic training program or a waitlist control condition and measures of depressive affect (Beck Depression Inventory, BDI), hostility (Cook Medley scale, CKM), and anxiety (Spielberger Trait index) were collected at study entry (T1) and at 12 weeks (T2). Longitudinal linear mixed effect models with generalized estimating equations were fit separately for each outcome. Final models were adjusted for age, sex, BMI, body fat percentage, and the alternative Mediterranean diet index.

Results: 119 participants were randomized to the exercise (n=60, 32 women) or wait list (n=59, 31 women) conditions. Mean age was 31.3 (± 5.9) years. Mean study entry VO_2max was 30.4 ± 6.9 and 31.0 ± 6.4 ml/K/min in the exercise group and control groups respectively. After training, VO_2max increased to 34.7 ± 8.4 in the exercise group but did not change (30.1 ± 6.2) in the control group. Within the exercise group, BDI scores significantly decreased by 29% from T1 to T2 (ES = 0.71, p = .0470); within the waitlist group, the BDI scores increased by 9%, though not significantly (ES = 1.09, p = .4871), while adjusting for covariates. Within the exercise group, CKM scores significantly decreased by 1.50 points from T1 to T2 (ES = -1.50, p

= .0091); within the waitlist group, CKM scores increased by 0.25 points, though not significantly (ES = 0.25, p = .5838), in the adjusted model. Exercise training had no effect on trait anxiety.

Conclusions: In this randomized controlled trial of a 12-week aerobic training program administered to healthy, young, sedentary adults, aerobic capacity increased significantly as predicted in the training but not the control group. Training also led to significant reductions in depressive affect and hostility but not anxiety. These findings are noteworthy especially in light of the fact that participants had normal levels of affect at study entry.

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Paper Session 31: Engagement with Genetic Testing and Information 10:45 AM-11:00 AM

LONG-TERM OUTCOMES OF TELEPHONE VS. IN-PERSON GENETIC SERVICES DELIVERY

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Genetic counseling and testing for *BRCA1*/2 mutations has become integral to the clinical care of women at risk of hereditary breast and ovarian cancer (HBOC). As the demand for cancer genetic counseling and testing has risen, alternatives to traditional face-to-face genetic counseling and testing are needed to ensure widespread access. We conducted a multi-site, randomized noninferiority trial comparing telephone delivery to standard in-person delivery of genetic counseling and testing for HBOC. Over the short-term, we found that telephone delivery was less expensive and yielded comparable (i.e., noninferior) genetic counseling (knowledge, decision conflict, satisfaction) and psychosocial (distress, quality of life) outcomes. In this report, we examined 12-month outcomes from this trial, to determine if telephone delivery remains noninferior to in-person delivery over the long-term.

Eligible women were age 21-85 who did not have newly diagnosed or metastatic cancer, were at high-risk for HBOC and were self- or physician-referred for genetic counseling at one of our study sites. Overall, 669 women were randomized to receive usual care (UC) or telephone counseling (TC). Of those, 514 completed the 12-month follow-up assessment. There were no differences in attrition across the two study groups (χ^2= 0.88, p = 0.767).

At 12-months post-randomization, TC was statistically noninferior to UC on all outcomes. Cancer distress (d = -0.50, upper bound of 97.5% CI, 1.99) did not cross the 4-point noninferiority limit, genetic testing distress (d = -0.54, upper bound of 97.5% CI, 1.08) did not cross the 3-point noninferiority limit, physical function (d = 0.77, lower bound of 97.5% CI, -0.74) and mental function (d= -0.17, lower bound of 97.5% CI, -1.73) did not cross their 2.5 point noninferiority limits and satisfaction with genetic testing decision (d = 0.15, lower bound of 97.5% CI, -0.31) did not cross its 1-point noninferiority limit. In follow-up analyses adjusting for genetic test result and potential confounders, the results were unchanged.

These results, confirming the long-term noninferiority of TC compared to UC, provide further evidence that remotely delivering genetic services is a safe and effective approach to increasing access and reducing the costs of genetic testing.

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Paper Session 31: Engagement with Genetic Testing and Information 11:00 AM-11:15 AM

ENGAGEMENT WITH GENETIC INFORMATION AND UPTAKE OF GENETIC TESTING: THE ROLE OF TRUST AND PERSONAL CANCER HISTORY

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Background: Targeted screening and treatment using genetic technologies is increasingly common. For individuals with a family and/or personal history of cancer, genetic testing might identify those at especially high risk. This is particularly important when there are corresponding guidelines for the management of high risk individuals (e.g., those with *BRCA1/2* mutation, Lynch Syndrome). However, use of genetic testing remains low among those eligible. This may be partially due to lack of communication about genetic testing and low trust in genetic testing information sources. No studies have explicitly examined the association between receiving genetic information from trusted sources and cancer-related genetic test uptake within a national sample of US adults. Our objectives were to better understand (1) the extent to which individuals trust the sources from which they receive information about health-related genetic tests, (2) whether level of trust for sources of genetic information might be related to health-related genetic testing uptake, and (3) whether factors such as cancer history or numeracy play a role in the latter association.

Methods: We used cross-sectional data from the Health Information National Trends Survey (HINTS 4, Cycle 3). Our study sample included individuals who responded “yes” to the following survey item: “Genetic tests that analyze your DNA, diet, and lifestyle for potential health risks are currently being marketed by companies directly to consumers. Have you heard or read about these genetic tests?” (n=1117). All analyses accounted for the complex survey design to achieve population-based estimates.

Results: Although respondents trusted information from health professionals the most, they were less likely to report hearing about genetic testing from them compared to the television ($p < 0.01$). Regardless of source, higher levels of trust in the information source from which participants heard about genetic tests were associated with increased odds of genetic testing uptake. This was particularly true among individuals with a personal history of cancer. Numeracy did not moderate the association between trust and uptake of testing.

Conclusion: Overall, these results suggest that trust is important among individuals with a personal cancer history. Because providers were among the most trusted sources of health

information, they may be important sources for genetic testing information, particularly for individuals with a personal cancer history.

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Paper Session 31: Engagement with Genetic Testing and Information 11:15 AM-11:30 AM

COMMUNICATING COMPLEXITY: ANALYSIS OF THE COMMUNICATION OF CANCER GENETIC TEST RESULTS THREE MONTHS POST DISCLOSURE

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Research on the communication of genetic test results in families have focused on predominately non-Hispanic White mutation positive families. Little is known about this process for racially and ethnically diverse individuals who undergo genetic testing. As part of a prospective clinical trial of patient experience with a 25-gene test, participants were sent a questionnaire three months after results disclosure, including questions about sharing test results. This is an interim analysis of the first 562 56.2% (n=562/1000) respondents. Responses were analyzed by results groups (Negative “Neg”, n=297; Variant of Uncertain Significance “VUS”, n=207; Positive “Pos”, n=59).

Self-reported race/ethnicity is 44.8% non-Hispanic White, 37.9% Hispanic, 10.1% Asian, and 2.8% Black. The majority (97.2%, n=546) had shared their test results. The Pos group was over six times more likely to encourage family members to undergo genetic testing than the Neg (OR=6.6, $p < 0.0001$, 95% CI [3.2, 14.7]) and VUS groups (OR=6.1, $p < 0.0001$, 95% CI [2.9,

13.8]). When compared to the Neg and VUS groups the Pos group was 12.4 and 13.8 times more likely, respectively, to report family members having undergone genetic testing (OR=12.4, *p* p < 0.00001, 95%CI [5.7,35.3]). All Pos respondents (n=59) shared their test results. When asked if they had encouraged family to undergo genetic testing, Asian respondents less frequently reported having done so than non-Hispanic Whites ($p < 0.05$). Additionally, Asian participants in the Pos group responded in the negative more frequently when asked if their family members underwent genetic testing ($p < 0.05$).

Three months post genetic testing, communication of results was very high among all result groups. However, individuals in the Pos group were more likely to encourage testing in their family members and their family members were more likely to undergo genetic testing, suggesting that participants correctly understood the implication of their results and were able to convey that information to their relatives. Differences by race/ethnicity merit further exploration. Longitudinal data will continue to be collected on these and the subsequently accrued participants, allowing for expanded analyses.

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Paper Session 31: Engagement with Genetic Testing and Information 11:30 AM-11:45 AM

BRCA-POSITIVE PREVIVORS’ INFORMATION NEEDS REGARDING HEREDITARY BREAST AND OVARIAN CANCER RISK

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Introduction: *BRCA1* and *BRCA2* carriers are at significantly increased risk to develop breast and ovarian cancer. Because of this genetic risk, *BRCA*-positive, unaffected patients—referred to as previvors—experience uncertainty regarding decision-making. Information is a key mechanism for managing such uncertainty. While previous research has explored cancer patients’ and survivors’ information needs, the information needs of previvors are likely to be distinct. Framed by the Messaging Model for Health Communication Campaigns (MMHCC)—which incorporates components of social marketing to provide a rigorous approach for the development of communication campaigns—we assessed previvors’ information needs and behaviors in order to inform the development of an educational intervention to manage uncertainty and promote uptake of appropriate prevention activities.

Methods: 25 qualitative, in-depth interviews were conducted with *BRCA*-positive, female, English-speaking previvors. Interviews were audio-recorded, transcribed verbatim by a professional transcription service, and checked for accuracy by study team members. The constant comparison method of grounded theory was utilized to code the interview data. Inter-coder reliability was established using Krippendorf’s alpha. Coders were reliable at α =.92.

Results: Qualitative analysis of previvors’ experiences revealed information needs were related to the stage in their health journey. Specifically, a four-stage model was identified: 1) pre-testing information needs, 2) post-testing information needs, 3) pre-management information needs, and 4) post-management information needs. Two recurring dimensions of desired knowledge also emerged within the stages—medical knowledge and personal/social.

Conclusion: Results suggest previvors’ information needs are distinct from cancer patients and survivors’ needs and change overtime as they navigate their health journey. Future research should confirm these results with a more diverse population, and if confirmed, develop educational materials to assist patients in managing uncertainty and reducing decisional conflict.

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Paper Session 32: Helping Mom Know Best: Maternal Health Research 10:45 AM-11:00 AM

IMPROVING MOTHERS' DIETARY INTAKE – AN ANALYSIS OF INDIVIDUAL AND FAMILY MEDIATORS IN A FAMILY-BASED INTERVENTION

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Purpose. The US Hispanic/Latino population is estimated to almost double between 2014 and 2050, representing 25% of the US population. Alongside this rapid growth, disparities in health outcomes between racial/ethnic groups persist, and continue to lead to more illnesses and premature death for communities such as US Hispanics/Latinos. Implementing effective, culturally appropriate interventions to improve the dietary intake of Hispanics/Latinos is, therefore, a priority to reduce health disparities in this rapidly growing population.

Methods. This study describes dietary changes among Hispanic/Latino mothers, and mediators of those changes over a 10-month period from an RCT conducted in a rural region along the US-Mexico border in California, US. A convenience sample of 361 families (children between 7-13 years old and their mothers, and in a 25% subsample, fathers) was recruited from community locations and using flyers and mass media. Intervention families (n=180) completed an 11-session community health worker-delivered home-based intervention designed to improve dietary outcomes. Remaining families (n=181) were part of a delayed-treatment control condition.

Results. The mean age of mothers was 39 years (SD=7.86). Most were born in Mexico (82%), and were either overweight (36%) or obese (50%). Daily servings of fruits was higher among mothers in the intervention condition (mean=1.86, SE=0.14) compared to those in the control condition (mean=1.47, SE=0.14) at 10-months post-baseline ($p \leq 0.05$). Mothers in the intervention condition reported consuming a lower percent energy from fat (mean=30.0%, SE=0.26% versus 31.0%, SE=0.27%; $p \leq 0.01$) and a higher diet quality (mean=2.93, SE=0.07) compared with mothers in the control condition (mean=2.67, SE=0.07; $p \leq 0.01$). These changes were mediated by improvements in behavioral strategies to increase fiber and lower fat intake and family support for vegetable purchasing, as well as decreased unhealthy eating behaviors and perceived family barriers to healthy eating.

Discussion. Both individual (behavioral strategies to increase fiber and lower fat intake, reducing unhealthy behaviors) and family (family support for vegetable purchasing, perceived family barriers to healthy eating) mediated changes in mothers' dietary intake. Future

interventions should consider approaches that target mediators of change, in addition to focusing on the dietary behavior itself.

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Paper Session 32: Helping Mom Know Best: Maternal Health Research 11:00 AM-11:15 AM

BEHAVIORAL & PSYCHOSOCIAL SCREENING & DECISION AIDS FOR MOTHERS OF YOUNG CHILDREN: DESIGN & LESSONS LEARNED

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Behavioral and psychosocial health (B&PH) is important to health after pregnancy, but is often overlooked during healthcare visits. Screening tools are a strategy to increase attention to B&PH (including diet, physical activity, tobacco and alcohol use, mood, and body image). Moreover, inclusion of decision aids eliciting women's preferences may promote a more patient-centered screening process. Aim 1 of this study was to identify an acceptable format and method of receiving results after B&PH screening. Aim 2 was to identify key values/preferences for inclusion in decision aids related to B&PH change-decisions. Individual interviews were done with 26 women of diverse income and race/ethnicity (7 White, 16 Latina, 2 Black, 1 Asian). Women were recruited by mailed flyers or flyers posted in a clinic serving children of low-income families. Women's mean age was 28 (range 18 to 40), with 1-5 children and the youngest ≤ 3 years. During interviews, women first completed a B&PH screening questionnaire, and then responded to open- and closed-ended questions about design of materials to convey screening results. The interview also included their ratings of 11 values/preferences (from behavioral theories and maternal health research) for use in a decision aid. Analysis involved computing percentages and the chi-square, where appropriate. Findings included: women preferred a feedback form entitled "Mom's Health" (54%) over using terms such as "dashboard" or "report card." They preferred screening results shown in a graphic format (56%) with 3-level, positively worded labels (42%) rather than other wording. Hispanic versus non-Hispanic ethnicity was unrelated to format preferences. Phone/computer was preferred for receiving results over receiving results from a care provider. The 4 top ranked values/preferences for inclusion in a decision aid were: most important to being a mother, most needing improvement, most motivated to change, and most family support for a change. 24 of 26 women rated the screening and decision aid as "very useful" in helping mothers to make changes to improve health. Our findings provide direction for communicating screening results and design of decision aids for B&PH changes to improve health of mothers of young children.

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Paper Session 32: Helping Mom Know Best: Maternal Health Research 11:15 AM-11:30 AM

A MULTIFACETED COMMUNITY PROGRAM TO SUPPORT BREASTFEEDING IN KANSAS

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Background: The “Communities Supporting Breastfeeding” (CSB) program is a multifaceted community approach to improve breastfeeding support in Kansas. This session covers all aspects of the program including goals, program evaluation, and shared communities’ experiences.

Methods: The CSB designation as defined by the Kansas Breastfeeding Coalition (KBC) requires meeting specific criteria within six sectors of the community: local breastfeeding leadership, peer support, maternity care practices, societal support, employer support, and childcare provider support. The KBC provides an assessment, hospital staff education, coalition building assistance, continuity of breastfeeding care, and education to home visitors. The CSB program is now in its third year. During year one and two, a survey to assess progress toward the designation was administered to all mothers who benefited from breastfeeding services.

Results: Since July 2014, eleven communities representing diverse populations have achieved the CSB designation. During program years one and two, five and six communities respectively achieved the CSB designation within the allotted 10-month time period. About 20 mothers in each of the respective communities participated in the survey (N=211). The majority of women believed local breastfeeding leadership, peer support, and hospital support provided adequate breastfeeding support in their community. Women were less familiar with programs that promote breastfeeding among employers and childcare providers. Further, year one communities appear to benefit from improved exclusive breastfeeding rates that may be associated with the CSB designation.

Conclusion: The CSB program informs other Kansas communities in their effort to build a culture of breastfeeding support and is now in its third year with five new communities. The program is currently listed as an “emerging practice” on the Innovation Station website of the Association of Maternal & Child Health Programs.

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Paper Session 32: Helping Mom Know Best: Maternal Health Research 11:30 AM-11:45 AM

CHANGES IN FRUITS AND VEGETABLES AVAILABILITY AND CONSUMPTION AMONG LOW-INCOME PREGNANT WOMEN: HEALTHY EATING ACTIVE LIVING

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Availability of fruits and vegetables (FV) increases consumption among adults, and is known as a protective factor to obesity. Healthy Eating Active Living (HEAL) is a multi-component, community-based, Community Health Worker (CHW)-led six-week program designed to promote healthy eating, physical activity, and intention to breastfeed among Medicaid-eligible pregnant women in Houston, TX. Pregnant women are recruited through clinics and participate in weekly 90-minute facilitated and experiential, group-education sessions. The purpose of this pilot study is to evaluate the feasibility of HEAL in increasing home nutrition environment and daily FV consumption, and if the impact vary by participants' perceived food security (PFS).

This was a one-group pre-post evaluation design. Availability to FV (23 items), daily consumption (24 items), and PFS (6 items) were measured using self-administered surveys. Ninety-two Medicaid-eligible pregnant women completed both surveys at baseline and post-intervention from October 2014 - September 2015. More than half (52.2%) of the women reported low food security at baseline. McNemar's test was conducted to evaluate the change of home availability of FV between the high/low-PFS groups, and Wilcoxon signed-rank test for FV consumption.

Results showed that participation in HEAL significantly increased home availability of 11 FV ($p < 0.05$) and increased women's daily consumption of FV ($p < 0.05$). When stratified by perceived food security, low-PFS women had increased availability of 9 FV and daily consumption of FV pre-to-post-intervention ($p < 0.05$). For their high-PFS counterparts, HEAL helped increase availability of 5 FV items and daily consumption of vegetables ($p < 0.05$) but not fruit.

This pilot study demonstrates the initial feasibility of using multi-component, community-based, CHW-led intervention approach to increase home availability and daily consumption of FV among low-income pregnant women, especially in women with low perceived food security.

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WEB AND MOBILE TECHNOLOGIES: ACTIVITY TRACKERS, FOOD INTAKE PROGRAMS AND BEHAVIORAL ASSESSMENTS FOR PERSONALIZED HEALTH

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Consumers are motivated to use physical activity trackers and web-based food intake and health programs, but their effectiveness and potential in improving and maintaining overall health needs further investigation. The use of such innovative and interactive mobile technologies provide powerful research opportunites that can help us better target a personalized and integrative health approach. Research can also be facilitated using the consumer as the informant providing important data and insight into individualized approaches, changing behaviors and understanding variations in outcomes. This panel aims to present personalized approaches and discuss their strengths,limitations and applications to research.

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STRATEGIES FOR ENGAGING, RECRUITING AND RETAINING DIVERSE WOMEN IN MEDICAL RESEARCH

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The importance of increasing the representation of women and minorities in medical research has gained recognition. Barriers to the participation of these groups in research have been documented and discussed. Progress will be achieved by moving from understanding barriers to implementing and evaluating solutions. In January 2016, the US FDA Office of Women's Health launched the Diverse Women in Clinical Trials Initiative. The chair of the proposed panel led a group of national expert collaborators in the development of professional education webinars hosted through the Association of Clinical Research Professionals. The chair is a national leader in sex and gender-specific women's health research and educational programming innovations. The panelists are academic faculty with extensive research and leadership experience in relevant fields including decision science, health communication, health disparities, and the participation of underrepresented groups in clinical trials. Panelists will describe strategies implemented in their work to increase the participation of diverse women in medical research, discussing the evidence base, results, and feasibility of each approach. Aspects of diversity to be discussed include race/ethnicity, age, co-morbidities, rural location, and socioeconomic status. A Q&A session will provide opportunity for attendees to interact with panelists. After attending this session, attendees will be able to describe and apply appropriate strategies to increase the feasibility of research participation for diverse women; describe effective applications of digital health to the engagement, recruitment, and retention of diverse women in research; and develop culturally competent communication about research participation tailored to diverse women. The panel will equip attendees with cutting-edge strategies to engage diverse women in behavioral and medical research, in order to achieve effective, acceptable, and culturally competent interventions. This panel represents a collaboration between the US FDA Office of Women's Health and innovative academic leaders within the clinical trials space.

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THE INTEGRATED PRACTICE UNIT (IPU) AS TRANSLATION ACCELERATOR: REAL-WORLD IMPLEMENTATION IN DIABETES, PAIN, AND PRIMARY CARE

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With the advent of population-based health, successful translation and implementation of behavioral medicine interventions will require a clear economic understanding of healthcare delivery. Although most chronic conditions require a coordinated treatment team, healthcare is often fragmented, redundant, and inefficient. The fee-for-service payment model is a significant obstacle to improving healthcare delivery because it only reimburses for the quantity of service, not its quality, outcome, or efficiency.

This panel will provide in-depth examination of the “Integrated Practice Unit” (IPU; Porter and Lee, 2013) model for improving illness management, outcomes, quality, and costs for virtually any chronic condition. In this model, treatment units are organized around specific patient problems rather than clinical specialties.

Although many existing multidisciplinary clinical teams are structured this way, few are true IPUs. A fully-developed IPU also focuses on systematically improving care quality, coordinating patients’ transitions across inpatient and outpatient settings, and monitoring key clinical outcomes and treatment costs. Importantly, its clinical objectives are to address quality and outcomes rather than RVU generation, and its business objectives are to target improved outcomes, efficiency, and growth. Effective IPUs then expand to new geographic locations and use their data to establish their bundled care rates for defined populations.

Following an overview of the general IPU model, panel members will present real-world exemplars of how IPUs are being implemented to address diabetes, chronic pain, and primary care. The panel will also discuss how researchers can use IPUs’ existing data to increase the utility of clinical trials, advance the most effective treatment models, approach population care from an economically-informed perspective, and advocate for improved healthcare policies in a language understood by administrators and insurers.

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BEHAVIORAL MEDICINE SCIENTISTS IN INDUSTRY: OPPORTUNITIES, CHALLENGES AND LESSONS LEARNED

Cynthia M. Castro Sweet, PhD[1], Heather Cole-Lewis, PhD, MPH[2], Leanne Mauriello, Ph.D.[3], Danielle Blanch-Hartigan, PhD, MPH[4]

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The explosion of mHealth and eHealth technologies has opened new career pathways for behavioral medicine scientists, and created innovative opportunities to apply expertise in behavior theory and scientific methods to diverse, health-related organizations outside of academic settings. Many health-related organizations (from small start-ups to large multi-national organizations) benefit from behavioral medicine specialists to inform the creation, application and evaluation of new health behavior-based tools and services for varied audiences. This panel of SBM members will present their experiences in bringing behavioral medicine expertise to life in careers outside of academia, and will highlight the unique opportunities and obstacles across different organizations and settings. The panelists will discuss the roles and responsibilities of their positions, the impact of their work on their organizations, and challenges experienced as academically-trained scientists in non-academic settings. The first speaker will discuss her role as the lead outcomes researcher for a digital behavioral medicine company focused on chronic disease prevention. The second speaker will discuss her career integrating evidence-based science on human behavior change with technology across various sectors—consumer healthcare, medical devices, and pharmaceutical--in a large healthcare corporation. The third speaker will discuss her role in bringing innovative lifestyle management programs to patients within a large, not-for-profit health care system. The final speaker will discuss her perspective as an early-career researcher consulting with a start-up company. Through sharing their experiences, the panelists aim to expose students and early-career scientists to the varied career paths after behavioral medicine training, and further collaborative discussion between behavioral medicine scientists across industry and academia.

This presentation is supported by the Industry Collaboration subcommittee of the SBM Digital Health Council.

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Panel Discussion 18 12:15 PM-1:15 PM

INTEGRATING PATIENT REPORTED DATA INTO BEHAVIORAL PRAGMATIC TRIALS: CHALLENGES AND SOLUTIONS

Wendy J. Weber, ND, PhD, MPH[1], Susan M. Czajkowski, Ph.D.[2], Lynn DeBar, PhD, MPH[3], Doug Zatzick, MD[4]

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In the last few years there has been a growing interest by the public and the scientific community in pragmatic clinical trials that test research hypotheses, which will directly inform the health care system. This interest has been driven by a number of factors including the high cost of traditional efficacy studies and the exclusion of many individuals from efficacy trials resulting in results that do not generalize to many patients. The proposed discussion session will include presentations that will provide an overview of pragmatic trials for behavioral interventions; how patient reported outcomes can be incorporated into pragmatic trials; examples from two large scale pragmatic trials that are incorporating patient reported outcomes; and provide resources for planning and conducting pragmatic trials. Dr. Weber will highlight an overview of pragmatic trials for behavioral interventions. Dr. Czajkowski will present on how pragmatic trials can capture patient reported outcomes (PROs), and give examples of some common PRO measures used in these trials. Dr. Debar will present the challenges of including patient reported outcomes of pain measures in a large pragmatic trial evaluating integration of multidisciplinary services within the primary care environment versus usual care. Dr. Zatzick will present about the challenges of collecting patient reported information to determine participant eligibility for a large pragmatic trial to evaluate a coordinated care delivery program for patients treated for acute trauma to prevent PTSD and other related conditions. Dr. Weber will provide a summary of resources developed by the NIH Health Care System Research Collaboratory for investigators who are planning and conducting pragmatic trials (www.nihcollaboratory.org). The session will close with a panel discussion with all presenters to answer questions from the audience.

This session will provide attendees with a strong overview of how to overcome challenges to incorporating patient-reported outcomes into pragmatic trials. Attendees will also be informed of resources and tools available to help them better understand the complexity of planning and conducting pragmatic trials.

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Panel Discussion 19 12:15 PM-1:15 PM

USING CONSUMER PRODUCTS IN BEHAVIORAL RESEARCH: LESSONS LEARNED FROM THE FRONTLINES

Ernesto Ramirez, PhD, MS[1], Sarah Kunkle, MPH[2], Job Godino, Ph.D.[3], Sheri J. Hartman, PhD[4], Chad D. Rethorst, Ph.D.[5], Lisa Gualtieri, PhD, ScM[6], Valentin Prieto-Centurion, MD[7]

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Over the last five years, Fitbit and other consumer health devices and applications have rapidly become key tools for measurement and intervention studies. Consumer products provide novel and user-friendly methods for behavioral data collection including, but not limited to, physical activity, heart rate, sleep, dietary behaviors, and weight. Additionally, most, if not all, consumer products are designed to collect data over longer periods of time than what is commonly gathered by typical “research grade” devices (e.g., accelerometers) and subjective measurement methods (e.g., questionnaires). In this panel, we will discuss the opportunities available to behavioral researchers when consumer devices are included as part of a measurement and/or intervention study. This panel represents key stakeholders in the current consumer device and research ecosystem. Each panelist will present their work and participate in a moderated discussion. The panelists have been involved with supporting and/or conducting research using consumer products, including: 1) a representative from Fitbit, the leading consumer physical activity and sleep tracking device brand; 2) an industry-academic partner with Fitabase, specializing in data management of behavioral data produced by consumer tools; 3) researchers who have deployed various consumer products as part of validation, measurement, and intervention studies across diverse participant populations. These researchers have designed and conducted innovating technology-enabled studies with children and adolescents, cancer survivors, patients with COPD, mental health patients, and historically underserved populations. Audience members will learn about the current best practices for using consumer products, including current validation outcomes, and how to best design studies for longitudinal data collection, interactivity, and maximal participant engagement.

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Panel Discussion 20 12:15 PM-1:15 PM

ACCELERATING INNOVATION WITH THE SPEEDING RESEARCH INTERVENTIONS (SPRINT) PROGRAM

Cynthia A. Vinson, PhD, MPA[1], Heather Greenlee, ND, PhD, MPH[2], Lisa S. Miller, PhD[3], Nora L. Nock, PhD, PE[4], Edmund Pendleton, MS[5], Amanda Marin-Chollom, MA[6]

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During the summer of 2016, the National Cancer Institute (NCI) kicked off the SPeeding Research INTerventions (SPRINT) Program which is designed to foster, grow and nurture an innovation ecosystem for behavioral interventionists. The program is run by instructors with extensive startup and teaching experience and provides real world, hands-on training on how to successfully incorporate innovations in cancer control into successful products. The ultimate goal is to create scalable research-tested behavioral interventions that are ready to be put into real world practice and which will reach a large audience of users.

Ten teams consisting of a Principal Investigator, Mentor and Entrepreneurial Lead participated in the 8-week pilot of SPRINT. The teams participated in both a 3-day opening and a 1-day closing in-person training session at NCI and weekly webinars. Teams also interviewed at least 30 potential customers, competitors and stakeholders. Teams integrated the information acquired during the interview with quantitative data to refine their respective intervention/product and develop a viable business model for their NCI-funded behavioral interventions.

The first team will share how the SPRINT training influenced plans for dissemination and implementation (D&I) of a Spanish language nutrition and physical activity program for breast cancer survivors. At the beginning of the SPRINT training, the team had the goal of scaling their intervention to reach a wider audience of Latina breast cancer survivors. After completing 50 interviews they pivoted to creating a website and/or phone app focused only on nutrition, which can be used by a larger and more diverse group of cancer survivors. Going forward, in order to facilitate delivering the product to the consumer at a faster pace, the team intends to think of scalability when beginning to design and test new interventions.

The second team will discuss how SPRINT helped the team in pursuing D&I of their intervention which involves an 'assisted' exercise technology. They will discuss the challenges faced in scaling-up their 'assisted' cycling prototype and modifications made based on lessons learned from SPRINT training and 'customer' interviews.

The third team will present on SPRINTs impact on D&I of a research-tested food label training program. The team started the program with a vague idea of selling an app to consumers to improve their food label reading skills. They ended SPRINT with a strategy for adoption, implementation and sustainability of a web-based nutrition literacy tool to help employers promote healthy food choices and reduce costs associated with diet-related chronic conditions.

An overview of the course design and content as well as evaluation results will be presented along with a discussion of future opportunities for SPRINT training by NCI representatives.

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Panel Discussion 21 12:15 PM-1:15 PM

GETTING STARTED WITH QUALITATIVE METHODS IN CANCER RESEARCH: TIPS FOR DESIGN, DATA COLLECTION AND ANALYSIS

Shirley M. Bluethmann, PhD, MPH, Michelle A. Mollica, PhD, MPH, RN, OCN, Katharine Rendle, PhD, MSW, MPH, Erin Kent, PhD

National Cancer Institute, Rockville, MD

There is increasing emphasis on use of qualitative and mixed-methods approaches in the field of cancer prevention and control research. Qualitative methods can be used to systematically capture contextual data in ways that are difficult to do with quantitative approaches alone. These methods can be used to provide rich insights on a particular topic, or they can serve as the foundation for additional quantitative research and intervention development. Planning and managing qualitative research, however, can be challenging for those new to the field. This panel will present a broad overview of how to conceptualize, conduct, and analyze qualitative research projects, with a focus on interview methods in cancer prevention and control research. This session is geared toward early-stage investigators and those that are new to qualitative research.

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Panel Discussion 22 12:15 PM-1:15 PM

APPLYING FOR GRADUATE FUNDING FROM THE NATIONAL SCIENCE FOUNDATION AND THE NATIONAL INSTITUTE OF HEALTH

Margarita Sala, BS[1], Amy Heard, BA[2], Stephanie Manasse, MS[3], Austin S. Baldwin, PhD[4]

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For graduate students and trainees, applying for grants from the National Science Foundation (NSF) or the National Institute of Health (NIH) is an important experience in their professional development. Receiving one of these grants guarantees funding during graduate school, opens opportunities for professional development, allows for the freedom to conduct independent research, and positions the trainee well to be competitive for future funding. However, these grants are highly competitive and guidance is limited, and thus the application process may seem overwhelming and daunting. In this panel, three graduate students who have been awarded pre-doctoral funding from the NIH or NSF will discuss their perspectives on preparing applications for the NSF Graduate Research Fellowship Program (GRFP) and the NIH Pre-doctoral Fellowship (NRSA F31), emphasizing their thoughts regarding what constitutes a successful application. In addition, an experienced reviewer will discuss his experience reviewing NIH Pre-doctoral Fellowship grants, emphasizing the review criteria set by NIH and his insights into what constitutes a good application. Attendees will have the opportunity to ask questions to the panelists.

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Panel Discussion 23 12:15 PM-1:15 PM

RESULTS AND LESSONS FROM COMPASS: NATIONAL IMPLEMENTATION OF EVIDENCE-BASED COLLABORATIVE CARE MODEL

Claire Neely, MD, MD[1], Karen J. Coleman, MS, PhD[2]

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Introduction: Collaborative care for the treatment of mental and physical health conditions in primary care settings has been shown to be effective in controlled trials. We present outcomes from a national dissemination and implementation project for depression and comorbid diabetes and/or cardiovascular disease, funded by the Center for Medicare & Medicaid Innovation. Barriers and facilitators that influence successful implementation and sustainability of this model across diverse populations, organizations and geographies will be discussed.

Background: The comorbidity of depression with diabetes and cardiovascular disease increases health care costs. Recently, randomized trials have shown that collaborative care models for depression can be expanded to comorbid conditions such as diabetes. Until now, wide-scale dissemination and implementation of this collaborative approach had not been tested.

Methods: 3,609 patients in 18 primary care systems and 172 clinics were enrolled in the Care for Mental, Physical and Substance Use Syndromes (COMPASS) program as part of a project to implement a proven chronic care model for patients with depression and diabetes and/or cardiovascular disease. COMPASS involved a minimum of monthly contact with care managers and weekly case review by a team of consulting physicians and psychiatrists. Eligible adult patients met these criteria: Patient Health Questionnaire (PHQ9) score 10 or higher and another poorly controlled medical condition; diabetes mellitus (HgbA1c > 8%) and/or cardiovascular disease (blood pressure > 140/90 mmHg).

Results: Of 3,609 patients with uncontrolled disease at enrollment, 40% achieved depression remission or response, 23% glucose control, and 58% blood pressure control during a mean follow-up period of 11 months. Depression improvement was directly related to the frequency of care management contact. Patients and clinicians were satisfied with COMPASS care. There were large variations in outcomes across medical groups. Challenges in implementation included changing scope and practice of physicians, psychiatrists, and existing care managers and care management systems.

Conclusions: Results from COMPASS provide support for institutionalizing proven collaborative care models in high volume primary care settings. Widespread implementation and improved patient outcomes were feasible through a collaborative effort among diverse health care systems; however, both implementation and outcomes varied greatly.

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Panel Discussion 24 12:15 PM-1:15 PM

MIND-BODY RESEARCH: A PANEL DISCUSSION OF SCIENTIFIC AND FUNDING TRENDS, PRIORITIES AND STRATEGIES

Crystal L. Park, PhD[1], Lanay M. Mudd, PhD[2], Frederick (Rick) Hecht, MD[3], Beth C. Bock, PhD[4]

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This panel session will provide a stimulating discussion of the current landscape and future prospects of mind-body science and is designed to promote extensive interaction between panelists and audience. The session will begin with a brief overview of current NCCIH funding priorities and opportunities by Lanay Mudd, program director at NCCIH. Two grantees with substantial NCCIH support, Rick Hecht and Beth Bock, will provide their perspectives on cutting-edge developments in mind-body research and their own strategies for maintaining adequate resources to pursue research. Panelists will discuss the importance of thinking systematically about sustained funding for ongoing lines of research and consider what makes funding proposals stand out—and what can sink them. The moderator, Crystal Park, will take questions from the audience and will also be ready with prepared questions to foster dialog.

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Panel Discussion 25 12:15 PM-1:15 PM

COMPLEX BEHAVIORAL MEDICINE PATIENTS: ADVANCING THE NEED FOR BEHAVIORAL MEDICINE SERVICES VIA CASE STUDIES

Kelly Gilrain, PhD[1], Cori E. McMahon, PsyD[2], David A. Moore, PsyD[3], Gonzalez A. Efrain, Psy.D., MSClinPharm, ABPP[4], Kaplan M. Lynne, Ph.D.[5], Petrongolo Jennifer, MSW, MA[6]

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Behavioral Medicine IP Consultation Teams are becoming more prevalent across hospital systems to address the psychological needs of medical patients in a manner that differs greatly from Social Work and Psychiatry services. The reasons for consulting an IP Behavioral Medicine Team are varied from adjustment concerns of mood and anxiety related to medical issues, trauma symptoms after injuries, new medical diagnoses that are causing emotional distress and varying types of losses related to medical concerns, as well as advisement on cognitive issues for our patients struggling with dementia versus delirium versus depression. While many of these cases are straightforward, Behavioral Medicine teams are more regularly being asked to provide insight into the more complex patient, particularly when there is no medical rationale to explain a patient’s pain, nausea, inability to use a limb, refusal to eat or engage with care or understand altered mental status. Many consultations now cross over to more complex challenges in assessment, management, and recommendations. These cases are typically associated with factitious, somatization and conversion disorders, which may also be complicated further by personality issues. Additionally, the capacity evaluations requested are oftentimes multifaceted due to cognitive issues, patient versus familial desires, as well as ethical concerns.

This Panel Discussion will showcase a variety of complex patient consultations received by Behavioral Medicine Teams across the country as well as those patients who would benefit from having Behavioral Medicine input. These new and complex consults are expanding the horizons of typical Behavioral Medicine requests from adjustment, anxiety or depression to a more intricate consult which must take into account biopsychosocial factors, the interconnectedness of physical and emotional wellbeing and how psychological functioning impacts medical presentations and subsequent medical care. The panel will provide insight on how to assess, conceptualize, and work with patients and their medical teams to ensure understanding of the medical patients’ psychological needs within the context of a complex and often vague symptom presentation. Clinicians from Cooper University Hospital (Camden, NJ), University of Miami, Department of Psychiatry and Behavioral Sciences (Miami, FL); WellSpan Behavioral Health (York, PA), and CHOP (Philadelphia, PA) will discuss these complex cases.

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Panel Discussion 26 12:15 PM-1:15 PM

GROUP VISITS AND GROUP PSYCHOTHERAPY IN INTEGRATED PRIMARY CARE: PROMOTING CHILDREN’S MENTAL AND PHYSICAL HEALTH.

Amber J. Landers, PhD[1], Shireen F. Cama, MD[1], Amelia Swanson, PhD[2], Bianca S. Shagrin, MD[3]

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Group interventions are a useful intervention to promote change via accessible exercise, social and education opportunities for families at their primary care clinic. This panel will discuss two group modalities in primary care (a psychotherapy group and a group visit) that were developed for promoting health behaviors among children and families These interventions will be considered from a multidisplinary team-based model and cultural-ecological theory that considers interplay of the social environment on children and families. Panel members will discuss the following groups from these frameworks, including lessons learned and implications for training.

Parent group – Led by psychologist, psychiatry resident, and psychology fellow in primary care clinic. Offered supportive therapy, mindfulness and education, as well as a training opportunity. Will discuss challenges and opportunities at the intersection of adult and child work in clinical practice and training, logistics and future goals.

Wellness group –led by pediatrician and conducted with multidisciplinary team (psychology, social work, nursing, nutrition). Offered health intervention and exercise activity (zumba!) as well as training opportunity. Will discuss logistics, outcomes of team-based approach, and future goals.

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Symposium 55 1:30 PM-2:45 PM

BEHAVIORAL INTERVENTIONS FOR OBESITY: A DEBATE ON THE STATE OF THE EVIDENCE

Dawn K. Wilson, Ph.D., FSBM[1], Peter Kaufmann, PhD[2], Robert M. Kaplan, PhD[3], Karina Davidson, PhD, MASc[4]

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This debate will focus on several themes common to the proposed presentations that include: 1) The importance of measuring patient centered health outcomes in contrast to surrogate markers, 2) Interpretation of null RCTs in light of study power, patient population, and study designs, and 3) Evidence requirements for public policy. A brief overview of these themes and the overall importance of the session from a national perspective will be provided by the chair.

Symposium 55A

A NULL RESULT IS NOT A TRIAL FAILURE: AN IN-DEPTH EXAMINATION OF THE IMPACT OF TRIAL DESIGN ON CLINICAL OUTCOMES.

Dr. Peter Kaufmann, PhD

Many large NIH trials produce null results. Dr. Kaufmann was the co-author of an important paper in Clinical Trials that described changes in the primary outcome of the Look AHEAD trial necessitated by low event rates (http://www.ncbi.nlm.nih.gov/pubmed/22334468). The presentation will describe how clinical trial design influences outcome, with implications for clinical application and future clinical trials.

Symposium 55B

EFFECT SIZES AND PRIMARY OUTCOMES IN LARGE NIH-BUDGET, CARDIOVASCULAR-RELATED BEHAVIORAL RANDOMIZED CONTROLLED TRIALS

Robert M. Kaplan, PhD

Dr. Kaplan will summarize the results of all large-budget behavioral trials funded by NHLBI and by NIDDK. In the context of current results, the presentation will suggest new directions for behavioral clinical trials. Dr. Kaplan published a review article on this topic in Feb. 2016, Annals of Behavioral Medicine, http://www.ncbi.nlm.nih.gov/pubmed/26507906.

Symposium 56 1:30 PM-2:45 PM

DIGITAL HEALTH TOOLS TO SUPPORT POPULATION HEALTH IN AN INTEGRATED DELIVERY AND FINANCING SYSTEM

Ellen Beckjord, PhD, MPH, Darren Olson, MBA, Ryan E. Cummings, MS, Amber Blackwood, MPH, CHES

UPMC Health Plan, Pittsburgh, PA

Evidence-based digital health interventions have the potential to extend the reach and enhance the impact of behavioral medicine. As part of an integrated delivery and financing system responsible for three million covered lives across commercial and governmental products, the UPMC Health Plan has been working to leverage digital tools to optimally manage the health and wellbeing of its members. This work includes the design, implementation, and evaluation of digital solutions focused on a variety of target behaviors in the service of multiple health-related goals. In this symposium, we will feature three digital tools developed and used by the UPMC Health Plan for population health management. The first presentation will focus on a member-facing mobile application; its features; and its importance as a “gateway” for members into a longitudinal and positive relationship with their health insurer (Olson). Next, we will discuss the translation of an internally-developed, evidence-based stress management program into a mobile solution, with an emphasis on the practices used to develop and evaluate a minimum viable product (Cummings). The third presentation will detail analytical approaches to optimizing member use and completion of a web-based, cognitive behavioral intervention for mild to moderate depression and anxiety (Blackwood). Our Discussant (Beckjord) will review what we have learned about best practices as well as challenges across these three solutions, including the importance of iterative development; the capture and use of consumer-generated data; defining member engagement in actionable ways; and using member input to provide digital solutions that meet and are consistent with consumers’ needs, preferences, and values.

Symposium 56A

USING A MEMBER APP TO ALIGN CONSUMER EXPECTATIONS IN THE MARKETPLACE WITH THEIR HEALTH PLANS

Darren Olson, MBA

Consumer expectations are at an all-time high when it comes to top-of-the-line service and user experience, and differentiating oneself from the competition is a challenge for many. Health insurance is not excused. As Moore's law accelerates the affordability and availability of technology, consumers expect their health plans to keep pace. In 2012, the UPMC Health Plan developed and released a mobile application for members and over the past year has conducted six studies with 143 participants to iteratively improve the solution and align it with member expectations. User testing focused on consumers' attitudes about and behaviors with the app as well as roadblocks or barriers to utilization. We used the findings to prioritize the roadmap of feature development in our sprint cycle. We will describe multiple features of the app; their utility for serving health plan members; and iterative improvements made to features including enabled fingerprint ID login; a streamlined registration process; use of push notifications; and the integration of other digital health tools into the mobile app environment. Results show that moving to fingerprint ID login reduced login errors by 30%; that redesigning key elements of the information architecture in response to user feedback decreased time spent on the login screen by 50%; increased monthly app downloads by 5%; increased app utilization by 25%; and increased monthly unique return visitors by 10%; and that streamlining the registration process decreased the time required to create a new account by two to three minutes. We will discuss these features and associated results in the context of supporting preventive health behavior; health behavior change; and optimizing consumer experiences as part of an integrated delivery and financing system serving three million members across commercial and governmental insurance products.

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Symposium 56B

THE BREATHE STRESS MANAGEMENT APP: LONGITUDINAL EVALUATIVE RESEARCH TO VALIDATE A LIFESTYLE DIGITIZATION CONCEPT

Ryan E. Cummings, MS

Stress is a common experience among health care consumers, and often the most frequently endorsed lifestyle risk factor reported on health risk assessments. The UPMC Health Plan has had an evidence-based stress management intervention available to members for over a decade; however, digitizing this intervention and offering it as a mobile solution is necessary to achieve adequate reach and to optimize impact. In 2015, in collaboration with a digital entertainment and gaming company, we designed and user-tested a prototype of a mobile stress management solution called Breathe. This minimum viable product (MVP) used ecological momentary assessment (EMA) to measure levels of stress throughout the day and provided guided instruction on deep breathing for stress reduction. Using qualitative methods, we conducted a 14-day longitudinal study to assess the effectiveness of the app to reduce and manage stress over time. We guided the study with 30 individuals (15 iPhone users and 15 Android users). We recruited participants through a remote usability platform, UserTesting. We conducted an initial evaluative exercise wherein users access the application and are asked to rank their overall health and stress levels and their expectations of the app. We then guided them through the setup process. asking them to 'speak aloud' about their experiences. Data collection included recording participants' on-screen device interactions, voice, and inter-study response to survey questions. At one week, we conducted a "check-in" with our users to validate their on-going participation. The test concluded with asking participants to explain their experience through both written and verbal prompts. Results showed that most users expected the app to be contextually aware, with notifications functioning as suggestions for techniques. Regarding app features, users viewed tagging reports of stress with triggers as cumbersome and confusing. However, they found the check-in interaction (EMA) to be very easy and intuitive. Participants found milestone badges very motivating and perceived the color palette as calming, and some users felt less stress just from viewing the app. Finally, participants stated that the setup process was lengthy, and warned it might deter people from completing the setup process. These results allowed us to provide recommendations to improve the overall experience and align continued development with prioritization of feature sets as we continue to translate evidence-based behavior change interventions into mobile solutions for health plan members.

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Symposium 56C

BEATING THE BLUES: USING CONSUMER USAGE DATA TO DRIVE ENGAGEMENT AND INCENTIVE STRATEGIES

Amber Blackwood, MPH, CHES

Many patients with anxiety or depression seek mental health treatment in a primary care setting where medication is often prescribed. The UPMC Health Plan is enhancing their members' experiences by offering digital tools as an alternative or supplement to traditional treatment. Beating the Blues is a web-based, cognitive behavioral intervention for mild to moderate depression and anxiety that is made up of 31 interactive modules. While the program design is evidence-based and theory-driven, completion of all 31 modules remains low (n=1334; completion=8.8%). Consumer usage data from digital health tools can be utilized to drive incentive strategies that encourage participation and increase program completion. We analyzed usage data to determine whether the time elapsed between completing modules was associated with continued participation in the program. We identified two high risk points where attrition was greater than 18%, and the number of days between modules was significantly ($p<0.05$) different between those who completed the next consecutive module and those who did not. 19% of individuals who completed module 2 did not go on to complete module 3, and 18% of individuals who completed module 11 did not go on to complete module 12. Among those who completed module 3 (n=935), the average time between completing modules 1 and 2 was significantly ($p<0.05$) shorter (0.93 days; SD=4.53) than among those who did not complete module 3 (n=212; 2.59 days (SD=9.55)). Among those who completed module 12 (n=414), the average time between completing modules 10 and 11 was significantly ($p<0.05$) longer (1.38 days; SD=3.61) than among those who did not complete module 12 (n=13; 0.19 days (SD=0.87)). These data suggest that an opportunity exists for engagement to be optimized through strategically incentivizing the pace at which individuals progress through web-based mental health treatment. When managing digital health intervention tools that involve a high level of patient effort and are of high value to the payer/provider, analytical approaches should be used to guide the design of strategic incentive structures to optimize engagement and achieve positive health outcomes.

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Symposium 57 1:30 PM-2:45 PM

ADVANCING BEHAVIORAL MEDICINE IN OBESITY RESEARCH ACROSS THE LIFESPAN

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The future of behavioral medicine lies in our ability to transform our science into action. Our field sits at the intersection between communication science, consumer education, industry, medicine, public health, and technology. The Society of Behavioral Medicine (SBM) has the unique ability to bring together experts from diverse fields to facilitate a collaborative environment through which synergy can be created across behavioral medicine disciplines. Over the past year, members of SBM’s Special Interest Groups (SIGs) have prepared manuscripts highlighting the future directions of behavioral medicine research in their respective fields of interest, to contribute to a landmark special issue for the *Journal of Behavioral Medicine*, a call for action to promote research advancing the science to inform policy and practice. Among the common themes that emerged across the special issue manuscripts was the critical issue of advancing obesity prevention and treatment across the lifespan. This symposium will highlight the future of behavioral medicine research in obesity prevention and treatment as outlined by 4 SBM SIGs: Obesity and Eating Disorders, Child and Family Health, Women’s Health, and Multiple Health Behavior Change. The Obesity and Eating Disorders SIG presentation will focus on advances in technology-based solutions for weight management, particularly for younger and older adults and the accompanying research gaps in this emerging field. The Child and Family SIG presentation will focus on the prevention of childhood obesity through lifecourse and systems perspectives, highlighting critical milestones for intervention and the multilevel nature of effective preventive medicine approaches. The Women’s Health SIG presentation will focus on the need for effective interventions to help women with weight and stress management during the critical inter-conception period. Finally, the Multiple Health Behavior Change SIG presentation will focus on areas of future research to maximize health behavior change for the prevention and treatment of multiple chronic diseases concurrently, including obesity, cardiovascular disease, and type 2 diabetes. Together, the symposium will present a range of perspectives on the future of obesity research that will stimulate an engaging dialogue among the presenters and the audience to further advance the conversation about the advancement of obesity research.

Symposium 57A

FUTURE DIRECTIONS OF MULTIPLE BEHAVIOR CHANGE RESEARCH

Dr. Claudio R. Nigg, PhD, FSBM

Non-communicable diseases (i.e., chronic diseases including cardiovascular disease, cancer, chronic respiratory disease, diabetes and obesity) result in 36 million deaths each year. Individuals' habitual participation in a single health-risk behaviors can seriously contribute to morbidity and mortality (e.g., tobacco use, daily fast food intake, etc.); however, more concerning is the typical co-occurrence or clustering of multiple health-risk behaviors. This burden can be minimized through successful cessation of health-risk behaviors and adoption of healthy behaviors; namely healthy lifestyle adoption or multiple health behavior change (MHBC). MHBC is an emerging field and, in order to advance MHBC research, future research recommendations are provided. A valid measure of MHBC (i.e., lifestyle) is warranted to provide the needed basis for MHBC investigations and evaluations. MHBC is thought to occur through shared co-variation of underlying motivating mechanisms, but how these relationships influence behavior remains unclear. A better understanding of the relationship between behaviors and the related motivating mechanisms (and potential cross-relationship of influences) is needed. Future research should also aim to improve lifestyles through understanding how to change multiple health behaviors. Finally, MHBC research should target the development of sustainable interventions which result in lasting effects (e.g., capacity, systems, policy and environmental changes), with dissemination considered during development. Focusing MHBC research in these areas will increase our understanding and maximize the impact on the health of populations.

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Symposium 57B

CURRENT RCT EVIDENCE AND FUTURE DIRECTIONS FOR TECHNOLOGY-BASED WEIGHT MANAGEMENT AMONG ADULTS

Andrea T. Kozak, PhD

Obesity is a prevalent health care issue associated with disability, premature mortality, and high costs. Traditional, face-to-face behavioral weight management interventions lead to clinically-significant weight losses in overweight and obese adults; however, individuals might not be able to participate in these programs due to limited access as well as the cost and time constraints associated with participation. Technological advances such as widespread access to the Internet, increased use of smartphones, and newer behavioral self-monitoring tools have resulted in the development of a variety of eHealth weight management programs. This presentation will provide a review of the current literature, potential solutions to methodological limitations (e.g., high attrition, minimal participant racial/ethnic diversity, heterogeneity of technology delivery modes), and future directions for the field, including important dissemination and policy implications. Younger and older generations' comfort with technological intervention modalities as well as the expectations of digital natives versus novices will be highlighted.

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Symposium 57C

CHILDHOOD OBESITY IN THE ERA OF PREVENTION: NEW OPPORTUNITIES AND CHALLENGES

Bernard F. Fuemmeler, PhD, MPH

Since passage of the Patient Protection and Affordable Care Act (ACA) in 2010, there is revitalized interest in prevention and population health management. This increased focus on prevention requires new ways of thinking about child and family health in research, practice, and policy contexts. Given childhood obesity increases risk for chronic health conditions into adulthood, it will become necessary for prevention models to address childhood obesity research from a broader perspective that embrace both a life course perspective and systems or multilevel thinking.

There are a number of "touch-points" that offer opportunities for implementing prevention strategies throughout the life course and across social systems that could be leveraged to affect changes in population obesity prevalence. For instance, the first 1,000 days from conception to 24 months after birth represents a critical window to address risk factors associated with childhood obesity, including maternal weight, tobacco use, and lack of breastfeeding. In addition, as a child matures from early childhood to adolescence there is a potential to shape weight-related trajectories by intervening on social-contextual factors, such as the family, school and community contexts.

Child and family health researchers will need to advance models and methods that incorporate a life course and systems perspective. Effective prevention efforts will require a better understanding of how early life factors shape future health trajectories and how broader family, school and community systems can be strategically leveraged to influence these trajectories in such a way as to maximize child health and minimize later adult chronic health conditions. This presentation will provide a brief overview of research on risk factors for childhood obesity in the first 1,000 days through early childhood with a focus on findings addressing a life course and systems perspective.

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Symposium 57D

EXPLORING THE NEED FOR INTERVENTIONS TO MANAGE WEIGHT AND STRESS DURING INTER-CONCEPTION

Dr. Jennifer Huberty, PhD

More than half of women in the U.S. enter pregnancy overweight or obese. More than 2/3 of these women exceed Institute of Medicine recommendations for healthy weight gain during pregnancy leading to adverse maternal, infant, and child health outcomes. Managing weight is a critical component of health during pregnancy. Strategies that encourage weight management, with emphasis on those that include ways to manage stress during the inter-conception period (i.e., time immediately following childbirth to subsequent pregnancy) are needed to promote optimal maternal and infant health outcomes.

The purpose of this presentation is to 1) summarize the current state of knowledge, 2) critically evaluate the research focused on weight and stress management during the inter-conception period, and 3) provide future recommendations for research in this area.

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Symposium 58 1:30 PM-2:45 PM

TRANSLATING LIFESTYLE INTERVENTIONS FOR REDUCING CARDIOMETABOLIC RISK IN VULNERABLE AND DISADVANTAGED POPULATIONS.

Delwyn Catley, Ph.D.[1], Thandi Rose. Puoane, Dr PH.[2], Brian Oldenburg, BSc, MPsychol, PhD[3], Christie Befort, PhD[4], Ken Resnicow, Ph.D.[5]

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While rigorous RCT's often demonstrate the efficacy of behavioral medicine interventions, their translation into practice and public health impact remains limited. There are increasing efforts to bridge this gap as well as an interest in understanding methods for successfully translating effective interventions into real-world settings. One important example is a lifestyle intervention approach to modify behavioral risk factors for cardiovascular disease and Type 2 diabetes. Although large trials in the US and Finland have provided strong evidence for the efficacy of lifestyle interventions, the challenge is to translate these interventions in such a way as to have high public health impact across a wide variety of real-world contexts. In this symposium we will describe trials being undertaken in three countries to translate effective lifestyle interventions to real-world practice. One presenter will describe the ongoing process of adapting a proven intervention for delivery by Community Health Workers in a poor urban township in South Africa in preparation for a large randomized effectiveness trial. Another presenter will describe the process they used for adapting and scaling up a peer-led, group based intervention in rural India for a large effectiveness trial. The third presenter will describe an on ongoing comparative effectiveness trial of alternative methods of delivering a lifestyle intervention in rural primary care practices in the U.S. Each presenter will describe the rationale for adapting the intervention for the targeted setting, the conceptual or theoretical approach to adaptation, the methods and processes of adaptation, the approach to measurement of the adaptation process, and the results. The discussant will integrate these presentations by highlighting commonalities in the approach to adaptation as well as key differences and lessons learned.

Symposium 58A

ADAPTING THE U.S. NATIONAL DIABETES PREVENTION PROGRAM FOR THE DEVELOPING WORLD

Dr. Thandi Rose. Puoane, Dr PH.

Increasing rates of cardiovascular disease and diabetes in developing countries are presenting significant challenges for the health care systems of countries with scarce resources. The National Diabetes Prevention Program (DPP) is a proven lifestyle intervention for reducing cardiometabolic risk that could be a powerful prevention tool, however the lack of health professionals to deliver the program, the high literacy and numeracy levels required of participants, and cultural differences in lifestyle (e.g., food preferences) need to be addressed. Informed by the RE-AIM framework and using a Community Engaged approach we are translating the DPP for delivery to overweight/obese community members in two impoverished urban townships in South Africa. The adapted program will be evaluated in a large cluster-randomized trial. Three major adaptations are: 1) to deliver the program using video and Community Health Workers (CHWs), 2) to capitalize on the widespread cell phone use to add interactive text-messaging support, and 3) to enhance CHW's communication skills through simplified Motivational Interviewing training. These adaptations together with lower literacy requirements, and cultural and language adaptations are expected to enhance program adoption, reach, and effectiveness. Community engagement is consistent with the implementation principle and is achieved through the recruitment of study team members drawn from the community and the formation of Community Advisory Boards that guide the project throughout. Support and engagement from the community is enhanced by years of preliminary work in the community. The research team drafts session scripts and expert consultants and Community Advisory Board members provide feedback to ensure the intervention will be adoptable and maintained. Implementation evaluation measures will include quantitative and qualitative measures of implementation feasibility and fidelity, perceived strengths and weaknesses of the program from the perspective of participants, CHW's and the NGO. Results of pilot sessions conducted by CHW's indicated 100% completion of fidelity requirements with rating of 4 out of 5 on overall quality). Session attendance and completion of homework was acceptable and 100% gave the highest satisfaction rating possible. Upon completion of the adaptation process the cluster randomize efficacy trial will begin and, if successful, dissemination will begin.

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Symposium 58B

EVIDENCE-BASED DIABETES PREVENTION IN INDIA: THE KERALA DIABETES PREVENTION PROGRAM

Professor Brian Oldenburg, BSc, MPsychol, PhD

A number of real world diabetes prevention programs have been well implemented and evaluated in high income countries; however, efforts to adapt to low and middle-income countries have been lacking. A strong, community-based model is required in India because the majority of people still live in rural areas and accessibility to health services is quite limited. The Kerala Diabetes Prevention Program (K-DPP) has been adapted to rural Kerala, India from Finland’s GOAL Lifestyle Implementation Trial. This has occurred in four steps over the last 5 years: 1) Needs assessment and participatory design; 2) Program translation and modelling; 3) Piloting of program delivery model; 4) Program refinement, active implementation and controlled evaluation. We used Intervention Mapping to identify program objectives, key determinants of target behaviors, learning and change objectives, behavior change techniques and practical strategies for implementation. The peer-led intervention program was also guided by learnings from US Global Peers for Progress program. Needs assessment identified environmental and personal determinants of unhealthy lifestyle changes. Barriers included limited state-wide policies and programs for diabetes prevention, poor accessibility to and availability of health services and low self-efficacy regarding lifestyle change. Program piloting also identified the need to improve knowledge and awareness of diabetes prevention, increase male participation and simplify intervention delivery. The resulting program, K-DPP, includes four components: 1) a peer-led program conducted in community-based groups; 2) a training and support program for lay peer leaders; 3) resource materials; 4) specific strategies for community engagement. A cluster RCT has been undertaken in 60 rural communities in Kerala and 24-month findings show a reduction in key cardiometabolic risk factors in intervention communities as well as a 36% reduction in diabetes incidence in the impaired glucose tolerance subgroup, compared to control communities. Scalability is now being evaluated in a further 15,000 communities in India.

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Symposium 58C

IMPLEMENTING BEHAVIORAL OBESITY TREATMENT IN RURAL PRIMARY CARE: THE RE-POWER COMPARATIVE EFFECTIVENESS TRIAL

Christie Befort, PhD

Rural residents have higher obesity rates and less access to evidence-based lifestyle interventions. Primary care has the potential to fill a major gap in the provision of weight management services for rural communities. The objective of this cluster-randomized pragmatic trial is to evaluate the comparative effectiveness of three obesity treatment models in rural primary care. The three models are operationalized as Fee-for-Service (FFS; one-on-one office visits delivered by local clinic staff), Patient-Centered Medical Home (PCMH; group visits delivered by local clinic staff), and Disease Management (DM: group phone visits delivered by centralized interventionists). 36 practices from the Midwestern U.S. were randomized to deliver one of the three interventions to 40 patients (n=1440) age 20 to 75 with a BMI 30-45 kg/m^2. The trial design was guided by patient and provider input since its inception. The Patient Advisory Board includes 10 men and women living in rural communities across 4 states. Provider stakeholders are rural PCPs with a vested interest in improving the treatment of obesity in their practices. To enhance engagement, a day-long kick off meeting was held where approximately 35 patient and provider stakeholders and investigators shared personal and practice-level experiences, discussed intervention design across the three arms, and brainstormed potential barriers and solutions to both patient and practice-level engagement. Resulting adaptations have included reducing the level of training for group counselors in the PCMH arm to represent what a practice might typically cover for a chronic disease care coordinator, and providing an intervention toolkit (previously unplanned but deemed necessary) for sites randomized to the FFS approach. To reach the targeted 36 sites, a total of 75 practices were approached. Participating practices includes 10 Rural Health Clinics (9 hospital-owned, 1 physician-owned), 11 Federally Qualified Health Centers (8 healthcare system-owned, 3 non-profit), 2 VA clinics, and an additional 6 hospital-owned practices and 7 physician-owned practices. Only 14 practices have co-located behavioral health specialists. An ongoing mixed methods process evaluation is examining characteristics influencing practice-level implementation and adoption. In sum, practice-based trials in geographically dispersed regions require working with heterogeneous practices with limited access to behavioral health and where local adaptations are necessary.

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Symposium 59 1:30 PM-2:45 PM

USING EHEALTH AND MHEALTH METHODS TO PROMOTE HEALTHY BEHAVIORS AMONG WOMEN

Lisa Cadmus-Bertram, Ph.D.[1], Emily L. Mailey, Ph.D.[2], Danielle Symons Downs, Ph.D.[3], Danielle Arigo, Ph.D., Licensed Psychologist[4], Katarzyna Wac, PhD[5]

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Electronic and mobile health tools have great potential to improve the effectiveness of health promotion programs for women, as they can increase the reach of behavioral interventions and respond to users' needs in real time. Electronic health (eHealth) tools such as web-based intervention programs allow women to access audiovisual content at their convenience, which can address problems such as difficulty scheduling appointments (e.g., around childcare needs). Similarly, mobile health (mHealth) tools such as wearable activity sensors and smartphone applications are carried with the user, and can passively collect health data to address women's individual health behaviors (e.g., reminders to increase physical activity or log food intake). Yet currently, these tools are not optimally engaging nor well matched to women's changing health needs across the lifespan; as a result, commercially available tools alone rarely foster sustained behavior change. The goal of this symposium is to describe the design and preliminary outcomes of three technology-supported interventions tailored to women's health behavior change needs. Each speaker will address the theoretical basis for integrating and tailoring eHealth and mHealth tools for women; these tools were used to augment traditional behavioral intervention to actively engage the specific populations of interest. First, Dr. Mailey will describe a web-based health promotion program for military spouses, which incorporated tailored podcasts and group dynamics features. Second, Dr. Downs will discuss an individually-tailored intervention to prevent excessive gestational weight gain among overweigtht/obese pregnant women, which incorporated Jawbone activity sensors and Aria wireless scales. Third, Dr. Arigo will present on the feasibility and preliminary effectiveness of a physical activity promotion program for obese post-menopausal women, which incorporated the self-monitoring and online social networking features of Fitbit. The discussant, Dr. Katarzyna Wac, will synthesize lessons learned from these studies and discuss necessary next steps for improving the use of eHealth/mHealth tools for health promotion among women.

Symposium 59A

WEB-BASED HEALTH PROMOTION FOR MILITARY SPOUSES: INCREASING ENGAGEMENT AND EFFECTIVENESS

Dr. Emily L. Mailey, Ph.D.

Military spouses report numerous barriers to health behaviors and could benefit from interventions that empower them to prioritize their own health and wellness. Web-based interventions would allow content to be highly accessible for this population, but are often plagued by low engagement and retention. The purpose of this study was to compare the effects of a comprehensive, theory-based web-delivered intervention (INT) and a standard educational web-delivered intervention (CONT) on physical activity, stress, depression, and anxiety among military spouses. CONT (n=46) provided links to health-related resources on the military's Operation Live Well website and a weekly discussion board. INT (n=73) was based on Self-Determination Theory and utilized original podcasts to deliver weekly content related to stress management, physical activity, and nutrition. In addition, all INT participants were placed on teams with 4-5 other spouses and engaged in weekly team challenges to facilitate social support. Both interventions lasted for 10 weeks. INT participants logged onto the website more often [median=12] than CONT participants [median=3.5]. Mixed design 2 (group) X 2 (time) repeated measures ANOVAs revealed significant main effects for stress [F(1,76)=35.0, pF(1,79)=30.2, pF(1,78)=39.0, pF(1,81)=6.61, p=.01] and moderate activity [F(1,81)=5.77, p=.02], but not vigorous activity [F(1,81)=2.27, p=.14], on the International Physical Activity Questionnaire. There were no significant between-group differences. These results suggest web-delivered interventions can improve physical activity and mental health among military spouses; however, additional work is needed to optimize effectiveness and engagement. In addition to discussing the primary results, this presentation will describe the formative research that informed the development of the theory-based intervention, and will highlight qualitative and quantitative follow-up data from participants that offer valuable insight about how to make web-based interventions maximally engaging and beneficial.

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Symposium 59B

MHEALTH SELF-MONITORING OF PHYSICAL ACTIVITY AND WEIGHT WITHIN A PRENATAL INTERVENTION TO MANAGE GESTATIONAL WEIGHT GAIN

Danielle Symons Downs, Ph.D.

Physical inactivity is prevalent in pregnant women and it can increase the risk of excessive gestational weight gain (GWG), which is associated with pregnancy and delivery complications. Innovative strategies to promote perinatal physical activity and reduce excessive GWG are strongly needed. Novel mHealth tools such as wrist-worn activity monitors, Wi-Fi weight scales, and smartphone applications can assist with self-monitoring to promote increased physical activity and weight management. However, little to no past research has utilized these tools to promote prenatal activity and manage GWG. We have developed an individually-tailored behavioral intervention that adapts intervention dosages to the unique needs of overweight and obese pregnant women and uses mHealth methods to promote physical activity and manage GWG. The goals of this presentation are to: (a) describe the intervention and mHealth methods for using the Jawbone activity monitor and Aria Wi-Fi weight scale for self-monitoring of physical activity and weight and (b) discuss preliminary findings and highlight key lessons learned from the initial trial on the use of the mHealth devices within the prenatal intervention. Overweight/obese pregnant women (N=22) were randomized to one of seven intervention dosages over a brief 6-week intervention period. Daily activity steps/minutes and weight were analyzed with SPSS and MATLAB; visualizations were used to provide real-time feedback to participants. The use of mHealth data to develop participant-specific energy balance models and reporting energy intake underreporting will be described. Average participant compliance rates were 95% (Jawbone) and 84% (Aria). Key lessons learned to be discussed will include designing the mHealth device self-monitoring procedures to provide real-time feedback to participants, overcoming technology issues, and user acceptability of the devices.

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Symposium 59C

FEASIBILITY OF A FITBIT-SUPPORTED BEHAVIORAL INTERVENTION TO INCREASE PHYSICAL ACTIVITY AMONG OBESE POST-MENOPAUSAL WOMEN

Dr. Danielle Arigo, Ph.D., Licensed Psychologist

Exercise is strongly recommended for obese post-menopausal women in order to mitigate cardiovascular risk, but less than 15% currently meet exercise guidelines. These women cite lack of both time and social support for exercise as primary barriers, indicating two critical targets of intervention. To address these targets, this study tested the feasibility of a technology-supported, social intervention to promote exercise among obese post-menopausal women. Participants (n=11, M_{AGE}=59, M_{BMI}=32.0 kg/m^2) increased either

traditional endurance exercise (EE, e.g., brisk walking; *n*=5) or short-duration interval exercise (SDIE, guided by DVDs; *n*=6). EE participants progressed to 250 exercise minutes per week, whereas SDIE participants progressed to 75 minutes per week, over 16 weeks. All participants attended one group treatment session per month. They tracked their exercise using the Fitbit system, and communicated with their treatment group between sessions using the Fitbit social network. This network included a group message board and a ranking of participants' exercise minutes (highest to lowest). Using a short recruitment window, enrollment approached the intended 12 participants (11/12, 92%), and retention over 16 weeks was 10/11 (91%); 8/11 participants (73%) attended all four group sessions. Among completers, daily device wear was 92% across groups. The average participant also responded to 11/16 weekly Fitbit social network threads (70%) and viewed the exercise rankings twice per week. Regarding exercise adherence, 3/5 EE participants met prescribed exercise minutes at both mid- and end-of-treatment, whereas 5/5 SDIE participants (who completed) met prescribed exercise at both time points. Findings demonstrate that introducing the novel components of this intervention (i.e., Fitbit self-monitoring and social networking, SDIE) to behavioral treatment is feasible and acceptable to obese post-menopausal women, and that adherence to SDIE might be greater than to EE. Consequently, this intervention may effectively address both lack of time and lack of social support for exercise as perceived barriers to engagement in the target population, and warrants investigation on a larger scale.

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Symposium 60 1:30 PM-2:45 PM

USING DIGITAL SOCIAL TOOLS FOR SMOKING CESSATION: INTERVENTION ENGAGEMENT AND EFFICACY

Judith J. Prochaska, PhD[1], Lorien Abroms, ScD, MA[2], Danielle Ramo, PhD[3], Cornelia Pechmann, MS, MBA, PhD[4]

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Tobacco use is the leading preventable cause of death in the US. Novel interventions are needed for prevention and intervention to reduce smoking among high risk groups. With wide reach and integration into the lives of users, digital tools (e.g., text messaging, social media) hold promise to help smokers quit. Yet scientific evidence for the utility of some digital tools is limited and inconclusive. This symposium will present the results of three randomized trials testing the efficacy of digital interventions for smoking cessation. Presentations will focus on strategies used to adapt interventions to a digital format, characterize engagement, and report efficacy in helping smokers quit. The first presentation is a text-messaging intervention for pregnant smokers (*Quit4baby*). Results provide support for the intervention's efficacy after 3 months of enrollment. The second presentation is a Facebook-based intervention for young adults tailored to readiness to quit smoking (*The Tobacco Status Project*) reporting 6-month outcomes. Results demonstrate efficacy with respect to biochemically-verified smoking abstinence at 3 months, reduction in smoking at 6 months, and the utility of using Facebook to engage the young adult population and tailoring to readiness to quit. The final talk is a trial testing the efficacy of a Twitter intervention for relapse prevention. Results demonstrate efficacy at 6 months among adult smokers, and highlight moderators of engagement and quit smoking status. The discussant will highlight lessons learned in carrying out trials with digital tools, unique strategies for measuring engagement in a digital environment, and the impact digital social tools can have on delivering engaging evidence-based smoking cessation interventions. The symposium will include dedicated time for a question-and-answer session with the panel of presenters.

Symposium 60A

A RANDOMIZED TRIAL OF A TEXT-MESSAGING PROGRAM TO PROMOTE SMOKING CESSATION IN PREGNANT SMOKERS

Dr. Lorien Abroms, ScD, MA

While automated text messaging programs have been found to be successful for adult smoking cessation, their efficacy for pregnant smokers is unknown. The Quit4baby study explores whether an interactive and intensive text messaging program can promote smoking cessation in pregnant smokers. Women were recruited from Text4baby, an existing text messaging program aimed at pregnant women. From July 2015 to February 1016, over 35,000 Text4baby subscribers were sent a recruitment text message. Interested and eligible women were enrolled (n= 497) and randomized to receive Text4Baby + Quit4Baby (intervention) or Text4Baby (control). Participants were surveyed at 1-month, 3-month and 6-months post-enrollment, and saliva samples were collected at 3-months for biochemical verification of smoking status. Using an Intention-to-Treat analysis, where missing are assumed to be smoking, 28.80% of the intervention group and 15.79% of control group reported not smoking in the past 7 days at 1-month (p<.01) and 35.20% of the intervention group and 22.67% of the control group reported not smoking in the past 7 days at 3-month (p<.01). Biochemical verification of smoking status at 3-months indicated no significant differences among groups, though quit rates favored the intervention group. Results will also be presented for the 6-month follow-up. Current results provide mixed support for the efficacy of the Quit4baby program. Future study is warranted.

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Symposium 60B

THE TOBACCO STATUS PROJECT: OUTCOMES FROM A RANDOMIZED TRIAL OF A FACEBOOK SMOKING CESSATION INTERVENTION FOR YOUNG ADULTS

Dr. Danielle Ramo, PhD

Introduction: Social media represents a promising strategy to deliver evidence-based smoking cessation treatment to young adults. Our group has developed the *Tobacco Status Project (TSP)* smoking cessation intervention for young adults, tailored to readiness to quit smoking. Previously we demonstrated feasibility and promising 12-month quit rates. Here we present outcomes from a randomized trial comparing the TSP to an online control condition. *Methods:* Young adult cigarette smokers (N=500; age 18-25) were recruited online and randomized to either the 3-month TSP intervention or a referral to the National Cancer Institute Smokefree.gov website, including Internet, Smartphone, and social media features. TSP included assignment to a private Facebook group tailored to Transtheoretical Model readiness to quit smoking (precontemplation, contemplation, preparation), daily Facebook contacts, weekly live counseling sessions, and for those ready to quit, six Cognitive Behavioral Therapy counseling sessions. *Results:* The sample was 73% White, 55% female, 87% daily smokers; 48% smoked 10 or fewer cigarettes per day, and averaged 2.8 years smoking; 30% were in precontemplation; 49% contemplation, and 21% preparation for quitting smoking. Posttreatment abstinence was modeled via logistic GEE. At treatment end (3 months), the follow-up rate was 70% (67% treatment, 74% control; χ2=.124, *p*=.14). In a modified intent-to-treat analysis, biochemically-verified 7-day point prevalence abstinence was significantly higher for TSP than control (8.3% vs 3.3%; odds ratio [OR]=2.52; 95% confidence interval [CI]=1.56, 4.04; *p.0001).* A greater proportion of TSP participants reduced the number of cigarettes they smoked in the past week by at least half from baseline to 3 months (52.7% vs. 38.8%; OR=1.82; 95% CI=1.33, 2.49; p=.0002). There were no differences in likelihood of having made a quit attempt during treatment or readiness to quit smoking in the next month across groups. 6-month follow-up rate was 68% (64% treatment, 73% control; χ2=.124, P=.14). Only reduction in smoking was still significantly different at 6 months (58.2% vs. 51.7%; OR=1.37; 95% CI=1.04, 1.83; p=.026). TSP participants who commented at least once (75%) averaged 42 comments, baseline stage of change and monetary incentive predicted comment volume, and comment volume marginally predicted abstinence at 3 months. Conclusion: A novel Facebook intervention was engaging and associated with smoking abstinence at 3 months and smoking reduction at 6 months. Social media intervention could be disseminated widely, and be helpful even for those not ready to quit smoking.

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Symposium 60C

PREDICTORS AND OUTCOMES OF DYADIC TIES IN ONLINE SMOKING CESSATION GROUPS

Cornelia Pechmann, MS, MBA, PhD

Tweet2Quit is a smoking-cessation intervention that involves creating 20-person groups of smokers on Twitter who agree to quit together and support each other’s cessation for 90 days, aided by daily automated discussion-topics tweets and individualized texts on engagement. An initial randomized controlled trial found 40% sustained abstinence for Tweet2Quit vs. 20% for control. Also strong dyadic ties related to engagement and

engagement to abstinence (p’s < .01). This study examined what facilitated dyadic ties and we studied 8 online groups. A dyad was identified when a group member sent a tweet to a specific individual, and 630 dyads were identified. Dyadic tie strength was measured as the number of tweets exchanged between two members who tweeted. Engagement of the dyad with the group was measured as the total count of tweets sent by dyad members to themselves or others. Dyadic goal attainment assessed whether one or both dyad members attained abstinence. Based on past research, people perceive that self-disclosing dissimilarities may result in rejection, yet there are potential benefits to self-disclosure in terms of rapport building. We tested a mediational model that predicted that dyadic dissimilarity would relate negatively to dyadic self-disclosure, but dyadic self-disclosure would relate positively to dyadic tie strength, engagement of the dyad with the group, and dyadic goal attainment (abstinence). The results supported the mediation model for gender β= -.02, employment status β= -.02, and marital status β= -.01 (*p*’s < .05), but not age β= -.0003 which was rarely self-disclosed. When one member of a dyad self-disclosed a demographic dissimilarity, this discouraged the other dyad member from self-disclosing that same demographic, but self-disclosing dyads benefitted greatly in terms of tie strength, engagement and abstinence. Our findings indicate that making online groups demographically homogeneous may encourage self-disclosure but this may run counter to diversity goals. Alternatively one can create dyads (buddy pairs) that are demographically similar and encourage self-disclosure. In our larger randomized controlled trial of Tweet2Quit, we will test both women-only and coed groups, assign people to demographically similar dyads, and encourage self-disclosure.

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Symposium 61 1:30 PM-2:45 PM

EXPANDING THE HORIZONS OF BEHAVIOR CHANGE RESEARCH WITH AN EXPERIMENTAL MEDICINE APPROACH: THE NIH SOBC RESEARCH NETWORK

Jennifer A. Sumner, PhD[1], Christine M. Hunter, PhD[2], Donald Edmondson, PhD, MPH[3], Jun Ma, MD, PhD[4], Susan M. Czajkowski, Ph.D.[5]

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Unhealthy behaviors—including smoking, overeating, medication nonadherence, and sedentary lifestyles—contribute to negative health outcomes and disease. Unfortunately, it is extremely difficult to initiate and maintain lasting healthy behavior changes. A major challenge facing the field in addressing these often intransigent behaviors is insularity of scientific domains that together might inform more effective prevention and intervention efforts. In response to these challenges, the NIH Common Fund's Science of Behavior Change (SOBC) program was formed to bring together researchers across disciplines to develop a more unified science of behavior change. The program represents a fundamental shift in the approach to behavior change research and aims to improve our understanding of mechanisms of behavior change by supporting cross-cutting research that integrates basic and translational science. In 2015, the SOBC Research Network was formed and brought together several interdisciplinary research teams to employ a mechanisms-focused, experimental medicine approach to behavior change research. These researchers are developing assays to measure putative intervention targets related to common mechanisms of behavior change, including self-regulation, stress reactivity and resilience, and interpersonal and social processes. The teams will then engage these targets through experimentation and/or intervention and examine subsequent behavior change. In this symposium, we will introduce the SOBC Research Network and provide examples of a mechanisms-focused, experimental medicine approach to behavior change research. First, an NIH representative from the SOBC program will describe the rationale and goals of the SOBC Research Network. Next, researchers supported by the SOBC program will present their approach to examining mechanisms of change common to multiple health behaviors and demonstrate how the experimental medicine paradigm and collaborative SOBC approach have been fundamental to their work. The symposium will conclude by having an NIH representative review the implications of the SOBC research approach for future basic and

translational research and discuss how basic science findings can be applied to develop and test innovative prevention and treatment strategies.

Symposium 61A

THE NIH SCIENCE OF BEHAVIOR CHANGE (SOBC) COMMON FUND PROGRAM: RATIONALE AND GOALS

Dr. Christine M. Hunter, PhD

The Science of Behavior Change (SOBC) Common Fund Program at the National Institutes of Health is supporting a mechanisms-focused, experimental medicine approach to behavior change research. An experimental medicine approach involves identifying putative intervention targets, developing assays (measures) to permit verification of target engagement, engaging the target through experimentation or intervention, and testing the degree to which target engagement produces the desired behavior change. Putative intervention targets are synonymous with "mechanisms of action" and with processes that are hypothesized to be malleable and to play a causal role in producing behavior change. By integrating work across basic science disciplines and between basic and clinical scientists, this effort will lead to an improved understanding of the underlying principles of behavior change as they apply to the initiation and maintenance of change, and to the personalization of intervention strategies. The current stage of the program supports the SOBC Research Network, which focuses on three classes of intervention targets that are highly relevant to understanding the mechanisms of behavior change: self-regulation, stress reactivity and stress resilience, and interpersonal and social processes. This introductory presentation will explain the rationale and steps involved in the experimental medicine approach as implemented in the SOBC Program and discuss how it is being used to examine mechanisms of change common to multiple health behaviors. The overarching goal of the SOBC Program is to transform the approach to behavioral mechanisms research, develop tools that can support the implementation of this approach in future research, and enhance the development of future behavioral interventions.

Symposium 61B

SYSTEMATIC REVIEW OF MECHANISMS OF ACTION IN NIH-FUNDED TRIALS TO IMPROVE MEDICATION ADHERENCE

Dr. Donald Edmondson, PhD, MPH

Background: Many patients do not take their medication as prescribed and although many interventions have been tested to increase adherence, few effective approaches exist. The NIH Science of Behavior Change (SOBC) program approach offers an experimental medicine method to optimize behavioral interventions by targeting underlying mechanisms of behavior change. We conducted a systematic review and meta-analysis to determine the proportion of NIH-funded adherence trials that measured a mechanism of action, and determined the strength of association between those mechanisms and nonadherence.

Methods: Multiple electronic databases were searched using all relevant subject headings and free-text terms to represent medication adherence and behavior change. We applied a search filter to limit results to studies funded by NIH only. Reference lists and cited reference searching were also conducted. Unpublished studies were sought through trial registries and grey literature sources, and by contacting authors of included studies. Eligibility criteria were the following: population, all adult human participants taking medication for any condition; intervention, any that aims to change the behavior of participants' adherence to medication; study design, randomized and quasi-randomized studies funded by NIH. Screening, data extraction, and quality assessment were conducted by two independent reviewers, with disagreements resolved through discussion. In our overall analysis, we will examine whether interventions are more effective when mechanisms were measured, and we will also analyze the associations of different mechanisms/mechanism classes with adherence. This systematic review and meta-analysis will be complete by February 2017.

Conclusion: We will discuss the proportion of NIH-funded intervention trials that tested mechanisms of behavior change hypothesized as influential in medication adherence. We will assess the relative strengths of association between mechanisms and adherence outcomes. This research will illustrate the current state of the science of behavior change, and highlight opportunities for behavior change research going forward.

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Symposium 61C

MECHANISTIC SELF-REGULATION TARGETS IN INTEGRATED BEHAVIOR THERAPY FOR OBESE AND DEPRESSED ADULTS: RAINBOW-ENGAGE STUDY

Dr. Jun Ma, MD, PhD

Obesity and depression are top contributors to the global burden of disease and disability; when comorbid, the burden is exacerbated. Understanding the processes and mechanisms contributing to risk will facilitate the development of targeted and personalized approaches to behavior change. Self-regulation is a core construct in empirically supported behavioral interventions for these disorders and a candidate target mechanism for behavior change. Human neuroscience has identified large-scale brain circuits for key self-regulation targets: emotion regulation, cognitive control, and self-reflection. Using a target-driven, experimental medicine approach, the ENGAGE study leverages an ongoing randomized controlled trial (RAINBOW) of integrated behavior therapy for comorbid obesity and depression in primary care to measure self-regulation targets among trial participants. The study aims are to identify and refine the measures (assays), validate target engagement and malleability, and test target-driven optimization of behavior therapy for comorbid obesity and depression. The chosen assays of emotion, cognitive and self-reflective regulation involve multiple domains (neural, physiological, behavioral, and psychological) and settings (brain imaging lab, virtual reality environments, and smartphone-based passive sensing). The assays are included at baseline, 2, 6, 12 and 24 months. We will examine the relationships between assays within and between domains and settings, and how assays of self-regulation targets predict health behaviors and outcomes through 24 months. ENGAGE will provide a toolkit of validated assays of self-regulation targets important for health behavior change. Findings on how self-regulation mechanisms predict behavior and outcomes will advance the development of targeted and personalized intervention strategies for treating obesity and depression, with implications for other common lifestyle-related comorbidities.

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Symposium 62 1:30 PM-2:45 PM

THE IMPACT OF ADVERSE CHILDHOOD EXPERIENCES [ACES] ON CHILD AND YOUNG ADULT HEALTH FUNCTIONING

Pamela Behrman, PhD[1], Kimberly A. Randell, MD, MSc[2], Sheela Raja, PhD[3], Nisha Beharie, DrPH[4], Emily F. Rothman, ScD[5]

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In 1998, a team of researchers led by Drs. Vincent Felitti, of Kaiser Permanente, and Robert Anda, of the Centers for Disease Control, found that certain potentially traumatic exposures in childhood were significantly associated with serious adult health outcomes. These traumatic exposures, called “Adverse Childhood Experiences,” or “ACEs,” include adversities such as childhood physical abuse, childhood sexual abuse, parental interpersonal violence, parental substance abuse, parental separation or divorce, economic hardship, and parental incarceration. In addition to adult psychosocial effects (e.g. depression and homelessness), ACEs were strongly related to adult chronic diseases such as cancer, heart disease, and COPD. High reported ACEs were also associated with 20-year reductions in life expectancy. The authors noted “dose-response patterns,” with higher reported ACEs more strongly related to serious adult health outcomes. Since the publication of the original ACE studies, there have been more than 60 investigations published by the original authors and several hundred peer-reviewed studies using ACEs as a primary variable.

The researchers in this symposium add to this auspicious body of literature. Using data collected at two Midwest academic hospitals, Dr. Kimberly Randell presents her study outcomes on the relations between parents’ reported ACEs and their school-aged (ages 6-12) children's adversities. Using data collected at a university-administered dental clinic, Dr. Sheela Raja illustrates the influences of ACEs and previous negative dental care experiences on children’s (ages 4 and over) behavior during routine dental care appointments. Finally, using longitudinal data from a nationally-representative sample of adolescents, Dr. Nisha Beharie showcases her findings on the impacts of childhood trauma and homelessness on adult drug abuse. Our discussant, Dr. Emily Rothman, concludes this symposium by analyzing these study outcomes in the context of existing literature. She also recommends future directions for child-focused ACEs research and prevention efforts.

Symposium 62A

ASSOCIATIONS BETWEEN PARENT ADVERSE CHILDHOOD EXPERIENCE SCORE AND CHILDREN'S ADVERSITY IN PEDIATRIC HEALTHCARE SETTINGS

Dr. Kimberly A. Randell, MD, MSc

Purpose: Limited data suggest parent adverse childhood experiences (ACEs) are associated with increased risk of child adversity. We aimed to determine associations between parent ACE score and child adversity in pediatric healthcare settings.

Methods: This was a secondary analysis from a study examining parent ACEs and child weight. Parents of children age 6-12 years attending general pediatric or pediatric weight management clinics at two Midwest academic hospitals completed a survey assessing parent and child conventional and expanded ACEs. ACE scores were calculated by summing individual ACEs.

Results: 339 parents participated. 58 (17%) parents had a conventional ACE score of $\geq$ 4, 26 (8%) an expanded ACE score $\geq$ 4, and 89 (26%) a total ACE score $\geq$ 4. Univariate analysis showed parent conventional, expanded and total ACE score $\geq$ 4 was associated with increased risk for child exposure to household criminal activity, household mental illness, household substance abuse, family violence, neighborhood violence, homelessness, racism, bullying, poverty, and child conventional and total ACE score $\geq$ 4. Logistic regression found parent total ACE score $\geq$ 4 is associated with increased risk for child conventional and total ACE score $\geq$ 4.

Conclusions: Findings support the call for pediatric healthcare delivery within a two-generation model. Parental ACE score $\geq$ 4 was common and associated with increased child risk for multiple adverse experiences as well as a child ACE score $\geq$ 4, suggesting parent ACE history may identify children at increased risk for adverse experiences and the attendant negative health outcomes. Consideration should be given for parental ACE assessment and provision of targeted resources for families in which parent ACE score is $\geq$ 4.

Symposium 62B

THE ROLE OF ADVERSE CHILDHOOD EVENTS IN PEDIATRIC DENTAL CARE: IMPLICATIONS FOR TRAUMA INFORMED DENTAL CARE

Sheela Raja, PhD

Purpose: Adverse childhood experiences such as exposure to violence, serious illness, and sudden death can impact children’s health and their ability to cope with stressful situations.

We examined the relationship between a history of childhood trauma and a child's behavior during non-invasive, routine dental treatment.

Methods: Parents of healthy children ages four years and over attending their initial dental appointment at a university pediatric dental clinic were asked to complete the Traumatic Events Screening Inventory- Parent Report Revised. Following the dental appointment, a pediatric dental resident completed the Frankl Scale, a clinician-based rating of a child's behavior in the dental chair.

Results: One hundred-seventy parent-child pairs participated. Fifty-three percent of parents indicated their child had experienced at least one traumatic event. Forty-four percent of parents indicated their child had a prior negative experience at the dentist. Analysis showed no significant relationship between traumatic events history and poor dental behavior, but a significant relationship between a previous negative dental experience and poor dental behavior.

Conclusion: Children with a history of traumatic events did not exhibit uncooperative behavior more often than those who did not experience it. However, future studies should examine the relationship between trauma history and behavior during dentally invasive procedures (e.g., fillings, extractions). Additionally, our results suggest that in addition to serious medical procedures, surveys of childhood trauma should also include dentally stressful experiences, including the potential consequences of immobilization and protective restraints in dental treatment.

Symposium 62C

THE SYNDEMIC EFFECT OF CHILD ABUSE AND HOMELESSNESS ON SUBSTANCE USE

Dr. Nisha Beharie, DrPH

Previous research has indicated elevated substance use as well as experiences of childhood trauma (e.g. physical and sexual abuse) among homeless populations relative to their housed counterparts. However, no research to date has investigated the syndemic effect of homelessness and history of abuse on substance use. As such, this study investigates the independent and combined effects of homeless and child abuse on drug use.

Logistic regression was employed using data from Wave I (adolescence), III (emerging adulthood), and IV (adulthood) of the National Longitudinal Study of Adolescent to Adult Health (Add Health) (N = 12,288). The independent variable was a four-level categorical variable: no experience of homelessness or child abuse, experience of only child abuse, experience of only homelessness, and experience of both child abuse and homelessness. All outcome variables of substance use were dichotomous (yes/no) and included binge drinking, marijuana, cocaine, methamphetamine, prescription pain medication, and injection drug use.

Homelessness was found to have stronger strengths of association than experiences of child abuse alone when predicting substance use. However, the strengths of association were greatest among those who had experienced both homelessness and child abuse. For example, those who had experienced only childhood abuse or only homelessness were at an approximately two-fold increased odds of ever using cocaine by emerging adulthood (OR=1.76, 95% CI:1.41, 2.20; and 2.23, 95% CI:1.45, 3.44 respectively). However, those who had experienced both childhood abuse and homelessness were at an almost six-fold increased odds of using methamphetamines by emerging adulthood (OR=6.56, 95% CI:3.85, 11.18).

Findings from this study highlight the crucial need to address past trauma as well as housing instability in order to reduce substance use among those who have experienced homelessness.

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Symposium 63 1:30 PM-2:45 PM

INNOVATION IN INDOOR TANNING MEDIA, MESSAGING, AND INTERVENTION SCIENCE

Darren Mays, PhD, MPH[1], Molly E. Waring, PhD[2], Derek Reed, PhD[3], W. Douglas Evans, PhD[4], Sherry Pagoto, PhD[2]

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Skin cancer is the most common malignancy in the US, and indoor tanning in adolescence and young adulthood significantly increases skin cancer risks, accounting for an estimated 10% of all cases. Research indicates patterns of indoor tanning behavior are complex, ranging from pre-event and seasonal tanning to potential tanning addiction. Like other cancer risk behaviors, indoor tanning is influenced by a suite of risk factors, including exposure to pro-tanning messaging in the media. Innovative strategies to investigate the indoor tanning media environment, how young people may respond to pro-tanning messaging, and how messaging can in turn be designed and delivered to prevent and reduce indoor tanning is needed to address the growing burden of skin cancer. This symposium will feature three presentations reporting on highly innovative approaches to indoor tanning media, messaging, and intervention science. The first study describes a content analysis of indoor tanning tweets, demonstrating the vast majority are generated by indoor tanners characterizing their motives and consequences of tanning, and indicating presence of few public health messages in this media space. The second study uses a novel cue-reactivity paradigm within a simulated indoor tanning salon to characterize indoor tanning cravings and motivations among young women. The study findings point to policy approaches to limit indoor tanning marketing as have been implemented in other behavioral cancer prevention domains (e.g., tobacco control). The final study pilot tested the feasibility, acceptability, and preliminary effects of a theory-driven, mobile phone text messaging intervention among young adult women who indoor tan. With further testing, this novel intervention approach has the potential for scalability and high public health impact. Our discussant will provide a critical synthesis of these innovative studies and lead a discussion of the implications for future research on indoor tanning behavior and approaches to prevention.

Symposium 63A

WHO IS TWEETING ABOUT INDOOR TANNING AND WHAT ARE THEY SAYING?

Dr. Molly E. Waring, PhD

Conversations about healthy and unhealthy behaviors have been observed on Twitter and may provide insight into attitudes and motivations for these behaviors. We content analyzed tweets that included the terms “tanning bed” or “tanning salon” to describe the content of conversations about indoor tanning on Twitter and to determine what proportion of tweets were posted by tanners. We extracted 4,691 tweets using the terms “tanning bed” or “tanning salon” over a 7-day period (17-23 March 2016). We randomly selected 1,000 tweets stratified by search term and timing of tweet (weekday or weekend). After replacing ads (n=200), we conducted a content analysis of tweet content. The research team developed a codebook and two coders coded all tweets. Twenty percent of tweets were double-coded (κ=0.74, 81% agreement) and consensus on discrepantly-coded tweets was reached through discussion. Among tweets expressing a desire to tan, we analyzed the proportion of tweets in which the tanner mentioned mood or appearance as reasons they tan (κ=0.89, 98% agreement for mood, κ=0.92, 99% agreement for appearance). Tweets (n=1,000) were posted by 978 unique accounts. The majority of tweets (71%) were by tanners (n=699 individuals). Themes included: tanner expressing desire or eagerness to tan (41%), tanner complaining about a negative experience at the tanning salon (12%), tanner reporting a burn (11%), tweets mocking tanners or the act of tanning (11%), tanner reporting sleeping in a tanning bed (6%), tanning salon employee chatter (4%), anti-tanning message (4%), and tweets arguing against tanning legislation (1%). Eleven percent of tweets were about other topics or unrelated to tanning. Among the 405 tweets in which a tanner expressed the desire to tan, 10% mentioned mood and 9% mentioned appearance as the reason they tan. Findings revealed a rate of 670 tweets per day about indoor tanning using two search terms. The majority of tweets were from tanners, with some reporting risky habits including burning or sleeping in the tanning bed. Very few tweets were public health messages. Twitter may provide an opportunity to study and intervene upon indoor tanners.

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Symposium 63B

CUE-REACTIVITY IN INDOOR TANNING DISORDER: STATE-BASED INFLUENCES ON CRAVINGS AND MOTIVATION TO TAN

Dr. Derek Reed, PhD

Excessive indoor tanning is a behavioral excess mimicking behavioral addiction characteristics associated with other addiction-related disorders such as drug use and gambling. Dense literature in the addiction sciences suggests that cue-reactivity is a behavioral marker of conditioned cravings and motivation for substances of abuse. Unlike other commodities of abuse, there are very few regulations on the prevalence of tanning-related advertisements and cues in public settings. Our study examined the extent to which indoor tanners exhibited cue-reactivity in a study translated from those using cigarette and alcohol cue-reactivity preparations. Findings suggests that tanning-related cues and paraphernalia significantly increased markers of craving and motivation to tan in college-aged indoor tanners. These tanning cue-reactivity findings provide novel insights into the role of tanning-related messages and visual cues in tanning disorders; such findings also contribute to a growing empirical body of support for tanning as a behavioral addiction. Notably, these cue-reactivity findings suggest that tanning disorder may be a function of both trait and state influences. Finally, the impact of cues on cravings and motivation for tanning also provide novel implications for regulating the extent of tanning-related cues in advertisements, messages, and media targeting youth.

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Symposium 63C

INNOVATION IN INDOOR TANNING MEDIA, MESSAGING, AND INTERVENTION SCIENCE

Dr. W. Douglas Evans, PhD

Background: Although skin cancer is largely preventable, it affects nearly 1 of 5 U.S. adults. There is a need for research on how to optimally design persuasive, public health indoor tanning (IT) prevention messages.

Objectives: To examine whether framed messages on indoor tanning behavioral intentions delivered through text messaging (SMS) will produce: 1) positive responses to the messages, including message receptivity and emotional response; 2) indoor tanning efficacy beliefs, including response efficacy and self-efficacy; and 3) indoor tanning risk beliefs.

Methods: We conducted a pilot study of IT prevention messages delivered via mobile phone text messaging in a sample of 21 young adult women who indoor tan. Participants completed baseline measures, were randomized to receive gain-, loss-, or balanced-framed text messages and completed post-exposure outcome measures on IT cognitions and behaviors.

Participants received daily mobile phone indoor tanning prevention text messages for 1 week, and completed the same post-exposure measures as baseline.

Results: Over the 1-week period there were trends or significant changes after receipt of the text messages including decreased IT behavioral intentions (*p* = 0.105) and increased perceived susceptibility (*p* p p = .027). OLS stepwise linear regression models showed an effect of text message exposure on self-efficacy to quit indoor tanning (*t* = -2.475, *p* < .023). OLS linear regression including all measured scales showed a marginal effect of texts on self-efficacy (*t* = 1.905, *p* < .077). Participants endorsed highly favorable views towards the text messaging protocol.

Conclusions: This study supports this use of mobile text messaging as an IT prevention strategy. Given the nature of skin cancer risk perceptions, the addition of multimedia messaging service (MMS) is another area of potential innovation for IT prevention messages.

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Symposium 64 1:30 PM-2:45 PM

THE TRANSFORMATION FROM 'I EXERCISE' TO 'I AM AN EXERCISER': HOW SELF-IDENTITY INFLUENCES EXERCISE BEHAVIOR & MAINTENANCE

Angela D. Bryan, PhD[1], Ryan E. Rhodes, PhD[2], Arielle S. Gillman, MA[1], Courtney J. Stevens, MA[3], Bess H. Marcus, Ph.D.[4]

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The transformation from “I exercise” to “I am an exerciser”: How self-identity influences regular exercise behavior and maintenance

An estimated 80 percent of US adults do not meet government recommendations for physical activity, and interventions to increase exercise, primarily based on social cognitive models, continue to have only modest success, especially when it comes to behavior maintenance over the long-term. To find insight into potential solutions to this problem, our symposium turns to a long history of social psychological research on identity and behavior, and applies these findings to exercise interventions to understand and enhance long-term maintenance of physical activity behavior. We present novel mixed-methods research addressing this question. Rhodes presents meta-analytic findings demonstrating a reliable relationship between exercise identity and regular exercise behavior, and identifies correlates of identity formation that link to theoretical frameworks that can guide intervention content. Gillman examines the link between past behavior and identity formation in the exercise context, and finds that regular exercise as a result of study participation can lead to spontaneous exercise identity formation in previously sedentary women, leading to maintenance of exercise behavior several months after study conclusion. Stevens examines psychological mechanisms through which an acceptance-based clinical intervention to increase exercise behavior may enhance exercise identity, and suggests that treatment-related effects on values congruent behavior and remembered affect during and after exercise may support increases in exercise identity, leading to greater maintenance at follow-up. Taken together, these investigations highlight important connections between self-identity and the exercise experience that may influence the maintenance of exercise behavior over time. Discussion will focus on factors that may help guide incorporation of “exerciser” into the self-identity of insufficiently-exercising individuals, and thus can be used in interventions to boost long-term behavioral sustainability.

LO1: To highlight a growing body of research demonstrating that exercise identity and regular exercise behavior are reliably linked.

LO1: To translate meta-analytical findings on identity and exercise into novel interventions to increase exercise behavior and maintenance

Symposium 64A

FORMING AN EXERCISE IDENTITY: A REVIEW OF CORRELATES AND POTENTIAL THEORETICAL FRAMEWORKS

Professor Ryan E. Rhodes, PhD

Forming an Exercise Identity: A Review of Correlates and Potential Theoretical Frameworks

Exercise identity represents a reflexive, self-regulating behavioral maintenance system that has shown a reliable, medium-sized correlation with regular physical activity (PA). Despite this evidence, the process of how an exercise identity forms has received limited research attention in the PA domain. Furthermore, the integration of exercise identity into contemporary theories of PA has been under-developed. The purpose of this symposium presentation is to provide a thematic review and analyses of the correlates of exercise identity, as well as the contemporary theories that address identity formation in the PA domain in order to facilitate future intervention research. Eligible studies were from English, peer-reviewed published articles that examined identity (and/or schema) in the context of PA. Searches were completed in June 2015 in five databases. Sixty-two independent data-sets, primarily of modest quality, were identified. Results showed that identity was associated with commitment, perceived capability, affective judgments, identified/integrated regulation and social comparison but not associated with perceived benefits of PA or introjected/extrinsic regulation. Theoretical models for understanding identity formation in the PA domain included adapted self-efficacy and self-determination theories, the PA self-definition model, multi-process action control, and variants of social identity, group cohesion and self-perception theories. Overall, contemporary research on the correlates of exercise identity support specific variables that span commitment, capability, affect, and social comparison and these link to several applicable theoretical frameworks in order to explore identity formation. Interventions employing experimental manipulations of these proposed antecedents are now needed for a better understanding of exercise identity formation.

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Symposium 64B

EXERCISE IDENTITY AND BEHAVIOR MAINTENANCE AFTER A SUPERVISED EXERCISE INTERVENTION

Arielle S. Gillman, MA

Given recent meta-analytic work demonstrating that exercise identity is reliably associated with long-term maintenance of physical activity behavior, the next logical question to explore is how to encourage inactive individuals to incorporate an exercise identity into their self-concept. A long history of social psychological research has demonstrated that individuals are likely to explain their past behavior as being the result of stable, internal characteristics. As such, we examined whether simply committing to regular participation in exercise as part of a short-term study could lead women to associate with an "exerciser" social category label, leading to maintenance of exercise behavior after the study. Our participants were 240 previously sedentary women participating in a larger study that examined changes in biological markers of breast cancer risk after 16 weeks of supervised exercise at differing levels of intensity and duration. Participants were not given explicit guidance regarding exercise maintenance after the intervention. Before and after the exercise program, participants completed the Exercise Identity Scale (Anderson & Cychosz, 1994), a measure examining the degree to which one identifies with exercise as an integral part of his or her self-concept. 6 months post-intervention, participants self-reported their exercise behavior, as well as psychosocial predictors including attitudes, norms, self-efficacy, and intentions to exercise. We found that across our sample, exercise identity increased from baseline to post-intervention (*t*=8.18, pr=.32), norms (*r*=.29), intentions, (*r*=.18), and minutes of exercise (*r*=.18). These findings suggest useful implications for behavior change. It appears that individuals can relatively spontaneously incorporate healthy behavior engagement into their self-concept, even without explicit encouragement to do so. Continuous participation in exercise behavior might thus create lasting effects on identity that can translate to behavior maintenance over the long-term.

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Symposium 64C

ASSOCIATIONS AMONG IDENTIFIED REGULATION, VALUES CONCORDANCE, AND EXERCISE BEHAVIOR OVER TIME: AN ACCEPTANCE-BASED APPROACH

Courtney J. Stevens, MA

Regular exercise participation is associated with reduced risk for all-cuase mortality and has also been shown to confer both prophylactic and therapeutic benefits for mental and emotional health. Unfortunately, half of American adults are insufficiently active and another quarter engage in no exercise at all. Prior work has shown that discomfort/displeasure experienced during exercise is associated with less esercise engagement, but how to best address these factors is not well understood. Rather than attempt to change or control the experience of exercise, acceptance-based interventions seek to facilitate values identification and promote behavior engagement consistent with those values (even in the presence of experiential discomfort). Identified regulation is a construct posited by self-determination theory to underlie motivation for behaviors that individuals personally identify with or value. The aims of the present investigation were to (1) evaluate the influence of an acceptance-based exercise intervention on exercise identified regulation and associated exercise behavior change over time; and (2) explore the associations between identified regulation, values concordance, and exercise behavior adoption and maintenance. The study was divided into two phases: Phase 1 (adoption, baseline visit – post intervention), and Phase 2 (maintenance, 3 and 6 months follow up). Data were collected at these 4 time points from a sample of N = 119 insufficiently active women randomly assigned to 1 of 3 conditions: (1) an acceptance-based health coaching intervention, (2) an information-based health coaching intervention, or (3) a no-health coaching control intervention. Results showed that identified regulation increased through Phase 1 among the acceptance-based intervention participants, but decreased over time among education and control participants, $t(107) = 2.13$, $p = .03$. Further, across conditions, identified regulation at post-intervention was associated with more exercise minutes completed at 3- and 6-months follow up, $r = .19 - .29$, respectively. Daily journal data for participants in the acceptance-based condition indicated that acting in accordance with values was positively associated with more minutes of exercise completed during both the exercise adoption, $r = .66$, and maintenance phases, $r = .27 - .45$. These results point to meaningful associations between identified regulation, values concordance, and exercise behavior adoption and maintenance.

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Symposium 65 1:30 PM-2:45 PM

MILITARY AND VETERAN HEALTH BEHAVIOR RESEARCH AND PRACTICE

Jeffrey Haibach, PhD, MPH[1], Daniel Cassidy, PhD[2], Margaret Dundon, PhD[3], Jennifer S. Funderburk, PhD[4], Gerald W. Talcott, PhD, ABPP[5]

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There are2.1 million current military Servicemembers and 21 million living Veterans in the United States. Although they were healthier upon entering military service compared to the general U.S. population, in the longer term Veterans tend to be of equivalent or worse health than civilians. One primary explanation for the Veterans' health disparity is poorer health behaviors during or after military service, especially areas of physical activity, nutrition, tobacco, and alcohol. In response, the Department of Defense and Department of Veterans Affairs continue to develop, evaluate, and improve health promotion programs and healthcare services for military and Veteran health behavior in an integrated approach. In this symposium, the chair will first present the context and overview of Military and Veteran health behavior research and practice, followed by presenters on specific interventions and programs in key areas. Presenter 1 will discuss tobacco research and prevention through DoD's initial military entrance training. Presenter 2 will discuss a quality improvement implementation of VA's new primary care group health promotion program, *Gateway to Healthy Living*. Presenter 3 will discuss the latest status on VA's primary care behavioral health program including DoD collaboration. Symposium presenters and participants will then discuss health behavior research and practice in both general and specific areas in forward movement for the health of Servicemembers, Veterans, and their Families.

Symposium 65A

INTERVENING DURING THE TRANSITION INTO MILITARY SERVICE ON TOBACCO AND HEAVY ALCOHOL USE

Daniel Cassidy, PhD

Every year, nearly 40,000 men and women enlist in the United States Air Force (USAF). Prior to arrival at Basic Military Training, Lackland Air Force Base, TX, these individuals will have met or exceeded the military's rigorous medical screening standards. While each of these Airmen enters the USAF with fundamentally good health, many also arrive with or subsequently develop health risk behaviors that have long-term costs of increased healthcare expenditure, reduced operational readiness, and lower quality of life. The Department of Defense spends an estimated $2.5 billion each year managing the ramifications of tobacco use and alcohol misuse. In the critical transition from civilian to military life, the Military Health System strives to apply the best available behavioral science for the short and long term health and wellbeing of servicemembers. Early efforts to reduce tobacco use leaned heavily upon an 8 week or greater tobacco ban during initial entry training, and the initial ban remains in place. Despite the majority of trainees espousing "complete confidence" in their ability to remain tobacco-free after initial training, only 17-28% of those who used tobacco prior to enlistment remain abstinent for at least 1 year, and new users are added. The resulting total percentage of tobacco users remains higher at 1-year follow-up and, in general, higher in the military than the civilian population. The story is much the same with regard to heavy alcohol use, which is also prohibited during initial entry training: The ban on consumption is of enduring benefit for some while others initiate or resume heavy use after the restrictions are lifted, suggesting a persisting challenge and opportunity to intervene during this period. Brief individual and group-based interventions delivered during and after initial entry training have demonstrated utility in the reduction of both health risk behaviors. For example, the Alcohol Misuse Prevention Program (AMPP) was associated with a 36% reduction in alcohol-related incidents in one evaluation (e.g., driving under the influence; underage drinking) and can be delivered to a large audience in less than 45 minutes. The AMPP data outcomes, along with similar projects targeting tobacco use, cast light on characteristics common to successful population-level prevention efforts. These interventions are generally delivered in a Socratic style, and preliminary evidence suggests that effects are stronger when the verbal behavior of the interventionist or program is aligned with the tenets of motivational interviewing. Programs under investigation also leverage behavioral economic principles (e.g., choice architecture; temporal discounting) to preserve freedom of choice while at the same time promote healthier behavior that persists across the military and beyond.

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Symposium 65B

VA'S GATEWAY TO HEALTHY LIVING

Dr. Margaret Dundon, PhD

The Veteran population has high rates of unhealthy eating, physical inactivity and tobacco use, similar to the general population. These 3 health behaviors are linked to many diseases and half of global mortality. The challenges of supporting health behavior change include helping people feel motivated, confident and willing to engage in evidence-based interventions. The Gateway to Healthy Living Program was designed by the VHA National Center for Health Promotion and Disease Prevention (NCP) to serve as an entry point for Veterans who might benefit from self-care and healthy living programming. Gateway is designed to evoke and increase motivation and confidence for health behavior change, and link Veterans with effective interventions, programs (e.g., weight management, increasing physical activity, tobacco cessation, limiting alcohol, and managing stress) and self-management tools. Gateway offers participants help with goal setting, problem-solving and change strategies as well as access to existing VHA clinical programs. Following the 90 minute group session, there are two subsequent clinician/participant contacts to ensure access to their program of choice, problem-solve, and affirm success. Gateway was piloted in 2015 in six sites across the VA. All of the 83 participants reported being “very satisfied” or "somewhat satisfied” with their Gateway session. The majority of patients reported that Gateway helped them set a goal to improve health. Sixty three percent of the 78 who completed the second follow-up call reported linking to a program or resource.Staff were also surveyed (n = 50), with 86% reporting that Gateway was “very helpful” in connecting Veterans to programs and resources. Fifty-six percent indicated that Gateway was helpful for supporting health behavior change, 74% reported Gateway helped improve efficiency of referrals to behavior change resources, and 68% reported that it saved them time. Based on the pilot success, Gateway training and program support are now being offered to all facilities in the VHA.

Symposium 65C

CURRENT STATUS AND RESEARCH FOR VA PRIMARY CARE AND BEHAVIORAL HEALTH INTEGRATION

Dr. Jennifer S. Funderburk, PhD

One of the largest evidence-based transformations that the VA has implemented to help address the high rates of mental and behavioral health symptoms within Veterans is the integration of behavioral health services into primary care. To accomplish this, the VA has integrated behavioral health providers into each primary care setting to provide focused assessment, intervention, and consultation, and offers evidence-based care coordination via care management models. This has resulted in over 1600 staff being hired to provide these services in 89% of the 365 VA primary care sites across the nation. These integrated service delivery models afford opportunities for trained mental health providers to provide both secondary and tertiary prevention interventions targeting a variety of mental health (e.g., anxiety, depression) and behavioral health (e.g., diabetes management, insomnia) concerns. Due to the increasing implementation of integrated delivery models outside of the VA, this presentation will provide an overview of the current status of integration and evaluation efforts within the VA to stimulate ideas for research and practice across both VA and non-VA settings. This overview will help identify opportunities for behavioral medicine researchers to expand their current work into the primary care setting. Although research has found integration to improve patient access to services, many additional gaps remain. Therefore, this presentation will also summarize gaps in our knowledge regarding integrated primary care, including the effects of brief interventions on clinical outcomes, the best methods to address multimorbidities, the most efficient ways to coordinate complementary services, keys to improving communication and collaboration among the team, the need for brief measures to assess patient functioning, and barriers and facilitators to implementation of integrated primary care service delivery models. Discussion will focus on opportunities for future research at a system- to patient-level on integration.

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Symposium 66 1:30 PM-2:45 PM

MECHANISMS WITHIN ROMANTIC RELATIONSHIPS THAT IMPACT HEALTH BEHAVIORS AND OUTCOMES: IDENTIFYING INTERVENTION TARGETS

Krista Ranby, PhD[1], Jennalee Wooldridge, MA[1], Michelle vanDellen, PhD[2], Megan Lewis, PhD[3], Sydneyjane Varner, M.A.[1]

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An individual's social environment impacts their health behaviors, yet, the processes by which this influence occurs is not well understood (LaGuardia & Patrick, 2014). Correlational research indicates a positive association between social support and health behaviors yet interventions focused on enhancing social support to change behaviors have fallen short. For this reason, additional targets relevant to interpersonal relationships that may be useful for health behavior interventions will be the focus of our symposium. With data from 280 engaged couples in Denver, CO, we found couples who had been living together for over 2 years were more similar on physical activity and BMI as compared to couples living together for less than 2 years. This study highlights how individuals may change some health behaviors, particularly daily habits, to match one's partner. Second, we will present an experimental study in which 100 dual-smoker couples received either a couple-focused or individual-focused message promoting smoking cessation. Message type and the relationship context (i.e. conflict) interacted to impact motivations to quit smoking. We will discuss how the effectiveness of dyadic interventions may be improved by considering qualities of the couple's relationship. Third, we examined relationship functioning and illness uncertainty at four time points during the year following a prostate cancer diagnosis. Couples (N=165) were recruited from Duke University Medical Center. Unsupportive behaviors increased and support provision decreased following diagnosis; baseline illness uncertainty negatively related to later measures of relationship functioning. Ways to intervene with couples to improve their adjustment will be discussed. Finally, in a national sample of couples participating in a physical activity (PA) intervention for Type II diabetes patients, we examined whether collaborative implementation intentions (e.g., joint planning) improved accelerometer assessed PA and whether this effect is mediated by partner investment in the PA goal and effectiveness of social support and social control attempts. This symposium will encourage researchers to consider the complex nature of the interpersonal environment for health behavior engagement and change. Further, we will discuss the importance of considering both partners' perceptions, unique aspects of life transitions, and appropriate methodological approaches for addressing these research questions.

Symposium 66A

HOW COHABITATION AFFECTS HEALTH BEHAVIOR CONCORDANCE AMONG ENGAGED COUPLES

Dr. Krista Ranby, PhD

Long time married couples experience similar health behaviors and health outcomes (Meyler, Stimpson, & Peek, 2007). Potential causes of this concordance includes partnering with similar others, shared resources and environments, and direct influences between partners. The current study adds to our understanding about how couples come to be similar by examining health behaviors within young adult, engaged couples. Couples who were over 18 and considered themselves engaged were recruited from the Denver, Colorado metro area. Both partners within 280 couples answered questions about their health behaviors, health goals, and relationship. Participants were an average of 27.2 years old (SD=4.0) and had been in a relationship with their current partner for an average of 46.5 months (SD=26.4); 90% of couples were heterosexual relationships. When considering cohabitation, 18% did not live together, 20% had lived together for less than a year, 22% had lived together for 13-24 months, and 41% had lived together for more than 2 years. Correlations of self-reported health behaviors and outcomes from both partners were examined. Stronger correlations emerged on BMI and days of exercise for couples who had lived together longer. This same pattern was not found for smoking and alcohol use which were correlated among all couples or sleep quality which was not correlated within couples. Longer relationship length did not relate to stronger correlations to the same extent as did longer cohabitation time suggesting daily habits may become more similar as people live together. Although couples were more similar after living together, couples who had been living together longer were not significantly more or less healthy than other couples. More work is needed to identify predictors of which partner is likely to change within the relationship. It seems that in some couples, one partner is improving their behaviors and in others, one partner is developing poorer habits. Given that behavioral changes are naturally occurring during this life transition, prevention interventions that consider relevant goals, motivations, and relationship dynamics may be better able to shift behavioral habits in a positive direction so that habits established within this interpersonal context might be maintained over time.

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Symposium 66B

COLLABORATIVE IMPLEMENTATION INTENTIONS AMONG COUPLES FACING TYPE 2 DIABETES: MECHANISMS OF BEHAVIOR CHANGE

Jennalee Wooldridge, MA

Many people with type 2 diabetes (T2D) do not engage in recommended self-management behaviors (SMB), particularly physical activity (PA). Relationship partners are highly interdependent and any significant lifestyle change made by one partner likely impacts the other. Considering the interpersonal context of behavior change and necessity of maintaining health behavior over time, couple-level processes are one promising area to incorporate into behavior change interventions. The current study tests a PA intervention with couples in which at least one partner had been diagnosed with T2D. The experimental manipulation involved having couples make collaborative implementation intentions (CIIs), or specific plans for how the diagnosed partner would overcome barriers to PA and follow specific plans to engage in PA. We theorized this manipulation would be successful by changing several important mediators. First, we believed CIIs would increase partner investment, or the degree to which one’s partner has a shared responsibility and takes action to support the goal of the patient engaging in PA. Second, we believed CIIs would increase patient’s self-efficacy if their partner is supporting the goal and possibly modeling the behavior themselves. Third, we believed CIIs would increase health-related social support and positive control behaviors provided by partners. Increases in all of these putative mediators are hypothesized to be positively related to PA. PA (Actigraph accelerometers) and self-management behaviors were assessed at baseline and 6 weeks post manipulation. Mediators were assessed from both partners at baseline, 3 weeks, and 6 weeks. The relationship of the experimental manipulation to the proposed mediators as well as the relationship of the mediators to PA and other SMB will be discussed. This talk will focus on theoretical mechanisms, within relationship partners, for behavior initiation, particularly within management of a chronic illness.

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Symposium 66C

THE INTERPLAY BETWEEN MESSAGE FRAME AND CONFLICT DURING SUPPORT ATTEMPTS IN DUAL-SMOKER COUPLES

Dr. Michelle vanDellen, PhD

Nearly 2/3 of smokers are partnered with other smokers. These dual-smoker couples are less likely than other smokers to try to quit. Very little is known about how relationship dynamics—including social support—relate to smoking cessation in dual-smoker couples. In the present talk, we will discuss the interplay between dyadic interventions and the relationship context among 100 dual-smoker couples. Specifically, we examined the impact of a 2 (gain/loss) by 2 (couple/individual) message framing manipulation on motivation to quit smoking. After completing baseline measures (including conflict during social support such as nagging, criticism, and distrust), partners independently read scenarios discussing either the benefits of quitting (gain-frame) or costs of not quitting (loss-frame) as it affected the individual or the couple. After reviewing the scenarios and reporting their desire to quit smoking, the couple members came together to discuss views on smoking. After the discussion they again reported desire to quit. Post-discussion desire to quit varied by whether the outcomes of framing focused on the individual or the couple and by baseline level of conflict $p < .05$. Individuals who reported less conflict were more motivated to quit when the messages were couple- rather than individual-focused. In contrast, individuals who reported more conflict were more motivated to quit when the messages were individual- rather than couple-focused. Thus, when individuals felt the relationship context was characterized by low conflict, focusing on couple outcomes increased motivation to quit. These results suggest that relationship dynamics may moderate the effectiveness of certain kinds of messages. Tailoring messages to couples based on their relationship functioning (e.g., conflict) could increase effectiveness. Future research examining how the relationship context changes motivations to quit smoking may improve effectiveness of interventions for dual-smoker couples.

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Symposium 66D

ILLNESS UNCERTAINTY AND RELATIONSHIP FUNCTIONING AMONG COUPLES FACING PROSTATE CANCER: A DYADIC, LONGITUDINAL EXAMINATION

Sydneyjane Varner, M.A.

Couples, both patients and partners, high in relationship functioning (RF) experience improved biopsychosocial outcomes in the illness recovery process for prostate cancer (PC). Illness uncertainty (IU), a major stressor for couples facing a PC diagnosis, may negatively affect several domains of RF, thus impacting important health outcomes. Little is known, however, about how the stress of IU impacts specific domains of RF between partners over time during the year following diagnosis. Couples (N=165) in which one partner was diagnosed with early stage PC were recruited from a urology clinic. Couples were assessed for a year following diagnosis and prostatectomy. Participants completed measures of illness uncertainty (IU), received partner support (PS), unsupportive behaviors (USB), and sexual functioning (SF) at diagnosis, 1-month, 6-months, and 12-months. In the year following diagnosis, USB increased significantly in both partners, while PS decreased significantly in both partners. USB and PS are significantly correlated across time points within couples indicating that there is variability in couples' adjustment during the illness recovery process. Further, significant correlations between baseline IU and relationship measures at various points throughout the year suggest the stress of illness may be having a deleterious effect on couples' relationship functioning. These findings reveal trends in distinct measures of relationship functioning during the year following PC diagnosis that have important implications for future intervention development.. Rather than focusing on increasing general relationship quality, targeting specific interaction patterns within couples, such as the ones in this study, may improve relationship functioning in couples coping with illness recovery.

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Symposium 67 1:30 PM-2:45 PM

ADVANCES IN UNDERSTANDING HEALTH EFFECTS OF STIGMA AND DISCRIMINATION IN FAMILY CONTEXTS

Lisa Rosenthal, PhD[1], David M. Frost, PhD[2], Nicole M. Overstreet, PhD[3], Hector F. Myers, PhD[4]

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Much research demonstrates that stigma and discrimination have adverse consequences for mental and physical health.The majority of this work has focused on the individual level, finding links between one's experiences of stigma or discrimination and one's own mental and physical health outcomes. However, recent research and theory suggest stigma and discrimination is not only experienced at the individual level, but rather should be understood within the context of social networks, such as within family contexts. This symposium includes three presentations of empirical studies that make advances in our understanding of health effects of stigma and discrimination in family contexts across a range of populations, types of stigma, and mental and physical health outcomes. The first presenter will report results finding that among same-sex couples, both individual- and couple-level expectations of rejection due to their socially stigmatized relationship were associated with greater depressive symptoms and more problematic drinking behavior. The second presenter will report results finding that among women exposed to intimate partner violence, stigmatizing reactions to disclosure of that violence were associated with greater depressive symptoms through the mechanism of greater avoidance coping. The third presenter will report results finding that everyday discrimination reported by pregnant women of color prospectively predicted poorer social-emotional development outcomes in their infants at one year old. The discussant will address the presentations' contributions to understanding inter-generational and couple/family-level effects of stigma and discrimination on health, and implications for future research and intervention. Overall, this symposium helps move the field forward in developing a deeper understanding of dynamic health effects of stigma and discrimination within family contexts, which can improve intervention efforts aimed at reducing health disparities faced by stigmatized groups in the U.S.

Symposium 67A

DISCRIMINATION IN PREGNANCY PREDICTS POORER INFANT DEVELOPMENT AT ONE YEAR

Dr. Lisa Rosenthal, PhD

Black women and some subgroups of Latina women in the U.S. experience disproportionately high rates of adverse birth outcomes, such as preterm birth and low birth weight. Black and Latino infants also have poorer behavioral, social, cognitive, and health outcomes than White infants in the first year of life, and these disparities grow larger over time. Increasing evidence suggests women's experiences of discrimination predict increased risk of adverse birth outcomes, supporting that there are inter-generational consequences of discrimination. However, almost no research has explored inter-generational effects of discrimination beyond birth outcomes. In a sample of 334 predominantly Black and Latina teens and young women receiving prenatal care in New York City, we longitudinally tested the hypothesis that women's experiences of discrimination reported during pregnancy would prospectively predict poorer infant development outcomes at one year old.

Participants reported their experiences with discrimination during second and third trimesters, and an aggregate score for pregnancy was calculated. Participants also completed items from the Infant Toddler Social Emotional Development Scale (ITSEA) assessing inhibition/separation problems, attention skills, negative emotions, and positive emotions at one year postpartum. Regression analyses controlling for a range of sociodemographic risk factors found that women's experiences with discrimination reported during pregnancy prospectively predicted greater inhibition/separation problems (B=0.87, SE=0.30, p=.026) and greater negative emotions (B=0.99, SE=0.35, p=.030), but not attention skills or positive emotion in their infants at one year old.

Findings support that there are inter-generational consequences of women's experiences of discrimination for their infants' development and well-being. Inter-generational effects of discrimination may help to explain persistent disparities in a range of developmental, physical health, and mental health outcomes across the life.

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Symposium 67B

THE EFFECT OF COUPLE-LEVEL MINORITY STRESS ON THE HEALTH OF SAME-SEX COUPLES

Dr. David M. Frost, PhD

Minority stress theory (Meyer, 2003) posits that sexual minority individuals are at risk for poor health due to the stress they experience stemming from social stigma. Being in a same-sex couple has been theorized to result in exposure to unique forms of stigma, which are thought to represent a risk to sexual minorities' health, above and beyond the risk associated with the stigma they experience as individuals (LeBlanc, Frost, & Wight, 2015). This presentation reports the results of the first empirical test of this theory of "Couple-Level Minority Stress." A purposive sample of 216 partners in 108 sample-sex couples living in the US completed a web-based questionnaire containing measures of individual minority stress in the form of expectations of rejection, a newly developed measure of couple-level minority stress, relationship satisfaction, depression (i.e., CESD) and alcohol use (i.e., AUDIT). The purposive nature of the sampling design ensured that participants were nearly evenly distributed by couple gender, relationship duration, and region of the country. Due to the dyadic nature of the data, the Actor-Partner Interdependence Model (APIM) was used to analyze the data. Analyses demonstrated that heightened expectations of rejection at both the individual- and couple-level were associated with poorer health in the form of increased depressive symptoms and more problematic drinking behavior. Couple-level expectations of rejection explained poor health above and beyond expectations of rejection at the individual level (actor effects) for both depression and drinking behavior, as well as at the dyadic level (partner effects) for drinking behavior. Additionally, evidence for the proliferation of couple-level minority stress was found in the form of a significant indirect effect of couple-level expectations of rejection on depression that operated via decreased levels of relationship satisfaction. Implications for research on sexual minority health disparities and clinical interventions aimed at improving the health of sexual minority individuals and same-sex couples will be discussed.

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Symposium 67C

STIGMATIZING REACTIONS TO INTIMATE PARTNER VIOLENCE DISCLOSURE AS PREDICTORS OF AVOIDANCE COPING AND DEPRESSIVE SYMPTOMS

Dr. Nicole M. Overstreet, PhD

Women exposed to intimate partner violence (IPV) are at higher risk for elevated depressive symptoms and major depressive disorder than women not exposed to IPV. Recent research suggests that negative social reactions to IPV disclosure may be associated with women's depressive symptoms. Despite increased attention to the relation between negative social reactions to intimate partner violence (IPV) disclosure and poorer mental health outcomes for victims, research has yet to examine whether certain types of negative social reactions are associated with poorer mental health outcomes more so than others. Further, research is scarce on potential mediators of this relationship. To fill these gaps, the current study examines whether stigmatizing reactions to IPV disclosure, such as victim-blaming responses and minimizing experiences of IPV, are a specific type of negative social reaction that exerts greater influence on women's depressive symptoms than general negative reactions, such as being angry at the perpetrators of IPV. We also examine avoidance coping as a key mediator of this relationship. A cross-sectional correlational study was conducted to examine these relationships. Participants were 212 women from an urban northeast community who indicated being physically victimized by their male partner in the past six months. Findings from a multiple regression analysis showed that stigmatizing reactions, not general negative reactions, predicted women's depressive symptoms. In addition, a multiple mediation analysis revealed that avoidance coping strategies, but not approach coping strategies, significantly accounted for the relationship between stigmatizing social reactions and women's depressive symptoms. Implications of the study findings for improving support from informal and formal sources and IPV-exposed women's psychological well-being will be discussed.

Symposium 68 1:30 PM-2:45 PM

PROMOTING PSYCHOLOGICAL WELL-BEING IN CANCER PATIENTS AND SURVIVORS: META-ANALYSES OF RANDOMIZED CLINICAL TRIALS

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Positive affect, meaning and purpose, and self-efficacy represent dominant concepts in human flourishing and are core components of psychological well-being. In cancer patients and survivors, these concepts are significantly associated with better health outcomes above and beyond the influence of distress and dysfunction. Several systematic reviews and meta-analyses highlight the importance of psychosocial interventions to reduce negative effects of depression, pain, and fatigue in patients with cancer, but we lack similar meta-analyses of interventions that promote and sustain well-being. As more people survive cancer, understanding and facilitating positive adjustment and growth is an important complement to understanding and mitigating impairment, disability and psychosocial morbidity. In this symposium, we will provide a summary and meta-analysis of psychosocial intervention effects on positive psychological outcomes and identify those interventions that have been optimally beneficial for people with cancer. Our aims are threefold: (1) obtain current, comprehensive, and robust estimates of the effectiveness of psychosocial interventions on positive affect, meaning and purpose, self-efficacy among cancer patients and survivors, (2) determine whether the effects of psychosocial interventions on positive affect, meaning and purpose, and self-efficacy differ by the intervention focus and modality, and (3) examine patient sociodemographic (age, gender) and clinical characteristics (cancer type, stage, and phase) as moderators of the strength of the relationship between psychosocial interventions and positive affect, meaning and purpose, and self-efficacy. Our first presentation is on the effects of interventions on positive emotions, optimism, and vigor. Our second presentation examines the effects of interventions on meaning, life purpose, and posttraumatic growth. Our final presentation analyses the effects of interventions on general self-efficacy as well as domain or task-specific self-efficacy. We will close by underscoring important similarities and differences among the three presentations and delineating the utility of psychosocial interventions to promote positive psychological outcomes among cancer patients and survivors. In so doing, we will clarify the role of psychosocial interventions in promoting better health and well-being among patients with cancer.

Symposium 68A

DON'T WORRY, BE HAPPY? META-ANALYSIS OF RANDOMIZED INTERVENTIONS ON POSITIVE AFFECT IN CANCER PATIENTS AND SURVIVORS

Judith T. Moskowitz, PhD, MPH

Introduction: Positive affects such as happiness, excitement, and contentment have unique beneficial effects in the context of health-related stress including improved health behaviors, better quality of life, and increased longevity. In the past decade, empirical evidence has emerged suggesting that positive affect may be an important target for behavioral interventions given its unique beneficial relationship with health outcomes. However, no systematic reviews exist to quantify the effects of behavioral interventions and better understand what works, for whom, and under what conditions within the context of cancer. This meta-analysis investigated the extent to which psychosocial interventions in people with cancer have effects on positive affect outcomes. **Methods:** Drawing from seven electronic databases, 1138 abstracts were identified, evaluated, and coded by reviewer pairs, yielding thirty-one randomized behavioral clinical trials. Effect sizes were calculated for positive affect outcomes such as positive emotion, optimism, and vigor. Synthesis was conducted using correlated random effects models with robust variance estimation to account for dependence among multiple effect sizes within each study. Potential moderators included sample age, gender, cancer type, cancer phase, intervention focus, and delivery format. **Results:** The weighted average effect across thirty-one studies of positive affect outcomes was $g = 0.134$, 95% CI [-0.043, 0.312]. There was substantial heterogeneity of effects across studies, with an estimated between-study variance of 0.193 (I^2: 83%). None of the moderators were statistically significant (all $P > 0.574$). Results did not exhibit outcome-reporting biases ($P = 0.412$ from a robust Egger regression test). **Discussion:** Although several behavioral interventions included positive affect as an outcome, few targeted positive affect as the primary outcome and results were typically small in magnitude. Surprisingly, intervention efficacy did not vary as a function of clinical, demographic, or intervention characteristics. Tailored interventions to promote positive affect with careful attention to measurement of positive affect may potentially yield greater effects, but more studies are needed to draw firmer conclusions.

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Symposium 68B

DO PSYCHOSOCIAL INTERVENTIONS WITH CANCER PATIENTS AND SURVIVORS INCREASE MEANING AND PURPOSE? A META-ANALYTIC APPROACH

Dr. Crystal L. Park, PhD

A sense of meaning and purpose are important for individuals dealing with cancer. Meaning can buffer stress effects by allowing individuals to view their cancer experiences as one part of a larger, richer whole or to reframe it in more positive ways (post-traumatic growth). Yet, cancer can threaten individuals' sense of meaning by undermining their views of the world as benevolent and controllable, their identities as healthy and intact, and their futures as optimistic and long. Identifying whether interventions can promote a sense of meaning, purpose and growth is important for improving the well-being of cancer patients and survivors. This meta-analytic study examined the efficacy of interventions that promote meaning and purpose and potential moderators (age, gender, cancer type, cancer stage, cancer phase, intervention modality, and delivery format) of this effect. 2080 abstracts from 7 electronic databases were evaluated by reviewer pairs. Inclusion criteria included randomized controlled trials of a psychosocial intervention with cancer patients and/or survivors that included an outcome measure of meaning, purpose, or growth. A total of 38 randomized trials met these criteria. Meta-analyses used correlated random effects models with robust variance estimation to account for dependence among multiple effect size estimates within each study. The overall average effect across studies that included over 3000 people was $g = 0.313$, 95% CI [0.165, 0.461], $P < .001$. Effects were heterogeneous with an estimated between-study variance of 0.138 (I^2 71%). No moderating effects were identified. There was a strong indication of publication bias ($P = .0196$ from a robust Egger regression test). Using Egger regression to adjust for potential small-sample bias reduced the overall average effect to $g = -0.059$, 95% CI [-0.323, 0.205], $P = .642$, I^2 68%. These results suggest that, although many interventions for improving meaning and purpose have reported salutary effects, the overall pattern of findings may be a function of outcome reporting biases rather than evidence that the interventions are effective in bolstering meaning and purpose in the context of cancer.

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Symposium 68C

A META-ANALYTIC REVIEW OF INTERVENTIONS TO ENHANCE SELF-EFFICACY BEHAVIORS IN CANCER PATIENTS AND SURVIVORS

Dr. Thomas V. Merluzzi, PhD

Background: Peoples' beliefs and expectations about their ability to exercise control or mastery over their behaviors represent an underlying and central mechanism of human agency and personal efficacy. Self-efficacy (SE) theory posits that greater confidence in the ability to execute courses of action enhances the probability that desired goals will be attained. Thus, cancer patients with higher SE for processes like coping, symptom management, and adherence to medical regimens are more likely to persist in strategies to achieve desired psychosocial (e.g., better adjustment and quality of life) and medical outcomes (e.g., less and/or less intense symptoms and side effects) compared with those with lower SE. This meta-analytic study determined 1) whether interventions to increase SE are effective and 2) if moderators like intervention focus are important. **Method:** Synthesis was conducted using correlated random effects models with robust variance estimation to account for dependence among multiple effect size estimates within each study. Outcome reporting bias was examined using funnel plots and a robust variant of Egger's regression. Moderators examined included age, gender, cancer type, intervention focus, and delivery format. **Results:** Across 45 randomized control trials examining the effects of psycho-social interventions, the weighted average effect on SE outcomes was g=0.338, 95% CI[0.233, 0.443],P<.001. There was substantial heterogeneity of effects across studies, with an estimated between-study variance of 0.092 (I-squared:72%). Intervention focus explained significant variation in the effect size estimates (F(2,11.2)=7.73,P=0.008). The average effect for individual-based interventions was g=0.218 (95% CI[0.121, 0.315], k=28 studies), for dyad-based interventions g=0.458 (95% CI[0.089, 0.829], k=9 studies), and for group-based interventions g=0.702 (95% CI [0.409, 0.995], k=7 studies). Effects for group-based interventions were statistically distinguishable from effects for individual-based interventions (P=.015) after multiple-comparisons correction). Results were not sensitive to outcome-reporting or small-sample biases (P=.547, robust Egger regression test). **Discussion**: Results suggest that SE does improve in the context of an intervention. Moreover, group interventions enhance self-efficacy more effectively than individually administered interventions. Consistent with SE theory, the group format may enhance SE through social modeling, persuasion in a group context, and support. Thus, in general, this preliminary evidence supports a preference for group-based rather than individual-based interventions to enhance SE.

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Symposium 69 1:30 PM-2:45 PM

MEASURING PERCEIVED RISK: THE PROFOUND IMPLICATIONS OF SEEMINGLY TRIVIAL CHOICES ABOUT ITEM WORDING AND FORMATTING

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Most health behavior theories assert that higher perceptions of personal risk are associated with higher engagement in healthy behaviors and lower engagement in unhealthy behaviors. Yet, many empirical studies have reported conflicting results in which the link between perceived risk and behavior was positive, negative, or absent. This has led some researchers to conclude that perceived risk is not an important predictor of behavior change and that health communication and behavior interventions should focus on addressing other key concepts (e.g., perceived benefits) or levels of influence (e.g., policy change).

However, conclusions such as these have not adequately addressed whether conflicting findings might be due to methodological considerations such as the specificity or generality of item wording and the characteristics of response options. If the inconsistent association between risk perception and behavior is attributed to limitations of risk perception as an important construct in health behavior change, rather than to methodological characteristics that limit the predictive validity of risk perception measures, health communication and behavior interventions that do not address risk perceptions may be unnecessarily self-limiting. Furthermore, such methodological variation may cloud our understanding of the meaning and magnitude of population perceived risk, obscure the “true” relationship between perceived risk and behavior, and consequently inhibit the advancement of health behavior theory and the development of effective health behavior change interventions.

This symposium will provide insight into the effects of common decisions about the wording and formatting of perceived risk items. It accomplishes this by (1) providing a systematic review of how risk perceptions are measured in the literature using tobacco use as a case study; (2) demonstrating that the correlations between perceived risk and other health beliefs, behavioral intentions, and behavior differ dramatically based on whether the risk perception items are or are not contingent on plans to engage in risk-mitigating behavior; (3) describing how perceptions of risk among current and former smokers who undergo lung cancer screening vary in magnitude depending on the specificity of the risk perception item and whether the items assess absolute or comparative risk perceptions; and (4) providing evidence against the common practices of (a) not including a “don’t know” response option for risk perception items, and (b) treating “don’t know” responses as missing data. The discussant, a program director at the National Cancer Institute, will identify future research needs and will describe the theoretical, methodological, and practical implications of the research.

Symposium 69A

RISK PERCEPTION MEASUREMENT IN TOBACCO CONTROL RESEARCH: A SYSTEMATIC REVIEW

Dr. Annette Kaufman, PhD, MPH

Despite the importance of perceived risk and the extraordinary breadth and volume of tobacco control research assessing risk perceptions, no studies have been conducted to review how this construct is measured across tobacco studies. The present review describes the characteristics of risk perception measures used in tobacco control research and evaluates whether studies incorporate best practices for risk perception measures put forward by risk perception researchers. Three databases (PubMed, PsycINFO, and Web of Science) were searched in March 2015, for published English language peer-reviewed articles measuring tobacco risk perceptions (N=2,557). Three coders independently coded abstracts for initial inclusion. A total of 441 articles met initial inclusion criteria and 100 were randomly selected for full-text review. Three coders independently coded critical aspects of each article, multi-item measure, and item: 54 articles, 33 measures, and 239 items were coded. We found large gaps in the use of best practices for measuring risk perceptions. Only 14 articles had a multi-item measure focused exclusively on risk perception and 11 articles had only one risk perception item. Many items asked about general health outcomes (43%), did not specify the person for whom risk was being judged (44%; e.g., self, average person), or did not specify the conditions for which the risk was being judged (27%; e.g., the product used, intensity of use). Few items assessed constructs known to provide additional information about how people deal with risk, including: perceived severity (11%), affective responses to risk (9%), perceived controllability (8%), or the extent to which risks are seen as unknown to experts (3%). Findings suggest that tobacco research inconsistently incorporated risk perception measurement suggested best practices, despite their established importance. Further promulgating best practice guidelines for assessing risk perception could be useful to tobacco research. A set of risk perception consensus measures may benefit the field.

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Symposium 69B

CONDITIONING PERCEIVED RISK ITEMS ON FUTURE BEHAVIOR: IMPLICATIONS FOR ADVANCING THEORY AND DEVELOPING INTERVENTIONS

Erika A. Waters, PhD, MPH

Background: Risk perception survey items that are conditioned on behavior (e.g., How likely is that you will get colon cancer IF YOU DO NOT GET REGULAR EXERCISE) may be interpreted differently than unconditioned items.

Objective: Examine whether conditioning risk perception items on exercise behavior alters the association between perceived risk and health beliefs, intentions, and behavior.

Methods: Secondary analysis of data from a risk communication study (N = 812). Participants were members of GfK Knowledge Networks, an Internet survey panel. Each participant answered an unconditioned and conditioned version of 4 types of colon cancer risk perception items: cognitive absolute perceived likelihood, affective absolute perceived likelihood, cognitive comparative perceived likelihood, and affective comparative perceived likelihood.

Results: Conditioned items elicited fewer “don’t know” responses than unconditioned items for the cognitive items (McNemar test ps < .005) but not the affective items (McNemar ps > .48). Mean risk perceptions were higher for all conditioned than non-conditioned items (paired t-test ps < .001). All conditioned items were positively correlated with intentions to exercise (ps < .0001), but none of the unconditioned items were (ps > .10). Conditioned items were positively correlated with current exercise behavior (ps < .05), but unconditioned items were either unrelated to (ps > .18) or inversely correlated (ps < .02) with current exercise behavior. Conditioned items had weaker correlations with worry and stronger correlations with anticipated regret than unconditioned items (Steiger z-test ps < .001). Perceived severity was independent from conditioned items (ps > .22) but positively correlated with unconditioned items (ps < .005). Both conditioned cognitive items and the affective

comparative likelihood item accounted for variance in intentions not accounted for by response efficacy (ps < .05), which suggests that conditioned risk perception items are not simply another way to assess response efficacy.

Conclusion: The decision about whether or not to condition perceived risk items on behavior has critical implications for participant comprehension of survey items, potential missing data, operationalization of health behavior theory constructs, and drawing correct inferences about the relationship between perceived risk, other health behavior constructs, and behavior. Not attending to such considerations may impede intervention development and evaluation.

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Symposium 69C

RISK PERCEPTIONS AMONG LUNG SCREENING PATIENTS: ONE SIZE DOES NOT FIT ALL

Daniel L. Hall, Ph.D.

Background: Multiple U.S. health agencies have recommended ongoing lung screening for current and former heavy smokers, which Medicare has recently began covering. Risk perceptions are known to influence patient uptake of screening guidelines. To date, little is known about risk perceptions about lung cancer (LC) or smoking-related diseases (SRD), and whether these perceptions vary by smoking status and/or reference point (i.e., absolute vs. comparative risk).

Method: This observational, cross-sectional study examined current smokers (n=88) and former smokers (n=81) who were undergoing lung screening at a large academic medical hospital. Ten self-report items assessed risk perceptions regarding LC and SRD, framed in either absolute or comparative terms. Items were scored (1=Low to 5=High), summed, and averaged to facilitate comparisons (i.e., LC vs. SRD; absolute vs. comparative). Independent and paired-samples t-tests were conducted to assess (dis)concordance in responses for the total sample as well as by smoking status.

Results: Overall, lung screening patients perceived moderate levels of health risk (M=3.57, SD=.68), although there was variability by smoking status and reference point. Specifically, patients endorsed higher health risk when questions were presented in terms of absolute health risk versus comparative health risk (p < .001). This pattern was true for both current and former smokers (ps < .001). When asked about risk for LC and SRD separately, current smokers perceived lower risk for LC than for SRD's ($p < .001$), while former smokers assessed their risk for both disease groups equally ($p = .29$).

Discussion: While lung screening patients endorsed moderately elevated health risk overall, ratings varied by reference point, smoking status, and disease in question. The significant variability by each of these factors among current and former smokers underscores the heterogeneity of risk perceptions in the context of lung screening, as well as the complexity involved in communicating lung screening recommendations and results.

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Symposium 69D

DO PEOPLE KNOW WHAT THEY SAY THEY DON'T? PRESENCE AND POSITIONING OF DON'T KNOW RESPONSE OPTIONS SHIFT PERCEIVED RISK ESTIMATES

Dr. Marc T. Kiviniemi, BA, PhD

BACKGROUND: People sometimes report not knowing their risk for health problems. Some argue that don't know responses (DKR) reflect satisficing and are essentially error variance. One should therefore discourage DKR by not providing a response option and/or treat DKRs as missing data. Others hold that DKRs are meaningful, reflecting differences in health knowledge and other factors, and should be assessed by including a DKR option. We conducted two online survey studies of US adults to examine evidence for these competing assertions.

METHODS AND RESULTS: In Study 1, absolute and comparative risk for both colon cancer and diabetes was assessed. A DKR option was presented as either the first or last response option. Participants ($N=280$) were more likely to use the DKR option when it was presented first (e.g., for colon cancer absolute risk, DKRs were 10.4% percentage points higher when presented first). For colon cancer, for which more people say they don't know their risk than for diabetes, the means for both types of risk were both significantly higher when DKR was last; both $ts>2.34$, both $ps<.05$. This pattern was also found for diabetes, although differences were not statistically significant. In Study 2, participants ($N=960$) reported absolute and comparative perceived risk for four health problems. Participants received items that either did or did not have a DKR option (placed last). In all risk domains, the DKR option was used when presented, with rates ranging from 3.5% (absolute risk, car crash) to 12.7% (comparative risk, colon cancer). For absolute risk, risk estimates were systematically higher in the DKR provided condition for all four risk domains, Fs<3.78, all ps<.05. For comparative risk, means did not differ by condition.

CONCLUSIONS: These findings cast serious doubt on the idea that one should simply reduce DKRs by not providing an option or treat DKRs as missing data. The differing patterns for diabetes versus cancer (Study 1) and for absolute versus comparative risk (Study 2) also call into doubt the idea that DKRs simply reflect satisficing, as this would predict the same response patterns across domains. The presentation will further explore implications for understanding of lay estimation of health risks and guidance on how to address DKRs in questionnaire development and data analysis.

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Paper Session 33: Cancer in Underserved Populations 3:00 PM-3:18 PM

IMPACT OF INDIVIDUAL AND AREA LEVEL RACE/ETHNICITY ON ILLNESS INTRUSIVENESS AMONG CANCER SURVIVORS

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Illness intrusiveness describes how much a specified disease, such as cancer, disrupts various aspects of someone’s life, including physical wellbeing, work, finances, relationships, and recreational activities. The socioecological model posits that individual health status is simultaneously produced by individual biology and the surrounding physical, social, and cultural environment. Despite evidence of the need to consider these hierarchical influences on cancer outcomes, little is known about the impact of area level factors on cancer-related outcomes, including illness intrusiveness.

Data from 993 breast, colorectal and prostate cancer survivors within the first year of completing active treatment were analyzed. Individual level data for the Illness Intrusiveness Ratings Scale were linked to census tract level data to characterize neighborhood conditions. As components of area indices, area-level race and education were investigated along with corresponding individual factors to study their interactive effect on illness intrusiveness.

232 (23.4%) participants reported relatively high illness intrusiveness (score >28). Education was not a significant predictor of illness intrusion. A model including interaction between area and individual-level race among other individual confounders exhibited significantly improved model fit ($p < 0.05$). The model showed that racial minorities living in areas with a higher percentage of racial minorities had higher odds of having greater illness intrusiveness when compared to Whites living in areas with a low percentage of racial minorities (aOR: 1.65, CI: 1.01, 2.68).

The results of this study suggest a differential effect of area level race composition, often characterized by fewer resources, by individual level race. While this study assesses area-level factors independently, these measures are also components of combined measures such as area deprivation indices. Further research will evaluate our research question using an Area Deprivation Index that is currently being developed. Findings may support the collective resources model which posits that the effect of area deprivation is greater in certain

sociodemographic groups who may find it difficult to seek potentially beneficial resources outside of their living area.

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Paper Session 33: Cancer in Underserved Populations 3:19 PM-3:36 PM

REACHING A HARD TO REACH PATIENT POPULATION: USING A MOBILE TECHNOLOGY-BASED TOOL TO PROVIDE INFORMATION AND SUPPORT

Catherine Benedict, PhD[1], Dave Fuehrer, N/A[2], Brad Love, PhD[3], David Victorson, PhD[4]

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Background: Adolescent and young adult (AYA; 15-39 years old) cancer survivors report an unmet need for emotional and informational support. Instapeer is a mobile app that provides AYAs access to instant, anonymous peer support and cancer information. Users complete a profile and are matched with peers based on self-selected criteria or can participate in unstructured group chats. This study evaluated AYAs' use of the app and preferences for peer-to-peer connection and app-based support.

Methods: In the first 12 months of public launch, 2,343 AYAs representing 44 countries downloaded the app and completed a profile (demographic/medical information, treatment side effects, and psychosocial concerns). A product and user analysis was conducted to evaluate app functioning and user satisfaction including quantitative app metrics and in-depth qualitative user interviews (N=6).

Results: Users were primarily female (74%), single (41%), childless (65%), and post-treatment (54%). Most common diagnoses were lymphoma (21%) and breast (18%). 23 unique treatment side effects and 24 psychosocial concerns were endorsed; 46% of users reported ≥6 side effects and 65% reported ≥6 psychosocial concerns. Users averaged 1,121 interactions per week for a total of 3,595 hours of time spent in the app over 12 months. Group chat rooms represented the majority of total message exchanges; however, users participating in one-to-one messaging appeared to make stronger connections with more frequent message exchanges.Qualitative user feedback centered around 3 primary themes: desire to connect with others of the same age and diagnosis; interest in connecting with peers based on non-medical information (e.g., interests/hobbies, location); and hesitation to connect (i.e., send a request).

Conclusions: Findings provide initial evidence for AYAs' interest and enthusiasm for using an mobile phone app to connect with peers and access support. Features that allow AYAs to connect with peers based on non-medical similarities and for one-to-one communication may be critical. Strategies to facilitate initial connections may also be needed to encourage

connections. App-based support tools may offer a promising approach to reach this underserved patient population. Strategies to promote peer connections and meaningful exchange of support should be explored based on AYAs' preferences and needs. Future research should evaluate whether access to support via this technology leads to improvements in psychosocial outcomes such as perceived support and social isolation.

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Paper Session 33: Cancer in Underserved Populations 3:37 PM-3:54 PM

MATERIAL FINANCIAL HARDSHIP AND LIMITING CARE DUE TO COST IN A MULTI-RACIAL COHORT OF CANCER SURVIVORS

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Background: Nearly one-third of cancer survivors in the United States experience financial hardship due to cancer. We examined whether experiencing material financial hardship was associated with limiting care due to cost among cancer survivors in Metropolitan Detroit.

Methods: Data from the Detroit Research on Cancer Survivorship (ROCS) cohort include responses from 682 (275 white, 407 black) adults (ages 27-79) diagnosed with a first primary breast, colorectal, lung, or prostate cancer since January 1, 2013 and diagnosed or treated at the Karmanos Cancer Center. Material financial hardship included experiencing a decrease in income, borrowing from friends or family, remaining in debt, or accessing existing assets (refinancing/selling a home, selling investments, withdrawing money from savings or retirement) due to cancer. Limiting care included skipping doses of medication to save money or refusing treatment or needing to see a doctor but not going due to cost. Logistic regression tested the association between material financial hardship and limiting care, adjusting for age, sex, race, marital status, income, education, health insurance, employment, cancer site, and treatments received. Effect modification by race was assessed.

Results: Overall, 49% of participants experienced material financial hardship, and 19% reported limiting care due to cost. In adjusted analyses, survivors who experienced material financial hardship were more than six times as likely to limit care (OR: 6.6, 95% CI: 3.7, 11.5). This association was strongest for participants who borrowed money from friends or family (OR: 8.8, 95% CI: 6.6, 16.8) and remained in debt (OR: 5.6, 95% CI: 3.4, 9.1); however, accessing existing assets (OR: 2.9, 95% CI: 1.6, 5.2) and experiencing a decrease in income (OR: 2.8, 95% CI: 1.7, 4.5) were also strongly associated with limiting care due to cost. Marginal effect modification was detected by race, suggesting that the association between any material financial hardship and limiting care may be stronger among black (OR: 10.0, 95% CI: 4.8, 21.0) than white survivors (OR: 3.5, 95% CI: 1.3, 9.6; $P_{interaction}$=0.10).

Conclusion: Cancer survivors who experienced material financial hardship were much more likely to report limiting care due to cost than those who did not. Left unaddressed, the impact of material financial hardship may exacerbate health disparities and lead to worse outcomes across U.S. cancer survivor populations.

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Paper Session 33: Cancer in Underserved Populations 3:55 PM-4:12 PM

CHANGE IN SOCIAL SUPPORT IN AFRICAN AMERICAN BREAST CANCER PATIENTS AFFECTS DEPRESSED MOOD AND GENERAL HEALTH

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Higher perceived social support is associated with better psychological and quality of life outcomes in breast cancer patients. Less is known about how changes in social support affect these outcomes in patients. We interviewed 227 African American women with non-metastatic breast cancer (72% early stage; 58% annual income < $25,000; 27% married/partnered; mean age 56, range 33-81 years) in a randomized controlled trial of a culturally tailored intervention using breast cancer survivor stories. Demographic and psychosocial interview data were collected at baseline, 1 month later, and then 6 months, 1 year, and 2 years after definitive surgical treatment. Mean Center for Epidemiologic Studies-Depression Scale (CES-D) score was 11.9 (*SD* = 11.4) at baseline and 11.1 (*SD* = 12.1) at 2 years; mean RAND 36-item general health subscale score was 59.1 (*SD* = 22.4) at baseline and 54.7 (*SD* = 22.9) at 2 years. An unconditional growth curve model estimated the intercept (estimated starting point) and slope (change over time) of perceived social support (19-item Medical Outcomes Study Social Support Survey) from baseline through 1-year follow-up after definitive surgical treatment. Two separate growth curve models then used this intercept and slope of social support over the first year after surgery to predict depressed mood and perceived general health 2 years after surgery. Models that controlled for the baseline measure of the outcome of interest showed good fit (CFI/TLI > .99, RMSEA ≤ .01, SRMR = .04). Patients who had lower estimated starting points of social support or experienced declines in social support in the first year after definitive surgical treatment reported higher depressed mood and lower perceived general health at 2-year follow-up. These results held after controlling for demographic and cancer-related variables. Thus, declines in social support in the first year after a breast cancer diagnosis had negative consequences a year later for African American women in terms of mental and general health. Screening for availability of social support at diagnosis and monitoring support levels during and after treatment could help patients with low or declining social support receive support services and psychological intervention as needed.

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Paper Session 33: Cancer in Underserved Populations 4:13 PM-4:30 PM

PSYCHOLOGICAL DETERMINANTS OF EHEALTH ACTIVITY AMONG AFRICAN AMERICAN AND WHITE CANCER SURVIVORS: A NEW APPLICATION OF THEORY

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eHealth is a promising resource for cancer survivors coping with their physical, psychosocial, and economic needs, and it may play an especially important role in reducing racial disparities in cancer survivorship. The current research is a preliminary examination of associations between beliefs about eHealth and reported eHealth activity. This is part of an ongoing study using a mixed-method design to assess eHealth activity among African American and white cancer survivors in the metropolitan Detroit area. The study assesses 17 eHealth activities spanning 5 categories—information seeking, connecting with informal support, connecting with healthcare providers, managing health, and medical transactions. We drew from the Unified Theory of Acceptance and Use of Technology, which suggests the adoption of new technology can be predicted by beliefs about its ease of use, usefulness, and social acceptability. We adapted the model to relate to use of technology for health-related reasons and extended it to include belief in the security of online health services. In a sample of African American (n=53) and white (n=34) survivors, we tested whether attitudes about ease (3-items, α=.80), usefulness (3-items, α=.94), social acceptability (4-items, α=.77), or security (3-items, α=.85) of eHealth were associated with eHealth activity, controlling for social-structural determinants (i.e. age, education, access to internet). The sample was comprised of primarily older adults (mean age=59, SD=10.37) and survivors of breast cancer (n =67). There was significantly less eHealth use among African American (M=4.37, SD=3.13) than white survivors (M=7.97, SD=3.19; $t(83)$=5.14, p < .001). The belief that eHealth was useful was positively associated with eHealth activity among both African American (r=.36, p=.02) and white survivors (r=.36, p=.05). Belief that eHealth was socially acceptable was associated with increased activity for African American (r=.28, p=.05), but not white survivors (r=.16, p=.41).

Beliefs in the ease and security of eHealth were not associated with use for members of either group (*r*s < .10, *p*s>.10). These results suggest interventions aimed at adjusting attitudes about eHealth may be effective in encouraging the adoption and use of this promising resource. Furthermore, the particular attitudes associated with eHealth activity differ across racial groups, suggesting targeted interventions may be most effective in encouraging eHealth use among cancer survivors.

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Paper Session 34: Novel Tools to Support Digital Health 3:00 PM-3:18 PM

DEVELOPING AUDIENCE PERSONAS THROUGH WEB ANALYTICS TO INFORM HEALTH PROMOTION AND OUTREACH

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Introduction: One of the greatest health communication challenges is understanding target audiences and developing content that meets their needs. In an environment where acquiring detailed marketing data is often cost-prohibitive and secondary data is often too broad, gaining detailed insights about the target audience can be difficult. The goal of this study was to systematically develop audience personas using website usage, demographic, and engagement data from Google Analytics to describe users of Smokefree.gov. Smokefree.gov is the National Cancer Institute’s digitally based smoking cessation program with a presence on a number of different platforms (e.g., web, social, text, app). Persona development is a foundational activity for digital health programs. When appropriately established, personas represent key audience segments which can be used to inform promotional decisions, optimization or content for specific browsers or devices, tailoring content, and overall outreach activities.

Methods: The current project utilized custom development work within Google Analytics to identify a number of user characteristics, including age, gender, geographic location, content needs, device preference, and browser preference, in order to build specific Smokefree personas. Data was collected from January 1, 2016-August 1, 2016, encompassing over 1.1 million visitors to Smokefree.gov.

Results: We identified 4 unique types of Smokefree.gov personas: 1) General website users, 2) Users entering the site through social media, 3) Users who downloaded the Smokefree mobile applications, and 4) Users entering the site through the SmokefreeTXT program. These persona groups differed in a number of ways, mainly their engagement levels with the website and the devices used to access the content. For example, Group 1 General website users were younger (age 18-24 (29%)), found the site through an organic search using terms such as “how to quit smoking,” and visited an average of 1.23 pages, with the “nicotine withdrawal” page being the most popular. In contrast, Group 4 visitors from SmokefreeTXT were slightly older (25-34), entered the site using an iPhone, landed on the QuitGuide mobile app page, and visited an average of 2.14 pages.

Conclusion: Personas such as these will enable us to create smoking cessation content that meets the specific needs of various users, is relevant to their lived experiences, and provides the means to better target outreach activities moving forward. Specifically, Smokefree can highlight specific resources and content on different channels based on findings from the personas, re-target promotional efforts to users who more align with the personas, and create new content based on the characteristics of various user types.

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Paper Session 34: Novel Tools to Support Digital Health 3:19 PM-3:36 PM

DEVELOPMENT OF THE MOBILE PHONE AFFINITY SCALE: ASSESSING PERSON'S RELATIONSHIP TO THEIR MOBILE PHONE

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Background: Existing instruments that assess an individual's relationship with mobile phones tend to focus on negative constructs such as "addiction" or "dependence" and appear to assume that high mobile phone and technology use reflects pathology. Since mobile phones can be beneficial for health behavior change, disease management, work productivity and social connections, there is a need for an instrument that provides a more balanced assessment of the various aspects of individuals' relationship to their mobile phones.

Objective: The purpose of this research is to develop, revise, and validate the Mobile Phone Affinity Scale (MPAS), a multi-scale instrument designed to assess key factors associated with mobile phone use.

Methods: Participants (N = 1058; mean age = 32.5, SD=10.3; 50% female) were recruited in a national sample using Amazon Mechanical Turk (MTurk) to complete a survey that assessed participants' attitudes and use patterns regarding their mobile phone, as well as assessments of anxiety (State-Trait Anxiety Inventory), depressive symptoms (Centers for Epidemiological Studies Depression Scale), impulsivity (Barratt Impulsiveness Scale) and resilience (Brief Resilience Scale).

Results: Confirmatory factor analysis was used to develop a six-factor model. The final model fit well (RMSEA = .059, CFI = .941, TLI = .931, SRMR = .042), and consisted of 24 items (4 items each) measuring six factors: Connectedness, Productivity, Empowerment, Anxious attachment, Addiction, and Continuous use. The subscales demonstrated strong internal consistency (coefficient alpha range = 0.76 to 0.88, M = 0.83), and high item factor loadings (range = 0.57 to 0.87, M = 0.75). Validity analyses further demonstrated support for the individual subscales. For example, Attachment and Addiction subscales were significantly and

positively correlated with symptoms of depression and anxiety, and correlated negatively with resilience, while Productivity was positively correlated with resilience.

Conclusions: The Mobile Phone Affinity Scale (MPAS) is a reliable, valid assessment of both positive and negative characteristics associated with the individual's relationship to their mobile phone. Mobile phone affinity may have an important impact on the efficacy and effectiveness of mobile health interventions. However, research is needed to assess its predictive ability in health behavior change interventions delivered through mobile phones.

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Paper Session 34: Novel Tools to Support Digital Health 3:37 PM-3:54 PM

E-EMBRACERS, WARY WEARERS, AND DATA DODGERS: PROFILES OF DIABETES DEVICE USERS

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Background: Diabetes devices (insulin pumps, continuous glucose monitors-CGM) are associated with improved health outcomes and quality of life in adults with type 1 diabetes (T1D). Rates of device uptake, particularly CGM, are low. This study aimed to understand profiles of adults with T1D in relation to device use and attitudes to ultimately inform tailored interventions to address barriers and increase device uptake among each group.

Methods: Participants were 1503 T1D Exchange participants (M±SD age 35.3±14.8 yrs; dx duration 20.4±12.5 yrs) who completed surveys on barriers to uptake, diabetes distress, and technology attitudes. Clinical data available from the T1D Exchange included device use and health outcomes (glycemic control). K-means cluster analyses were used to group the sample by barriers to device use and technology attitudes. ANOVAs and chi-square tests assessed differences among groups by demographic and psychosocial variables (e.g. hypoglycemia worry, diabetes distress).

Results: Cluster analyses yielded four distinct profiles. The *e-Embracer*s (n=712) endorse few barriers to device use and have the highest rates of device use, lowest levels of distress, and lowest A1c (M±SD=7.3±1.1). *Data Dodgers* (n=170) have the lowest CGM use. The barrier that most differentiated them was not wanting more diabetes data. *Off-the-Grid-ers* (n=444) have the most negative technology attitudes and endorse average levels of barriers to device use. *Wary Wearers* (n=177) have the lowest overall device use, are the youngest, and have shortest T1D duration. They do not want attention or daily hassle of devices, are most distressed and worried about hypoglycemia, and have highest average A1c (M±SD=8±1.6). Cost, a commonly endorsed barrier to using devices, did not distinguish among groups.

Conclusion: *Off-the-Grid-ers* may benefit from addressing attitudes toward diabetes technology; *Data Dodgers* may benefit from increasing comfort with handling diabetes-related information. *Wary Wearers* may benefit from comprehensive psychosocial intervention targeting diabetes distress and hypoglycemia worries along with issues related to

wearing devices and having other people notice them. These profiles will help clinicians to identify adults with T1D needing each intervention to ultimately increase device uptake.

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Paper Session 34: Novel Tools to Support Digital Health 3:55 PM-4:12 PM

HABIT APP: FEASIBILITY OF A WEIGHT LOSS PROBLEM SOLVING APP

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A behavioral strategy employed in virtually every visit of weight loss counseling but not yet included in weight loss mobile apps is problem solving. Problem solving is a process used to identify barriers to a goal and generate solutions to be iteratively attempted until barriers are overcome. We developed an app that employs Nezu's problem solving algorithm to produce expert-derived solutions to diet and exercise problems. Each problem solving session on the app produces a list of solutions or "habits." The user selects a habit and then schedules reminders to execute the habit during the week. We performed a pilot study to evaluate the feasibility of the Habit app.

Adults who were overweight or obese were enrolled in an 8-week intervention that included the Habit app and support via a private Facebook group. Participants were instructed to use Habit app weekly to identify 1-2 habits to work on. In the Facebook group, a counselor emphasized the importance of trying new habits to overcome weight loss challenges, asked them to share weekly habit goals and accomplishments, and encouraged dietary self-monitoring. Problem solving skills were measured with the Social Problem Solving Inventory-R at baseline and follow-up.

Participants (N=27) were on average 37.2 (sd=11.6) years old, baseline BMI of 31.1 (sd=4.6), 67% female, and 85% non-Hispanic white. Three participants dropped out (88% retention). Of the 41 diet and exercise challenges identified by participants, only 3 were not addressed in the app. Participants reported using the Habit app on an average of 7.1 weeks (sd=1.7). Higher baseline positive problem solving scores were associated with greater use of the app ($r= .414$, $p=0.04$), but no changes were observed in positive problem solving over 8 weeks ($p=0.27$) Participants lost on average 0.20% (sd=0.03%) per week ($p=0.004$), comparable to 0.28% in the Diabetes Prevention Program Lifestyle Intervention.

The Habit app addressed the majority of participants' weight loss challenges, was used on most weeks, but did not improve problem solving skills. In an ongoing pilot, Habit app is being delivered with brief problem solving training to better impact problem solving skills. Data from the ongoing pilot will also be presented.

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Paper Session 34: Novel Tools to Support Digital Health 4:13 PM-4:30 PM

EMBRACING ITERATION GUIDED BY MIXED METHOD EVALUATION DURING MHEALTH CLINICAL TRIALS

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mHealth strategies are increasingly used in clinical intervention research, yet much remains unknown regarding optimization of engagement in interventions delivered by mobile phones. Although formative work is often involved in intervention design, many interventions and smartphone applications are not modified based on feedback after launch of a traditional RCT. As previous research has supported, mHealth app use declines 40-50% over time. To reasonably expect long term engagement, researchers must identify ways to initiate and sustain engagement of the app user. Concepts from design research may be used to evaluate engagement, receive feedback, and make modifications that positively affect engagement and thus, outcomes. The NUYou Study enrolled 150 freshmen students, in its first year, for a 2-year cardiovascular health promotion study. The purpose of this work was to systematically evaluate recruitment and engagement strategies to iterate key trial components, like the NUYou smartphone application, push notification recommendation system, and social media groups. Potential participants not enrolled in the trial (n=365) were surveyed about the effectiveness of advertisement and initial engagement initiatives. Enrolled participant (n=150) app use was continuously monitored via app log data 6 months after recruitment opened, and users were interviewed during the trial. While 98% of potential participants recognized and recalled aspects of the study, only 7% of the total target population enrolled in the trial. Significant barriers included lack of time and being too busy. App monitoring indicated that although 14% of the sample used the app consistently, great variability existed in the amount and length of continued use of the application, pointing to issues with sustained engagement. Surveys found that although 55% indicated agreement that the app was relevant to their health goals, 21% indicated agreement that the app helped achieve goal attainment. Qualitative interviews revealed that students generally liked reminding features, that the app was easy to use, and that further personalization could help them reach health goals. Results were applied to inform further iteration of features to optimize engagement in the intervention and the smartphone application. Specifically, small daily incentives, additional tracking of stress, happiness, and cognitive performance, and dynamic data visualization were

added to the trial for continuing and new participants in year 2. Opportunities to maximize learning and optimization during mHealth clinical trials are essential to behavior science and as such, potential methods and impact are discussed.

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Paper Session 35: Stress, Pain and Fatigue in Cancer Survivors 3:00 PM-3:18 PM

MINDFULNESS-BASED STRESS REDUCTION FOR FATIGUED CANCER SURVIVORS: EFFECTS ON MINDFULNESS, ACCEPTANCE, AND SELF-COMPASSION

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Mindfulness-based stress reduction (MBSR) has resulted in reduced physical and psychological symptoms in cancer populations, but little is known about theory-based psychological processes through which mindfulness-based interventions may decrease symptoms. In the present trial of MBSR for fatigued cancer survivors, mindfulness, acceptance, and self-compassion were psychological processes theorized to play a role in symptom outcomes. This trial randomized 35 cancer survivors with clinical levels of cancer-related fatigue (CRF) to either a 7-week MBSR intervention for CRF or a waitlist control condition. We hypothesized that the MBSR group would show increases in one aspect of mindfulness (i.e., non-reactivity), acceptance, and self-compassion relative to controls.

The majority of participants were White (80%), female (94%), and college educated (71%) with an average age of 57 years (*SD* = 9.3). Participants were primarily diagnosed with early-stage breast cancer (80%), and all had completed cancer treatment at least 9 months prior to enrollment. All 35 participants completed assessments of mindfulness, acceptance, and self-compassion at baseline, immediately post-intervention, and 1-month follow-up.

Three linear mixed models were conducted to examine main effects of time, study group, and the time x group interaction on mindfulness, acceptance, and self-compassion. A significant effect of study group in favor of MBSR was found for non-reactivity ($F(1,33)=9.46$, $p=.004$) and acceptance ($F(1,33)=5.75$, $p=.022$). A significant time x group interaction ($F(2,66)=5.80$, $p=.005$) was found for self-compassion, such that the MBSR group showed a steady increase in self-compassion, whereas the control group's scores remained relatively stable.

Findings suggest that MBSR for fatigued cancer survivors leads to increased levels of mindfulness, acceptance, and self-compassion. Further research is needed to examine whether these psychological processes mediate the effects of MBSR on symptom outcomes during cancer survivorship.

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Paper Session 35: Stress, Pain and Fatigue in Cancer Survivors 3:19 PM-3:36 PM

CITATION AND MERITORIOUS AWARD WINNER

CANCER-SPECIFIC STRESS AND ABSOLUTE LYMPHOCYTE COUNT TRAJECTORIES IN PATIENTS WITH CHRONIC LYMPHOCYTIC LEUKEMIA

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Chronic stress has been commonly observed in cancer patients and is associated with immune system down regulation. The effect of stress on immunity in hematologic cancers such as chronic lymphocytic leukemia (CLL) has not been studied despite the role of immune system dysfunction in CLL's pathogenesis. In a phase II clinical trial, 154 patients with relapsed/refractory CLL received ibrutinib and provided blood samples and completed a self-report measure of psychological stress specific to cancer over an 18-month treatment period (nine assessments). Targeted treatments like ibrutinib have been effective in reducing disease progression in CLL despite the occurrence of lymphocytosis, which is an increase in absolute lymphocyte counts (ALC) and has previously been regarded as a marker of active disease. Controlling for demographic, health status, number of prior treatments, and CLL genetic risk (del17p) factors, random changepoint models were estimated to evaluate the impact of stress on ALC trajectories. Stress was associated with pretreatment ALCs (β_0 = 0.13; 95% CI = 0.02, 0.25) but did not impact the timing of lymphocytosis (δ_{x1}= 0.03, CI = -0.15, 0.22), or the ALC trajectory before (β_{x1} = -0.11, CI = -0.23, 0.01) and after (o_{x1}=0.10, -0.01, 0.22) lymphocytosis. Stress affects pre-treatment ALC such that a 10% increase in stress results in a 1.3% increase in ALC. However, stress has little impact on ALC trajectories after beginning drug therapy. Additional analysis showed that lymphocytosis occurs later in the treatment trajectory for individuals classified as drug non-responders compared to responders at 18-months (δ_{x2} = -0.89; CI= -1.48, -0.30). However, there are a variety of ways a patient can exhibit lymphocytosis (e.g. lymphocytosis before ibrutinib administration or treatment-induced lymphocytosis) and it is unclear whether the mechanism of lymphocytosis or specific ALC trajectories can predict treatment response. Overall, results suggest that while stress increases pre-treatment ALC, patients exhibit similar ALC trajectories after treatment initiation. Future trials may assess whether clinical, demographic, or other psychological risk factors can predict ALC trajectories or treatment responses. The current study provides a novel way to provide knowledge of how psychological stress impacts disease trajectories in patients undergoing a new cancer therapy.

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Paper Session 35: Stress, Pain and Fatigue in Cancer Survivors 3:37 PM-3:54 PM

OMEGA-3 VERSUS OMEGA-6 SUPPLEMENTATION FOR CANCER-RELATED FATIGUE: EXAMINING INFLAMMATORY AND ANTI-OXIDANT PATHWAYS

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Background: Cancer-related fatigue (CRF), one of the most troublesome side effects of cancer and its treatment, is associated with increased levels of inflammation. We conducted a nationwide, multi-site, phase II RCT through the URCC NCORP Research Base to examine the effect of omega-3 supplementation (ω-3) from fish oil versus omega-6 supplementation (ω-6) from soybean oil for improving CRF. ω-3 was chosen for its anti-inflammatory properties while ω-6 was chosen as a control condition.

Methods: Breast cancer survivors between 4-36 months post-adjuvant therapy with a CRF level of 4 or greater (on a 0-10 scale) were stratified by baseline CRF (4-6: moderate and 7-10: high) and randomized into 3 arms: 1) High-dose ω-3 (ω-3; 6 g/day), 2) Low-dose ω-3/Low-dose ω-6 (ω-3/ω-6; ω-3: 3 g/day and ω-6: 3 g/day) and 3) High-dose ω-6 (ω-6; 6 g/day) for 6 weeks. CRF was assessed pre- and post-intervention via the Symptom Inventory (SI). Serum protein and RNA levels of inflammatory (PGE2, sTNFRI, sTNFRII, and CRP) and anti-oxidant (SOD2) markers were also measured at pre- and post-intervention. ANCOVAs assessed associations between changes in CRF and biomarker levels.

Results: 108 female breast cancer survivors were accrued (93% Caucasian, mean age = 59.8). Mean baseline CRF levels did not differ between groups and serum levels of fatty acids confirmed high compliance in all study arms with minimal contamination. After controlling for baseline CRF, ω-6 supplementation significantly improved CRF in a dose-response manner (SI Change score: ω-3 = -2.5 vs. ω-3/ω-6 = -2.1 vs. ω-6 = -0.9; Cohen's δ=0.72; p=0.02). ω-3 supplementation failed to significantly reduce markers of inflammation, potentially due to low baseline levels of inflammation. RNA levels of SOD2 significantly increased in the ω-6 group (Cohen's δ=0.48; p=0.02), while there was a trending increase in SOD2 protein levels for the ω-6 group compared to the ω-3 group (Cohen's δ=0.22; p=0.17). RNA levels of PGE2 declined significantly (Cohen's δ=−0.78; p‹0.01) for the ω-6 group, but there was no change in PGE2 protein levels (p=0.21).

Conclusions: ω-6 supplementation from soybean oil significantly reduced CRF compared to ω-3 supplementation in breast cancer survivors. These findings are contrary to our hypothesis and provide new information on the mechanisms underlying CRF. ω-6 supplementation resulted in a subtle anti-inflammatory effect, with a more pronounced anti-oxidant effect, providing a potential mechanism of action. Future studies are needed to confirm these findings. Funding: NCI UG1CA189961 & R03CA175599. Nordic Naturals, Inc. supplied all study agents.

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Paper Session 35: Stress, Pain and Fatigue in Cancer Survivors 3:55 PM-4:12 PM

THE ROLE OF ILLNESS PERCEPTIONS IN CANCER-RELATED FATIGUE OUTCOMES IN OVARIAN CANCER PATIENTS

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Background: Cancer-related fatigue (CRF) is one of the most common and debilitating symptoms reported by cancer patients (Jensen et al., 2011). Factors implicated in the severity of CRF include cancer treatment, age, and pain (e.g., Anderson & Hacker, 2008). Research suggests that ovarian cancer (OC) patients may be at greater risk for the development of CRF, compared to other cancer populations (Payne, 2002), yet little research has examined the factors contributing to CRF in OC. One factor that may contribute to fatigue variability is the impact of patient illness perceptions (IPs; Leventhal et al., 1980) related to the diagnosis of cancer and treatment. Using Leventhal's Common Sense Model (CSM), this study examined the role of IPs (i.e., illness identity, timeline—chronicity and cyclicality, consequences, personal and treatment controllability, and coherence) on fatigue severity in patients with OC.

Method: Women with OC (N=265) were recruited from the Princess Margaret Hospital in Toronto. Participants completed the following self-report questionnaires: Illness Perception Questionnaire-Revised (Moss-Morris et al., 2002); Brief Pain Inventory (Cleeland & Ryan, 1994); and Functional Assessment of Chronic Illness Therapy Fatigue Scale (Cella et al., 2005). Controlling for three factors commonly associated with CRF: age, cancer treatment, and pain severity, a two-step hierarchical regression examined the impact of IPs on fatigue severity.

Results: Step one of the hierarchical regression was significant, $F(4,184) = 21.12$, $p < .001$; only pain severity ($\beta = -.43$, $p < .001$) was significantly associated with more fatigue severity. The overall model in step two was significant, $F(10,178) = 12.65$, $p < .001$. Out of the six IPs included in the model, greater endorsement that cancer is cyclical in nature ($\beta = -.13$, $p < .05$), and endorsement of significant consequences associated with OC ($\beta = -.22$, $p < .001$) were associated with greater fatigue severity, predicting an additional 10.1% of the variance in fatigue, $F(6,178) = 5.12$, $p < .001$. The total model accounted for 38.2% of the variance in fatigue severity.

Discussion: This is the first examination of the full array of Leventhal's illness perceptions in association with CRF. Believing that one's cancer has serious negative consequences on one's life and that it is likely to recur appears to be associated with intensified fatigue. These data provide partial support for the CSM in understanding CRF.

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Paper Session 35: Stress, Pain and Fatigue in Cancer Survivors 4:13 PM-4:30 PM

A RANDOMIZED PILOT TRIAL OF AN MHEALTH PAIN COPING SKILLS TRAINING INTERVENTION FOR HEMATOPOIETIC STEM CELL TRANSPLANT PATIENTS

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Pain is common and persistent among patients following Hematopoietic Stem Cell Transplant (HSCT) and associated with decreased quality of life. Current behavioral cancer pain interventions have limited reach among HSCT patients who, after weeks of intense medical care, are discharged home often far from the hospital. To address the unique needs of these patients, we developed a home-based mobile pain coping skills training (mPCST) protocol. A small RCT was conducted to test the feasibility and acceptability of the protocol and examine intervention-related changes in pain, pain self-efficacy, pain disability, fatigue, and physical disability. Participants were randomized to mPCST (n=18) or usual care (n=18). mPCST bridged hospitalization (1 session) and home (5 video-conferencing sessions) using CBT skills (e.g., relaxation, cognitive-restructuring, activity pacing/planning); a website with personalized messages was used. Participants completed assessments at pre- and post-treatment. mPCST participants completed M=4.9/6 sessions. Skill use increased over time, and participants found sessions to be helpful, easy to understand, highly acceptable, and rated the intervention to be good or excellent overall. mPCST participants evidenced significant improvements in pain self-efficacy and the two-minute walk test; the usual care arm did not. Both groups experienced significant improvements in pain disability and fatigue; however, the magnitude of the effect sizes were greater for the mPCST arm. Participants in both arms evidenced significant improvements on a self-report measure of physical disability. There were no significant changes in pain. The results demonstrate that an mPCST protocol tailored to meet the needs of HSCT patients is feasible and acceptable. Many HSCT patients have pain that varies over time; patients who improve their pain coping skills may be better able to manage pain and decrease pain-related disability and interference. Psychosocial interventions that increase pain self-efficacy and decrease pain disability may lead to improved outcomes for HSCT patients. Longitudinal studies are necessary to examine the long-term implications of the observed improvements in pain self-efficacy on patient outcomes.

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Paper Session 36: Translation of Interventions in Disease Prevention and Management 3:00 PM-3:18 PM

TRANSLATING RESEARCH INTO PRACTICE FOR HEALTH: A COMMUNITY-BASED, LIFESTYLE INTERVENTION FOR ADULTS WITH TYPE 2 DIABETES

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Background: At least 1 out of 3 people will develop type 2 diabetes in their lifetime and risk of death is 50% higher for adults with diabetes than for adults without diabetes. The LookAHEAD study of over 5,000 overweight patients with type 2 diabetes showed that participants in the intervention program lost more weight and had improvements in urinary incontinence, sleep apnea, depression, quality of life, physical functioning, and mobility. However, the Look AHEAD intervention is not currently available on a population scale, because the approach is prohibitively costly and difficult to translate into real-world settings.

Methods: Working with primary-care providers between January 2013 and July 2014, we enrolled 331 adults with BMI ≥24 kg/m^2 and prior diagnosis of type 2 diabetes from two ethnically diverse Chicago area neighborhoods into the study. Participants were randomized to: (1) brief lifestyle counseling with nearby community resource information; or (2) brief lifestyle counseling plus encouragement to participate in a group-based adaptation of the LookAHEAD program offered in both English and Spanish languages, free-of-charge by the YMCA. The primary outcome was mean difference in body weight at 12 months. Secondary outcomes included changes in HbA1c, cholesterol, and blood pressures. Interim intent-to-treat (ITT) analyses accounted for clustering of longitudinal patient-level data and imputed missing follow-up data.

Results: At baseline, participants had a mean (SD) age of 57.4 ± 11.4 years, BMI 35.6± 7.6 kg/m2, HbA1c 7.22 ± 1.25%. Approximately half (50.2%) were women, 30.5% were African American, 34.4% were non-Hispanic White, and 27.5% were Hispanic. Approximately one third (38.9%) reported annual household incomes of < $25,000. Overall, 75 participants (45.7%) participated in at least 1 intervention session. In ITT analysis, the average effect of randomization to GLI encouragement was -1.58 pounds per six months (95% CI, -2.83 to -0.34; P=0.01). Over the 12-month follow-up period, this effect equates to an additional 3.16 pounds of weight loss. Mean weight losses of non-Hispanic white, African American, and Hispanic participants were not statistically significantly different.

Conclusions: Delivery of a group adaptation of the LookAHEAD program by YMCA’s suggests a

scalable lower cost mechanism to help a diverse, predominantly low-income adults with type 2 diabetes lose a modest amount of weight. Health care reform models and reimbursement policies should include access to community-based intensive healthy lifestyle interventions to translate interventions into practice.

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Paper Session 36: Translation of Interventions in Disease Prevention and Management 3:19 PM-3:36 PM

CITATION AWARD WINNER

CAN A PEDOMETER-BASED WALKING PROGRAM LOWER HEALTH CARE COSTS AMONG ADULTS WITH TYPE 2 DIABETES?

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Physical inactivity is associated with higher health care utilization and costs among adults with diabetes. Pedometer-based walking interventions have been shown to be effective in increasing physical activity for diabetics, but the effect on health care utilization and costs is unclear. This study examines how an incentivized pedometer-based walking intervention impacts both physical activity and health care costs for adults with diabetes.

In 2009, Blue Cross Blue Care Network enrollees with a body mass index (BMI) of 30 kg/m^2 or greater were given a choice to join an internet-mediated pedometer-based walking program (Walkingspree). Participation was financially incentivized because individuals could potentially save an estimated 20% of out-of-pocket expenses by uploading their step count data at least once every 30 days to the program website and averaging at least 5000 daily steps every three months. The pedometer assessed both total daily steps and aerobic steps, measured as continuous steps for at least 10 minutes. A multiple linear regression analysis determined the impact of average daily steps and aerobic steps on the change in health care costs after one year, controlling for diabetes status, age, gender, body mass index, length of program participation and other comorbidities.

Of the 7,594 WalkingSpree participants, 15 percent had diabetes. On average, every 100 daily steps were associated with a $9.07 decrease in health care costs (p=0.049). Among participants with a mean of 5000 daily steps, predictive margins show the average person without diabetes experienced cost savings of -$441.93 (p=0.004). In comparison, those with diabetes averaged increased costs ($872.67, p < 0.001), particularly for those with diabetes with complications ($2491.88, p < 0.001). However, these costs decreased for every 100 daily steps.

Greater daily steps are associated with decreased total health care costs for all three groups, but there was a nonlinear differential effect by diabetes status. Further investigation is needed to better understand the relationship between step counts and health care costs for diabetics, especially those with more serious complications. Although people with diabetes may incur greater health care costs, daily steps may help to slow these increased costs over time.

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Paper Session 36: Translation of Interventions in Disease Prevention and Management 3:37 PM-3:54 PM

EFFECTIVENESS OF AN OBESITY TREATMENT APP WITH PROVIDER COUNSELING FOR MEDICALLY VULNERABLE PATIENTS IN PRIMARY CARE PRACTICE:

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INTRODUCTION: Obesity treatment is less successful for those in medically vulnerable populations. These disparities extend to treatments delivered in the primary care setting, where there is little evidence that we can produce clinically meaningful weight loss among populations who have the greatest obesity risk.

OBJECTIVE: We examined whether obesity treatment app, combined with counseling from a primary care provider and a dietitian, could outperform weight losses produced by usual care among medically vulnerable primary care patients.

METHODS: Track is a 12-month randomized controlled trial of a digital health weight loss intervention in a community health center system. Participants were 351 adults (aged 21-65) with obesity and a diagnosis of hypertension, diabetes, and/or hyperlipidemia. We randomized participants to usual primary care or the 12-month Track intervention which comprised: algorithm-generated tailored behavior change goals, weekly self-monitoring via mobile technologies, daily self-weighing using a network-connected scale, skills training materials, and 18 counseling phone calls with a dietitian. Primary care providers delivered counseling to intervention participants using electronic-health record-based recommendations generated by the Track app. The primary outcome was weight change over 12 months.

RESULTS: Participations (n=337) were largely female (69%) and non-Hispanic Black (52%), with a mean age of 50.6 years and a mean body mass index of 35.9 kg/m^2. Most (90%) had less than a college degree, 32% were unemployed, and half (52%) were living under or near the poverty line. The Track intervention produced larger weight losses than usual care at 6- (net effect: -4.4 kg, 95% CI [-5.5, -3.3], P < .0001) and 12-months post-randomization (net effect: -3.8 kg, 95% CI [-5.1, -2.5], p < .0001). Intervention participants (n=170) completed a median 93.2% (IQR: 54% to 100%) of weekly self-monitoring via mobile device and a median 89% (IQR: 50% to 100%) of counseling calls. Intervention participants were more likely to lose 5% or more of their baseline weight at 6- (43% vs. 6%, p < .0001) and 12-months (40% vs. 17%, p < .0001) post-randomization.

DISCUSSION: We can effectively treat obesity among medically vulnerable patients in community health centers using a scalable, low cost, digital treatment that both informs and optimizes provider counseling.

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Paper Session 36: Translation of Interventions in Disease Prevention and Management 3:55 PM-4:12 PM

PROVIDER COUNSELING IS ASSOCIATED WITH INCREASED WEIGHT LOSS IN A PRIMARY CARE-BASED DIGITAL HEALTH WEIGHT LOSS INTERVENTION

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Background: Digital health weight loss interventions offer substantial promise for addressing obesity in primary care. Primary care providers may play an important auxiliary role in these treatments by counseling patients to stay engaged in treatment. **Methods**: This is a secondary analysis of Track: a randomized clinical trial testing a 12-month digital health behavioral weight loss intervention delivered at community health centers compared to usual care. At 6 and 12 months, participants reported whether their providers counseled them about weight generally (general weight counseling) or specifically about intervention participation (intervention counseling) at their most recent clinic visit, as well as their perceptions of providers' empathy. Weight was also collected at these times points. We used adjusted linear regression models to compare differences in weight outcomes based on provider counseling among intervention participants (no counseling vs. general weight counseling only vs. intervention counseling) and separately among usual care participants (no counseling vs. general weight counseling). **Results:** Study participants were 69% female, 52% Black, and had a mean age of 51 years and BMI of 36 kg/m^2. Intervention participants (6 month, n=119; 12 month, n=115) and usual care participants (6 and 12 months, n=124) reported similar likelihood of receiving any counseling from providers at 6 months (75.6% vs. 69.8%, p=.31) and 12 months (72.2% vs. 66.9%, p=.38). Provider counseling reported at 6 months was not associated with weight change at 6 or 12 months among intervention participants, p>.05. However, provider counseling reported at 12 months was associated with weight change among intervention participants; those receiving intervention counseling lost more weight

than those receiving general weight counseling only (adjusted M_{diff} = 4.1 kg, 95% CI [0.2, 7.9], *p*=.04) and no counseling (adjusted M_{diff} = 4.4 kg, 95% CI [0.04, 8.9], *p*=.047). Among intervention participants only, perceptions of provider empathy reported at 12 months was associated with 12 month weight loss, *b*=-0.13 kg, t(110)=2.0, *p*=.049. Among usual care participants, weight loss counseling was not associated with weight loss at any time point. **Conclusions**: Our findings suggest that whereas general weight counseling by primary care providers is unlikely to influence weight, counseling patients to engage in a specific, evidence-based digital health treatment can contribute to weight loss. Providers conveying empathy towards patients may also impact weight.

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Paper Session 36: Translation of Interventions in Disease Prevention and Management 4:13 PM-4:30 PM

IMPLEMENTING A PRIMARY CARE ELECTRONIC HEALTH RECORD-BASED MODEL FOR BEST PRACTICES IN PAIN MANAGEMENT FOR LOW-INCOME PATIENTS

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Health Information Technology (HIT) can address gaps and variation in provider knowledge and skills, but studies have noted challenges to the adoption of new technology into daily patient care. While HIT solutions to improve pain management in primary care may be valuable, obstacles to adoption must be overcome to realize any benefits. As part of a randomized trial, we implemented a new electronic health record (EHR)–based decision support tool (the “Pain Management Support System for Primary Care” [PMSS-PC]) in 6 practices of a large Federally Qualified Health Center, which serve a low-income population in New York City and upstate New York. We evaluated uptake of the PMSS-PC by primary care providers (PCPs) in the practices as part of an examination of its implementation. The PMSS-PC was programmed into Epic’s® platform and used a “best practice alert” format similar to extant decision support for health screening and management of chronic diseases, like diabetes. It included informational screens, checklists, documentation requirements, and validated practice support tools. Specific elements included screening tools for depression, anxiety, and substance use; a pain assessment tool; opioid risk assessment, and treatment guidelines. Treatment guidelines were developed for primary care and included first-line non-pharmacological approaches, referral for psychological, integrative, and other care, as well as pharmacotherapy. EHR data extracted between 3/2014-4/2016 showed that 46 PCPs used the pain assessment tool a total of 1,595 times for 237 patients. Further, 63 PCPs accessed the treatment guidelines a total of 1,061 times for 433 patients. While few referrals and treatments were provided using the PMSS-PC (a total of 109 times for 97 patients), overall referrals increased in the practices between the first 3 months, and last 3 months of implementation by 110.3% (1,561 to 3,283; physical therapy, 33.5%, 37.8%; psychological and behavioral care, 29.5%, 29.2%; orthopedic care, 27.0%, 21.9%; pain management, 6.7%, 8.0%; acupuncture and chiropractic care, 3.3%, 3.1%, respectively). Similarly, the number of patients who received prescriptions increased by 156.8% (1,376 to 3,533) during this same

time: 7.9%, 6.9% opioids; 92.1%, 93.1% non-opioids. Only 39.8% of PCPs reported high-moderate satisfaction with the PMSS-PC. These results suggest that provider use of the PMSS-PC in this trial was limited, but changes in pain practice were more substantial. We will report final analyses on uptake and potential modifiers of PCP use of the program over time, including patient (e.g., depression), provider (e.g., satisfaction), and practice-related (e.g., location) characteristics. Future results may show the importance of using HIT to promote best practices for pain management and its positive effect on patient-reported outcomes.

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Paper Session 37: Older Adult's Physical Activity: Determinants and Interventions 3:00 PM-3:18 PM

DEVELOPING A SUSTAINABLE PEER-LED PHYSICAL ACTIVITY PROGRAM FOR SENIOR

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Less than 3% of older adults meet physical activity (PA) guidelines. Our previous project, Multilevel Intervention for Physical Activity in Retirement Communities (MIPARC), increased participants' step counts and prevented the inherent decline associated with aging. Additionally, participants successfully completed advocacy projects to improve walkability in and around the retirement communities (e.g., safer crosswalks, cleaner pedestrian bridges).

However, once the study ended, transitioning leadership from UCSD staff to individuals within the community was challenging. Based on these results, the Peer Empowerment Program for PA (PEP4PA) is designed to promote & assess delivery and sustainment of a peer-led multi-level PA program in senior centers. PEP4PA transitions intervention delivery from UCSD research staff to peer health coaches (PHCs) and center staff from within senior centers. PHCs and a center staff member complete a 16-hour training course and certification to lead the program and build a sustainment plan.

We employ mixed-methods to evaluate program implementation. Intervention fidelity is assessed through an online tablet that PHCs use to track intervention delivery including attendance, participant step counts, and progress towards goals. To promote success, the intervention dose was simplified to ensure PHCs have capacity to deliver the components. PHCs meet with participants in person for counseling, use color coding to identify goal setting, and are encouraged to work with participants who are most in need. As a pragmatic trial, PEP4PA has rolling recruitment which helps with motivation during the two year project by continuing to have new participants enroll. Results from the implementation measures are used to improve the project under the Plan, Do, Study, Act framework.

Training PHCs within the senior centers to lead and deliver the program has empowered individuals to seek out additional advocacy opportunities. Two PHCs have joined local committees and all sites secured funding from local businesses to cover some program expenses. Building capacity within the community and discussing long-term sustainability in the beginning ensures the program will continue after the research study ends.

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Paper Session 37: Older Adult's Physical Activity: Determinants and Interventions 3:19 PM-3:36 PM

CITATION AWARD WINNER

FORMATIVE RESEARCH OUTCOMES FOR THE SMART TELEVISION EXERCISE PROGRAM FOR INDEPENDENT LIVING FACILITIES STUDY (STEP FOR LIFE)

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Despite its significance in maintaining functional independence, physical activity (PA) is lowest among Older Adults (OA). Streaming technology offers innovative potential in delivering personalized wellness programs to OAs. *STEP for LIFE* is an NIH-funded study evaluating the feasibility of a PA program for senior adults residing in Independent Living Facilities (ILF) using interactive web-enabled television that can be individually tailored. Study goals are to 1) examine both individual- and organizational-level factors to inform translation of PA for OAs into a scalable delivery medium, and 2) inform future translation of other evidence-based health promotion programs with OAs and other senior living settings. To guide prototype development, a national sample of ILF residents (n=136; mean age 82.4 +/- 6.9 years; 91% White; 67.9% female) and ILF administrators (n=51; mean age 41 +/- 13.1 years; 80% White; 72% female) were surveyed. Administrators were asked to assess the type, quality, quantity, and attendance of PA programs available for their residents and the organizational decision-making process and level of interest in technology approaches for delivery of PA programs. Results revealed that 88% strongly agreed that providing organized PA programs was important, that a variety of approaches were used to promote organizational programs (word of mouth, newsletters, family members, etc.), and on average, half of the facilities had regular resident participation. Less than 16% of administrators disagreed that a SmartTV exercise program would be helpful or of interest. Over 70% of administrators indicated that the ability to tailor the exercise would be highly appealing. ILF residents were surveyed on their exercise and social activities, and use and comfort with different technologies. Results revealed that 90% rated their health as good or very good, 51.3% participated in a PA program at their facility 2-3 times a week, and 37.3% reported 5-8 hours a day of sitting. Over 83% reported comfort using the Internet and 59.7% reported comfort with using a tablet device. Nearly 63% reported that with some help or training they would be agreeable to trying a SmartTV exercise program. To further inform prototype development, focus groups and semi-structured

interviews were also conducted. Real-world usability testing is currently underway. Survey and formative research results as well as the quantitative outcomes from the completed study will be presented.

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Paper Session 37: Older Adult's Physical Activity: Determinants and Interventions 3:37 PM-3:54 PM

TESTING PSYCHOSOCIAL MEDIATORS OF INTERVENTION STRATEGIES TO PROMOTE PHYSICAL ACTIVITY IN OLDER ADULTS

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Purpose: Evidence is inconclusive about which behavioral change strategies effectively promote physical activity (PA) among older adults. Thus, we conducted an experiment testing the relative effects of two theoretically driven sets of behavioral change strategies—interpersonal and intrapersonal—delivered in combination with an evidence-based PA protocol, on average daily step count. The purpose of this study is to explore whether psychosocial constructs targeted by these behavioral change strategies can help explain why specific sets of strategies were and were not effective.

Methods: Data for this study are from a 2x2 factorial experiment in which older adults (n=102) were randomized to one of 4 conditions: (1) Otago (an evidence-based PA protocol); (2) Otago+interpersonal behavioral change strategies; (3) Otago+intrapersonal behavioral change strategies; or (4) Otago+interpersonal and intrapersonal behavioral change strategies. All participants received a PA monitor (Fitbit One^{TM}) and intervention content during 8 weekly small group (4-6 people) meetings, 90 minutes each. Data was collected at 3 time points: baseline, post-intervention, and 6 months follow-up. PA was measured as average daily step count via Fitibit monitors. Using the PROCESS macro, ordinary least squares regression models were assessed in which sets of interpersonal and intrapersonal behavioral change strategies were considered as independent variables; changes in the psychosocial constructs *social support, readiness, self-efficacy, self-regulation and goal attainment*, post-intervention--controlling for baseline--were considered mediators; and PA, post-intervention and 6 months follow-up--controlling for baseline--were considered outcomes.

Results: Participants who received interpersonal behavioral change strategies, compared to those who did not, had significantly greater increases in their average daily step count post-intervention ($p < .001$) and six months post-intervention ($p < .001$). They also reported greater increases in *readiness, self-regulation*, and *goal attainment* at both time points (p's $< .05$), but only *self-regulation* mediated the intervention-PA reltionship. Receipt of intrapersonal behavioral change strategies did not lead to an increase in PA, but was associated with higher ratings of *social support* from family by participants at both time points (p's $< .01$).

Conclusion: By exploring the psychosocial constructs targeted by specific sets of interpersonal and intrapersonal behavioral change strategies, this study contributes to current knowledge related to the development of PA interventions for older adults and suggests it may be important to target *self-regulation* through interpersonal behavioral strategies rather than intrapersonal strategies.

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Paper Session 37: Older Adult's Physical Activity: Determinants and Interventions 3:55 PM-4:12 PM

CITATION AWARD WINNER

REDUCTIONS IN LONELINESS THROUGH EXERCISE TRAINING IN OLDER ADULTS: PSYCHOSOCIAL AND NEURAL DETERMINANTS

Diane Ehlers, PhD[1], Ana M. Daugherty, Ph.D.[2], Agnieszka Burzynska, PhD[3], Jason Fanning, PhD[4], Elizabeth Awick, MS[5], Laura Chaddock-Heyman, PhD[5], Arthur Kramer, PhD[6], Edward McAuley, PhD[7]

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Despite the prevalence of and negative health consequences associated with perceived loneliness in older adults, few studies have examined interactions among behavioral, psychosocial, and neural mechanisms. Research suggests that physical activity and improvements in perceived social support and stress are related to reductions in loneliness. Yet, the influence of brain structure on these changes is unknown. The present study examined whether change in regional brain volume (i.e., amygdala volume) mediated the effects of changes in social support and stress on change in perceived loneliness after an exercise intervention. We also examined the extent to which baseline amygdala volume moderated the relationship between changes in social support, stress, and loneliness. Participants were 247 older adults (65.4±4.6 years-old) enrolled in a 6-month randomized controlled trial comprised of three exercise conditions: Dance (n=69), Strength/Stretching/Stability (n=70), and Walk (n=108). All groups met for one hour, three times weekly. Participants completed questionnaires assessing perceived social support, stress, and loneliness at baseline and post-intervention. Amygdala volume before and after the intervention was measured with automatic segmentation of each participant’s T1-weighted structural MRI. Data were analyzed in a latent modeling framework, with regression coefficients presented as unstandardized estimates. Perceived social support increased ($p=0.003$), while stress ($p < 0.001$) and loneliness ($p=0.001$) decreased over the intervention. Increased social support predicted improved loneliness directly (-0.63, $p < 0.01$) and indirectly through decreased stress (-0.10, $p = 0.02$). Amygdala volume did not change over the

intervention (p=0.40) and was unrelated to change in psychosocial variables (all $p \geq 0.44$). However, individuals with larger baseline amygdalae experienced greater reductions in stress, and in turn greater decreases in loneliness (0.35, p = 0.02). No group differences in these pathways were observed. The social support environment of exercise sessions, as opposed to exercise mode, may represent an important feature of exercise programs aimed at improving older adults' perceived loneliness. As amygdala volume has been linked to anxiety, depression and impaired cognitive control processes, moderation findings suggest further investigation in this area is warranted.

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Paper Session 37: Older Adult's Physical Activity: Determinants and Interventions 4:13 PM-4:30 PM

GROUP BASED PHYSICAL ACTIVITY FOR OLDER ADULTS (GOAL) RANDOMIZED CONTROLLED TRIAL: 3- AND 6-MONTH ADHERENCE OUTCOMES

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Title: **GrOup based physical Activity for oLder adults (GOAL) randomized controlled trial: 3- and 6-month adherence outcomes.**

Abstract: The GrOup-based physical Activity for oLder adults (GOAL) trial was a three-arm RCT (ClinicalTrials.gov # NCT02023632) that was designed to test the efficacy of two different group-based exercise programs for older adults (informed by the tenets of self-categorization theory; SCT) in relation to a standard group-based exercise program. 630 older adults (M age = 71.44, SD = 5.36; 71.1% female) were randomized to similar-age same gender (SASG), similar-aged mixed gender (SAMG), or ‘standard’ mixed-aged mixed gender (MAMG) exercise group conditions. In addition to considering group composition, the SCT-informed conditions included older-adult instructors, and operationalized key principles and strategies from SCT designed to foster a sense of social connectedness among exercise group participants. In this paper we report the results of the trial’s primary outcome, namely adherence behavior (assessed through objective measures of class attendance) over 3 and 6 months. Based on intent-to-treat (ITT) analytic principles, analyses of covariance (controlling for pre-intervention physical activity behavior) revealed that older adults randomized to the SAMG (3 months d = .48, p = .001; 6 months d = .44, p= .004) and SASG (3 months d = .34, p= .008; d = .35, p = .01) conditions adhered to a greater extent than those in the MAMG comparison condition. At both time points these effects were invariant by gender, and the differences between the SAMG and SASG conditions were non-significant. In conclusion, the results of this RCT provide support for the efficacy of group-based physical activity programs informed by the tenets of SCT. Furthermore, the results suggest that community group-based exercise programs should attempt to engage in age-targeting but not necessarily gender-targeting among older adults.

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Paper Session 38: Understanding Risk Perception 3:00 PM-3:18 PM

CITATION AWARD WINNER

EXAMINING DIFFERENT REACTIONS TO NARRATIVES FROM COLON CANCER SURVIVORS VS. HEALTHY SCREENERS

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The use of patient narratives or testimonials in interventions and on the Internet is becoming ubiquitous, and has outpaced empirical research regarding how and for whom narratives are effective. Most research has compared narratives with didactic messages rather than compare across narratives. To inform future interventions that incorporate narratives, we tested the effects of different role models (”survivors” vs. “screeners”) for increasing colorectal cancer screening (CRCS) intentions and behaviors. We randomized adults age 50-75 not adherent to CRCS guidelines with no history of cancer to one of three groups: 1) CRCS information only, 2) CRCS info plus a narrative from a CRC survivor, or 3) CRCS info plus a narrative from a healthy CRC screener. Role model photos were tailored to the participant’s sex, age group and race/ethnicity. Participants (n=487) completed surveys online before and after the intervention and at 1 & 6 month follow up. We used structural equation modeling (AMOS 16) to test our conceptual model of the direct and indirect effects of narratives on CRCS intention and behavior via post-exposure mediators including engagement, emotions, message acceptance, and psychosocial determinants of CRCS, controlling for significant covariates. Results showed good model fit. Narratives were more engaging (β=.27,$p < .001$) and emotionally evocative (β=.10,$p < .01$), but less believable (β= -.09,$p < .01$) than information only. Engagement was related to greater perceived benefits and social norms for CRCS ($p < .001$); greater affect was related to perceived risk, worry and intention ($p < .01$). Survivor (vs. screener) stories aroused more negative emotions (β=.33,$p < .001$) which was related to greater perceived risk, worry, barriers, and info avoidance ($p < .001$). Survivors were perceived as less similar to participants (β= -.13,$p < .05$), which was positively related to message acceptance and social norms ($p < .001$). Survivor stories produced less self-relevant engagement (β= -.22,$p < .001$), which was related to greater perceived risk, benefits, norms, self-efficacy, and intention; less counterarguing and perceived barriers. Only intention post-intervention predicted CRCS by 6 months follow up. Cancer survivor narratives evoke more negative emotion and reduced self-related engagement and identification which may

indirectly undermine message effects on CRCS. Understanding the mechanisms of how different role models influence health behaviors is important for selecting or creating effective narratives.

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REACTIONS TO COLORECTAL CANCER RISK ESTIMATES AMONG A NATIONALLY REPRESENTATIVE SAMPLE OF ADULTS WHO HAVE NEVER BEEN SCREENED

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Screening for colorectal cancer (CRC), the 3rd leading cause of cancer death among men and women in the United States, saves lives. Yet, among adults ages 50 to 75, about 30% have never been screened. Internet-based strategies that deliver tailored CRC risk estimates can promote screening, especially among those at higher risk. To be effective, recipients of feedback should be able to extract their risk level delivered online, find the risk estimate accurate and useful, and it should influence their perceived CRC risk. We examined these reactions to online tailored CRC risk estimates among adults who have never been screened for CRC. Potential participants were recruited from GfK's Knowledge Networks online panel, a panel representative of the U.S. population. Eligible participants were between the ages of 50 to 75 who self-reported never having been screened. Using the Harvard Disease Risk Index algorithm, participants received tailored 10-year risk of getting CRC compared to others their age and sex ranging from very much below average to very much above average – seven levels of risk total. Participants were asked to recall their estimate and rate on a 7-point Likert scale its accuracy and usefulness, as well as their perceived comparative 10-year risk from very much below average to very much above average. Among the 619 participants who qualified, mean age was 58 (SD=6.4), 46% were male, and 75% were Non-Hispanic, White; 39% of the sample had a high school education or less. The mean level of the tailored comparative risk estimate was average. Overall, 29% of the sample could not reflect back their estimated risk. Greater inaccuracy was higher among the less educated. Perceived comparative risk was slightly below average (M=3.2; SD=1.3) and correlated with the risk estimate (r=.40, $p < .0001$). The risk estimate was viewed as somewhat accurate (M=4.0, SD= 1.3) and somewhat useful (M=4.7, SD=4.7). These reactions varied by risk estimate. With increasing risk, estimates were viewed as less accurate (r=-.14, $p < .05$) and less useful (r=-.28, $p < .001$). Findings suggest that many individuals, especially the less educated, have trouble extracting their online risk estimate and view it as less acceptable (e.g., accurate, useful) with higher degree of risk, pointing to defensive processing. Strategies to curb these potential barriers to online risk communication strategies to promote CRC screening targeting adults who have never been screened appear warranted.

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DIFFERENT TYPES OF RISK: RISK UNCERTAINTY VARIES BY RISK FRAMING.

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Purpose: There is debate over the conceptualization and measurement of risk perception. A variety of measurement approaches have been employed, including assessing perceived risk as an absolute or comparative judgment and attempting to capture the corrections people make in their risk judgments based on their past or expected behavior (conditional risk). In order to assure that our measurement strategies are valid, it is important to understand whether people are able to make meaningful judgments in response to researchers' risk perception questions. The purpose of this study was to compare participants' level of uncertainty about their risk judgments based on measurement approach.

Methods: Participants were 280 MTURK workers (median education = some college; 80% White; mean age = 34(SD = 9)) who completed an on-line survey. We assessed conditional and non-conditional absolute and comparative heart disease risk using a Likert-type scale with a "don't know" option. Those who chose a "valid" response (don't know responders were excluded) were asked to rate their certainty about their judgment. Paired t-tests were used to compare mean certainty of participants' risk as a function of 1) being conditioned on healthy behavior change and 2) framed as absolute vs. comparative risk.

Results: More people reported being uncertain or very uncertain about their absolute risk and non-conditioned risk: 66.36% of participants were uncertain about absolute risk, 44.35% about comparative risk, 31.45% about conditional absolute risk, and 29.30% about their conditional comparative risk. For both absolute and comparative heart disease risk, participants were more uncertain about their non-conditional risk (mean difference= -.5, t = -8.8, p < .001; mean difference= -.3, t = -6.1, p < .001) than conditional risk. For both conditional and non-conditional risk, participants were more uncertain about their absolute risk than comparative risk (mean difference= -.09, t = -2.0, p=.02; mean difference= -.27, t = -6.4, p < .001).

Discussion: Even after eliminating individuals who say that they don't know their risk, participants were uncertain about their judgments. The way participants are asked to appraise their risk contributes to this uncertainty; participants are more uncertain about non-

conditional than conditional judgments and about absolute than comparative judgments. While our previous research demonstrates that lack of knowledge contributes to uncertainty about risk, this association does not explain why levels of uncertainty vary by question format. Non-conditional and absolute risk items are more ambiguous and may be more difficult to answer for participants because there a lack of information or no frame of reference, which may lead to more uncertainty.

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BARRIERS AND PROMOTERS OF COMMUNICATION ABOUT FAMILY CANCER HISTORY AMONG AFRICAN-AMERICANS IN BALTIMORE

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Objective. Although cancer is the second leading cause of deaths for Americans, African-Americans remain more likely to die from cancer than any other racial or ethnic group in the U.S. Family cancer history (FCH) plays a key role in shaping individual prevention and early detection behaviors to decrease cancer risk. However, many individuals may lack knowledge of FCH, and be unaware of increased risk for cancers based on family patterns. For some African-American communities, a lack of communication about FCH is pronounced and barriers to this communication have not been well studied. To optimize the use and impact of FCH, it is crucial to better understand how patients gather and share FCH with family members, and discuss information with healthcare providers.

Methods. We conducted four community focus groups (40 participants) and seven key informant interviews (9 participants) to investigate knowledge and experiences of FCH and barriers/promoters of FCH in the East Baltimore African American community.

Results. Thematic analysis of transcripts identified 11 distinct themes across 4 topic areas: Definitions of FCH, past FCH communication, and barriers/promoters of FCH. FCH was most often defined by narratives of cancer experienced by individual family members, rather than records or patterns of disease over time. The majority of participants had gathered or shared little or no FCH information with family members. Three psychosocial domains (fear/denial, pride/dignity, and fatalistic attitudes about cancer) were commonly reported barriers to sharing family cancer history. Additionally, distrust/skepticism about medical care was a barrier to sharing FCH with healthcare providers. Diagnosis/death of a loved one and need for caregiving/social support promoted FCH communication and encouraged cancer prevention behaviors such as screening.

Conclusion. Although most participants had experienced cancer in their families, reported communication about FCH was low and psychosocial barriers were common. Understanding these communication domains in minority populations is crucial to addressing disparities in

cancer prevention, particularly where effective screening and care recommendations exist for those with positive family histories. Community-based interventions are needed to improve understanding of FCH, address common barriers, and provide communication tools to promote family cancer history communication among African American families in Baltimore.

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PERCEIVED THREAT AND PRESSURE RELATED TO SPORT ACHIEVEMENT EXPLAIN WHY SOME SPORT PARENTS DON'T TALK ABOUT CONCUSSIONS

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Early identification and removal from play of athletes who have sustained a concussion is an important aspect of reducing concussion-related harm. This process is often dependent on athlete self-report of injury. Prior research finds that some athletes experience pressure from their parents to continue playing with concussion symptoms (Kroshus et al., 2015). However, it is not clear whether this perceived pressure is the result of direct communication or whether it is inferred from factors such as parent investment in their sporting career. As one step towards addressing this gap in the literature, the present study examines parent-described direct communication to encourage concussion reporting, testing three hypotheses. First, that greater perceived susceptibility to and seriousness of concussion would be associated with greater parent-child communication about the importance of seeking care for a suspected concussion. Second, that parents who put more pressure on their child related to sport achievement would be less likely to encourage care seeking. Third, that there would be a significant interaction between parent attitudes about the child’s sport participation and perceived seriousness and susceptibility in predicting concussion care seeking communication, with the relationship between perceived severity, susceptibility and communication being weaker among parents who put more sport achievement pressure on their child. Participants were 246 parents of competitive youth club soccer players (ages 8-18 years) in a league located in a large urban center in the northwest region of the United States who completed an anonymous online survey. Across the full sample, just over two thirds of parents (68.38%) indicated that they communicated with their child about the importance of reporting suspected concussions. Consistent with the Health Belief Model (Rosenstock, 1974) and as presently hypothesized, parents who believed that their child was more likely to sustain a concussion were more likely to encourage their child to report symptoms of a suspected concussion. However, parents who believed that the consequences of this concussion would be more harmful were significantly less likely than other parents to encourage concussion reporting. Further, there was an interaction between parent pressure and concussion severity in that when parents reported greater pressure for sport achievement on their child, the association between perceiving concussions to be more harmful and encouraging concussion symptom reporting was significantly less strong. Results will be discussed in the context of fear appeals, and the implications that these findings have for the development of health

education targeted at parents of youth sport participants to encourage concussion safety-supportive communication.

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Paper Session 39: African American Women's Health 3:00 PM-3:18 PM

A QUALITATIVE EXAMINATION OF THE INFLUENCE OF CULTURE ON ENGAGEMENT IN PHYSICAL ACTIVITY AMONG BLACK WOMEN

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Despite the noted benefits of physical activity, engagement among minorities and women, particularly Black women, remains low. In response to the lower rates of physical activity among Black women, there has been an increase in intervention studies promoting physical activity. However, intervention studies for both inactive and underactive Black women have produced modest success in short-term engagement and almost no success in long-term maintenance. Understanding cultural context may be instrumental to developing effective and sustainable solutions to address health disparities associated with inactivity. Therefore, the purpose of the current investigation was to gain a better understanding of how culture influences Black women's experiences with physical activity. Specifically, the associations between cultural values, beliefs and attitudes and participation in physical activity were examined. Data were collected using individual semi-structured interviews with participants (N=12). The interview guide was designed to address common factors related to physical activity adoption while also discovering additional factors. Women ranged in age from 19-52 (M = 29.38). Mean income for the sample was $33,100 (SD = 25.34). Participant BMIs ranged from 18.60 to 47.30, with 42% being classified as overweight or obese. Audiotapes of the interviews were transcribed verbatim and thematic analysis was used to generate key themes. Emergent themes were then summarized, interpreted and categorized using the PEN-3 Model. Women identified the need for psychoeducation related to health versus aesthetic benefits of physical activity, significance of communal support, the role of spirituality, acceptance of larger body sizes as a barrier to a physically active lifestyle, lack of exposure to physical activity as a familial/cultural norm, and the tendency to prioritize others over themselves. Analysis of interviews conducted with this sample of women suggests an interplay among the PEN-3 domains and physical activity behavior, with implications for the design of culturally sensitive interventions. Results support the importance of incorporating culture into the development and dissemination of an intervention. Thus, physical activity interventions should aim to incorporate these perspectives without focusing exclusively on cultural barriers. Instead, culture should be used to understand and then empower Black women to increase their levels of physical activity while still remaining true to their culture.

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Paper Session 39: African American Women's Health 3:19 PM-3:36 PM

PATIENT OPINIONS ON THE DESIGN OF A RACIALLY TAILORED EXERCISE INTERVENTION FOR BLACK INDIVIDUALS WITH MULTIPLE SCLEROSIS

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Black individuals with multiple sclerosis (MS) experience a more aggressive disease course and worse comorbidity and prognosis with disease modifying drug therapies than white individuals with MS. This requires further consideration of approaches for managing MS in this population, and one approach may be exercise training. There is substantial evidence of the benefits of exercise training for managing the disease, yet the samples have been mostly white. We further note that black individuals with MS engage in less physical activity and exercise than white counterparts. This necessitates the need for developing a racially targeted exercise training program for black individuals with MS. Such an intervention should include patients during the designing phase, as the range of input is invaluable when creating the best-suited exercise program for this population. To that end, we conducted a survey among black individuals with MS about the development of a targeted-exercise training program. Participants answered a series of items administered through Qualtircs (Prove, UT) regarding demographics and opinions of an ideal exercise program, the importance of racial considerations, and current physical activity levels. 40 black individuals with MS (age of 52.24 ± 8.95, BMI of 30.39 ± 9.28 kg/m^2, & 92.5% female) completed the survey. The mean physical activity score was 44.54 ± 22.19. Regarding the exercise program, participants wanted to exercise 5.0 ± 1.6 days per week at a moderate intensity (50% of participants). 62.5% of participants desired an exercise program that was longer than 6 months, with 57.5% of participants wanting the aid of a behavioral coach for supporting exercise behavior change. The desired program consisted of mainly resistance/weight training exercises (52.5%) and easy walking (35%). The expectations from exercising were primarily to increase muscle strength (65%), to improve overall body functioning (60%), increase ability to perform daily activities (57.5%) and to help manage stress (57.5%). The anticipated barriers to exercise were largely fatigue (40%) and not having enough time (32.5%). There was variation in the importance of racial considerations in the design of the program. The data from this study should be considered when creating an exercise training intervention for black individuals with MS.

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Paper Session 39: African American Women's Health 3:37 PM-3:54 PM

SIX MONTH PHYSICAL ACTIVITY AND PSYCHOSOCIAL OUTCOMES FROM THE HIPP STUDY FOR AFRICAN AMERICAN WOMEN IN DEEP SOUTH

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Purpose: To establish the feasibility and acceptability of a Home-based, Individually-tailored Physical activity Print (HIPP) intervention for African American women in the Deep South.

Methods: A pilot randomized controlled trial was conducted to test the HIPP intervention (N=43) vs. wellness contact control arm (N=41). Physical activity (7-Day Physical Activity Recall interviews, accelerometers) and related psychosocial variables were assessed at baseline and 6 months.

Results: The sample was recruited in Birmingham, AL and included 84 overweight or obese African American women between the ages of 50-69. Retention was high at 6 months (90%). Group differences in physical activity and related psychosocial variables at 6 months were examined with a generalized linear model controlling for baseline values. On average, HIPP intervention participants reported larger increases (M=+73.9 minutes/week, SD=90.9) in moderate intensity physical activity from baseline to 6 months than the control group (+41.5, SD=64.4), p> .05. The intervention group reported significantly greater improvements in physical activity goal-setting and enjoyment from baseline to 6 months compared to the control group. There were no other significant group differences [weight, BMI, % body fat (BIA), 6MWT, physical activity planning, behavioral processes of change, stage of change]; however, trends in the data for cognitive processes of change, self-efficacy, outcome expectations, and family support for physical activity indicated small improvements for the HIPP arm (P> .05) and declines for the control arm. Significant increases in waist circumference and decreases in decisional balance and friend support for physical activity from baseline to six months were observed in the control arm and not the intervention arm. Of the 36 intervention participants surveyed at follow-up, most reported being satisfied with the HIPP program and finding it helpful (N=33, 91.67%). Almost all (N=35, 97.22%) would recommend it to a friend.

Discussion: The HIPP intervention has great potential as a low cost, high reach method for reducing physical activity-related health disparities. The approach was well received by our sample. The lack of improvement in some domains may indicate that additional resources and supports will be required to help this target population reach national guidelines for MVPA (> 150 minutes/week of moderate intensity physical activity).

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Paper Session 39: African American Women's Health 3:55 PM-4:12 PM

OPTIMIZING SOCIAL COGNITIVE THEORY IN THE DESGIN OF PHYSICAL ACTIVITY PROGRAMS FOR AFRICAN AMERICAN WOMEN: A QUALITATIVE STUDY

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Introduction. The Social Cognitive Theory (SCT) is one of the most widely used theories in physical activity (PA) promotion research. Through focus group methods, this study examined the cultural relevance of five SCT constructs in the design and acceptability of a PA intervention for sedentary and obese African American (AA) women.

Methods. Twenty-five AA women (*M* age = 38.5 years, *M* BMI = 39.4 $kg{\cdot}m^2$) were enrolled in a series of 3 focus groups held over a 6 week period. Focus group guides were designed to gain information on how five SCT constructs can be culturally tailored in the design of a PA program for AA women: self-efficacy, self-regulation, behavioral capability, outcome expectations, and social support. Focus groups were audio recorded and transcribed verbatim. Content analysis was used to capture and extend knowledge and understanding of cultural and contextual resources for participation in a theory-based PA intervention for AA women.

Results. Participants provided in-depth data on how the five SCT constructs examined were relevant and can be leveraged in the design of a PA program for AA women. Pertaining to the construct of behavioral capability, AA women were generally unaware of the amount, intensity, and types of PA needed for health benefits. Participants discussed a variety of outcome expectations associated with regular PA engagement, including increased energy, improved functional status, weight loss, and positive role modelling behaviors. Results for the constructs of self-efficacy and self-regulation indicated that women perceived their own intrapersonal processes as their primary barrier to PA and that PA programs should: a) leverage an AA women’s previous positive experiences with PA (i.e., during childhood and early adulthood), and b) illustrate how PA is relevant to their familial, societal, and caretaking roles. For the construct of social support, participants endorsed the need of a strong social support component with a variety of sources acceptable to include in a PA program (i.e., family members, other study participants, friends).

Conclusions. Findings highlight the utility of the SCT as a theoretical basis for PA programs for

AA women. PA programs should clearly outline the dose and intensity of PA necessary to achieve health benefits. Programs should also leverage AA women’s previous positive experiences with PA and illustrate how PA is relevant to their familial, societal, and caretaking roles.

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Paper Session 39: African American Women's Health 4:13 PM-4:30 PM

EXAMINING PEER SUPPORT AND SURVIVORSHIP OUTCOMES FOR AFRICAN AMERICAN WOMEN WITH BREAST CANCER

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More than three million female breast cancer (BrCa) survivors live in the United States, and the number continues to grow. Health status and quality of life amongst survivors is variable, and African American (AA) BrCa survivors suffer disproportionately from BrCa morbidity and mortality. Emerging evidence suggests peer support is an effective strategy to promote positive survivorship outcomes for AA women with BrCa. The aim of this study was to explore the role of structured peer support in the BrCa experiences of AA survivors. The research team worked collaboratively with The Breakfast Club, Inc. (BCI), a community-based BrCa support and advocacy organization with twenty years of experience providing peer support to survivors, to compare similarities and differences in the survivorship experiences of AA women with BrCa according to receipt of structured peer support. Data were collected, analyzed and triangulated from three sources to generate findings. These sources included: participant observations of BCI members attending monthly support group meetings, key informant interviews with BCI leadership and semi-structured interviews with two groups of AA BrCa survivors, such that one group of survivors received structured peer support (in addition to social support from other sources) and a comparable group of survivors received standard care (only social support from other sources). Triangulated results indicate that peer relationships function to assure social connectedness and provide consistent, quality social support in addition to or in the absence of support from other sources. This consistent peer support helps survivors cope with the continued stress of BrCa and may result in better psychosocial health and quality of life. These findings expand our current understanding of peer support and may enable public health and clinical practitioners to promote improved quality of life during survivorship by better recognizing and intervening with those for whom additional support services are needed.

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Paper Session 40: Skin Cancer Prevention: Policies, Intentions and Measurement 3:00 PM-3:18 PM

SUNSCREEN APPLICATION KNOWLEDGE AND REPORTING IN SURVEY FORMAT

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Background: Sunscreen use is the most commonly reported method of UV protection in the U.S. Despite increasing public awareness of the risks of UV exposure, skin cancer incidence has increased over the past decades. The effectiveness of sunscreen against the harms of UV depends on proper application, and consumers frequently do not apply adequate sunscreen to achieve the advertised SPF. The purpose of this study was to examine reported sunscreen application, knowledge of proper sunscreen use, and quantity of sunscreen used.

Method: Undergraduate students (N = 335) from a university in Oregon completed an online survey about their UV exposure beliefs and behaviors. Sunscreen use was measured with the original and modified versions of NHIS sunscreen use frequency item. Sunscreen quantity used was measured with two items; response options offered 1) a choice of written descriptions of sunscreen quantity (i.e., 1/2 tsp.) and 2) an array of photographic depictions of quantities of sunscreen in a hand, with a coin included for scale. Univariate and bivariate analyses were performed first on the full sample and then stratified by gender.

Results: Whereas 34% of respondents reported using sunscreen consistently (i.e., “almost always” or “always”) on warm sunny days, only 9% reported consistent sunscreen use on most days. The majority of participants (89%) either did not know (48%) or reported incorrectly (41%) the amount of sunscreen needed to achieve the advertised SPF. Sunscreen use among participants who responded that they did not know the amount of sunscreen needed did not significantly differ from use among participants who believed they knew the appropriate amount (p = .22). Reported quantity of sunscreen applied was inconsistent between the two formats of sunscreen quantity measurement (Weighted kappa = .20).

Discussion: Inconsistent and inadequate application of sunscreen is a challenge for skin cancer prevention. Perceived lack of knowledge, however, was not associated with use of smaller or larger amounts of sunscreen used. Inconsistent responses between written and photographic items measuring sunscreen use highlight the need for more accurate measures of sunscreen application. Future research is needed to clarify how sunscreen users decide when and how much sunscreen to apply and to validate items measuring sunscreen use.

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Paper Session 40: Skin Cancer Prevention: Policies, Intentions and Measurement 3:19 PM-3:36 PM

PROJECT SOL: TESTING A SUN-SAFETY PROGRAM FOR HISPANIC OUTDOOR DAY LABORERS

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Introduction: Individuals who work outside often encounter high temperatures, humidity, and excess exposure to the sun's ultraviolet (UV) rays. These factors increase the risk for heat illness (heat exhaustion/stroke), sunburns, skin damage, and skin cancer. Hispanic individuals in the United States are over-represented in many outdoor occupations, including landscaping and construction. Few interventions have been tested to promote sun-safe behaviors among Hispanic outdoor workers. In Project SOL (Sun-safety for Outdoor Laborers), we evaluated the impact of a sun-safety program for Hispanic outdoor day laborers (who typically seek work in informal, open-air urban settings such as street corners).

Methods: 119 Hispanic men (39% Mexican, 28% Ecuadorian, 13% Honduran; *M* age 39 years) were recruited from outdoor locations where day laborers commonly congregate in New Brunswick, NJ. We trained peer trainers, who delivered a Spanish language, culturally targeted, 2-hour sun-safety program to groups of 7–22 individuals. Guided by a participant workbook (developed using preliminary focus group and survey research), trainers led participants through small group activities focused on the risks and precautions associated with high heat, humidity, and UV exposure. Participants completed a survey immediately prior to and after the program that included questions on sunburns and heat illness symptoms last summer, sun-safety knowledge (8 *true-false* items), frequency of engaging in sun-safe behaviors (8 items, 5-point *never* to *always* scale: taking regular breaks, drinking water, working in the shade, and wearing a long-sleeved shirt, long pants, a wide-brimmed hat, sunglasses, and sunscreen) while working outdoors last summer and intended frequency next summer, and an evaluation of the program's content and format (9 items, 5-point *strongly disagree* to *strongly agree* scale).

Results: Most participants reported having a sunburn (66%) and/or heat illness symptoms (66%) last summer.Sun-safety knowledge increased significantly from before to after the program (*Ms* = 4.4, 6.5 items correct, $t = 13.3$, $p < .001$). The frequency of engaging in sun safe-behaviors as a whole last summer was low (*M* = 3.0) and the intended frequency was significantly higher after the program (*M* = 4.2, *t* = 14.5, *p* < .001). Statistically significant increases were also seen separately for each of the 8 behaviors (*t*s ≥ 3.4, *p*s ≤.001). Participants evaluated the program very favorably (*M* = 4.7 out of 5).

Conclusions: We demonstrated the feasibility of delivering a peer-led sun-safety program to Hispanic outdoor day laborers. The program was well-received by participants and there were increases in knowledge and sun-safe behavioral intentions after the program. Future research is warranted to test the impact of the program on behavioral outcomes and to explore potential dissemination approaches.

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Paper Session 40: Skin Cancer Prevention: Policies, Intentions and Measurement 3:37 PM-3:54 PM

THE IMPACT OF INDOOR TANNING LEGISLATION ON INDOOR TANNING PREVALENCE IN ALABAMA

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A growing list of U.S. states have enacted restrictions on minor's use of indoor tanning; however, few studies have examined the impact of these restrictions.

In 2014, Alabama passed HB 254, which enacted a series of restrictions on indoor tanning among minors. Analyzing changes in the prevalence of indoor tanning between 2013 and 2015 may provide some evidence for the impact of HB 254. Moreover, data from Florida were included as a control, as the only restriction in place in Florida during 2013-2015 is a ban in indoor tanning for minors under 14.

Data were extracted from the 2015 Alabama and Florida YRBS. These surveys are conducted every two years and assess health risk behaviors among 9-12 grade public and private school students. The Alabama and Florida surveys are of representative samples of the entire population of high school students in their respective states. Indoor tanning was assessed with the item: "During the past 12 months, how many times did you use an indoor tanning device, such as a sunlamp, sunbed, or tanning booth? (Do not count getting a spray-on tan)." As in previous studies, this item was dichotomized as "0 times" vs. "1 or more times." The total employed sample was *N* = 14,389 (population *N* = 1,864,241). Mean age of participants was 16.10 (*SD* = 1.20). Given differences in the prevalence of indoor tanning by age and sex, all analyses were stratified by sex and age. Four levels of age were created: 14, 15, 16-17, and 18 year olds. This approach allows a test of the various indoor tanning regulations enacted within Alabama. Logistic regression models were used, with the independent variables of year (2013 vs. 2015), state (Alabama vs. Florida), and the year by state interaction term. The dichotomous indoor tanning variable was set as the criterion variable. Complex Samples in SPSS 24 was used to account for weighting, clustering, and stratification, allowing for population based estimates.

Female High School Students

Within each age group, only significant main effects of state emerged, with Alabama girls reporting higher indoor tanning compared to Florida girls. No significant main effects of time or state by time interactions were significant for any age group.

Male High School Students

Within each age group, only significant main effects of state emerged, with Alabama boys reporting higher indoor tanning compared to Florida boys. No significant main effects of time or state by time interactions were significant for any age group.

The current study found no significant changes in indoor tanning among teens since the enactment of Alabama's tanning restrictions. More oversight and monitoring is needed to assure that indoor tanning facilities are compliant with emerging laws. As the FDA considers a national ban on minor's use of indoor tanning, enforcement interventions will be necessary to realize its impact.

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Paper Session 40: Skin Cancer Prevention: Policies, Intentions and Measurement 3:55 PM-4:12 PM

RESULTS OF A CROSS-NATIONAL RANDOMIZED TRIAL ON THE EFFECT OF BUILT SHADE ON USE OF RECREATION AREAS IN PUBLIC PARKS

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Shade use is recommended to prevent skin cancer. A randomized controlled trial tested the hypothesis that individuals were more likely to use recreation areas in public parks in which shade was introduced (i.e., ultraviolet protection factor [UPF]-rated shade cloth structures) than unshaded control areas. Shade was built in public parks in Denver, Colorado (US) and Melbourne, Victoria (Australia) to test also if built shade would increase use of the recreation areas more in Australia with its 25-year-long skin cancer prevention campaign than in the United States. Public parks (n=144) containing two unshaded passive recreation areas (PRA) suitable for building shade (study and comparison PRAs) were selected in three annual waves. Following pretest, parks were randomized in a 1:3 ratio to built shade or unshaded control. Primary outcome was observation of whether the study PRA was in use during four 30-minute observations at pretest and posttest on weekends between 11 am and 3 pm in summer months. Adjusting for clustering of observations within parks, analyses showed that shaded PRAs (probability of PRA in use: pre=0.09, post=0.31) were more likely to be in use at posttest than unshaded control PRAs (pre=0.13, post=0.15), odds ratio (OR)=3.87, 95% CI=1.70, 8.82 (adjusted for wave, pretest, weather [temperature, cloud cover, and wind], type of recreation, comparison PRA use, user age and race [proportion white]). City moderated the impact of shade on PRA use, OR=2.90, 95% CI=1.07, 7.84. Shade increased the probability of PRAs in Denver being in use (control: pre=0.17, post=0.18; shaded: pre=0.14, post=0.47) but the increase was not statistically significant in Melbourne (control: pre=0.10, post=0.13; shaded: pre=0.05, post=0.17). Purpose-built shade may improve sun protection (i.e., shade use) in public spaces. Shade can be a good public investment because a) many attractive, protective designs are available and b) it requires less pre-planning than other sun protection practices (e.g., clothing and sunscreen). Differences in existing shade, amenities in the parks and near PRAs, and public sun safety campaigns may explain the unexpectedly higher use of shaded PRAs in Denver than Melbourne.

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Paper Session 40: Skin Cancer Prevention: Policies, Intentions and Measurement 4:13 PM-4:30 PM

EFFECT OF AN INTERVENTION ON OBSERVED SUN PROTECTION BY VACATIONERS IN A RANDOMIZED CONTROLLED TRIAL AT NORTH AMERICAN RESORTS

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High-risk sun exposure often occurs during vacations. An intervention based on Transportation and Diffusion of Innovation Theories comprised of posters, brochures, audiovisual, and online (website and social media) messages promoting comprehensive sun protection (clothing, hats, sunscreen and reliable cues to solar UV) targeted vacationers. It was evaluated with a sample of 41 North American warm-weather destination resorts in 17 states enrolled in a pair-matched, group-randomized pretest-posttest controlled quasi-experimental design in 2012-14. Resorts were randomly assigned to receive the intervention or remain no-treatment controls. Sun protection practices were observed in cross-sectional samples of vacationers who appeared 18 or older at pretest (n=4,347) and posttest (n=3,986) by trained research staff during two-day visits to resorts. Vacationers' sun protection (i.e., composite z-score measure of body coverage and use of shade) did not differ by experimental condition ($p>0.05$) or extent of intervention implementation ($p>0.05$). However, recreation venue moderated intervention impact. The intervention improved comprehensive sun protection at waterside (pools and beaches) recreation venues (intervention pre=-22.74, post=-15.77; control pre=-27.24, post=-23.24) but not at non-waterside (golf, courts, and dining) venues (intervention pre=20.43, post=20.53; control pre=22.94, post=18.03, p pre=-25.45, post=-14.05; low implementation pre=-24.70, post=-21.40) compared to non-waterside (high implementation pre=14.51, post=19.98; low implementation pre=24.03, post=18.98, $p < 0.01$) recreation venues. The intervention was effective with vacationers in recreation venues with the highest-risk sun exposure, waterside venues. However, it was not broadly effective throughout the resorts possibly due to the sun-seeking desires of vacationers, information overload at resorts, and constraints on clothing styles and sun protection practices by recreation activities.

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Paper Session 41: Understanding Lapses and Impulse Management in Diet and Obesity 3:00 PM-3:18 PM

CITATION AWARD WINNER

PHYSICAL, EMOTIONAL AND SITUATIONAL PREDICTORS OF DIETARY LAPSES IN WEIGHT LOSS TREATMENT

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Frequency of lapsing from a prescribed weight loss diet predicts weight loss treatment failure, yet inconsistent findings about factors preceding lapsing have prevented effective treatment targeting. Lapses are categorically heterogeneous and as such may have unique internal and external antecedents. The current study uses ecological momentary assessment (EMA) to examine predictors of three lapse types—eating more than intended, eating a forbidden food, and eating when not intended—in adults (n=189; 82.0% female; 70.9% Caucasian; M_{age} = 51.81 ±9.76 years; M_{BMI} = 36.93 ±5.83 kg/m^2) enrolled in a 12-month randomized controlled trial comparing the effectiveness of standard behavioral weight loss treatment to an acceptance-based condition. At baseline, participants completed 14 days of EMA in which they indicated whether and what type of lapse had occurred since the last prompt, and responded to questions assessing current physical (hunger, tiredness), environmental (presence of delicious foods), and affective (loneliness, sadness, stress, boredom, feelings of deprivation) states. Because lapse frequency did not differ by study condition, conditions were combined for the following analyses. Separate generalized estimating equations were used to examine whether each state prospectively predicted lapse occurrence at the next survey. The majority of lapses were categorized as eating a forbidden food (44%), followed by eating when one had not intended (28%) and eating a larger portion than planned (27%). Results indicate that likelihood of eating a forbidden food was greater for those who reported more frequent aversive physical states ($p < .05$), and for all participants when delicious foods were present ($p < .01$). Likelihood of eating larger portions was greater for those reporting more frequent negative affective states ($p < .01$). Eating when not intended was more likely to occur following momentary aversive affective and physical states for all participants ($p < .01$). Results support the theory that distinct lapse types exist, and that lapse types can be predicted by both momentary conditions and individual tendencies toward certain physical and affective states. Identifying individual differences in tendencies toward sadness,

tiredness, and hunger, might help participants anticipate conditions for lapsing and develop specific strategies for their most common lapse types. Future research should examine how lapse types uniquely affect weight loss outcomes.

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Paper Session 41: Understanding Lapses and Impulse Management in Diet and Obesity 3:19 PM-3:36 PM

CITATION AWARD WINNER

A RANDOMIZED TRIAL OF AN ACCEPTANCE BASED BEHAVIORAL INTERVENTION FOR WEIGHT LOSS IN PEOPLE WITH HIGH INTERNAL DISINHIBITION

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Background: Most individuals completinga behavioral weight loss program achieve weight loss of approximately 7-10% over 6-9 months and then gradually regain weight thereafter. Innovative approaches are needed to improve long-term weight control otucomes. Standard interventions typically include cognitive and emotional control strategies (e.g. thought replacement, distraction, relaxation) to support weight loss efforts. However excessive attempts to change or control thoughts, feelings, or bodily sensations, referred to as experiential avoidance, could paradoxically make it more difficult for individuals with obesity to cope with food cravings and instead lead to greater caloric consumption. Alternative treatment components may be necessary to help individuals cope with situations that can interfere with successful weight loss maintenance. Acceptance-based approaches (e.g. Acceptance and Commitment Therapy; ACT) may provide a viable alternative thorugh the use of mindfunlness and acceptance-based strategies that focus on improving felxibile responding to unwanted thoughts, feelings, and cravings. The aim of this study was to determine whether an Acceptance-Based Behavioral Intervention (ABBI) produces better weight losses than standard behavioral treatment (SBT) among individuals reporting high internal disinhibition.

Methods: Participants were 162 adults with overweight or obesity (mean BMI 37.6) randomly assigned to ABBI or SBT. Intervention was one year with a fading contact schedule and counterbalanced interventionists. Both interventions provided the same calorie intake target, exercise goal, and self-monitoring skills training. SBT incorporated current best practice interventions for addressing problematic thoughts and emotions. ABBI utilized acceptance-based techniques based on Acceptance and Commitment Therapy. ABBI and SBT were compared on weight change and disinhibition change over 24 months.

Results: Mixed models analysis showed mean weight loss at 24 months was -4.1% (*SE*=0.88) for ABBI and -2.4% (*SE*=0.87) for SBT (*p*=.204). Secondary analyses showed that the ABBI group regained less weight from the end of treatment to the final follow-up (4.6 vs. 7.1kg;

p=.005), and that a significantly higher proportion of ABBI participants achieved a 5% weight loss (38% vs. 25%; *p*=.038) at 24 months.

Conclusions: Taken together, results suggest that ABBI had a positive impact on weight outcomes by reducing the magnitude of weight regain after treatment ended, suggesting that ABBI could be helpful for improving the maintenance of weight loss for individuals who report high internal disinhibition. The results of this trial also point to gaps in our current knowledge of the utility of using mindfulness and acceptance strategies for improving weight control (e.g. when is the best time to introduce these strategies/ who is a good fit?).

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Paper Session 41: Understanding Lapses and Impulse Management in Diet and Obesity 3:37 PM-3:54 PM

CITATION AWARD WINNER

TIME DELAYS PROMOTE HEALTHIER VENDING MACHINE SNACK CHOICES

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In environments replete with palatable foods, a preference for immediate gratification can frequently outstrip inhibitory control during food choice. Research on delay discounting suggests that delaying access to tempting high-calorie foods could potentially shift choice to healthier (though less desired) options. We tested this principle in the context of a novel vending machine intervention called DISC (Delays to Influence Snack Choice), which selectively delays the delivery of less healthy snacks. When less healthy snacks are purchased, DISC retains the purchased snack on a platform until the specified time delay expires. This ecological study used a repeated-measures design to test the effects of a 25-second time delay on purchasing rates for healthy snacks in three vending locations at an urban medical center. The proportion of total sales from healthy snacks was compared for the following conditions: 1) no intervention, 2) 25-s time delay on less healthy snacks, 3) 25-cent discount on healthy snacks, 4) a 25-cent tax on less healthy snacks, 5) 25-s time delay plus 25-cent discount, 6) 25-s time delay plus 25-cent tax. Each condition ran for roughly one month in each location. Healthy snacks met ≥5 of 7 nutritional criteria and composed 50% of items sold in each machine. The proportion of total sales from healthy snacks in each condition was compared through generalized estimating equations with 31,827 sales. Relative to no intervention, 25-s time delays yielded a 1.6% to 5.4% absolute increase ($p < .001$) in the proportion of total purchases from healthy snacks, depending on location. Healthy snack purchasing also increased under both 25-cent discounts and taxes (p’s < .001). Combining time delays with the discount doubled its impact ($p < .0001$). None of the interventions involving time delays led to a significant reduction in overall vending sales volume. Brief time delays influence food choice at the point of decision, do not harm vending revenues, and may augment differential pricing interventions. Future research should test DISC in a larger multisite trial, and explore the potential impact of time delays on food choice in other

contexts such as fast food restaurants and online grocers. Funded by R21HL121861. NCT02359916.

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Paper Session 41: Understanding Lapses and Impulse Management in Diet and Obesity 3:55 PM-4:12 PM

CITATION AWARD WINNER

ACCEPTANCE-BASED BEHAVIORAL TREATMENT OUTPERFORMS STANDARD BEHAVIORAL TREATMENT AT POST-TREATMENT AND LONG-TERM FOLLOW-UP

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Acceptance-based behavioral treatments (ABTs; i.e., approaches that fuse behavioral strategies with tolerance of difficult internal experiences and loss of pleasure, mindful decision making and commitment to valued behavior) have been recognized as potential enhancements to the efficacy of gold standard behavior treatment (SBT) for weight loss. However, only one full randomized controlled trial testing this hypothesis has been published to date, and no long-term follow-up has been conducted. The NIH-funded Mind Your Health Project randomly assigned overweight and obese participants (n = 190) to 25 sessions of either SBT or ABT. At the 1-year (post-treatment) and 2-year (1-year follow-up) assessments, and using maximum likelihood imputation, ABT produced significantly greater percent weight loss (1-year: 13.3% ± 0.83, 2-year: 7.3% ± 0.88) than did SBT (1-year: 9.8% ± 0.87, 2-year: 4.6% ± 0.92; linear effect of treatment condition p = .04). Weight regain from 1 to 2 years was equivalent by condition. Results support the long-term efficacy of ABT. Mediation effects support the postulated mechanisms of ABT, and moderation effects suggest that those with greater impulsivity would especially benefit from assignment to ABT. Future directions include examining outcomes at an even longer follow-up period and examining whether post-treatment booster sessions strengthen and/or extend the advantage of ABT.

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Paper Session 41: Understanding Lapses and Impulse Management in Diet and Obesity 4:13 PM-4:30 PM

CITATION AWARD WINNER

USING MACHINE LEARNING AND JUST IN TIME ADAPTIVE INTERVENTION TO PREDICT AND PREVENT DIETARY LAPSES: THE DIETALERT APP

Evan M. Forman, PhD[1], Stephanie P Goldstein, M.S.[2], Adrienne S. Juarascio, Ph.D.[1], Meghan L. Butryn, PhD[1], Pramod Abichandani, PhD.[1]

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Lack of success in weight loss programs can be largely attributed to dietary lapses, i.e., specific instances of inadherence to dietary recommendations. Lapses have been linked to a select group of internal and external cues, suggesting that lapse prediction and prevention are possible, given sufficient data. As such, we have set out to create a smartphone-based system called DietAlert that utilizes machine learning to predict lapse behavior with increasing accuracy, and to deliver tailored, momentary interventions designed to prevent lapses from occurring during a period of elevated risk. This presentation describes four phases of development and evaluation which involved overweight participants using DietAlert while following a Weight Watchers weight loss plan. First, we will describe the development of an experience sampling component of the app, and will report user compliance (94.6%) and user-rated satisfaction (6.42/7.00). Second, we will describe the creation and evaluation of a machine learning predictive model of lapses (e.g., the maximizing of sensitivity without unacceptably low specificity). As such, we will report the final model's strongest predictors of lapse (e.g., socializing, affect, tiredness), sensitivity (70%) and specificity (72%). Third, we will report on the development of 159 tailored micro-interventions, and implementation of these interventions in DietAlert. Fourth, we report on an effectiveness trial in which participants (current n=20; projected n=40) used a full version DietAlert that included experience sampling, risk alerts, and momentary and tailored micro-interventions. Preliminary results suggest that DietAlert is reducing lapse frequency (M = -3.00, SD=5.55) and enhancing weight loss (M = 3.7%, SD=1.6%) versus weight watchers alone (M ~ 2% in an independent sample), though the uncontrolled nature of the study makes this conclusion temporary.

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Paper Session 42: Advancing Care for Type 1 Diabetes 3:00 PM-3:18 PM

YOUTH WITH TYPE 1 DIABETES: PSYCHOSOCIAL PREDICTORS OF RISK FACTORS AND DIABETES-RELATED COMPLICATIONS 11 YEARS LATER

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The goal of this study was to examine the extent to which psychosocial variables measured during adolescence predicted risk factors and early indicators of diabetes-related complications at age 22. We followed 132 youth with type 1 diabetes, average age 12 at study entry, for 11 years with 81% retention. At age 22, we obtained measures of glucose control (HbA1c), cardiovascular risk factors (BMI, cholesterol, blood pressure) and indicators of diabetes-related complications (nephropathy [albuminuria], autonomic neuropathy [heart rate from inhalation and exhalation], peripheral neuropathy [from vibratory readings]). Lower parental social status at study entry and minority race were related to several risk factors and complications. Current education achieved predicted outcomes: higher education by age 22 was associated with better glycemic control, lower cholesterol, and lower autonomic and peripheral neuropathy. Thus, we statistically controlled for parent social status, sex, race, and current educational achievement in all analyses presented below. Overall quality of relationship with mother and father predicted multiple risk factors, but there were more consistent links to father relationship. Higher father relationship quality was associated with lower BMI ($B = -1.18$, $p < .05$), lower levels of non-HDL cholesterol ($B = -16.11$, $p < .01$), and marginally higher autonomic neuropathy ($B = .06$, $p < .10$). Friend support at age 12 did not predict risk factors or complications, but friend conflict did. Friend conflict predicted higher HbA1c (.42, $p < .10$), higher autonomic neuropathy ($B = -.09$, $p < .05$) and higher peripheral neuropathy ($B = .40$, $p < .05$). Greater depressive symptoms and lower feelings of self-worth at age 12 predicted increased albuminuria ($B = 59.78$, $p < .05$; $B = -27.0$, $p < .05$) and peripheral neuropathy ($B = 1.32$, $p < .05$; $B = -.59$, $p < .10$). These results suggest that youth with type 1 diabetes who are having difficulties in relationships and experiencing psychological distress are more likely to experience poor health outcomes many years later. There are a number of potential pathways by which psychosocial variables at age 12 impact physical health 11 years later.

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Paper Session 42: Advancing Care for Type 1 Diabetes 3:19 PM-3:36 PM

INCONSISTENT SLEEP IS LINKED WITH POOR DIABETES MANAGEMENT AND GLYCEMIC CONTROL IN ADOLESCENTS

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Background: Prior research has focused on improving adherence and glycemic control in adolescents with type 1 diabetes (T1D), but the effect of sleep on these outcomes has received little attention. Adolescents, in general, have difficulty meeting sleep recommendations (8-10 hours/night) due to changes in circadian rhythms paired with early school start times, and increased time spent on schoolwork, extracurricular activities, and peer relationships. Insufficient sleep may have serious consequences for adolescents with T1D due to its link to poor diabetes management. This study aims to examine the links between inconsistent and insufficient sleep, measured by objective actigraphy data, and measures of adherence and glycemic control in adolescents with T1D.

Methods: Participants (n = 64, age 13-17 years, 52% female, mean A1C = 8.9±1.5%) wore actigraphs for 7 nights. Actigraphy data were analyzed using Philips Actiware software. Sleep inconsistency was calculated using the standard deviation of total sleep time across 7 nights, representing the variation in sleep from night to night. Average daily blood glucose monitoring (BGM), average blood glucose levels (BG), and percent of blood glucose readings within target range were obtained through 30 day glucometer downloads. A1C was obtained from medical charts and adherence was measured using the Self-Care Inventory (SCI).

Results: Bivariate analysis revealed a significant association between inconsistent sleep and daily BGM ($r=-0.27$, $p < 0.05$), such that more inconsistent sleep was associated with less frequent BGM. Further, inconsistent sleep was correlated with A1C ($r=0.34$, $p < 0.01$) and BG ($r=0.30$, $p < 0.05$), such that participants with greater sleep inconsistency had higher levels of A1C and BG. Additionally, sleep consistency was associated with percent of blood glucose levels within range ($r =-0.26$, $p < 0.05$), indicating that greater sleep inconsistency was linked with fewer blood glucose levels within a specified target range. Inconsistent sleep was not significantly associated with other measures of adherence such as the parent-report or self-report SCI. Average total sleep time was not significantly associated with adherence or glycemic control.

Discussion: In our sample, inconsistent sleep patterns were associated with poorer glycemic control and less frequent BGM in adolescents with T1D. These findings provide novel insights

into the importance of sleep in youth with T1D, suggesting that inconsistent sleep may be more detrimental than total sleep time, and that clinicians should consider sleep patterns as a factor that might affect adherence and glycemic control. Future research should aim to determine the directionality of the relationship between sleep patterns and diabetes-related outcomes through longitudinal studies, and to understand the role of sleep in adolescents' ability to successfully manage T1D.

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Paper Session 42: Advancing Care for Type 1 Diabetes 3:37 PM-3:54 PM

PERFORMANCE-BASED AND QUESTIONNAIRE MEASURES OF EXECUTIVE FUNCTION LINKED TO DIABETES OUTCOMES

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Background: Type 1 diabetes (T1D) is one of the most prevalent medical conditions affecting teens. A complex treatment regimen is needed to maintain glycemic control, which requires components of executive function (EF), such as the ability to shift attention, regulate emotions, and initiate behavior. Although past studies have focused on EF deficits in teens with diabetes, our study is unique and expands upon current literature, incorporating both performance-based and parent-reported measures of EF in relation to glycemic control, treatment adherence, and fear of hypoglycemia.

Methods: Teens with T1D (n=65, age 13-17, 52.3% female, 87.1% White, mean A1c=8.85%) and their caregivers completed the Self Care Inventory (SCI), a measure of diabetes management behaviors where higher scores indicate greater adherence. Parents reported on their teen's EF using the Behavior Rating Inventory of Executive Function (BRIEF), with higher scores indicating greater dysfunction. Teens completed the Fear of Hypoglycemia Survey (FHS), which assesses behaviors and worries related to hypoglycemia. After teens checked their blood sugar, the Delis–Kaplan Executive Function System (D-KEFS) Trail Making subtest, a performance-based measure of EF, and the Working Memory Index (WMI) of the Wechsler Intelligence Scale for Children were administered. Clinical data (i.e., A1c) were collected from medical charts.

Results: Bivariate analysis showed significant relationships between the Worry subscale on the FHS and the D-KEFS Trail Making (r=-.282, $p < .05$), and the Behavior Regulation Index (BRI) on the BRIEF (r=-.273, $p < .05$). These relationships were not present for the Behavior subscale of the FHS. The Emotional Control scale on the BRIEF was found to be significantly associated with A1c (r=.287, $p < .05$). Several BRIEF subscales, as well as the BRI (r=-.325, $p < .05$) and Global Executive Composite (r=-.308, $p < .05$) were significantly correlated with the parent report SCI. These relationships were not observed with the self-report SCI. WMI was not related to any outcomes.

Discussion: As teens become more responsible for their diabetes care and management, the role of EF in treatment adherence becomes more important. This study reveals that lower levels of EF are related to worse treatment adherence, and worries about hypoglycemia are linked to worse performance on an EF task. EF deficits may make it more difficult for teens to

adhere to their treatment plans and maintain glycemic control. Our study is unique in its multimethod assessment of EF, using performance-based and questionnaire measures, which provide valuable and complementary information regarding separate facets of diabetes management. Worry's relation to EF is a novel finding, and warrants further investigation. Future research will need to identify which EF components are most important to specific health behaviors.

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Paper Session 42: Advancing Care for Type 1 Diabetes 3:55 PM-4:12 PM

MULTIMETHOD SLEEP ANALYSIS OF ADOLESCENTS WITH TYPE 1 DIABETES

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While sleep's effect on psychosocial and cognitive functioning is well-established, few researchers have described sleep habits in adolescents with type 1 diabetes (T1D) and few clinicians regularly assess sleep habits. This study aimed to provide an in-depth description of adolescents' sleep on school nights and weekend nights using a multimethod (actigraphy, questionnaire, daily diary self-report) approach to measuring sleep habits.

Participants included adolescents with a diagnosis of T1D for at least 1 year (N=65, mean age=15.0, mean HbA1c=8.9%, 52.3% female). Participants completed the Pittsburgh Sleep Quality Index (PSQI), wore an actigraph and kept daily diaries recording sleep, activity, mood, and blood glucose monitoring (BGM) habits for at least 7 days. Actigraphy was analyzed using Philips Actiware software. Data were analyzed for each participant for one school night and one weekend night.

On school nights, actigraphy revealed average bed time was 10:55 PM (range: 8:19 PM-2:51 AM) and average wake time was 6:34 AM. Actigraphy showed only 5.8% of participants slept for ≥8 hours on school nights, while 38.8% self-reported ≥8 hours of sleep. School night diary data revealed 52.3% of the sample slept with ≥1 electronic device in the room, 60% reported nighttime BGM, and 76.9% reported morning BGM. On weekend nights, actigraphy revealed average bedtime was 11:53 PM (range: 9:21 PM-5:06 AM) and average wake time was 8:46 AM. Actigraphy showed 33.3% of participants slept for ≥8 hours on weekend nights, while 55.8% self-reported ≥8 hours of sleep. Weekend night diary data revealed that 60% of the sample slept with ≥1 electronic device on in the room, 72.3% reported nighttime BGM, and 83.1% reported morning BGM. Using PSQI data, 41.7% self-reported clinically significant poor overall sleep quality.

Paired t-tests revealed that participants slept more on weekend nights than on school nights, using both actigraphy (7:31 on weekends, 6:32 on school nights; $p < .001$) and daily diaries (8:45 on weekend nights, 7:45 on school nights; $p < .005$). Bivariate analysis revealed that greater actigraphy sleep time was correlated with less caffeine intake on the weekend ($r=-.27$, $p < .05$). Additionally, using PSQI report, better overall sleep quality was correlated with less stress on school nights ($r=.34$, $p < .05$) and better mood on the weekend ($r=.26$, $p < .05$).

These findings suggest that few adolescents with T1D meet sleep recommendations on school or weekend nights regardless of sleep measure used, though they tend to sleep longer and report BGM more regularly on weekends than school nights. Clinicians could consider assessing adolescents' sleep habits, particularly on school nights, and encouraging earlier bedtimes and less caffeine intake. Future studies utilizing objective BGM data would elucidate the relationship between sleep and diabetes management habits.

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Paper Session 42: Advancing Care for Type 1 Diabetes 4:13 PM-4:30 PM

PATIENT-PROVIDER COMMUNICATION IN PEDIATRIC TYPE 1 DIABETES CLINICAL CARE

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Although widely studied in adult health care, few studies have examined patient-provider communication(PPC) in pediatric medical care and almost none describe PPC in pediatric chronic illness. A few pediatric PPC studies in primary care and one recent study in chronic illness describe a pattern of low child participation(age=10.3±1.1 years, 53% female, 62% Caucasian, diagnosed 5.1±2.2 years, 61% insulin pump, M_{HbA1c}=9.2%±1.4, 74% 2-parent homes, Mdn_{income}=$50-59K). Three coders used an adapted version of the Turn Allocated System to characterize who initiated a given communication and who the intended recipient was(e.g., physician speaks to patient). We coded 10,341 speaking turns; 20% of each recording was co-coded to assess inter-rater reliability(κ=.680). Patients' speaking turns comprised only 12% of the interactions whereas caregivers represented 39% and physician 48%, a pattern consistent with previous research. Sequential analysis suggested a significant pattern of conversational turn-taking. Physicians responded directly to patients' physician-directed turns 63% of the time overall with a pattern of increasing response as patients' age increased: physicians responded directly to 45% of 8-9yr olds' communications, 63% of 10yr olds', 64% of 11yr olds', and 75% of 12yr olds'. A similar pattern emerged for patient-directed physician turns and parent interruptions of these turns. Patients responded to physicians 53% of the time overall with an increasing pattern as patient age increased: 8-9 year olds responded 42% of the time, 10yr olds responded 44% of the time, 11yr olds responded 58% of the time, and 12yr olds responded 72% of the time. Parents "interrupted" these turns 17% of the time overall, 26% of the time with 8-9yr olds, 21 with 10yr olds, 14% with 11yr olds, and 8% with 12yr olds. These data provide preliminary information on patterns of PPC in pediatric specialty care. Further research is needed to understand the content and purpose of parent "interruptions", how PPC varies over time, and how to optimize PPC patterns that promote patient health outcomes in children with chronic health conditions.

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Paper Session 43: Innovation in Tobacco-Based Interventions 3:00 PM-3:18 PM

CAN "SMARTER" MHEALTH PROGRAMS IMPROVE ENGAGEMENT, ADHERENCE, AND SMOKING CESSATION OUTCOMES?

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Most mHealth smoking cessation apps are not particularly 'smart.' Their content does not follow best practice clinical guidelines and they do not take advantage of smartphone capabilities to adaptively tailor content or allow two-way communication between users and clinicians. We developed a comprehensive, interactive mHealth smoking cessation and medication adherence program (MyMAP; My Mobile Advice Program) that combines standard cognitive-behavioral self-help with real-time adaptively tailored cessation and adherence support/advice, and ability to exchange secure messages with a cessation counselor. MyMAP was pilot tested (n=66; 56% female) against an identical mHealth program minus the interactive and adaptive support/advice and secure messaging features when both were paired with varenicline. Those randomized to MyMAP completed self-initiated and prompted brief check-in surveys about smoking status, cessation medication use, motivation/confidence for quitting, and common adverse events (AEs; withdrawal symptoms/medication side-effects). Participants then received tailored support/advice based on this information. Secure messages were initiated by participants or by counselors, in response to reported AEs, as needed. Outcome measures of engagement, adherence, and cessation were all positive at 5 months. MyMAP was used more often than the control program (10.6 vs. 2.7 mean log-ins, P =.0001), driven by use of the experimental features (tailored support/advice and secure messaging). Experimental participants received help managing 258 withdrawal symptoms/medication side-effects and exchanged 130 secure messages (22 message strings initiated by smokers; 44 message strings initiated by clinicians in response to concerns raised during check-in surveys). Most thought MyMAP could help others quit smoking (92%), consistently take their medication (97%), and would recommend it (87%). More MyMAP participants tended to be 'optimally' adherent (36% vs. 24%) and quit smoking (36% vs. 24%; ORs for each: 1.79; CI: 0.61-5.19). In sum, MyMAP's proactive, adaptive and interactive treatment approach showed promising effects on engagement, adherence and cessation. Results have implications for designing future mHealth cessation programs.

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Paper Session 43: Innovation in Tobacco-Based Interventions 3:19 PM-3:36 PM

SMOKERS WHO ARE NOT MOTIVATED TO QUIT ARE MORE LIKELY TO QUIT SMOKING WITH MORE INTENSIVE VS. LESS INTENSIVE INTERVENTIONS.

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Parents who smoke and are not motivated to quit are an important group for intervention, particularly if they have a child with asthma. Previous research indicates that smokers who are not motivated to quit will be less responsive to intensive smoking interventions, although motivation by treatment interactions have not been directly tested. The current study is a secondary analysis examining whether motivation to quit among parents with asthmatic children moderates the effect of a smoking cessation induction intervention. We hypothesized that smokers who were not motivated to quit would be more likely to quit smoking and reduce secondhand smoke exposure (SHSe) in a more intensive intervention vs a less intensive one.

Parents had a child with an asthma episode requiring urgent care. They were told that they would receive two home-based asthma education visits and discuss their smoking, but they did not have to want to quit smoking to enroll. Home visits included asthma education, motivational interviewing (MI) for smoking cessation and feedback on child SHSe. After the home visits, participants were randomized (n=339, 79.6% female) to receive either enhanced-PAM (Precaution Adoption Model; 6 counseling calls using MI for cessation induction and repeated SHSe feedback) or PAM (6 contact control calls with checks on asthma status) over 4 months. Motivation to quit within 30-days (yes/no) was assessed at baseline. Outcomes were bioverified 7-and 30-day point prevalence abstinence (PPA) at 6 months, and SHSe was measured by passive dosimetry (very low/undetectable vs moderate/high).

At baseline, 38.9% were not motivated to quit. There was a significant treatment group by motivation interaction: Not-motivated smokers in enhanced-PAM were 3-4 times more likely to be abstinent vs. not-motivated smokers in PAM (7-day PPA OR=3.71, 95%CI=1.06, 12.99; 30-day PPA OR=4.15, 95%CI=1.20, 14.35). Smoking outcomes did not significantly differ between treatment arms among motivated smokers. Not-motivated smokers in enhanced-PAM were more than 4 times as likely to have very low/undetectable SHS at follow-up vs not-motivated smokers in PAM (OR=4.46, 95%CI=1.31, 15.15). SHSe did not significantly differ between treatment arms among motivated smokers.

Thus, parents who were not-motivated to quit achieved better outcomes with the more intensive treatment. It cannot be assumed that smokers who are unmotivated to quit will not be responsive to intensive interventions.

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Paper Session 43: Innovation in Tobacco-Based Interventions 3:37 PM-3:54 PM

IMPLEMENTATION OF MHEALTH TECHNOLOGY FOR HIGH-RISK INPATIENT UNITS: TECHNOLOGY INPATIENT PROGRAM FOR SMOKERS (TIPS)

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Background. Tobacco use increases the likelihood of hospitalization for cardiac and pulmonary patients. Hospital stays for these conditions are teachable moments, representing “windows of opportunity” for patients to address their risk behavior. The Technology Inpatient Program for Smokers (TIPS) is a short messaging system (SMS) texting program with motivational messages for hospitalized smokers. The TIPS implementation program included 1) engaging hospital stakeholders and 2) motivating TIPS usage through a promotional poster campaign. The goal of this project was to evaluate the implementation.

Methods. The implementation was evaluated quasi-experimentally for 15 weeks on 2 hospital wards at each of 2 sites. Process measures of the implementation program included weekly site observation and stakeholder meetings on the wards participating. Reach was calculated using admission rates of current smokers from electronic medical records and centralized logs of text messages. Administrative documents were used for a cost analysis.

Results. Posters were hung in patient rooms and hallways on wards by hospital staff. On weekly rounds, a mean of 10.2% (SD: 8.7%) posters went missing from patient rooms and had to be replaced. ***Implementation*** challenges included coordinating the poster campaign and establishing leadership buy-in, but were not detrimental to overall Program rollout. Per hospital floor, 29 to 51 smokers (Mean: 34.7, SD: 8.8) were admitted per week. After 15 weeks, 30 smokers enrolled in the system. Thus, estimating total smokers admitted in 15 weeks, 5.7% (30/520) enrolled in the system. The initial sunk ***cost*** of the TIPS intervention, including posters and stakeholder meetings, was $2238.89. There was a small marginal cost per smoker of $6.32 ($189.49/30).

Discussion. Smokers participated in TIPS with only limited interventional effort and small marginal costs, although proportionately few smokers signed up for TIPS. Further research will be conducted to examine the effects of more intensive implementation efforts, including incorporation of a TIPS Program orientation into nurse workflow.

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Paper Session 43: Innovation in Tobacco-Based Interventions 3:55 PM-4:12 PM

PROJECT CONNECT: HELPING TOBACCO USERS STAY QUIT AFTER DISCHARGE WITH BEDSIDE VISITS FROM TRAINED VOLUNTEERS

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In-patient hospital care represents a window of opportunity to initiate smoking cessation. However, a lack of cessation support upon discharge limits the extent to which initial abstinence becomes sustained cessation. To address this gap in care, the current study evaluated the efficacy of a systems-based smoking cessation program – *Project Connect*- designed to provide a continuity of smoking cessation care from the bedside back to the community. Between February and June, 2016, hospital-trained volunteers (former smokers, former nurses, health behavior science students) administered a brief, smoking cessation protocol based on the ASK-ADVISE-CONNECT model to active smokers admitted to any cardiology unit of a single large hospital. If the patient accepted, a fax-referral form was submitted to the Delaware state quitline to initiate quitline cessation services within 72 hours of discharge. A total of 434 patients across 462 admissions were included in the study. The sample was 40% female, 75% white, and on average 57.5 years of age. Across admissions, 30% resulted in a fax referral to the quitline. Of the patients with complete 90-day follow up data, 50% (122/244) indicated they were ready to quit in the next 6 months. Of those, 49 (40%) accepted services and enrolled in treatment. To date, 77 patients have reported not using tobacco within the past 30 days at 90 days post discharge. *Project Connect* is a novel approach to help link patients to evidence-based treatment for their tobacco use. Costs are kept low by using trained volunteers and connecting patients to a state-funded Quitline that offers free choice of seven FDA-approved cessation medications and coaching over the telephone or in person. *Project Connect* represents a value-based approach by treating tobacco use as a chronic disease that is addressed in the hospital and managed through referral to free resources in the community.

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Paper Session 43: Innovation in Tobacco-Based Interventions 4:13 PM-4:30 PM

CITATION AWARD WINNER

INCENTIVES FOR HELPING MEDICAID RECIPIENTS QUIT SMOKING: A RANDOMIZED CONTROLLED TRIAL

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Medicaid recipients smoke at nearly double the rate of the general population and have more difficulty quitting. Treatment for smoking-related disorders costs Medicaid over $40 billion/year. CMS launched an initiative to examine incentives for the prevention of chronic disease. This study was part of that initiative and examined the effect of providing incentives to help Medicaid smokers quit smoking; the study was embedded in the California Tobacco Quitline.

Quitline callers with Medicaid who consented to the study (N=3,816) were randomly assigned to: Usual Care (UC), Nicotine Patches (NP), or NP plus Incentives (NP+I) using a ratio of 1.0:1.4:1.4. All groups were provided standard quitline counseling. UC subjects could receive free nicotine patches by taking a doctor's prescription to their pharmacy. NP subjects were sent free nicotine patches directly to their home by the quitline to minimize barriers. NP+I subjects were mailed patches directly and were provided with small monetary incentives to participate in counseling (up to $60 for a complete course of 5 counseling sessions).

Subjects were evaluated on quit attempts made, self-reported prolonged abstinence (30-day abstinence at 2 months and 180-day abstinence at 7 months), and use of nicotine patches and other quitting aids.

Incentives increased the median number of counseling sessions delivered by 1. Mailing patches directly increased use of quitting aids from 68.4% to over 90%. Quit attempt rates were 88.3%, 91.8%, and 94.5% for the UC, NP, and NP+I groups, respectively. At 7 months, prolonged abstinence rates were 14.1%, 15.8%, and 19.3%, for the three groups, respectively. For both quit attempt rates and prolonged abstinence rates, the difference between UC and NP+I was significant. Results for NP were not significantly different from either condition.

Barrier free access to patches and small monetary incentives for counseling increase quit attempts and success for Medicaid recipients. The policy implications of these findings will be discussed.

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Paper Session 44: Correlates of Cardiovascular Disease 3:00 PM-3:18 PM

DEPRESSIVE SYMPTOM PROFILES, CARDIOMETABOLIC RISK AND INFLAMMATION: RESULTS FROM THE MIDUS STUDY

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Depression is an important predictor of cardiometabolic risk; however; the presentation of depressive symptoms can be highly heterogeneous. In this study, we used latent profile analysis (LPA) to (1) provide a comprehensive characterization of depressive symptoms profiles in a healthy sample of adults, and (2) examine their association with cardiometabolic outcomes, including metabolic syndrome (MetS) and obesity. Participants were 1180 adults enrolled in the MIDUS-II biomarker study. We used LPA to derive depressive symptom profiles using subscales of the Mood and Anxiety Symptom Questionnaire, the Center for Epidemiologic Studies Depression Scale subscales and the Pittsburgh Sleep Quality Index. Blood was drawn to assess C-reactive protein as a marker of inflammation. Four depressive symptom profiles were identified. The “Low Symptoms” subgroup (56.66% of the sample) had low scores across all subscales. The “Somatic Complaints” subgroup (25.93%) was characterized by lower scores across indicators, with subscales measuring somatic symptoms being the highest *within* group. The “Negative Affect” subgroup (11.78%) had high scores across subscales with those measuring negative affect/loss of interest being the highest. Finally, the “Acute Symptoms” subgroup (2.63%) was characterized by high scores on all subscales. After controlling for sociodemographic characteristics, membership to both the “Somatic Complaints” and the “Negative Affect” subgroups was associated with greater odds of presenting MetS (OR_{Som}=1.384, *p*=0.037; OR_{NegA}=2.088, *p*=0.001) and obesity (OR_{Som}=1.392, *p*=0.032; OR_{NegA}=1.934, *p*=0.001). Inflammation partially attenuated the association between the “Somatic Complaints” subgroup and cardiometabolic outcomes, while associations for the “Negative Affect” subgroup remained independent. This is the first study to identify empirically-derived depressive symptom profiles among healthy mid-life adults in the US and link them to cardiometabolic outcomes. Future work should examine potential differential pathways to increased risk across depressive symptom profiles and examine whether tailored interventions have an impact on cardiometabolic risk.

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Paper Session 44: Correlates of Cardiovascular Disease 3:19 PM-3:36 PM

MERITORIOUS AWARD WINNER

PREOPERATIVE DEPRESSION AND STRESS PREDICT POSTOPERATIVE CARDIOVASCULAR EVENTS IN PATIENTS UNDERGOING VASCULAR SURGERY

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Preoperative depression and stress predict postoperative cardiovascular events in patients undergoing vascular surgery

Background: Depression and psychosocial stress are associated with cardiovascular morbidity and mortality, including negative outcomes following cardiac surgery. Hypothesized mechanisms include poor lifestyle, high blood pressure and increased platelet activity These mechanisms are also involved in peripheral vascular disease, but little is known about the effects of psychosocial factors on vascular surgery outcomes. We examined the association between depressive symptoms and psychosocial stress and cardiovascular events 30 days after vascular surgery.

Methods: The study sample included 181 adult patients with vascular disease undergoing non- emergent vascular surgery at NYU Medical Center and Bellevue Hospital. Validated single item measures of depressive symptoms, perceived stress at home or work, and financial stress were administered preoperatively and were dichotomized (high versus low) for this analysis. The two stress items were combined to provide a measure of elevated stress of any kind. The primary outcome was the 30-day event rate, a composite of stroke/transient ischemic attack, myocardial infarction, death and troponin elevation.

Results: Mean age was 70 ± 9 and the sample included 29.3% females and 17.7% racial/ethnic minorities. The 30-day composite event rate was 21.1%. Prior to surgery, 54.2% of participants reported high depressive symptoms and/or high stress. These participants had almost twice as many postoperative events as those reporting low depression and low stress (24.2% vs. 13.2%, p=.07). After adjusting for age, sex, race/ethnicity, body mass index, smoking status, type of surgery and prior coronary artery disease or myocardial infarction, high stress/depression was associated with higher odds of postoperative events (OR 3.44, 95% CI, 1.28 to 9.24). The odds were similar in participants reporting both elevated stress and depression 3.61 (0.9, 14.55) and those reporting elevated stress or depression 3.38 (1.2, 9.54), compared with those reporting low stress and low depression.

Conclusions: These results support the hypothesis that high pre-operative stress or depressive symptoms may increase risk for negative outcomes after vascular surgery.

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Paper Session 44: Correlates of Cardiovascular Disease 3:37 PM-3:54 PM

IMPACT OF ANTIDEPRESSANTS ON RISK FOR MAJOR ADVERSE CARDIOVASCULAR EVENTS IN PATIENTS WITH AND WITHOUT CARDIOVASCULAR DISEASE

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Background: The American Heart Association (AHA) has endorsed depression as a cardiac risk factor and recommends screening as part of routine practice. This has been met with controversy due to a paucity of data linking depression treatment to better cardiovascular outcomes. This study prospectively assessed the association between antidepressant treatment (defined as being prescribed antidepressants) and major adverse cardiovascular events (MACE) in men and women undergoing exercise stress tests.

Methods: 2385 participants were recruited on the day of their exercise stress test between 1998 and 2002, and were followed for 8.8yrs. Participants underwent a sociodemographic, medical, and psychiatric interview (PRIME-MD) and completed the Beck Depression Inventory (BDI). Antidepressant use was self-reported and verified via chart review. Outcomes included MACE from administrative databases.

Results: A total of 39% (n=921) of the sample had depression and 8% (n=190) were taking antidepressants at baseline.Adjusted cox regression analyses revealed that antidepressant use was associated with a 30% reduced risk of MACE (HR=0.697; 95%CI =0.504–0.964; *p*=.029). There was no significant interaction between antidepressant use and sex (β = -0.07, 95%CI; (β) = -0.73 – 0.60; *p*=.85).

Conclusions and Relevance: Findings indicate a cardio-protective effect of antidepressants on risk for MACE over an 8.8-year follow-up among patients presenting for exercise stress tests

independent of traditional risk factors, CVD history and baseline depression, which did not differ by sex.

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Paper Session 44: Correlates of Cardiovascular Disease 3:55 PM-4:12 PM

CLUSTERING OF SOMATIC SYMPTOMS OF DEPRESSION, HRV, AND INFLAMMATION IN PATIENTS WITH ASYMPTOMATIC HEART FAILURE

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Stage B, asymptomatic heart failure (HF) presents a therapeutic window for attenuating disease progression and development of HF symptoms, since mortality rates increase dramatically when there is progression to symptomatic HF. By identifying biomarkers that cluster with somatic symptoms of depression, interventions may be developed to target this high risk group. Methods. Participants were 44 patients with Stage B HF (mean age = 66.2 +/- 7.6 and left ventricular ejection fraction (LVEF%) = 62.8 +/- 8.48) assessed for somatic and cognitive symptoms of depression, Beck Depression Scale (BDI), heart rate variability (HRV) (EquaVital, EQ01 heart rate monitor) and plasma inflammatory biomarker, c-reactive protein (CRP). Results. Regression analyses, adjusting for EF revealed that elevated somatic symptoms of depression predicted increased HRV measures, RMSSD (delta R2 = .104, p = .037) and HF (delta R2 = .145, p = .02), and inflammation biomarker CRP (delta R2 = .072, p = .042). A hierarchical cluster analyses was performed whereby a Dendrogram using Ward Linkage showed that indeed somatic but not cognitive symptoms of depression clustered with HRV and CRP. Conclusions. In patients with Stage B heart failure, somatic symptoms of depression were associated with increased HRV and a marker of inflammation. Somatic symptoms of depression, potentially denoting sickness behavior associated with increased inflammation, may result in increased parasympathetic activity to conserve energy.

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Paper Session 44: Correlates of Cardiovascular Disease 4:13 PM-4:30 PM

CHILDHOOD TRAUMA, PERCEIVED STRESS, AND HAIR CORTISOL IN ADULTS WITH AND WITHOUT CARDIOVASCULAR DISEASE

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Background: Traumas experienced in childhood have been associated with greater psychological or physical morbidity, including a greater risk of developing cardiovascular disease (CVD). It has been hypothesized that this may reflect, at least in part, disturbances in how stress is later perceived and regulated.

Objective: To examine the associations of childhood trauma with perceived stress over the past two years and 3-month hair cortisol levels in adults with and without CVD. Whether associations differ as a function of sex, age or CVD status is also examined.

Methods: 745 men and 453 women (Age=65 ± 7 years) with and without (N=581) CVD completed the Childhood Trauma (CTQ) and Perceived Stress Questionnaires. Cortisol concentrations from 3-cm segments of hair were assessed in 642 participants. Analyses involved Pearson correlations and hierarchical regressions that controlled for pertinent covariates.

Results: Moderate to severe childhood trauma was experienced by 374 participants, and was reported to a similar extent irrespective of sex, age, or CVD status. Women reported more stress but had lower hair cortisol levels compared to men (all $p < 0.001$). Those with CVD exhibited greater cortisol ($p < 0.001$) but similar stress levels compared to participants without CVD. Childhood trauma was associated with higher perceived stress levels over the past two years ($r=0.344$, $p=0.01$; $\beta=0.309$, $p < 0.001$), but not with hair cortisol concentration in both univariate and multivariate analyses. Age moderated the relation between childhood trauma and perceived stress ($\beta=-0.061$, $p=0.023$).

Conclusion: Younger individuals who experienced trauma in their youth reported more chronic stress in late adulthood. However, childhood trauma was not associated with greater accumulation of cortisol in hair over the past 3 months. Whether this reflects more or less intact HPA regulation in those having lived trauma in childhood or reflects the characteristics

of our sample (e.g. 81.1% over the age of 60, 94.5% with at least one illness) requires further investigation.

Keywords: cardiovascular disease, childhood trauma, hair cortisol, perceived stress

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Paper Session 45: Racial Concordance and Provider Communications 3:00 PM-3:18 PM

CITATION AWARD WINNER

RACIAL ATTITUDES AND NONVERBAL CONVERGENCE IN RACIALLY DISCORDANT ONCOLOGY INTERACTIONS

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Background: Patient and physician racial attitudes (e.g., physician implicit racial bias; patient suspicion of medical care racial/ethnic minorities receive) affect perceptions of communication in racially discordant (Black patients, non-Black physicians) medical interactions. Racial attitudes are likely expressed and reinforced through nonverbal behaviors. The Communication Accommodation Theory predicts that nonverbal convergence/divergence reflects relational convergence/divergence over time in interpersonal interactions. However, prior research has not investigated the association between nonverbal convergence/divergence and racial attitudes. We investigated the relationship between patient and physician racial attitudes and the convergence/divergence of nonverbal behaviors in racially discordant oncology interactions.

Method: Data were 99 racially discordant video-recorded oncology interactions. Five one-minute slices from each interaction were extracted, randomized, and coded by trained coders (N=495 slices). Coded behaviors were selected based on the research literature and community members' input. The coding system assessed frequency/duration of facial behaviors (e.g., smiling, eye gaze) and body behaviors (e.g., lean, orientation to the other, and openness). Longitudinal dyad discrepancy score modeling (i.e., scores nested within patient-physician dyads) was used to determine discrepancy in nonverbal behaviors between patients and physicians. A three-level longitudinal multilevel model (i.e., time nested within patient, patient nested within physician) was used to determine to what extent racial attitudes influence nonverbal convergence/divergence across each oncology interaction for each behavior.

Findings: Results showed that racial attitudes of patients and physicians influenced the degree of convergence of facial, but not body, behaviors across the oncology interactions. Physicians

lower in implicit racial bias converged with their patients more on frequency of smiling than physicians higher in implicit bias ($p < .05$). Patients higher on medical suspicion converged more with their physicians on duration of eye gaze than patients lower on medical suspicion ($p = .07$). No significant relationships were found between racial attitudes and body behaviors.

Discussion: Findings suggest racial attitudes may manifest in facial behaviors, lending partial support to the Communication Accommodation Theory. Next steps including applying the final phase of the coding system, identification of paraverbal behaviors, to further determine to what extent racial attitudes impact nonverbal convergence/divergence throughout oncology interactions, and to link nonverbal behaviors to interaction outcomes.

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Paper Session 45: Racial Concordance and Provider Communications 3:19 PM-3:36 PM

RACE, AGE, AND GENDER DIFFERENCES IN CLINICAL TRIAL AWARENESS, PARTICIPATION, AND SOCIAL SUPPORT IN A SAMPLE OF U.S. ADULTS

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Background: Historically, racial/ethnic minorities, older adults, and women have been underrepresented in clinical trials (CTs) and health research studies. Limited knowledge and awareness, medical mistrust, logistical barriers, and lack of invitation are some of the commonly cited reasons for these disparities. However, it is not clear how, if at all, these factors may differ by demographics.

Objective: To assess race, age, and gender differences in awareness, participation, and social support for CT participation in an online sample of adults across the United States.

Methods: Black (n=1513) and white (n=361) adults were recruited through Survey Sampling International and completed an online survey about diabetes, health behaviors, CT awareness and participation, and attitudes about research. Age range of participants was 30 to 85. With regard to gender, 910 were male and 949 were female. Chi-square tests were conducted for the following items: 1) Have you ever participated in a research study; 2) Have you ever heard of a CT; 3) Have you ever been asked by a healthcare provider to participate in a CT; 4) Have you ever tried to participate in a CT but told that you were not eligible; 5) If you could guess, how many of your friends and family would participate in a CT (none, some, most, all); and 6) If you decided to participate in a CT, how many of your friends and family would support that decision (none, some, most, all)?

Results: There were significant differences between whites and blacks for having heard of a CT (86% vs. 81%), $\chi^2(df=1,N=1865)=4.5$, $p=.03$. There were also racial differences for how many friends and family would support one's decision to join a CT, $\chi^2(df=3,N=1863)=24.75$, $p < .001$, with whites reporting a higher percentage of “most” compared with blacks. Among blacks exclusively, there were significant age differences. Compared with younger black adults, older black adults were more likely to answer “yes” to the following items: having participated in a research study, $\chi^2(df=1,N=1481)=4.81$, $p=.02$; heard of a CT, $\chi^2(df=1,N=1482)=36.59$, $p < .001$; ever asked by a provider to participate in a CT, $\chi^2(df=1,N=1480)=26.85$, $p < .001$; and tried to participate in a CT but told you were not eligible, $\chi^2(df=1,N=1474)=3.93$, $p=.04$. Additionally, perceptions of how many friends and family would participate in CTs (i.e., "most" or "all") was

higher among younger black adults compared with older black adults, $\chi^2(df=3, N=1483)=23.12$, $p < .001$. There were no differences between black men and women for any of the items evaluated.

Conclusion: More research on the role of social support on CT decision making is needed. Efforts to raise CT awareness and improve participation of diverse groups may benefit from targeted approaches that incorporate demographic, health literacy, and psychosocial factors.

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Paper Session 45: Racial Concordance and Provider Communications 3:37 PM-3:54 PM

THE INFLUENCE OF HEALTH PROFESSIONAL CONTROL AND QUALITY OF CARE ON WELL-BEING AMONG BREAST CANCER SURVIVORS

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Recent work on locus of health control has clarified the role of both passive and active dimensions of external locus of control in African American cancer survivors. Locus of control and perceptions of professional care were examined in African American and Latina breast cancer (BC) survivors. The hypotheses were as follows: compared to individuals low on quality of professional care, individuals high on quality of professional care will endorse greater well-being; and individuals who endorsed higher professional control and higher internal control (for both control scores, lower scores = higher control) will endorse higher quality of professional care. This study used baseline data from a parent study examining the effects of a psychosocial intervention to reduce distress. Participants were recruited from state and local hospital cancer registries, including the City of Hope cancer registry. The sample included 320 women, 28% African American and 73% Latina, age 26 – 89 years, and 1-5 years post BC diagnosis. High quality of professional care was associated with greater well-being ($\beta = .67$, $p < .001$). Professional control was correlated with professional care. BC survivors who viewed their doctors as being less in control of their health endorsed greater quality of professional care ($r = .15$, $p < .01$). Internal control was inversely correlated with professional care as survivors who had high internal control reported greater quality of professional care ($r = -.25$, $p < .001$). There was no significant interaction between professional care and professional control on well-being. Professional care varied by ethnicity, $F(1, 311) = 18.99$, $p < .001$, as African American survivors endorsed higher quality of professional care than Latina survivors. English speakers endorsed higher quality of professional care than Spanish speakers, $F(1, 311) = 24.25$, $p < .01$. These results may be partially explained by language differences and Latina BC survivors' lower scores on professional care. These findings support the relationship between internal control and professional care, but the findings on professional control and care are unexpected and may provide important insights for care delivery to Latina BC survivors.

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Paper Session 45: Racial Concordance and Provider Communications 3:55 PM-4:12 PM

THE IMPACT OF BLACK PATIENTS' RACE-RELATED ATTITUDES ON THE QUALITY OF RACIALLY DISCORDANT ONCOLOGY INTERACTIONS

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In a seminal report on “Unequal Treatment,” the IOM panel identified both provider and patient attitudes as contributing to racial disparities in the quality of healthcare. Subsequently, considerable attention has been given to the impact of providers’ racial attitudes in racially discordant medical interactions. The racial attitudes of Black patients have received much less research attention. The present study explores how different facets of Black cancer patients’ race-related attitudes and beliefs affect patients’ behavior in racially discordant oncology interactions and also patients’ and oncologists’ post-visit perceptions.. Black patients (n=114) completed baseline measures of perceived past discrimination, trust of physicians, healthcare suspicion, and racial identity. Approximately one week later, patients had initial visits with an oncologist (n=18). Ninety-nine of these interactions were recorded and assessed for patients’ verbal activity (e.g., how much they talked). Finally, both patients and oncologists completed post-interaction questionnaires regarding perceptions of each other and of the interaction. Despite their conceptual similarity, patient attitudes and beliefs were weakly intercorrelated and showed different effects. Multi-level regression models were conducted, to account for patients being nested in physicians. Past discrimination was strongly positively associated with patient verbal activity, but was not associated with patient perceptions. Suspicion was negatively associated with patients’ perceptions of oncologist patient-centeredness, trust in the oncologist, confidence in recommended treatments, and ability to complete treatments. Suspicion was also negatively associated with physicians’ perceptions of patient education. A mediational analysis showed that perceived educational level led oncologists to believe higher suspicion patients were less likely to follow treatment regimens and tolerate their treatments. Thus, Black patients’ race-related attitudes and beliefs, which are grounded in history and in current experiences as Black people living in the US, play an important role in racially discordant medical interactions. These attitudes and beliefs can contribute to racial disparities in patient and physician treatment decisions and adherence. Differences among patients in these attitudes and beliefs must be considered in attempts to reduce racial disparities in healthcare.

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Paper Session 45: Racial Concordance and Provider Communications 4:13 PM-4:30 PM

INFLUENCE OF RACE OF PRINCIPAL INVESTIGATOR ON STUDY PARTICIPATION OF AFRICAN AMERICANS

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African Americans continue to be underrepresented in clinical research studies. This study aimed to investigate if the race of the principal investigator (PI) would influence African Americans' motivation to participate in research studies, how to convey the race of the PI, and factors that would help build trust when the PI is not African American. We conducted in-depth semi-structured interviews (n=4) and two focus groups (n=6) with adults who self-identified as African American or multiracial African American. Interviews and focus groups were recorded and transcripts were coded using an inductive method. We conducted a content analysis on all questions of using an inductive method using two coders. Participants (n=10) were on average 35 (SD=6.0) years old and 80% were college educated. Results revealed that for the majority of the participants (n=9), their motivation to participate in a study would be enhanced if they knew that the PI was African American (kappa =1.0). When asked what would the best way to convey the PI was African American, a face-to-face approach was the most common recommendation reported by 4 participants. Other recommendations included putting a picture of the PI on the recruitment flyers (n=3), and stating "by black people for black people" on recruitment materials (n=1) (kappa=.7). Several themes emerged about how to build trust when the PI is not African American (kappa= .8): having a presence in the community (n=6), showing transparency in the research process (n=4), acknowledgement of the African American struggle (n=2), and hiring diverse staff (n=1). Increasing the diversity of research investigators and research workforce as well as changes in recruit strategies may increase African American participation in research studies. Further research is needed to explore which strategies are to increase participation of African Americans in research studies.

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Paper Session 46: Health Profiles of Veterans 3:00 PM-3:18 PM

CITATION AWARD WINNER

USING MACHINE LEARNING TO IDENTIFY SOCIAL DETERMINANTS THAT PUT VETERANS AT HIGHEST RISK FOR POOR DIABETES OUTCOMES

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Social determinants of health contribute to disparities in diabetes. Whether or how multiple social determinants combine to put patients at highest risk for poor diabetes management is unknown. We used classification and regression trees (CART) methods in a national cohort of 188,743 Veterans with type 2 diabetes in 2008 to identify combinations of key social determinants that predict two indicators of poor diabetes management: diabetes-related preventable hospitalizations and mortality. Using Veterans Affairs and US Census data, we computed 45 individual and zip-code level indicators of social determinants of health, including individuals' sociodemographic (e.g., race, marital status, homelessness) and clinical (e.g., mental illness, HIV) characteristics and their neighborhood's socioeconomic status, safety, racial/economic diversity, internet connectivity, and grocery stores. In 2009, 0.7% of the sample were hospitalized and 3.6% died. CART identified 4 individual-level variables that combined into 5 risk factor profiles for hospitalizations (range: 0.3% to 3.1% hospitalized). Area under the receiver-operator characteristic (ROC) curve for these 4 predictors was 0.64. Highest hospitalization rates were among married Veterans with a history of homelessness (3.1%) and unmarried Veterans (1.2%). Among those remaining, the highest rate was among black Veterans under age 65 or over 74 (1.0%). For mortality, CART identified 4 individual and 2 neighborhood variables that combined into 8 risk profiles ranging from 1.8% to 6.6% in the youngest and oldest age groups, respectively (ROC=0.66). In the middle age groups, those who were unmarried, had hepatitis or used tobacco, and lived in areas with high poverty and unemployment had increased risk of death. From the 45 possible risk factors, CART analysis identified a small subset of key social determinants that predicted poor diabetes outcomes in Veterans. Additionally, these risk factor combinations would be difficult to detect using traditional statistical methods and can enable interventions to be targeted towards particularly at-risk populations.

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Paper Session 46: Health Profiles of Veterans 3:19 PM-3:36 PM

MERITORIOUS AWARD WINNER

CHARACTERISTICS OF ARMY RESERVE FAMILIES WHO USE FAMILY READINESS PROGRAMS

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Background: Previous research suggests that families of Reserve/National Guard (R/NG) personnel are less integrated into military life compared to active duty families. Special family readiness programs (FRPs) exist to address this issue, but limited research has been conducted to examine who uses them. This study uses the Andersen Behavioral Model (ABM) to examine characteristics of Army R/NG families who access FRPs.

Methods: Data are cross-sectional from Operation: SAFETY (Soldiers And Families Excelling Through the Years), an ongoing longitudinal study of US Army R/NG Soldiers and their partners (N=411 couples). The ABM was used to frame predisposing, enabling, and need-based factors that may influence use of FRPs. Logistic regression models assessed the likelihood of the respondent or an immediate family member accessing an FRP based on selected variables.

Findings: Predisposing factors that may influence a family to access FRPs include having more children (OR=1.14 [1.01-1.30], $p < 0.01$). A military-specific predisposing factor is a family experiencing at least 1 deployment (OR=3.18 [2.08-4.85], $p < 0.001$). Furthermore, having two spouses who have deployed, as in dual-military couples, also increases the likelihood of accessing an FRP (OR=4.95 [1.91-12.84], $p < 0.01$). For enabling factors, families with members who have longer time in military service are more likely to access FRPs (OR=1.12 [1.07-1.16], $p < 0.001$), while families with the wife as the military spouse results in lower likelihood of accessing FRPs, compared to husband-only and dual-military families (OR=0.26 [0.12-0.57], $p < 0.01$ and OR=0.33 [0.12-0.93], $p < 0.05$, respectively). For need factors, mental health status (depression, hazardous drinking, and PTSD), of either military or civilian spouse, is not related to the outcome. However, physical intimate partner violence perpetrated by the husband is marginally significantly related to accessing an FRP (OR=1.68 [1.00-2.82], $p=0.05$).

Conclusions: Findings shed light on the types of military families that may or may not access FRPs, which might guide future efforts to link underserved families to resources. Future research should focus on understanding need-based factors and the impact that FRPs might have on such needs.

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Paper Session 46: Health Profiles of Veterans 3:37 PM-3:54 PM

LONGITUDINAL EXAMINATION OF RESILIENCE AMONG 3 SAMPLES OF MILITARY PERSONNEL

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After exposure to potentially traumatic events (PTEs) some individuals experience great hardship while others return to normal functioning. This ability to “bounce back” after exposure to PTEs characterizes psychological resilience. Given the importance of resiliency in contributing to individual wellbeing, several researchers have noted a need for considering the temporal nature of this construct. Research into the stability of resiliency over time is limited and can provide mixed conclusions. To help add to this growing literature base, the current study investigates the stability of resiliency among three samples of military personnel. Sample 1 includes 873 personnel on a combat deployment. Sample 2 includes 177 personnel participating in a training initiative. Sample 3 includes 611 military personnel presenting for mental health treatment. *Resilience* was measured using the Response toStressful Experiences Scale (RSES), a 22-item scale emphasizing coping processes. Longitudinal growth models using a multilevel random coefficient modeling framework were employed to examine trajectories of resilience over time (Raudenbush & Bryk, 2002). Results suggest that from 49% to 64% of variance in resilience scores were explained by between person differences. Results suggest that lowest initial RSES scores were found among the sample of treatment seeking military personnel while the highest initial RSES scores were found among the personnel participating in a training initiative. The treatment seeking sample displayed the strongest increase in resilience scores over time while the deployed Marine sample displayed the lowest increase in resilience scores over time. Results from the treatment seeking sample may suggest that clinicians can provide personnel with the resources and confidence needed to address future stressors. Results of the current study suggest that over time, resilience scores are more likely to increase (or remain stable) than to decrease. This is evidenced by the significant positive relationship between time and resiliency scores and the positive relationship between age and overall resiliency scores. Even throughout a stressful combat deployment, resiliency scores tended to increase over time.

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Paper Session 46: Health Profiles of Veterans 3:55 PM-4:12 PM

12-MONTH WEIGHT LOSS OUTCOMES AMONG VETERANS WITH PREDIABETES IN AN ONLINE DIABETES PREVENTION PROGRAM

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There is a significant evidence base supporting the effectiveness of the Diabetes Prevention Program (DPP), a lifestyle management program to reduce incidence of diabetes, which has been translated to multiple settings. Online adaptations of the DPP may enhance reach by allowing individuals to participate in DPP at the time and location of their choosing. However, most programs have been limited to face-to-face or phone-based modes of delivery. Thus, the goal of this study was to assess the effectiveness of an online version of the DPP among Veterans with prediabetes.

Eligible Veterans with prediabetes were invited to enroll in an online DPP, which was added to an ongoing trial of two in-person programs as an additional parallel, non-randomized arm. The analytic sample included consented patients who had 12-month weight outcomes available (via wireless scales or clinical administrative data). Mixed effects models were used to assess 12-month weight change, controlling for demographic factors.

Based on preliminary analyses, on average, online DPP participants (n=268) lost 6.25 lbs ($p < 0.001$) from baseline to 12 months. This was comparable to the average weight loss of 7.5 lbs ($p < 0.001$) among participants of the in-person DPP that was part of the ongoing trial within the VA. These preliminary findings suggest that online delivery of DPP is feasible and that results may be comparable to a group-based in-person program for Veterans with prediabetes.

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Paper Session 46: Health Profiles of Veterans 4:13 PM-4:30 PM

LIFESTYLE FACTORS AND RISK OF OBESITY AMONG US VETERANS

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Research suggests US veterans have a higher prevalence of obesity (body mass index [BMI] ≥30 kg/m^2) than those with no prior military service and weight gain is particularly high around the time of military discharge. Despite an established link between individual lifestyle factors and weight gain, few studies have assessed the combined influence of multiple factors on obesity risk. This study examined the cumulative effect of several lifestyle factors on risk of new-onset obesity after separation from the military using data from the Millennium Cohort Study, an ongoing prospective study designed to investigate health effects associated with US military service. Participants complete surveys triennially that collect information on demographics, service-related and lifestyle factors, and physical and mental health. Participants' self-report of lifestyle factors of interest (physical activity, sedentary time, sleep duration, fast food intake, alcohol use) were dichotomized into "healthy" and "unhealthy" categories (e.g., fast food intake < 1 vs. ≥1 times per week). Multivariable Cox models estimated hazard ratios (HR) and 95% confidence intervals (CI) for incident obesity in relation to the number of healthy lifestyle factors (0 to 5). Among 16 432 participants with a BMI of 18.5 to 29.9 kg/m^2 at baseline, 16% became obese over a mean follow-up of 4.8 years. Obesity risk decreased with an increasing number of healthy lifestyle factors, with a 51% lower risk for those with all 5 vs. 0 healthy lifestyle factors (HR 0.49; 95% CI 0.34 to 0.69); evaluated ordinally, risk was 14% lower for each additional healthy lifestyle factor (HR 0.86; 95% CI 0.83 to 0.90; *P*, trend < 0.001). Estimates were similar by sex but less precise among women. The population attributable risk for having 1 or more of the 5 unhealthy lifestyle factors compared with none was 30% (95% CI 1% to 48%), an estimate of the proportion of individuals with new-onset obesity that would have been prevented if the entire study population had all 5 healthy factors. The present findings suggest the adoption of an increasing number of healthy lifestyle factors is associated with an additive reduction in risk of obesity among veterans.

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Paper Session 47: Behavioral Medicine in Sleep and Insomnia Research 3:00 PM-3:18 PM

MERITORIOUS AWARD WINNER

STRESS REACTIVITY MEDIATES THE WITHIN-DAY LINK BETWEEN SLEEP QUALITY AND DEPRESSION IN FIBROMYALGIA

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Poor sleep quality is a common correlate of chronic pain. Not only does poor sleep exacerbate ongoing pain, but it can also impair psychological functioning through heightened symptoms of depression. The within-day mechanisms linking a night of poor sleep to increased depression the next day have not been examined. Therefore, the current study examined the within-day relations among morning reports of sleep quality on the previous night, late afternoon reports of stress reactivity, and nighttime reports of depressive symptoms. Stress reactivity was expected to mediate the link between sleep quality and symptoms of depression. Electronic daily diary data were collected for 21 days from 220 individuals with fibromyalgia, a chronic pain condition. Multilevel Structural Equation Modeling was performed to estimate the mediation model at the within-person level. Results demonstrated that stress reactivity significantly mediated the relation between sleep quality and depressive symptoms. Specifically, higher than usual morning reports of poor sleep quality on the previous night predicted greater than usual late afternoon stress reactivity, which subsequently predicted higher than usual levels of depressive symptoms reported at nighttime. Further, a secondary within-day analysis showed that nighttime reports of depressive symptoms did not predict sleep quality reported the next morning. Overall, the findings suggest that a night of poor sleep may heighten same-day depression in chronic pain individuals by interfering with their ability to manage stressors that day. There was no evidence to suggest carryover effects of depression on sleep, suggestive of a “vicious cycle,” on subsequent days.

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Paper Session 47: Behavioral Medicine in Sleep and Insomnia Research 3:19 PM-3:36 PM

BRIEF BEHAVIORAL THERAPY FOR CANCER-RELATED INSOMNIA: EFFECT ON QUALITY OF LIFE AND HEART RATE VARIABILITY DURING CHEMOTHERAPY

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Quality of Life (QOL) is negatively impacted in breast cancer (BC) patients receiving chemotherapy, and diminished QOL exacerbates psychological and physiological symptoms. Reduced vagal tone, as indicated via lower heart rate variability (HRV), is hypothesized to influence the pathophysiology of impaired QOL. To date, there are no effective brief behavioral interventions that are deliverable to cancer patients in the clinic while they are receiving chemotherapy. As QOL and HRV are heavily influenced by sleep quality, we aimed to evaluate the efficacy of a novel intervention, Brief Behavioral Therapy for cancer-related insomnia (BBT-CI), for improving QOL and HRV in BC patients undergoing chemotherapy.

In our phase II, 2-arm, randomized controlled trial, 71 BC patients (mean age=52.5, SE=1.16; 96% Caucasian) who reported moderate insomnia were randomized to: 1) BBT-CI (2 face to face sessions + 4 phone calls) or 2) a healthy eating behavioral control (HEAL). BBT-CI and HEAL were delivered over 6 weeks by trained nurses or clinical research assistants in the chemotherapy infusion clinic at 5 NCI-funded Community Oncology Research Program (NCORP) clinical practices across the U.S. QOL was measured via the Functional Assessment of Cancer Therapy – General (FACT-G) and FACT-B, a specific subscale for patients with BC, as well as HRV via an ambulatory heart-rate device (Firstbeat Bodyguard 2) at baseline and post-intervention. HRV was measured using time (SDNN, rMSSD) and frequency indices.

The study showed excellent feasibility and acceptability of conducting BBT-CI in the infusion clinic with a recruitment rate of over 75% of eligible participants and an intervention adherence of 74%, with 75% of intervention components successfully delivered by trained community research staff. Analysis of covariance showed that patients who received BBT-CI exhibited improvements in their QOL compared to those receiving HEAL at 6 weeks (FACT-G, p=0.009; FACT-B, p=0.016). Furthermore, there was a significant treatment effect in HRV indices of both time and frequency in which patients receiving BBT-CI remained stable in contrast to patients receiving HEAL whose HRV declined (SDNN, p=0.047; rMSSD, p=0.040; HF, p=0.018).

BBT-CI rendered greater improvements than HEAL on QOL and HRV, demonstrating efficacy in the community oncology setting. BBT-CI is a novel intervention that can yield additional psychophysiological benefits to patients during their infusion sessions. Bringing efficacious behavioral interventions to the oncology clinic can change the paradigm of clinical practice, ameliorating patients' burden and symptoms.

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Paper Session 47: Behavioral Medicine in Sleep and Insomnia Research 3:37 PM-3:54 PM

SLEEP QUALITY INFLUENCES NEXT-DAY AFFECT AND EMOTION REGULATION: A DAILY DIARY STUDY OF HIV-POSITIVE GAY AND BISEXUAL MEN

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Background: Previous studies have uncovered the impact of poor sleep quality on subsequent affect and emotion regulation in the general population. Daily diary studies on gay and bisexual men have also observed event-level associations between both anxious affect and sexual activation and increased sexual risk-taking. The current study sought to explore links between sleep quality and daily affect and emotion regulatory capacity amongst HIV-positive gay and bisexual men using event-level data from an online daily diary study. **Method:** We analyzed 798 daily reports from 53 HIV-positive gay and bisexual men enrolled in a 21-day online diary study. Multilevel logistic modeling was used to test whether previous night's sleep quality predicted affect (depressive, anxious, anger, fatigue, and sexual, separately) and emotion regulation. Models were fit with an AR(1) covariance structure and random intercept. Daily reports of previous night's sleep quality were disaggregated into individual-level averages and situational fluctuations around one's average, and were used to predict current-day affect and emotion regulation. **Results:** The sample was diverse with regard to race/ethnicity (75% men of color), and had a mean age of 38 years. Daily sleep quality was significantly associated with each affective outcome, such that an individual having lower-than-average sleep quality on a given day also reported higher levels of depressive ($B = -0.08$, $p < 0.001$), anxious ($B = -0.04$, $p = 0.02$), and angry ($B = -0.05$, $p < 0.01$) affect, as well as greater fatigue ($B = -0.08$, $p < 0.001$) and emotion dysregulation ($B = -0.04$, $p< 0.01$). Lower-than-average sleep quality on a given day was also marginally associated with increased sexual activation ($B = -0.05$, $p = 0.06$). **Conclusions:** Individuals experiencing daily disruptions in sleep quality reported increased negative emotionality, which is consistent with previous research on various populations. The current study highlights poor sleep quality as an important lifestyle variable in these men's emotional and sexual lives--increasing negative affect and potentially sexual activation, while also decreasing the individual's capacity to regulate these affective states. Implications for the development of sleep-related interventions to improve mood and daily coping, and to potentially reduce sexual risk-taking, will be explored.

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Paper Session 47: Behavioral Medicine in Sleep and Insomnia Research 3:55 PM-4:12 PM

SLEEP DISRUPTION AMONG CANCER PATIENTS FOLLOWING AUTOLOGOUS HEMATOPOIETIC CELL TRANSPLANTATION (HCT)

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Background: Sleep disruption is a commonly reported quality of life concern among cancer survivors following HCT. Despite the high prevalence of sleep disruption in HCT recipients, relatively little research has investigated sleep disruption or explored relationships with psychological factors such as cognitive or behavioral factors. In addition, no studies have used actigraphy to characterize sleep disruption in this population.

Method: Autologous HCT recipients who were between 6 to 18 months post-transplant completed self-report measures of cancer-related distress, fear of cancer recurrence, dysfunctional sleep cognitions, and maladaptive sleep behaviors upon enrollment. Patients then wore an actigraph and completed a sleep log for the next 7 days and completed a self-report measure of sleep disruption on day 7 of the study.

Results: Patients were 84 autologous HCT recipients (age M = 60, 45% female, 69% multiple myeloma). Forty-one percent met criteria for sub-clinical or clinical insomnia based on patient self-report (ISI ≥ 8). Examination of actigraphy data indicated that, on average, sleep was disturbed (e.g., wake after sleep onset M = 66 minutes; total sleep time M = 6.5 hours). Cancer-related distress, fear of recurrence, dysfunctional sleep cognitions, and maladaptive sleep behaviors were related to self-reported sleep disruption (p's < .05), but were not related to objective sleep indices. The cognitive and behavioral factors accounted for 27% of the variance in subjectively reported sleep disruption compared to 7% of variance accounted for by cancer-related distress and fear of recurrence.

Conclusion: Results suggest that many HCT recipients experience sleep disruption during the post-transplant survivorship period. Cancer-related distress, fear of recurrence, dysfunctional

sleep cognitions, and maladaptive sleep behaviors are related to self-reported sleep disruption and can be considered targets for intervention.

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Paper Session 47: Behavioral Medicine in Sleep and Insomnia Research 4:13 PM-4:30 PM

MIND-BODY-SPIRITUAL PROGRAM REDUCES INSOMNIA IN FEMALE VETERANS WITH PTSD: A RANDOMIZED PILOT

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Objectives: Prior research on outcomes of the Mantram Repetition Program (MRP) in 80 women has shown significant posttreatment reductions in perceived stress and improvements in quality of life. The majority of women, however, did not have history of trauma. This study explored the outcomes of MRP versus Present Centered Therapy (PCT) in female Veterans diagnosed with PTSD.

Methods: A randomized trial compared the MRP with PCT in 173 Veterans. Of these, 26 were women randomly assigned to either 8-weeks (1 hour/week) of individual MRP (*n*=16) or PCT (*n*=10). Insomnia Severity Index (ISI), Clinician-Administered-PTSD Scale-version-4 (CAPS), and PTSD Checklist-version 4 (PCL) were administered at pre-, post-, and 2-month follow-up. Data were analyzed using mixed effect models.

Results: Participants' average age was 39.5±11.6 ranging from 25 to 65 years old. Fifty-four percent (*n*=14) were White, 23% (*n*=6) were married/partnered, and 27% (*n*=7) were employed full-time. There was a significant group by time interaction effect for ISI, *F*(2,32)=3.70, *p*=.036, indicating the MRP group had a significantly greater decrease in ISI at 2-month follow-up (*M*=18.94±6.3 to 12.5±9.5) versus PCT group (*M*=18.0±6.4 to 16.4±7.0). There was strong trend for a group by time interaction effect on the CAPS, *F*(2,34)=3.08, *p*=.059, showing MRP group with a greater decrease at 2-month follow-up (*M*=81.50±18.9 to 50.30±20.5) compared with PCT (*M*=76.90±20.4 to 60.33±27.5). There were significant time effects for CAPS in both groups, *F*(2,34)=12.43, *p*=.001. There were significant time effects for PCL *F*(2,45)=16.12, *p*=.0001 with MRP group reporting a slightly greater decrease in PCL at follow-up (*M*=60.07±11.7 to 41.10±12.8) compared with PCT (*M*=60.50±15.5 to 49.50±16.3).

Conclusions: The MRP, a non-trauma-focused, complementary program for PTSD, may significantly reduce insomnia in female Veterans with PTSD. Despite the small sample size, these findings are promising and support future research to determine the full effect of the MRP for PTSD symptoms.

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Paper Session 48: Caregivers: Providers of and Targets for Behavioral Medicine 3:00 PM-3:18 PM

CHANGES IN NURSE-CAREGIVER COMMUNICATION IN CANCER HOME HOSPICE VISITS OVER TIME

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Background

Cancer patients often decline quickly at end of life and many choose home hospice care. In home hospice, family caregivers (CGs) have primary responsibility for patients' day-to-day symptom, psychosocial, and emotional care with support from a nurse-led interdisciplinary team. Little systematic research has been conducted on nurse-CG communication in home hospice and thus it is unknown how nurse-CG communication changes with patient decline. Our goal was to identify the trajectory of home hospice nurse-CG visit communication.

Methods

As part of a large prospective, multi-site observational study, 537 nurse home visits to 101 spouse cancer CGs were audio-recorded from hospice enrollment to patient death. Communication in physical, psychosocial, and emotional domains were identified for both nurses and CGs. Linear mixed modelling was conducted on communication domain using visit as a random effect and CG and nurse as fixed effects.

Results

CG M age=65.6 years (SD=10.2) and 60% were female. Nurses were 90% female and M years practicing in hospice=4.5 (SD=4.9). Visits averaged 40 minutes and length did not significantly change over time. Physical care talk was the most common for nurses on average (M=55%, SD=23%) and CG (M=46%, SD=28%). Psychosocial talk averaged 11% of nurse talk (SD=10%) and 21% for CGs (SD=19%); emotional talk averaged 12% for nurses (SD=8%) and 8% for CGs (SD=11%). Over time nurses had significantly less psychosocial (t=-2.56, p.05).

Discussion

Findings suggest that nurses and CGs co-construct communication in home hospice over time, with small but significant changes as patient death approaches. CG physical care talk increases as their psychosocial and emotional talk is maintained, suggesting CGs are reporting more physical changes with patient decline. Despite this, nurse physical care talk remains stable. The reduction in nurse psychosocial and emotional talk frequency may suggest lessening priority of these domains or providing more space for CGs. Our findings demonstrate a first step in future research to demonstrate how CG needs are met over time and the impact this has on patient and CG outcomes.

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Paper Session 48: Caregivers: Providers of and Targets for Behavioral Medicine 3:19 PM-3:36 PM

FEASIBILITY AND ACCEPTABILITY OF A COMMUNICATION INTERVENTION FOR COUPLES COPING WITH HEMATOPOIETIC CELL TRANSPLANTATION

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Hematopoietic cell transplantation (HCT) is an aggressive form of cancer treatment with medical and psychosocial sequelae. Caregiving partners are also impacted, reporting elevated levels of distress. Patient-partner communications, moreover, are characterized by avoidance of treatment-related concerns. This study assessed acceptability and feasibility of a 5-session couple-based intervention to optimize communication between HCT patients and partners. Of 89 couples approached and deemed eligible, 40 (45%) consented. Demographic characteristics were: M (SD) age = 55.9 (12.3), 38% female, 5% Hispanic and 92% White [patients]; M (SD) age = 54.2 (11.9), 62% female, 8% Hispanic and 92% White [partners]. Eligible and consenting patients did not differ from eligible and refusing patients on these characteristics ($p > .05$). All enrolled patients and partners completed baseline assessments prior to HCT. Thirty reached the intervention (TX) phase 1 month post-HCT; 4 patients died prior to this phase and one was deemed no longer eligible for transplant. All 30 commenced TX and 25 completed TX and follow-up questionnaires; two remain in treatment (90% retention). Process data collected after each session revealed that ratings of self-disclosure and partner responsiveness were high, with means ranging from 4.45 (0.66) to 4.80 (0.35) on a 1-5 scale. These findings suggest that the intervention facilitated communication as intended. Number of sessions completed was positively associated with partner ratings of the extent to which they felt close to and understood/ validated/ accepted by the patient during the sessions (r values ranging from 0.40 to 0.54, p values < .05), and unassociated with baseline demographic or psychosocial characteristics ($p > .05$). Program evaluation ratings support acceptability: M (SD) = 4.50 (0.59) and 4.17 (0.72) on a 1-5 scale for satisfaction with services reported by patients and partners, respectively; and 4.17 (0.70) and 4.22 (0.80) for usefulness of the program. Findings indicate that HCT patients and partners can be recruited and retained for this intervention, and found it acceptable and useful. Perceived partner responsiveness may be important for continued retention.

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Paper Session 48: Caregivers: Providers of and Targets for Behavioral Medicine 3:37 PM-3:54 PM

COPING WITH HOME HOSPICE CANCER CAREGIVING: EMOTIONAL SCAFFOLDING IN NURSE-CAREGIVER COMMUNICATION

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Background

Cancer caregiving can be stressful for families, especially in home hospice as end of life approaches and more demands are placed on family caregivers (CGs). CGs of home hospice patients are often dependent on their hospice nurse for guidance in providing patient care and in helping CGs emotionally cope with the stress of care and an impending loss. Much is known about how nurses support CGs in providing patient symptom management, but little research has addressed nurse strategies for scaffolding CG emotional coping during distress. This study examines the communication strategies utilized by hospice nurses to support emotional expression and coping and the responses from informal spouse caregivers.

Methods

Data were taken from a larger study of audio recorded nurse visits to families in cancer home hospice. Using transcripts of recordings, trained coders identified verbal behaviors representing various types of nurse emotional scaffolding and CG emotional expression. Using an iterative process of constant comparison, coders inductively categorized the instances of nurse and CG communication behavior into overarching themes.

Results

19 visits were selected (representing 7 hospice agencies). Average nurse age was 42.5 (SD=8.9), 90% white, 100% female. CGs were spouses of patients (average years in relationship=35.9, SD=20.0), average age=68.1 (SD=10.6), 100% white, 84% female). Nurses scaffolding was more common than CG emotional expression. Nurses scaffolding included encouragement of emotional expression and modeling emotional coping strategies. CGs expressed positive emotion (e.g. gratitude, humor) and frustration. Common thematic

strategies included positive reframing (e.g. seeking to see the positive side), building emotional rapport (e.g. using humor to connect), and venting (e.g. giving permission, providing a safe space, or airing concerns).

Discussion

Emotion-focused coping can reduce stress and improve psychological and physical health. Nurses provide emotional scaffolding that encourages some CGs to express emotions during distress, but more research is needed to determine longer-term impacts on CG coping or CG health outcomes and patient care. These findings may inform educational materials for nurses or future communication interventions.

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Paper Session 48: Caregivers: Providers of and Targets for Behavioral Medicine 3:55 PM-4:12 PM

SOCIAL SUPPORT FOR LATINO CAREGIVERS

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Alzheimer’s disease and related dementia (ADRD) affect 11% of people age 65 and older in the US. Latinos are a growing segment of the population and it is expected that by 2050, 128 million Latinos will account for 29% of the population. Loneliness and low levels of support from family, friends and social groups are important predictors of disease outcomes in older adults. Latinos report greater social isolation than non-Latino whites, exposing them to greater risk of chronic diseases. The purpose of this study was to identify the different groups that provide social support for Latino caregivers, and to understand how the four kinds of social support (emotional, appraisal, informational, and instrumental support) are offered for Latino caregivers. Interviews were conducted with Latino caregivers (N=16, 12 females; 4 males), 50 years and older, caring for a relative with ADRD a minimum of 4 hours daily for the past 6 months. Eight interviews were conducted in Spanish and eight in English. Interviews about the caregiver role, family and social support, and health behaviors were recorded, transcribed, translated and coded according to the directed content analysis. Caregivers mentioned that social support was provided by family, friends, therapist, homemakers, governmental aid, and organizations. The four types of social support were identified: emotional, appraisal, informational, and instrumental support. Caregivers reported receiving emotional support from family and friends; appraisal support from family and therapist; informational support was provided by family and organizations; and instrumental support from family, friends, homemakers, organizations, and governmental aid. Family members were cited as vital piece in caregiving, providing all four types of support. Instrumental support was mentioned as a needed type of support, mainly offered by family members, homemakers, and governmental aid. Interventions must consider the Latino family structure in offering assistance for caregivers, and also the crucial instrumental help desired to reduce caregivers’ responsibilities.

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Paper Session 48: Caregivers: Providers of and Targets for Behavioral Medicine 4:13 PM-4:30 PM

ENGAGEMENT IN PLEASANT LEISURE ACTIVITIES AND BLOOD PRESSURE: A 5-YEAR LONGITUDINAL STUDY IN ALZHEIMER'S CAREGIVERS

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Objective: Elevated blood pressure is a significant public health concern, particularly given its association with cardiovascular disease risk, including stroke. Caring for a loved one with Alzheimer's disease has been associated with physical health morbidity, including higher blood pressure. Engagement in adaptive coping strategies may help prevent blood pressure elevation in this population. This 5-year longitudinal study examined whether greater participation in pleasant leisure activities was associated with reduced blood pressure in caregivers.

Methods: Participants were 126 in-home spousal Alzheimer caregivers (mean age = 74.2 ± 7.9 years) that completed five yearly assessments. Linear mixed effects models analysiswas used to examine the longitudinal relationship between pleasant leisure activities and caregivers' blood pressure, after controlling for demographic and health characteristics.

Results: Greater engagement in pleasant leisure activities was associated with reduced mean arterial blood pressure (MAP; $p = 0.037$). Follow-up analyses indicated engagement in activities was significantly associated with reduced diastolic ($p = 0.031$) but not systolic blood pressure ($p = 0.097$). In addition, MAP was significantly reduced when caregiving duties ended because of placement of care recipients in nursing homes ($p = 0.005$) or death of the care-recipient ($p = 0.019$).

Conclusions: Greater engagement in pleasant leisure activities was associated with lowered caregivers' blood pressure over time. Participation in pleasant leisure activities may have both cardiovascular and psychological health benefits for Alzheimer's caregivers.

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Paper Session 49: Sexual Behaviors Across Populations 3:00 PM-3:18 PM

MERITORIOUS AWARD WINNER

THE IMPACT OF AGE ON THE ASSOCIATIONS BETWEEN DRUG USE DURING SEX AND HIV RISK BEHAVIORS AMONG BLACK MEN WHO HAVE SEX WITH MEN

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Background: The associations between drug use during sex, age, and HIV risk remain understudied among samples of exclusively Black MSM (BMSM). Younger BMSM are at highest risk for HIV infection, and so understanding the influence of age on HIV risk behavior patterns among BMSM is critical.

Method: 812 BMSM (*M* age = 33.28 years, *SD* = 11.15 years) in Atlanta, GA completed a quantitative assessment via computer-assisted personal interviewing (CAPI). Negative binomial regression was employed to model the association of number of male partners with whom condomless anal intercourse (CAI) was had, number of female partners with whom condomless vaginal intercourse (CVI) was had, depressive symptoms, problem drinking, HIV treatment optimism, and age with frequency of drug use during sex in the past 3 months.

Results: Of the BMSM who reported drug use during sex (n = 399, 49.14%), the average number of sex acts under the influence of drugs was 6.28 (*SD* = 20.47). BMSM's drug use during sex was positively associated with the number of female partners with whom UVI was had (AOR = 1.61; 95% CI = 1.39-1.88, p = 0.001), depressive symptoms (AOR = 1.06; 95% CI = 1.01-1.10, p = 0.006), and problem drinking (AOR = 2.00; 95% CI = 1.55-1.58, p = 0.001). In contrast, HIV treatment optimism (AOR = 0.68; 95% CI = 0.54-0.87, p = 0.002) and younger age (AOR = 0.95; 95% CI = 0.92-0.98, p = 0.001) were negatively associated with drug use during sex. The interactions between CAI × age (AOR = 1.02; 95% CI = 1.01-1.04, p = 0.003), CVI × age (AOR = 0.98; 95% CI = 0.97-0.99, p = 0.001), and HIV treatment optimism × age (AOR = 1.02; 95% CI = 1.01-1.04, p = 0.002) were significant. As age decreased, the association between CVI with drug use during sex became stronger. Conversely, as age increased, the associations between CVI and HIV treatment optimism with drug use during sex were strengthened.

Discussion: Age is key to understanding the relationships between drug use during sex, CAI, CVI, and HIV treatment optimism. Future HIV prevention efforts may consider tailoring their content to address specific age-related risks for their BMSM clients.

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Paper Session 49: Sexual Behaviors Across Populations 3:19 PM-3:36 PM

ASSOCIATION BETWEEN ATTACHMENT AND RISK FACTORS FOR ENGAGEMENT IN RISKY SEXUAL BEHAVIORS AMONG AFRICAN AMERICAN WOMEN

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Background: The study assessed whether attachment-related constructs, *working model-self* (WMS) and *working model-other* (WMO), are associated with risky sexual behaviors, and whether WMS and WMO are associated with risk factors for sexual behaviors commonly targeted by HIV prevention interventions for African American women (e.g., fear of condom negotiation). Furthermore, the study evaluated whether risk factors partially mediate the hypothesized association between WMS and WMO and risky sexual behaviors among African American women.

Methods:560 African American females (age 18-24) reported attachment style, condom use for vaginal and anal sex, and alcohol use prior to sexual encounters during the past 3 months. A subset of women in relationships reported condom use at most recent sexual encounter with boyfriend/main sexual partner.

Results: Neither WMS nor WMO were associated with the following outcomes: (a) proportion condom use for vaginal sex; (b) any condom use for anal sex; (c) condom use at most recent sexual encounter with boyfriend/main sexual partner; and (d) consuming alcohol prior to any sexual encounters. As such, no partial mediation hypotheses were supported. However, WMS was associated with all risk factors for risky sexual behaviors (mediators): partner communication self-efficacy (for example, in relation to this construct, $\beta = 0.26$, $p > .001$); fear of condom negotiation; peer norms for risky sexual behaviors; partner trust; and sex-related alcohol expectancies. Participants with lower WMS had (a) lower partner communication self-efficacy, (b) more fears related to condom negotiation, (c) greater endorsement of peer-norms for risky sexual behaviors, (d) lower levels of partner trust, and (e) greater sex-related alcohol expectancies.

Discussion: Future research should examine whether women with lower WMS benefit from more intensive HIV prevention interventions to effectively change these risk factors and, whether they reduce engagement in sexual risk behaviors.

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Paper Session 49: Sexual Behaviors Across Populations 3:37 PM-3:54 PM

GENDER COMPARISONS OF CONDOMLESS SEX INTENTION AMONG COLLEGE VARSITY ATHLETES IN TAIWAN USING THE THEORY OF PLANNED BEHAVIOR

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Background: Prior research has found that the prevalence of unprotected sexual behavior in male college athletes was higher than that in female athletes. However, given the different socio-cultural context in Taiwan, little is known about whether and how male and female athletes differ in their condomless sex intention (CSI) and associated factors. Hence, this study aimed to systematically examine the theory-based factors influencing CSI among college athletes using the Theory of Planned Behavior (TPB).

Methods: A total of 1,652 anonymous survey responses were collected from college varsity athletes in Taiwan. After excluding non-heterosexual athletes (n=270) and incomplete responses, a final sample of 1,348 was included in the multivariate logistic regression analyses to examine the TPB-based factors related to higher CSI (rated on a 7-point scale and dichotomized by the median). Items derived from the 3 constructs of TPB (Attitude Toward the Behavior, Subjective Norm, and Perceived Behavioral Control) were factor-analyzed to form 5 factor-based subscales, whose scores were trichotomized using tertiles as cutoffs.

Results: In this study, male college athletes reported significantly greater prevalence of higher CSI (53.6%) than their female counterparts (31.7%). In regard to the 5 TPB subscales, males tended to rate significantly more positively than females concerning attitudinal evaluations of positive CSI outcomes, subjective norm, and perceived ease of CSI under constraining conditions. Among male athletes, those perceiving relatively neutral (AOR=1.66) and relatively positive (AOR=2.59) attitudinal evaluations of positive CSI outcomes were more likely to have higher CSI. By contrast, females had elevated CSI only when they had relatively positive evaluations (AOR=3.75). Further, males with relatively neutral (AOR=1.68) and relatively supportive (AOR=3.22) norm had higher CSI, whereas females reported higher CSI only when perceiving relatively supportive norm (AOR=3.04). Notably, males perceiving relatively intermediate level of control over CSI under facilitating conditions (AOR=0.62) had lower CSI. Lastly, males with relatively high level of control over CSI under constraining conditions (AOR=1.66) had higher CSI.

Conclusions: In conclusion, male college athletes in this study had higher CSI than their female counterparts. Using TPB as a framework, this study found that males reported elevated CSI if they had relatively neutral or higher levels of attitudinal evaluations of positive CSI outcomes

and supportive norm, while females only reported higher CSI if they had relatively positive evaluations and supportive norm, suggesting a threshold for CSI in female athletes. These findings along with other differential patterns and associations warrant gender-specific sexual health education tailored for male and female college athletes in the future.

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Paper Session 49: Sexual Behaviors Across Populations 3:55 PM-4:12 PM

EXAMINING THE SYMPTOM NETWORK OF DEPRESSION AND PTSD IN RELATION TO SEXUAL RISK BEHAVIOR IN MSM WITH CHILDHOOD SEXUAL ABUSE

Karmel W. Choi, MA, PhD Candidate[1], Abigail W. Batchelder, Ph.D., M.P.H.[2], Michael Boroughs, PhD[3], Peter P. Ehlinger, B.A.[4], Conall O'Cleirigh, PhD[1]

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Background: Histories of childhood sexual abuse (CSA) are disproportionately common among men who have sex with men (MSM) and predict high rates of depression and PTSD, which are known to contribute to sexual risk behavior. To date, research has examined influences of depression and PTSD on sexual risk at the level of disorders, rather than individual symptoms. Moreover, while depression and PTSD frequently co-occur, their symptoms are expected to be meaningfully distinct in presentation and behavioral impact. This study sought to use a novel network approach to (1) visualize how symptoms of depression and PTSD are inter-related in MSM with CSA histories, and (2) explore which symptoms of depression and PTSD are most related to sexual risk behavior.

Methods: In a cross-sectional sample of 296 urban MSM with CSA histories, depressive symptoms were assessed using the Centre for Epidemiological Studies Depression Scale, and PTSD symptoms were assessed using the frequency scale of the Davidson Trauma Scale. Sexual risk behavior was indexed by self-reported frequency of unprotected sex in the past three months. Network analyses were performed in R using mixed graphical modeling to account for different variable types.

Results: The resulting network structure showed complex associations (1) between symptoms across depression and PTSD, and (2) in relation to sexual risk behavior, even when accounting for the influence of all other variables in the network. While depression and PTSD symptoms mainly clustered within their respective disorders, they were connected at symptom nodes related to sleep disruption, concentration difficulties, and limited life outlook. Moreover, specific symptoms of depression (e.g., trouble keeping mind on things, feeling disliked by others) and PTSD (e.g., painful reminders of the event, reliving event) were linked to sexual risk behavior while other symptoms were not.

Conclusions: Network analyses allow associations to be simultaneously mapped according to

the strength and relevance of these relationships. Consistent with existing literature, depression and PTSD showed some degree of connectivity (comorbidity) across expected symptoms domains. Of note, this analysis has identified symptoms of depression and PTSD that may particularly influence sexual risk in MSM with CSA histories, and illustrates a promising method to refine clinical targets affecting health risk behavior.

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Paper Session 49: Sexual Behaviors Across Populations 4:13 PM-4:30 PM

“SEX ED IS NOT A THING!”: EARLY HEALTH SEEKING BEHAVIORS AMONG MEN WHO HAVE SEX WITH MEN IN RURAL AREAS

Danielle N. Lambert, MPH, CHES[1], Natalia Truszczynski, MPH[2], Anne Marie Schipani-McLaughlin, MPH[2], Carolyn Lauckner, PhD[2], Nathan Hansen, PhD[2]

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Background: Men who have sex with men (MSM) are disproportionately affected by HIV and STIs. Although at increased risk for negative health outcomes, relatively few sexual health education curriculums are inclusive to the health needs of men identifying as gay, bisexual, or queer. This is especially true in rural areas where stigmatization of sexual minorities is even more prevalent. Thus, in the absence of appropriate programming, little is know about where and from whom MSM in rural areas seek out and learn sexual education.

Methods: Semi-structured qualitative interviews were conducted with 20 respondents ranging from 18-60 years old from July 2015 to June 2016. Respondents were eligible for participation if they identified as a man who dates or has sex with other men, resided in a non-metropolitan area of the United States, and were at least 18 years old. Interviews were transcribed verbatim and analyzed by a diverse coding team in NVivo 11 using grounded theory approaches.

Results: The majority of the respondents sought sexual health information from three sources: the Internet, their social network, and LGBT resource centers. Geographic isolation and low population density forced many young MSM to turn to the Internet for information related to HIV/STIs, condom use, and PrEP. While some recognized the CDC and WHO websites as trusted forms of information, many did not know where to start searching for health information on the Web and therefore ended up reviewing non-validated sites, such as blogs. Web-based social networking platforms, such as dating websites or support groups, were a way for respondents to obtain health advice from other MSM in rural areas where inclusive social venues were uncommon. For many respondents, LGBT resource centers located on college campuses were a key source of health information. They provided educational materials to improve safe sex behaviors, guidance in accessing healthcare, free testing, and confidential services in a trusted environment.

Conclusions: The lack of tailored sexual health education for MSM speaks to an immediate need for more reliable programming and inclusive resource centers. Understanding the barriers to receiving sex education, and the ways in which MSM are currently obtaining sexual

health information, can help practitioners relay accurate sexual health information to channels and organizations commonly accessed by MSM.

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Friday

March 31, 2017

6:00 PM-7:00 PM

6:00 PM-7:00 PM

THE IMPACT OF HOPE ON QUALITY OF LIFE IN LUNG CANCER

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Goal-setting, problem-solving, and values-based action are common components of quality of life interventions for cancer (Graves, 2003). These components are sometimes referred to as “hope,” which has been associated with quality of life across multiple types of cancer. The utility of hope has not, however, been tested longitudinally in lung cancer where quality of life is a key treatment outcome given low survival rates and high symptom and treatment burden. The goal of this study was to study relations between hope and quality of life (e.g., social functioning, palliative wellbeing) in lung cancer patients undergoing treatment. Patients with higher hope were expected to report better quality of life and daily levels of hope were hypothesized to predict daily quality of life. Fifty lung cancer patients (58% female, 78% non-small cell, 66% metastatic disease, average age = 68.66, SD = 8.78) completed a baseline questionnaire and 21 daily assessments (M = 20.3 days, SD = 1.3; 1,042 days of data). Multilevel modeling was used to analyze same-day and next-day relationships. Pre-specified models controlled for disease (e.g., time since diagnosis, treatment type, daily disease symptoms) and psychological (e.g., depression, daily affect) factors. Intra-class correlations ranged from 0.64 to 0.75. Patients with higher levels of hope reported higher social and role functioning (estimate = 3.37, SE = 0.90, 95% CI = 1.60, 5.14) and higher palliative wellbeing (estimate = 0.88, SE = 0.24, 95% CI = 0.40, 1.35). On days where patients reported higher hope, they reported higher social and role functioning (estimate = 2.36, SE = 0.70, 95% CI = 1.00, 3.73), better physical functioning (estimate = 2.27, SE = 0.81, 95% CI = 0.68, 3.87), and higher palliative wellbeing (estimate = 0.91, SE = 0.13, 95% CI = 0.66, 1.16). Daily hope appeared to attenuate the negative impact of treatment days on functioning (estimate = 3.33, SE = 1.25, 95% CI = 0.88, 5.77). Daily hope did not, however, predict quality of life in any next-day models. Daily hope was not predicted by cancer symptoms, which suggests that hope may support quality of life regardless of symptom burden.

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C001 6:00 PM-7:00 PM

A HEALTH MESSAGE INTERVENTION FOR INCREASING PHYSICAL ACTIVITY IN EMERGING ADULTS AT-RISK FOR DIABETES

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Background: Millions of adults in the U.S. have type 2 diabetes (T2D), a disease largely preventable with health behavior change. Rates continue to rise, even among younger populations. Emerging adulthood (18-25) is an important point in development for establishing healthful behavior; however most do not meet CDC guidelines for physical activity (PA). Framed health message interventions may provide an effective and easily implemented avenue for increasing PA motivation and behavior in emerging adults.

Aim: This pilot study tests the effectiveness of a framed health message intervention focusing on increasing PA in emerging adults at-risk for T2D.

Method: Ss were 51 sedentary emerging adults with a family history of T2D (68.6% White, 84.3% Female). At baseline and 2-week follow-up, Ss completed validated self-report measures assessing exercise behavior (SDSCA) and motivation (exercise intention). Ss were randomly assigned to receive a gain (n=22) or loss (n=29) framed health message to promote regular PA in an effort to reduce T2D risk. Exercise intention and behavior scores at baseline and follow-up were compared using paired sample t-tests. Change scores from baseline to follow-up were calculated and compared by type of framed message using independent sample t-tests.

Results: *Intention* to increase exercise was higher at follow-up (*M*=5.43, *SD*=1.31), when compared to baseline (*M*=4.95, *SD*=1.52), *t*(50)=-2.009, *p*=.050. Frequency of exercise *behavior* also increased from baseline (*M*=2.82, *SD*=1.20) to follow-up (*M*=3.78, *SD*=1.64), *t*(50)=-3.663, *p*=.001. However, no significant differences emerged by frame of message for exercise intention [Gain: *M*=.011, *SD*=1.91; Loss: *M*=-.853, *SD*=1.46, *t*(49)=1.833, *p*=.073], or exercise behavior [Gain: *M*=-.75, *SD*=1.46; Loss: *M*=-1.12, *SD*=2.14, *t*(49)=.733, *p*=.467].

Conclusion: Findings suggest that health messages may be an effective strategy for increasing exercise motivation and behavior in sedentary emerging adults at-risk for T2D, regardless of message valance. Consistent with previous literature, it was expected that gain-framed messages would promote greater exercise intention when compared to loss. However, no differences by message valence emerged. It is possible that simply bringing T2D risk to awareness, coupled with concrete behavioral suggestions for reducing disease onset, may be sufficient for promoting health behavior change. More research examining framed health messages in emerging adults is needed, including exploration of potential mediators and moderators. Development of efficacious interventions promoting health behavior change in emerging adults is crucial for reducing disease risk.

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C002 6:00 PM-7:00 PM

A TOBACCO-FREE CAMPUS POLICY REDUCES CIGARETTE SMOKING AND USE OF ELECTRONIC NICOTINE DELIVERY SYSTEM DEVICES

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Cigarette smoking is the number one preventable cause of death and disease in the United States; 90% of all adult smokers start smoking in their teens (Bach, 2016; USDHHS, 2014). As part of tobacco prevention efforts, college campuses in the United States have started to implement smoke-free policies in an effort to reduce cigarette smoking and use of Electronic Nicotine Delivery System (ENDS) devices (e.g., electronic cigarette, electronic hookah). The purpose of the current research project was to examine the effect of a tobacco and smoke-free campus policy on cigarette smoking and ENDS use in college freshman living on campus at a state university in the Southwest United States. Self-report data from 1,419 freshmen (median age 18, 84% female) were collected the year before the policy took place (Fall 2015 semester) and immediately after the policy was enacted (Fall 2016 semester). The prevalence rate of cigarette smoking (past 30-day use) dropped from 6.4% in Fall 2015 to 4.0% in Fall 2016, a statistically significant reduction ($p = .048$). Past 30-day ENDS use decreased from 18.1% in Fall 2015 to 11.7% in Fall 2016, which was also statistically significant ($p = .001$). These results provide empirical support that a campus-wide tobacco and smoke-free policy resulted in less cigarette smoking and ENDS use by freshman living on campus. These findings are important because smoking has negative effects on health, and these data suggest that enacting smoke-free policies on college campuses can reduce smoking and ENDS use.

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C003 6:00 PM-7:00 PM

AMBIVALENCE MODERATES THE EFFECT OF MOTIVATIONAL INTERVIEWING ON THE PROMOTION OF INTERNAL MOTIVATION TO DONATE BLOOD

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BACKGROUND: Having a strong internal motivation to donate blood is positively associated with donation intention and behavior. At a group level, participation in a brief motivational interview designed to bolster individual autonomy related to the decision to donate has been shown to increase internal motivation, donation intention, and actual donation behavior. However, at an individual level, donation-related ambivalence may moderate the effect of a motivational interview as individuals who hold ambivalent attitudes may be more amenable to change. Accordingly, the present study sought to determine if individual differences in ambivalence moderate the effect of a motivational interview on internal motivation to donate blood.

METHODS: A sample of recent blood donors (N = 299) was randomly assigned to receive an intervention that either did or did not contain a brief, telephone-based motivational interview aimed at enhancing individual autonomy related to the decision to donate blood. Measures of ambivalence and autonomy to give blood were administered at least one week before and after the interview.

RESULTS: Consistent with a moderation effect, regression analyses revealed a significant interaction between baseline ambivalence and interview group on post-intervention autonomy, while controlling for baseline autonomous motivation ($p < .05$). Specifically, compared to no-interview controls, participation in a motivational interview was associated with significantly higher levels of autonomous motivation among donors with high initial ambivalence (1 SD above the mean) or average levels of initial ambivalence, but no significant differences were observed among donors with low initial ambivalence (1 SD below the mean).

CONCLUSIONS: Ambivalent donors appear to derive more benefit from a brief motivational interview designed to enhance autonomous decision making regarding future blood donation.

Additional research is needed to determine whether the promotion of internal motivation among ambivalent donors is related to significant changes in donation intention and behavior.

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C004 6:00 PM-7:00 PM

BREAST CANCER SURVIVORS' ATTRIBUTIONS OF LACK OF EXERCISE AS CAUSES FOR CANCER DIAGNOSIS AND RECURRENCE RISK

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Regular exercise (i.e., ³ 150 vigorous/moderate intensity weekly minutes) is associated with and thus recommended to decrease breast cancer diagnosis and recurrence risk. However, most breast cancer survivors (BCS), do not meet this recommendation. Understanding the extent to which BCS attribute exercise influencing their diagnosis and especially recurrence can inform how to motivate exercise. Thus we explored the extent to which BCS attribute lack of exercise to their initial cancer diagnosis and possibility of cancer recurrence, and how the latter attributions are related to perceived recurrence risk and levels of exercise.

BCS 2 months - 10 years post treatment were recruited through oncologist referral by mail or in person, at regular follow-up visits. BCS completed online questionnaires. Exercise was measured using the Godin scale. Attributions for initial diagnosis and recurrence were assessed by "What do you think caused you to be diagnosed with breast cancer?" and "What if anything may cause your breast cancer to come back?". Risk recurrence perceptions were assessed by "What do you think is your chance that your breast cancer will come back in your lifetime if you do not exercise?" (1=no chance – 7=certain to happen) and "Compared to other breast cancer survivors your age and race, what do you think is your chance that your breast cancer will come back in your lifetime if you do not exercise?" (1=much below average – 7=much above average).

The sample (n=111) mean age is 57 (SD=10), mean exercise is 147 min/wk (SD=210), is 87% Caucasian, and most (81%) have some college education. The two most common attributions for initial diagnosis were stress and genetics (both cited by 24% of sample); lack of exercise was mentioned by only 8% (n=9) of the sample. With respect to recurrence risk, lack of exercise was the second most common attribution reported by 22% of the sample, behind only diet, mentioned by 26%. Of import, BCS who mentioned lack of exercise as increasing recurrence risk reported exercising more weekly minutes than survivors who did not mention lack of exercise (169 (SD=229) vs. 68 (SD=86), p

BCS attribute lack of exercise as a more frequent cause for possible recurrence than initial diagnosis. This attribution, along with diet, suggests that BCS perceive causes more under their control for recurrence than for an initial event. This may serve the purpose of empowering BCS to believe they have control over lowering their recurrence risk. The heightened perceptions of recurrence risk among those who mentioned versus did not mention lack of exercise may serve as a motivational cue. Further studies are needed to determine how best to incorporate attributions of recurrence risk to motivate exercise.

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C005 6:00 PM-7:00 PM

CHANGES IN BMI, SELF-REPORTED FAMILY NUTRITION, PHYSICAL ACTIVITY, AND SEDENTARY BEHAVIORS IN THE E.P.I.C. KIDS STUDY

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The prevalence of overweight and obesity in youth continues to be high (Ogden et al., 2016). Obesity in youth is strongly associated with obesity into adulthood, as well as increased risk for chronic diseases, including type 2 diabetes (T2D) (Field, Cook, & Gillman, 2005; Herman, Craig, Gauvin, & Katzmarzyk, 2009). Parents shape their children's home nutrition and physical activity environments, making them central agents for prevention and treatment of weight-related problems. However, few effective community-based programs aimed at reducing obesity prevalence and diabetes risk within the family environment exist. In EPIC Kids, we tested the effect of a 12-week family-focused YMCA-based lifestyle intervention in forty-eight 9-12-year-old obese children at risk of T2D and their parents, on behavioral, anthropometric, and environmental T2D risk factors. We hypothesized that a supportive home nutrition, physical activity, and media environment would be associated with a lower child BMI Z score. Child height and weight was measured by trained technicians. Age and sex specific BMI percentiles were determined using CDC growth charts. Self-reported family food, physical activity, and media environment was assessed at baseline and follow-up using the Family Nutrition and Physical Activity (FNPA) questionnaire, a 20-item survey completed by parents focusing on nutrition, physical activity, and sedentary behavior. Descriptive statistics and t-tests were calculated. Difference scores were calculated as week 12 minus baseline scores. BMI Z scores are age and gender standardized using CDC standards. Regression methods were used to explore the relationship between BMI Z scores and FNPA scale and sub scales. Thirty-six families completed post-intervention (12-week) measurements. Improvement (reduction) in BMI Z score ($p = 0.02$) and in family nutrition ($p = 0.0001$) and physical activity ($p = 0.002$) behaviors were observed from baseline to 12 weeks. No significant changes in sedentary behaviors were observed ($p = 0.063$). Similar to previous research using the FNPA instrument (Ihmels, Welk, Eisenmann, Nusser, & Myers, 2009), baseline FNPA scores trended toward predicting change in BMI Z scores although did not achieve significance ($p = 0.241$). Limitations include potential measurement error from self-report and small sample size. These preliminary findings demonstrate the potential for a

YMCA-based lifestyle intervention to improve child BMI Z score, and parent-reported health behaviors, although change in BMI Z score did not predict changes in health behaviors.

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C006 6:00 PM-7:00 PM

EXAMINING FAMILY AND GROUP-LEVEL DIFFERENCES ASSOCIATED WITH SELF-MONITORING IN THE FAMILIES IMPROVING TOGETHER (FIT) TRIAL

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The Families Improving Together (FIT) for Weight Loss Project is a randomized controlled trial testing the efficacy of a motivational and family-based program for improving weight loss among underserved African American adolescents and their parents. Project FIT integrates face-to-face and online sessions to build skills around sustaining healthy lifestyle improvements, including self-monitoring and goal-setting. Parents and adolescents are encouraged to monitor and track their caloric intake and energy expenditure. Intervention facilitators review and provide feedback on participants' self-monitoring logs. Although numerous studies have shown that self-monitoring is a critical behavior-change skill, relatively little is known about the conditions under which people are most likely to self-monitor. The present research extends past research by examining how: 1) aspects of the family structure (including marital status and education-level of the parent) and 2) a facilitator's ability to implement behavioral skills training in a given cohort (as assessed by independent process evaluators) impact self-monitoring among parents and adolescents. A self-monitoring score was created by summing the total number of weeks (range: 0- 6) that participants reported engaged in self-monitoring. Among parents ($N = 72$, $M_{\text{age}} = 43.77$, 93% female, $M_{\text{BMI}} = 37.85$, $M_{\text{income}} \leq \$40,000$), those who were married tracked significantly more weeks ($M = 2.90$ weeks) compared to those who were not married ($M = 2.00$; $p < .05$). Teens ($N = 72$, $M_{\text{age}} = 13.12$, 69.4% female, $M_{\text{BMI\%}} = 97.02$) with parents that had at least a college degree tracked significantly more ($M = 2.60$ weeks) compared to those with parents that had two years of college or less ($M = 1.80$; $p < .05$). Furthermore, among cohorts with relatively high behavioral skills implementation, adolescents engaged in greater behavioral tracking ($M = 2.54$) than cohorts with relatively low behavioral skills implementation ($M = 1.76$; $p = .03$). There were no differences in self-monitoring by age, BMI, or sex. The present study provides preliminary evidence that aspects of the family structure as well as group-level factors contribute to self-monitoring. Given the importance of self-monitoring for promoting health behavior change, the present results suggest that family structure and parent capacity should be considered when designing future weight loss interventions for underserved African Americans.

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C007 6:00 PM-7:00 PM

EXAMINING HEALTH LITERACY, SELF-EFFICACY, AND HEALTH BEHAVIORS IN COLLEGE STUDENTS WITH CHRONIC CONDITIONS

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To date, research on how students adapt to college life in the context of managing their illnesses and their experiences with a chronic condition are limited. In this study, health literacy and self-efficacy were examined in their associations with health behaviors (e.g., general behaviors, wellness maintenance, substance use). Health literacy, an understudied construct, has high relevance for college students considering many may have recently reached legal age and are now responsible for seeking and understanding how to use health services. Participants included 153 students with a chronic condition (18-37 years; 67% female; 40% White; 23% Black/African-American; 16% Asian; 26% asthma; 6% allergic rhinitis; 4% heart condition) who completed a series of online questionnaires. Health behaviors were categorized into general behaviors (e.g., “I get enough sleep”), wellness maintenance (e.g., “I see a doctor for regular checkups”), and substance use behaviors (e.g., “I do not drink alcohol”). General health behaviors were associated with each subscale of health literacy (functional, r=.253, p=.003; communicative, r=.459, p < .000; critical, r=.387, p < .000) and self-efficacy (management, r=.440, p < .000; general, r=.389, p < .000, outcomes r=.404, p < .000) .Wellness maintenance behaviors were associated with each subscale of health literacy (functional, r=.206, p=.014; communicative, r=.388, p < .000; critical, r=.485, p < .000), as well as self-efficacy (management, r=.424, p < .000; general, r=.340, p < .000, outcomes r=.314, p < .000). Fewer substance use behaviors, however, were only associated with communicative health literacy (r=.193, p=.023), critical health literacy (r=.277, p=.001), and self-efficacy to achieve outcomes (r=.233, p < .000). Findings suggest that higher levels of both health literacy and self-efficacy may have an impact on general health and wellness maintenance behaviors in college students with chronic conditions. On the other hand, fewer substance use behaviors were associated with only one dimension of self-efficacy and two dimensions of health literacy. It may be that in college, students engage in substance use behaviors to appear more normative to peers, regardless of their own self-efficacy. More research is needed on college students with chronic conditions in order to elucidate the mechanisms by which health literacy and self-efficacy can reduce substance use, and also improve positive health behaviors.

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C008 6:00 PM-7:00 PM

INTERVENTION MEDIATORS IN AN RCT TO INCREASE COLONOSCOPY UPTAKE AMONG THOSE AT INCREASED RISK FOR FAMILIAL COLORECTAL CANCER

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Background: Understanding pathways by which interventions achieve behavioral change is important for optimizing intervention strategies. The Extended Parallel Process Model and implementation-intention strategies were theoretical guides to the development and implementation of the intervention. **Purpose:** We examined mediators of behavior change in a tailored-risk communication intervention that increased guideline-based colorectal cancer (CRC) screening among individuals at increased familial risk. **Methods:** Using a population-based recruitment strategy, participants at increased familial risk for CRC (N=481) were randomized to one of two intervention arms: 1) remote, tailored-risk communication (TeleCARE) or 2) mailed educational brochure. **Results:** A mediation model showed that the intervention lead to increased colonoscopy uptake through several constructs (threat, efficacy, emotions, knowledge, intentions). Structural equation modeling showed that TeleCARE participants were more likely to get a colonoscopy. The effect was partially mediated through threat perceptions ($\beta=0.12$, pConclusion: Evaluating mediating variables between an intervention (TeleCARE) and a primary outcome (colonoscopy) contributes to understanding underlying mechanisms that lead to health behavior change, thus leading to better informed future interventions.

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C009 6:00 PM-7:00 PM

MATERNAL BMI CHANGE LINKED TO CHILD ACTIVITY CHANGE IN FAMILY-BASED BEHAVIORAL INTERVENTIONS FOR PEDIATRIC WEIGHT MANAGEMENT

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Objective: Family-based behavioral interventions (FBBIs) for pediatric weight management encourage weight loss through modification of the family’s nutritional intake and physical activity (PA) habits using behavioral techniques. Studies on FBBIs typically focus on child weight change as the primary outcome. Little is known about factors associated with change in PA in FBBIs, but evidence suggests that parent modeling and family environment influence children’s overall diet and PA habits and are critical components in FBBIs. We investigate whether change in maternal body mass index (BMI) is associated with change in child’s moderate to vigorous PA (MVPA), prolonged sedentary behavior (PSB), and BMIz during the course of FBBIs for pediatric weight management.

Methods: Youth (*n*=126) ages 5-13 (mean age=9.03±1.7) years with a baseline BMI ≥ 85th percentile (mean BMI%=94.66±4.6) and their families were enrolled in one of three similar FBBIs for pediatric weight management and followed over a period of 6-12 months, depending on length of the FBBI. Child and maternal height and weight were measured by trained clinicians using standardized procedures. Activity data were collected via accelerometers. Residualized change scores were computed for each variable of interest (dependent variables: children’s BMIz, minutes/day of MVPA, proportion of day consisting of PSB; independent variables: maternal BMI) and each covariate (total wear time, weekdays worn, weekend days worn) by regressing follow-up (T2) score on baseline (T1) score. Other covariates included child age, gender, race, study, length of FBBI, and treatment session attendance.

Results: From T1 to T2, maternal BMI decreased from 30.47±6.3 to 30.25±6.0 (*p*=.26), child BMIz decreased from 1.80±.5 to 1.76±.5 (*p*=.04), child MVPA decreased from 36.67±23.4 to 32.09±19.1 minutes/day (*p*=.02), and proportion of day consisting of child PSB increased from 12.06±8.0% to 14.78±11.3% (*p*=.01). Regression analyses indicated a decrease in maternal BMI attenuated both the decrease in child MVPA, *B*=2.77, *p*=.048, and the increase in

proportion of day consisting of child PSB, *B*=-.02, *p*=.02, from T1 to T2. Change in maternal BMI was not associated with change in child BMIz (*B*=.03, *p*=.29) from T1 to T2.

Discussion: Improvement in maternal BMI showed important positive associations with child MVPA and PSB over the course of FBBIs for pediatric weight management. Our findings support the theoretical construct that enabling mothers to improve their weight status via health behavior changes as part of a pediatric weight management intervention is important in supporting healthy behavior change in their children. Future research should consider directly measuring maternal PA and/or target maternal health habits more directly.

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C011 6:00 PM-7:00 PM

MOTIVATIONAL PROCESSES AND HEALTH BEHAVIOR OUTCOMES AMONG HIGH-RISK LATINAS PARTICIPATING IN A LIFESTYLE INTERVENTION

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Purpose: Mexican-American women have one of the highest lifetime risks for developing diabetes, which may stem, in part, from high levels of obesity and physical inactivity. Research to date has focused on behavioral, socioeconomic, or environmental risk factors, while few studies have examined the motivational systems underlying poor health behaviors.

Behavioral inhibition and activation are two discrete, opposing motivational systems that are posited to underlie behavior and mood, and have been widely used as a framework for examining health behaviors associated with obesity and chronic disease. The behavioral inhibition system (BIS) promotes avoidance of punishment or negative emotions, and has been associated with higher levels of anxiety. The behavioral activation system (BAS) promotes goal directed behavior and is sensitive to reward, and has specifically been implicated in increased intake of high-sugar, high-fat foods and obesity.

We completed a randomized trial testing the effectiveness of a dyadic weight loss intervention in Mexican-American mothers with type 2 diabetes and their obese, adult daughters. Despite high rates of perceived stress in this population, no study has considered the complex interplay between motivation, stress, social relationships and health characteristics of two individuals pursuing a shared health behavior change in the context of a weight loss intervention in this under-resourced, high-risk population.

Objective: The study examined baseline associations between mothers' and daughters' ratings of BIS/BAS and: (1) measures of perceived stress and positive and negative social interactions; and (2) self/other health behavior characteristics (i.e., nutrition intake, BMI).

Method: Data was derived from 89 mother-daughter Mexican-American dyads (N=178).

Results: Higher BIS scores were associated with higher levels of perceived stress ($r=0.30$, $p < 0.001$). However, higher BAS scores were associated with lower levels of perceived stress (r=-

0.23, p=0.02) and negative social interactions (r=-0.26, p=0.007). In addition, higher BAS scores were associated with greater saturated fat intake (r=0.21, p=0.01). Additional analyses examined the differential associations between mother/daughter ratings' of self and other health behaviors

Discussion: The findings from this study highlight the importance of considering motivational states in characterizing risk factors of chronic disease and improving health outcomes in this high-risk population.

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C012 6:00 PM-7:00 PM

NUTRITION-BASED HEALTHY LIFESTYLE PILOT PROGRAM FOR FEMALE HOSPITAL EMPLOYEES

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Background: Behavioral risk factors for chronic disease (i.e. smoking, unhealthy diet, sedentary lifestyle) are prevalent in hospital employees (HE). Female HE are at a particular risk given shift work and stressful work environment. Gender-tailored interventions may improve outcomes. Identifying effective methods for increasing HL among HE can inform public health interventions in hospital-based and employee interventions worldwide.

Objectives: This study explored a gender-tailored nutrition-based healthy lifestyle (HL) program for female HE in a Jerusalem hospital, assessing outcomes of health behaviors and BMI. It consisted of 8 weekly sessions on the Mediterranean diet and HL monitoring, including physical activity (PA), with emphasis on providing tools likely to improve outcomes in women (social support, social and emotional eating, etc.). Participants completed surveys (asking about nutrition, PA and other HL parameters) and had BMI and blood pressure measured before and after the program. Program objectives included increased adherence to the Mediterranean diet, increased PA, reduced smoking, and reduced BMI.

Results: 48 women (ages 36-67) completed surveys. 46% were nurses and 25% from hospital administration. They reported increased consumption of vegetables (29.8%, p2 (p

Conclusions: This gender-tailored HL pilot program was effective in helping female HE improve adherence to the Mediterranean diet, reduce smoking, and achieve healthier BMIs. Tailoring HL programs to women may increase HL in female HE.

Main Messages:

- Gender-tailored nutrition-based healthy lifestyle programs can be effective at empowering female hospital employees to adopt healthy behaviors.

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C013 6:00 PM-7:00 PM

PATTERNS OF TOTAL AND SATURATED FAT CONSUMPTION AND THEIR ASSOCIATIONS WITH WEIGHT CHANGES OVER A 12-MONTH WEIGHT LOSS STUDY

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Background: Established guidelines recommend restriction of total fat intake to 20-35% and saturated fat to < 10% of total calories for both general public and those in weight loss studies. To date, no study has examined temporal patterns of fat intake change. Our aim was to identify distinct trajectories of total and saturated fat intake and their associations with weight change.

Methods: This was an analysis of data from a 12-month behavioral weight loss study where participants were asked to reduce total fat intake to ≤25%. Dietary intake was recorded using the Lose It! app on a smartphone and averaged weekly. Weight was measured via a digital scale every 6 months. Group-based trajectory and mixed modeling were used for analyses.

Results: The sample (N=148) was 90.5% female, 81.1% White, with a mean age (±SD) of 51.3±10.1 years and a mean BMI of 34.1±4.6 kg/m^2. Three trajectory groups were found for % calories from total fat: *recommended & decreasing* (n=46, 22.4-26.3%); *recommended & increasing* (n=68, 28.9-33.0%); *high & increasing* (n=34, 32.7-42.5%). For % calories from saturated fat, 3 trajectory groups were found: *recommended* & *consistent* (n=35, 5.3-7.3%), *recommended & increasing* (n=89, 8.6-10.0%); *high & increasing* (n=24, 11.1-16.5%). Significant differences in % weight change were found among total fat trajectory groups (p=.04), with mean % weight losses of -10.6±7.4 for the *recommended & decreasing* group, -9.1±8.8 for *recommended & increasing* group and -5.8±-6.7 for the *high & increasing* group. We found no differences in % weight loss among saturated fat trajectory groups (p=.54).

Conclusions: Nearly one third of sample consistently followed recommendations for fat intake and had greater weight loss. Those consuming fat in excess of recommended levels had less weight loss and could benefits from additional strategies to assist in the development of skills and habits to lower fat intake to support weight loss and improve cardiovascular health.

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C014 6:00 PM-7:00 PM

PILOT TEST OF A SUN SAFETY PROGRAM FOR THE TATTOO COMMUNITY

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Sun Safety Ink! (SSI!) is a skin cancer prevention program developed for the tattoo community. Over 5.4 million cases of non-melanoma skin cancers occur annually and melanoma rates continue to increase. Invasive melanoma of the skin is the third most common cancer among adolescents and young adults (ages 15-39). Concurrently, the popularity of tattoos continues to grow in the U.S. and among members of the military. One in four American adults (23%) have a tattoo, and younger adults, [38% of the Millennial Generation and 32% of Generation X] are more likely to have tattoos than older adults. Tattooed individuals need to take extra precautions not only to protect themselves from UVR but also to reduce damage to and preserve their tattoos. Sun safety is sometimes promoted with tattoo aftercare instructions.

The *SSI!* program included a training for tattoo artists with information on skin cancer and tattoo rates, the relationship of UV and the skin, and skin cancer risk factors and prevention strategies along with a tip card to be distributed with the tattoo studio's aftercare instructions.

55 tattoo studios were invited to participate. 18 (32%) enrolled, 5 (9%) refused, and 32 (55%) did not respond. [4 dropped out after enrollment and randomization]. 14 tattoo studios (6 intervention [I], 8 control[C]) participated. 77 clients completed posttest surveys after receiving a tattoo. Most tattoos were on the arms (50%) and upper torso (47%). 80% reported a sunburn in the past 12 months; sun protection practices were low (1= never to 3=always): sunscreen, M=2.16; wide-brimmed hat, M= 1.53; long sleeve shirts and pants, M=1.69; sunglasses, M=2.57; seek shade, M=1.90. 15.5% engaged in indoor tanning. Strong tanning preferences were reported.

85% (87% Intervention[I] v. 80% Control [C]) received sun protection information in the studio: verbal message from tattoo artist: 93% (95%I v. 86%C]; written aftercare instruction: 92% (90%I v. 100 %C), studio website: 54% (50%I v. 61%C): social media, poster or sign: 51% (55%I v 41%C), tip card brochure, 73% (76%I v. 64%C).

59% (56%I v. 68% C) of respondents said messages were about protecting tattooed skin and 40% (44%I v. 31% C), about protecting all of your skin. The results of pilot study support the need and feasibility to move forward to further test *SSI!*

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C015 6:00 PM-7:00 PM

POSITIVE MOOD IS ASSOCIATED WITH DAILY FRUIT AND VEGETABLE CONSUMPTION DURING AN INCENTIVE INTERVENTION

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Monetary incentive interventions to promote health behavior change have gained recent popularity in both academic research and public health practice, and they have been deemed effective in numerous health domains. However, much remains unknown regarding the effects of these interventions on psychosocial factors associated with overall health and well-being, including affect and perceived stress.

The present research explores these relationships in the context of a brief randomized controlled trial designed to promote fruit and vegetable (FV) consumption using monetary incentives. Participants (n = 60) were randomized to receive either daily incentives, delayed lump sum incentives, or no incentives based upon their FV consumption. Over the course of 21 days, they completed daily reports of their FV consumption, affect, and stress.

Multilevel modeling was employed to examine within- and between-participant relationships between intervention condition, health behavior engagement (i.e., FV consumption), affect, and stress. Results demonstrated a significant relationship between affect and FV consumption both within and across days, over and above the effect of intervention condition ($\beta = 0.90$, $p = .02$). Specifically, on days when participants reported more positive affect, they consumed more FV ($\beta = 0.07$, $p = .04$). Additionally, participants who experienced more positive affect across days also consumed more FV ($\beta = 0.52$, $p = .04$). Daily stress, however, was not significantly associated with FV consumption overall, though a stress X condition interaction reached a trending level ($\beta = 0.08$, $p = .10$), such that an effect of reduced FV consumption on days when participants reported more stress was less strong for participants receiving incentives than those in the control condition.

In sum, this research presents a first examination of the within- and across-day effects of monetary incentives, affect, and stress on FV consumption. Notably, participants' mood was positively associated with their FV consumption both within and across days, indicating that healthier behavior is linked to more positive affect, and these relationships were not adversely affected by the presence of incentives.

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C016 6:00 PM-7:00 PM

POTENTIAL DRIVERS OF DIETARY CHANGE IN AFRICAN AMERICAN CONGREGANTS

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Introduction: Cardiovascular morbidity and mortality are higher in African Americans than whites, partly due to differences in diet quality. African Americans tend to have poorer diet quality than whites, and in particular, eat fewer vegetables. Increased vegetable consumption is associated with decreased cardiovascular and all-cause mortality. The ALIVE intervention is a church-based intervention, designed by a partnership among researchers, pastors and church leaders, to increase vegetable consumption among African Americans. A pilot study showed that ALIVE was successful at increasing average vegetable consumption by one serving over 9 months. The purpose of the current analysis is to investigate individual and social factors related to increased vegetable consumption.

Method: The ALIVE study was a 9-month single-arm trial that was conducted in 5 African American churches. Participants were exposed to both church-wide and individual-level intervention components and completed assessments at baseline and 9 months, including 24-hour dietary recalls and measures of self-efficacy, nutrition knowledge, social norms, and social support. We measured associations between these psychosocial variables and whether participants increased vegetable intake by ≥ 1 servings per day.

Results: Across the five participating churches, participants (n=206) were mostly female with a range of socioeconomic status (25% below poverty). 182 participants (88%) completed at least one dietary recall at 9-month follow-up. Vegetable consumption increased by ≥ 1 serving in 46.6% of participants. Self-efficacy, nutrition knowledge, social norms and social support increased during the intervention (all ps

Discussion: These findings suggest that clinically significant changes in vegetable consumption may be related to both individual-level and social factors. Interventions that focus solely on individual-level factors may be failing to leverage the importance of social norms in driving dietary behavior.

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C017 6:00 PM-7:00 PM

PRECONCEPTION HEALTH (PCH) BEHAVIORS: EXAMINING THE GAP BETWEEN KNOWLEDGE AND INTENTIONS

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Background: Positive PCH behaviors (i.e., health changes made before pregnancy) are important to maximize offspring health. While studies suggest the general public has knowledge of the importance of PCH behaviors, even many of those with planned pregnancies do not engage in them. Little research has examined the intention to engage in specific PCH behaviors. Intentions may represent an intermediate step between PCH knowledge and behavior change and may help explain the knowledge-behavior gap.

Methods: As part of a larger study on PCH knowledge and behaviors, 170 women from Thunder Bay, Canada between the ages of 18 and 45 were surveyed regarding their knowledge of the importance of, and the intention to engage in, 12 different PCH behaviors prior to a potential future pregnancy (i.e., avoiding alcohol, tobacco, second-hand smoke, toxic chemicals, personal care products with parabens/phthalates, toxic-cleaners, and fish high in mercury; reducing stress and caffeine; improving sleep and physical activity; and taking folic acid). Women were asked whether they intend to engage in the behaviors: *in the months before pregnancy*, *when they begin to attempt to conceive*, *when they know they are pregnant*, *later in pregnancy*, or *not at all*.

Results: Across the 12 behaviors studied, a mean of 86% of women reported knowledge of the importance of engaging in them (ranging from 63 to 94%, who knew they should avoid personal care products with parabens/phthalates and get adequate sleep, respectively). Of the women with knowledge of the importance of each behavior before pregnancy, a mean of 72% of women reported the intention to engage in each behavior in the months before a potential pregnancy (ranging from 59 to 82%). Of the women with knowledge, a mean of 28% did not intend to engage in PCH behaviors in the months before conception (18% endorsed waiting until trying to conceive, and 10% endorsed waiting until they know they are pregnant, later in pregnancy, or not engaging in the behavior at all).

Discussion: Although most women report knowing the importance of engaging in positive PCH behaviors before a potential pregnancy, a mean of 28% of women with knowledge reported no intention to engage in specific behaviors in the months before attempting conception.

Results indicate that having PCH knowledge does not necessarily lead to intentions. This may in part explain the ‘knowledge-behavior gap’ observed in PCH. Future research should examine reasons for this gap.

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C018 6:00 PM-7:00 PM

PROMOTING PATIENT PARTICIPATION IN HEALTHCARE INTERACTIONS THROUGH COMMUNICATION SKILLS TRAINING: A SYSTEMATIC REVIEW

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Background: Communication training is a potentially effective tool for promoting patient participation in care and helping patients to get the most out of their visits. Previous reviews of patient communication training literature are either outdated or topical reviews. The purpose of the current systematic review was to present an overview of the status of patient communication training research. Our goal was to examine the content and structure of existing training programs, the design of intervention studies, and evidence concerning the impact of training on patient behavior, communication process, and other important outcomes.

Methods: Systematic searches were conducted in six databases: MEDLINE (via PubMed), Embase, The Cochrane Library, Web of Science, PsycINFO (via OVID), and ERIC (Education Resource Information Center). References were screened for inclusion through title, abstract, and full text review phases by a team of five researchers. Extracted data included intervention study design, sample characteristics, content and structure of training programs, outcomes assessed, and findings reported.

Results: A total of 32 unique intervention studies met inclusion criteria. Most targeted primary care (50%) or cancer patients (28%) and used a randomized controlled design (59%). Interventions used a variety of training formats (i.e., materials only, materials plus individual coaching, and group-based) and modes of delivering educational material (e.g., written, face-to-face, and web-based). Reported findings suggest that communication training is an effective approach to increase patients’ total level of active participation in healthcare interactions and that some communication behaviors may be more amenable to training (e.g., expressing concerns). Trained patients do not have longer visits and tend to receive more information from their providers. Most studies have found no link between communication training and improved health, psychosocial wellbeing, or treatment-related outcomes.

Conclusions: We cannot conclude that a superior patient communication training program exists or that one method for delivering educational materials is best. If anything, the findings of our review indicate that there are many different ways of increasing patient participation

through communication skills training. More work is needed to determine the most efficacious training programs with the strongest potential for dissemination.

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C019 6:00 PM-7:00 PM

PSYCHOSOCIAL MEDIATORS OF PHYSICAL ACTIVITY ADOPTION IN A RCT OF AN INTERNET-BASED INTERVENTION FOR LATINAS

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Theory- and Internet-based interventions have shown great promise in improving physical activity (PA) among Latinas, a group disproportionately affected by PA-related conditions (obesity, diabetes). A better understanding of the theoretical constructs driving PA behavior change in this at-risk group is needed. Pasos Hacia la Salud tested a culturally adapted, theory-based, individually tailored, Internet-based Spanish language PA intervention vs. an Internet-based Wellness Contact Control condition among 205 under-active Latinas. For both objective (accelerometer) and subjective (7-Day PA Recall Interview) measures of PA (minutes/week), the Intervention group had significantly greater increases in PA than controls. The current study explores potential psychosocial mediators (self-efficacy, behavioral and cognitive processes, social support and enjoyment) of the intervention effect on both self-reported and objectively measured PA. A multiple mediation approach was used based on the product of coefficients method with bootstrapped standard errors (one model for each of the primary PA outcomes). There were significant *a* path coefficients (effects of intervention on mediators) for self-efficacy, (a=.43, SE=.15,p=.004); behavioral (a=.64, SE=.14, pb paths (effect of mediator on outcome) such that higher self-efficacy (b=24.54, SE=10.98, p=.03), social support (friends, b=2.36, SE=1.23, p=.04) and to some degree enjoyment (b=.74, SE=.42, p=.08) were associated with higher mean min/week of self-reported PA. The only significant *b* path for objectively measured PA was for self-efficacy (b=22.36, SE=11.25, p=.04). For both PA outcomes, there was an indirect effect of the intervention on PA through increases in self-efficacy (*ab*=10.49, CI:2.46-24.54 for self-report; *ab*=11.11, CI:1.37-32.72 for objectively measured). For self-reported outcomes, there was a significant indirect effect of enjoyment (*ab*=7.30, CI: 0.92-21.78). Results indicate that self-efficacy and enjoyment are key

psychosocial mediators of PA change in Latinas and have important implications for future intervention targets.

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C020 6:00 PM-7:00 PM

QUALITY OF SLEEP AFFECTS SELF-EFFICACY FOR ADHERING TO A HEALTHY LIFESTYLE PLAN

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Background: Prior research suggests that sleep affects adherence to a healthy lifestyle. We conducted a 12-month behavioral weight loss intervention study and used ecological momentary assessments (EMA) to collect data about behaviors and emotions. This study is a secondary analysis of the relationship between self-efficacy (SE) for adherence to a healthy lifestyle plan and quality and quantity of self-reported sleep.

Methods: Using a smartphone, participants completed a beginning of the day (BOD) survey reporting quality and quantity of sleep and random assessments of their level of SE for following a healthy lifestyle. All 12 months of data were used for each participant. Linear mixed effects models were fit including subject-dependent random effects of intercept, each sleep variable, and study interval.

Results: The sample (*N* = 150) was primarily female (90.7%), White 80.7%), middle-aged (51.1(10.2) years of age), and obese (BMI = 34.0 (4.6) kg/m^2). Participants completed 99.6% of the 44,917 BOD assessments on sleep. They reported a mean of 6.9 (1.3) hrs of sleep and 1.6 (3.5) awakenings. On a 0-10 scale, they rated “how well slept” as 6.5 (2.1) and “trouble falling asleep” as 3.1(2.6), and feeling tired 42% of the days. SE was assessed in 133,508 random assessments and was rated as 7.0 (2.1) on a 0-10 scale. Neither trouble falling asleep nor hours slept were significantly related to SE; however, SE increased by 0.02 points for each unit increase in “how well slept”, increased by 0.15 points when subjects reported that they were not feeling tired, and decreased by 0.02 points for each awakening the previous night.

Conclusions: While participants averaged nearly 7 hours of sleep per night, they reported feeling tired over 40% of the mornings. Sleep duration did not affect SE; however, how well a person slept and not feeling tired increased SE ratings, and awakenings reduced SE ratings. The mean SE score of 7 suggests that confidence in adhering to the lifestyle met the minimum level for engaging in adherence to lifestyle behaviors, based on the theoretical basis of the SE construct. However this level of SE does not ensure they will sustain this behavior in the face

of challenges. Future work needs to focus on strategies to improve sleep quality among individuals aiming for weight loss and weight loss maintenance.

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C021 6:00 PM-7:00 PM

REACHING THE HARD TO REACH

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Introduction/Background: ‘Hard-to-reach’ is a term that has been primarily used by researchers to describe groups of people who have been historically difficult to find or contact. The group could be hard to reach for a myriad of reasons, such as geographical location or social and economic situation, concealment of identity due to fear, social pressure, or stigma or social invisibility. The term, ‘hard-to-reach’, implies that the only barrier to recruiting the population is reaching or accessing them. Researchers know that is not the case though. After reaching the hard-to-reach, researchers often encounter challenges in recruiting and retaining participants. It is important for public interest to include members of ‘hard-to-reach’ in research because not including certain sub-populations in research diminishes the ability to identify groups that potentially have the highest burden of illness and to develop an understanding of why group differences exist. Thus, the purposes of this presentation are to: 1) describe the challenges in recruiting hard-to-reach population in two separate research studies, 2) discuss the strategies that were used to overcome those challenges, and 3) provide recommendations for researchers.

Methods: The authors used two of their own research studies involving hard-to-reach populations as case studies for this paper. The research studies used in these case studies involved two very different hard to-reach groups, (1) low-income ethnic minorities who were un- or under-insured, and (2) lesbian and bisexual women and transgender men. Each author was able to access their respective population but encountered numerous challenges in recruiting participants and in collecting all of the data necessary for their study. Several creative recruiting strategies were utilized to gain adequate sample size for these 2 populations.

Results: Through open discussion between the two authors regarding the challenges to reaching their ‘hard-to-reach’ populations, two overarching themes were identified as barriers to ‘reaching’ the population of interest: (1) *gaining interest* and (2) *building trust*. These themes add to the literature regarding the multi-prong approach that is needed to recruit members of hard-to-reach populations. We found that despite having buy-in from stakeholders and a multi-prong recruiting approach, gaining interest of potential participants included barriers such as language in recruitment flyers, competing demands for time, and

transportation to the data collection site. Building trust with interested study participates was also a large issue noted between both studies; especially concerning sensitive questions or cultural barriers regardless of the reliability and validity of the tools used in the study.

Discussion: It is widely believed that underserved populations are ‘hard to reach’ however, it is because they are unwilling or it is it because we don’t know how to reach them? ‘Reaching’ the population of interest means that you take into consideration the opportunity to participate. Gaining interest and building trust with your population of interest is key. Recruiting in rich environment with known high numbers of the potential participants can yield low sample size if one does not take the time to consider how to adequately gaining interest and build trust with potential or actual research subjects.

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C022 6:00 PM-7:00 PM

RECIPROCAL RELATIONSHIP BETWEEN SEDENTARY BEHAVIOR AND MOOD IN YOUNG ADULTS

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With the increasing development of technology, a variety of leisure activities are spent in sedentary or seated behavior. Numerous associations between sedentary behavior and mental health outcomes such as mood have been reported, however none have looked at the reciprocal relationship between mood and sedentary time. The purpose of this study is to examine the relationship of sedentary behavior with mood and health status in young adults.

Methods: A sample of 430 adults (49.3% male) between the ages of 21-35 provided valid objective activity data in addition to an assessment of their wellbeing in a year-long observational study. For the purpose of this study, sedentary behavior is defined as less than 1.5 METS and was measured using a SenseWear mini-armband. The armband was worn for a period of 10 days (compliance of 7 days), with at least 21 hours of verifiable wear time per day. In addition, participants' mood status and quality of life were assessed by the Profile of Mood State (POMS) and SF-36 questionnaire respectively. Specifically, this study used the Total Mood Disturbance (TMD) score from the POMS questionnaire to assess mood. Assessments of sedentary behavior were conducted at baseline and then quarterly for one year duration, while assessments of mood and health status were conducted at baseline and one year.

Results: A cross-lagged, autoregressive clustered model was used to examine simultaneous changes over time in both mood and sedentary behavior allowing for both clustering and adjustment of covariates over time. Data suggests that TMD score decreased significantly over one year, suggesting improvement in mood ($p=0.01$). Furthermore, there were positive associations between sedentary time and TMD; this association increased over time ($p=0.001$). Specifically, higher sedentary time was associated with more distress and this association intensified over time. Mean sedentary time remained stable over the course of the study ($p=0.29$). However, higher TMD scores (more distress) were associated with greater mean sedentary time ($p=.03$), and this association remained stable over the study period ($p=0.51$). Taken together, results suggest significant reciprocal associations (cross-lagged

effects) between mood and sedentary time, with the stronger predictive associations of mood on sedentary time. Similar patterns of change over time in health status and its' reciprocal relationship with sedentary time will also be presented.

Conclusion: These results indicate a reciprocal relationship between mood and sedentary time, that is a decrease in sedentary time should improve mood status, likewise, an improved mood may decrease time spent sedentary. However, the stronger association is mood status predicting time spent sedentary in young adults. By identifying predictors of seated behavior, researchers can better understand ways to reduce time spent sedentary.

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C023 6:00 PM-7:00 PM

REVERENCE—A PREOPERATIVE POSITIVE EMOTION PREDICT POST-OPERATIVE LENGTH OF HOSPITALIZATION

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There has been growing diversification of the American religious landscape (Pew Forum, 2008), which call for research on its behavioral health implications. Aa a cardinal virtue deeply rooted in Western and Eastern civilization, reverence is a sacred positive emotion. Reverence is defined as “feeling or attitude of deep respect, love, and awe, as for something sacred,” which can bestow meaning and purpose in life within different worldviews. In this interdisciplinary study, we investigated the predictive value of traditional religiousness and of experiencing reverence in religious and secular (e.g., naturalistic, moralistic) contexts in postoperative hospital length of stay among patients undergoing open-heart surgery 400+. *Method*: Information on demographics, faith factors, sense of reverence, mental health, and medical comorbidities was collected from 400+ patients (age 62+12) around two weeks before surgery via personal interview. Measures included depression, social support, optimism, religiousness, spirituality, and reverence. Standardized medical indices, including hospital length of stay, were retrieved from the Society of Thoracic Surgeons' national database. *Results*: Hierarchical multiple regression associated secular reverence and shorter hospitalization, after controlling for demographics, medical indices, depression, and psychosocial protectors. Other hospital length of stay predictors included female gender, age, medical comorbidities, low left ventricular ejection fraction, perfusion time, and coronary bypass graft surgery. *Conclusion*: Secular reverence exerts a protective role in an objective measure of cardiac health. More investigation is warrant on naturalistic view of spirituality in patients with diverse beliefs. If the finding is replicated, health providers may integrate a naturalistic perspective of spirituality in cardiac behavioral care.

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C024 6:00 PM-7:00 PM

RISK PERCEPTION UNCERTAINTY MATTERS: GREATER UNCERTAINTY PREDICTS A LOWER LIKELIHOOD OF BEHAVIOR CHANGE.

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Purpose: The association between perceived risk and behavior is often surprisingly weak given the intuitive nature of the relationship. It is possible that important dimensions of risk perception have been neglected. We propose that uncertainty about risk perception, or people’s low confidence in the accuracy of their risk perception appraisals, may also influence behavior change. This may be the case if uncertainty is indicative of lack knowledge about risk factors that would guide behavior change or can be used defensively to justify non-action. The purpose of this study was to test whether risk perception uncertainty predicts health behavior change.

Methods: Participants were 255 MTURK workers (median education = some college; 83% White; mean age = 34(SD = 9)) who completed an on-line cross-sectional survey. We used four logistic regression models to test whether level of uncertainty about perceived risk for heart disease predicted behavior change, controlling for level of perceived risk. In the first model we regressed change in diet on perceived conditional absolute risk and associated uncertainty about risk. In the second, we regressed change in diet on perceived conditional comparative risk and uncertainty. Corollary models were tested for change in exercise. We controlled for age, gender, race/ethnicity, education, income, insurance status, and healthcare provider access.

Results: For conditional comparative and conditional absolute risk uncertainty, 29%-31% of participants reported being very uncertain or uncertain. Three out of 4 tests supported the hypothesis that greater uncertainty about perceived risk is associated with lower likelihood of health behavior change. Participants who were more uncertain about their perceived conditional absolute, and comparative risk were less likely to have changed their diet (OR = 1.7, p = .04; OR = 1.6, p = .02). Participants who were more uncertain about their perceived conditional comparative risk were less likely to have changed their physical activity (OR = 1.5, p = .048). However there was no association between conditional absolute risk uncertainty and change in physical activity. Only one of the four perceived risk measures was associated

with health behavior change: a higher conditional absolute risk perception of heart disease was associated with a greater likelihood of diet change (OR = 1.6, p = .03).

Discussion: Risk perception uncertainty predicts health behavior change even when controlling for level of risk perception. In fact, it was a more reliable predictor of behavior change than level of perceived risk itself. Dissemination of risk estimation tools that help people understand their personal risk profiles may help people assess their risk with greater certainty, and therefore may improve our ability to promote health behavior change.

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C025 6:00 PM-7:00 PM

SELECTING MOBILE APPS FOR DISTRACTION AND RELAXATION TO HELP SMOKERS DEAL WITH CRAVINGS

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Background.

Smart phone mobile applications (or Apps) available at the point-of-need may help smokers in their quit attempts. Cravings are a major problem for smokers trying to quit. Relaxation and distraction activities can be used to assist smokers in managing cravings. We identified existing relaxation Apps and distraction game Apps. Using formative evaluation techniques, we evaluated smoker's preferences for these Apps.

Methods.

Our study was conducted in two phases. **Phase1:** We conducted a search to identify a set of relaxation and distraction Apps (iOs and Android) for usability testing. To select a subset of Apps for patient review, the investigators conducted a heuristic criteria evaluation. Criteria used included: evidence based Apps that are compatible to both Apple and Android phones, free to the consumer, frequently downloaded, and low complexity (duration of 2-7 minutes).

Phase 2: We recruited smokers to participate in a think-aloud usability testing. Testing sessions were coded for thematic content.

Results.

Phase 1: Our search yielded 15 Apps (9 relaxations and 6 distractions). Based on the heuristic evaluation criteria, a subset of 7 Apps was selected.

Phase 2: Participants (N=8) preferred various relaxation Apps based on their visuals and sounds. Example Comments were: visual ***("I like scenery, like beach, lakes"),*** and sound ***("I like sound of rain, ocean, beach and water running. I love sounds")***. Among distraction Apps, a major theme was that users found some distraction games too challenging and frustrating *(**"This game gives me frustration"**).* Further themes included that engagement was key to game preference ***("Game it's very engaging, it keeps my mind alert")***. Also some smokers commented that game was of appropriate duration to manage a craving ***("This game is long enough, it keeps me distracted and away from smoking").***

Discussion/Conclusions.

Participants revealed a wide range of personal preferences for both current relaxation and distraction. Further evaluation of these Apps for current smokers will continue in the larger randomized trial.

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C026 6:00 PM-7:00 PM

STRATEGIC SELF-PRESENTATION AND BMI: THE IMPACT OF SOCIAL AND PHYSICAL COPING STRATEGIES IN THE ACTIVE BY CHOICE TODAY TRIAL

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This study examines the role of social cognitive and motivational theories on increasing motivation for physical activity (PA) in underserved adolescents. One motivational strategy known as Strategic Self-Presentation (SSP), involves making a public commitment to an action-plan and coping strategies. SSP is based on a theoretical framework that integrates elements from role-playing and commitment, cognitive dissonance theory, and self-perception theory, all of which predict that a person’s public display has a strong impact on one’s self-perceptions and subsequent actions. Past studies have found that SSP facilitates greater coping skills among chronic disease patients, and positive changes in diet and PA among minority youth. Despite preliminary support for the efficacy of SSP, few studies have implemented SSP as a behavioral strategy in a randomized controlled trial. The present study extends past research by examining the effects of an SSP intervention module of a larger school-based PA trial on: 1) changes in body mass index (BMI) from pre-to-post intervention; and 2) the relations of different SSP-derived youth coping strategies on post-intervention BMI. SSP was an intervention component in the Active by Choice Today (ACT) trial, a 17-week randomized school-based trial evaluating the efficacy of motivational intervention on increasing PA among sixth-graders. The SSP task involved completing a video-taped interview about one’s personal coping strategies for overcoming PA barriers and for enlisting peers in PA. To further induce public commitment, students were allowed to view and revise the video. SSP interviews (N = 301, 95.7% female, 36.2% African American) were coded by two raters using a standardized coding scheme ($\kappa = 0.75$), such that strategies used to enlist peers in PA were separated into six categories: psychological (greater confidence), emotional (feel good), social (be with friends), physical (increased ability), health (reduce heart-risk), academic, and other. Sex, race, baseline PA, and baseline BMI were included as covariates. A linear regression indicated that generating a greater number of social and physical strategies was associated with a lower post-intervention BMI, $B = -.220$, $SE = .10$, $t = 2.21$, $p = .028$. The results of this study indicate that social and physical coping strategies are especially impactful for helping underserved adolescents to overcome PA barriers, and should be considered in future interventions.

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C027 6:00 PM-7:00 PM

THE EFFECTIVENESS OF HEALTH COACHING: A SYSTEMATIC REVIEW

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Health coaching is an emerging patient-centered, collaborative intervention where coaches work with patients to identify goals and action plans to maximize personal well-being and overall health. This systematic review evaluated health coaching effectiveness among adults with chronic medical conditions on clinical, behavioral, and self-efficacy outcomes. We searched multiple databases for health coaching RCTs, screened studies, and abstracted data based on pre-determined criteria. When meta-analysis was feasible, we computed summary effect estimates via standardized mean differences or mean differences in random-effects models with Knapp-Hartung confidence interval correction. We grouped analyses based on active (eg, counseling) or inactive (eg, usual care) comparator. When meta-analysis was infeasible, we synthesized qualitatively. Compared to inactive comparators, health coaching had a statistically significant effect on A1c (MD -0.30; 95% CI -0.50,-0.10); physical activity (SMD 0.29; 0.15, 0.43); BMI reduction (MD -0.52; -0.91, -0.14); fat reduction (SMD -0.21; -0.31, -0.10); and self-efficacy (SMD 0.41; 0.21, 0.62). Only change in physical activity had sufficient studies to compare effects with active comparators. When compared to active controls, physical activity change was not significant (SMD 0.17; -0.32, 0.67). Estimates exhibited moderate to high statistical heterogeneity ($I^2 \geq 50\%$). In qualitative syntheses, results were mixed or inconclusive for health coaching on functional status, smoking, and medication adherence. We explored potential sources of heterogeneity including population characteristics, intervention dose, intervention delivery mode, coach type, and concordance with key elements of health coaching. None of these factors were robust predictors of heterogeneity suggesting that high heterogeneity in pooled estimates may be driven by a combination of intervention characteristics. These results suggest that health coaching has the potential to produce significant changes in clinical, behavioral, and psychosocial outcomes. Changes compared to usual care were similar to published results for other

counseling or self-management interventions. Variability in what is considered health coaching may contribute to the overall inconsistency and heterogeneity of effects. Additional research is warranted on the impact of health coaching and the central elements that distinguish it from other behavioral counseling and self-management approaches.

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C028 6:00 PM-7:00 PM

ASSOCIATIONS BETWEEN MEETING COMBINED EXERCISE-ONCOLOGY GUIDELINES AND QUALITY OF LIFE IN KIDNEY CANCER SURVIVORS

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Background: Kidney cancer survivors (KCS) are advised to engage in both aerobic and strength exercise. It is unclear, however, if meeting the combined exercise guidelines confers any additional quality of life (QoL) benefits compared to meeting only one of the exercise guidelines.

Purpose: To estimate the prevalence of adherence to the combined exercise guidelines and determine any associations with QoL.

Methods: All 1985 KCS diagnosed between 1996 and 2010 were identified through a Canadian Provincial Registry and mailed a survey including the Godin Leisure Time Exercise Questionnaire and several Functional Assessment of Cancer Therapy QoL scales. Self-reported demographic and medical variables were collected.

Results: Completed surveys were received from 703 (43%) of the 1,654 KCS that received the survey. Only 71 KCS (10.1%) reported meeting the combined exercise guidelines, 112 (15.9%) were meeting the aerobic guideline only, 62 (8.8%) were meeting strength guideline only, and 458 (65.1%) were meeting neither guideline. Analyses of covariance indicated a dose–response association between the exercise guidelines and most QoL outcomes ($p < 0.001$). For the primary QoL outcome of the trial outcome index-fatigue (TOI-F), meeting the combined exercise guidelines was superior to meeting: a) neither guideline (mean difference = 11.8 points; 95% CI: 7.1–16.3, $p < 0.001$), b) the strength only guideline (mean difference = 5.4 points; 95% CI: 0.7–10.1, $p = 0.025$), and c) the aerobic only guideline (mean difference = 6.1 points 95% CI: 2.4–9.8, $p = 0.001$). The aerobic and strength exercise only guidelines were superior to meeting neither guideline ($p = 0.025$ for aerobic; $p = 0.001$ for strength) but were not different from each other ($p = 0.80$).

Conclusions: Meeting the combined exercise guidelines is associated with significantly and meaningfully better QoL in KCS. However, only a small percentage of KCS are meeting the

combined guidelines. Efforts are needed to encourage KCS to adopt the combined exercise guidelines to optimize QoL.

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C029 6:00 PM-7:00 PM

BENEFIT FINDING AND HEALTH BEHAVIORS ONE YEAR AFTER HEMATOPOIETIC STEM CELL TRANSPLANT

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Background/Objectives. The ability of cancer survivors to find benefits in the midst of crisis has been increasingly recognized. Less is known about benefit finding (BF) among cancer survivors receiving hematopoietic stem cell transplant (HSCT), especially in association with health behaviors of prognostic significance and at long-term follow-up. Exercise in particular has been associated with better mood, fatigue, and speed of rehabilitation post-treatment. Better understanding of the relationship between BF and health behaviors may suggest interventions to improve health behaviors as prognostic factors and long-term quality of life among cancer survivors. **Method.** 667 adults completed a survey of benefit finding and health behaviors one year after HSCT. Benefit finding was assessed using the Benefit Finding Scale (Antoni et al., 2001; Tomich & Helgeson, 2004) 17-item mean score. Multivariate analyses were used to determine associations between BF and health behaviors. Age ranged from 18 to 78, with an average age of 55. 21. This sample consisted of 60. 4% male, 80. 1% married, and 69. 7% Caucasian survivors. Most received autologous HSCT (79. 9%). **Results.** BF was higher among women than men ($F(1, 665)= 8. 716$, $p = 0. 003$) and among those in remission at one year follow-up ($F(1,663) = 5. 359$, $p = 0. 021$). BF was not associated with age at time of treatment, marital status, or type of transplant. In examination of health behaviors, BF was associated with eating more servings of fruit per day ($r = 0. 081$, $p = 0. 038$) but was not associated with servings of vegetables or with current exercise at one-year follow-up. BF was also associated with greater perceived importance of diet ($r = 0. 124$, $p = 0. 001$), but not importance of exercise. BF was associated with intention to change/improve health behaviors, such that those who intended to improve both diet ($F(1,645) = 38. 755$, $p < 0. 001$) and exercise ($F(1,636) = 4. 087$, $p = 0. 044$) reported higher BF compared to those who did not intend to improve these health behaviors. Finally, BF was associated with greater self-efficacy for behavior change, including patients' confidence in their ability to improve nutrition ($r = 0. 237$, $p < 0. 001$) and exercise more ($r = 0. 079$, $p = 0. 046$). Associations remained significant when controlling for gender and remission status, except that BF was no longer associated with eating more fruits per day. **Conclusions.** While BF was not generally associated with current exercise and diet behavior one year after HSCT, BF was associated with intention to improve health behaviors as well as greater self-efficacy for health behavior change. Future work should examine whether interventions could capitalize on patients' ability to find

benefits in the cancer experience as well as their intention and self-efficacy for health behavior change to promote improved health behaviors among HSCT populations.

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C030 6:00 PM-7:00 PM

CLINIC VISIT WAIT TIME: ADVANCED CANCER PATIENT AND CAREGIVER DISCUSSIONS

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Background

In an effort to become more patient and family centered, cancer outpatient care is moving towards increased consolidation of multiple provider consultations (e.g. oncologist, pharmacist) into a single visit. For patients with advanced cancer and their family caregivers, it is especially important that their time is used wisely, focusing on what matters most for them today and for the remainder of the patient's life. Our objective was to describe the length of wait times and the content of family communication during outpatient oncology appointments. This information can direct future structuring of appointments in cancer centers to better meet the needs of families.

Methods

We recorded and analyzed 21 outpatient clinic visits where at least one family caregiver was present with an advanced cancer patient. Wait times were identified, timed, and patient and family dialogue was analyzed using an iterative, inductive coding process.

Results

Most patients were female (71.4%) with a mean age of 64.6 (SD=11.7) years; family caregivers were mostly female (66.7%) averaging 56.3 (SD=16.9) years old and 50% were spouses. Visits averaged 61.3 (SD=30.5) minutes, with an average of 29.3 (SD=11.2) minutes spent with a healthcare provider and 25.2 (SD=22.7) total minutes spent waiting. On average 13.1 minutes of wait time was uninterrupted (range=50 seconds to 81 minutes). All visits except for two had at least 9.8 minutes of uninterrupted time. During wait times, families spent 53.5% of time discussing their health care. For example: medication management, the current appointment or treatment, caregiving responsibilities, and completing clinical or research paperwork. 46.5% of wait time was spent discussing everyday life such as meals, shopping, and grandchildren.

Conclusion

We found advanced cancer patients and their family caregivers spend approximately half of their appointment time waiting for providers. Approximately half of their waiting time is spent discussing health-care related topics and half on everyday life. Cancer centers may consider

restructuring appointment timing to further consolidate time with providers, or provide guidance for discussions during wait times to provide more support to families. Examples include interventions to facilitate family decision making, sharing values and goals, and care management problem solving, which have been shown to be an under-addressed need for advanced cancer patients and families.

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C031 6:00 PM-7:00 PM

DESIGNING PHYSICAL ACTIVITY INTERVENTIONS BASED ON FAMILY CAREGIVERS' PERSPECTIVES: RESULTS FROM THE RECHARGE TRIAL.

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Background: Research activity on physical activity (PA) interventions to support cancer family caregiver health and wellbeing has increased over the last 5 years. Recent studies on PA in cancer caregivers have demonstrated significant effects of exercise on physical health, psychological health, PA levels, and physical fitness. Very few studies have used qualitative inquiry to gather the caregivers' perspectives about this type of intervention.

Method: This qualitative inquiry was part of a larger mixed methods investigation of a randomized controlled trial exercise intervention for cancer family caregivers (the RECHARGE trial). Caregivers participated in group based resistance training classes as well as independent aerobic sessions over 24 weeks. Our goal was to examine cancer family caregivers' perspectives about their participation in the exercise program. Semi-structured face-to-face interviews were completed and analyzed using the method of Interpretive Description.

Results: 20 participants were interviewed. The following themes characterized the caregivers' experience of participating in the exercise program. The context of caregiving is an important component of caregivers' ability to regularly exercise, therefore, timing of when caregivers can participate in PA is highly variable. Caregivers were motivated to participate for many reasons, including wanting to feel better mentally and physically, and wanting to engage in a healthier lifestyle with their entire family. Caregivers preferred exercising with other caregivers in a group based format. The caregivers preferred instructor led (versus independent) exercise as it meant one less thing to worry about or plan. The resistance training format was important as it allowed caregivers to focus on one thing and was a distraction from their worries. Having fun and doing something positive for their own health was an important benefit of regular exercise.

Conclusions: Our findings highlight important aspects of the design of an exercise program based on caregivers' perspectives. Future research on PA interventions in caregivers should include qualitative inquiry to better understand how to design interventions based on caregiver preferences, what outcomes to measure, how to reach more caregivers, and how to sustain PA programs in the changing context of the caregiving situation.

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C032 6:00 PM-7:00 PM

EFFECTS OF A TXT INTERVENTIONS ON PSYCHOSOCIAL OUTCOMES FOR BREAST CANCER PATIENTS RECEIVING CHEMOTHERAPY: A RCT STUDY

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As a core component of cancer care, the use of chemotherapy in the ambulatory care setting is likely to increase considerably with projected increases in the incidence of breast cancer. Chemotherapy may improve overall survival; it is also often associated with substantial treatment-related toxic effects that negatively affect HRQOL. Patients are responsible for making complex decisions about what to do or when to contact the providers in the event of new, escalating or unexpected side-effects. To fill this void, we are in the process of evaluating an innovative and automated text messaging program, designed to facilitate breast cancer patient's self-management in the home setting during adjuvant chemotherapy. The theory-based mChemoCoping text messaging-based intervention was developed through an iterative formative evaluation process with targeted population. Using a RCT design, 34 women were assigned to a control group with a patient education booklet and 31 were assigned to the mChemoCoping intervention group in the ongoing study. During the 4-month intervention, participants in the mChemoCoping condition receive one chemotherapy coping tip text message in the morning and one topic inquiry tip (to generate user-initiated text) in the afternoon. All participants complete a baseline survey and 4 monthly follow-up survey. For the 1-month follow-up complete data, Intervention feasibility and acceptability scores are above average and satisfaction feedback from intervention participants is highly positive through qualitative interviews. A total of 1649 text messages are sent by intervention participants and the most prevalent topics requested by the participants are emotional coping, fatigue, and body changes. The intervention had positive effects on self-efficacy ($F = 9.9$, $p < 0.05$) but not symptom distress ($F=0.9$, $p=0.35$) at 1-month follow-up. This innovative mHealth intervention has potential for improving women's coping skills to manage chemotherapy in the ambulatory care setting.

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C033 6:00 PM-7:00 PM

EXPERIENCES OF FINANCIAL SACRIFICE AMONG CANCER SURVIVORS UNDER AGE 65

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Background: Many cancer survivors experience financial hardship, particularly individuals under age 65. This study examined qualitative responses of cancer survivors under age 65 to a survey item requesting description of financial sacrifices associated with cancer.

Methods: We examined data from adults aged 18-64 years with a history of cancer who responded to a 2012 LIVESTRONG Survey on experiences with cancer. The online survey contained a section dedicated to the effects of cancer on finances, including borrowing money, filing for bankruptcy, and “other” financial sacrifices. Among 4484 survey participants aged 18-64 years, approximately 37% (n=1656) responded to the survey item “Have you or your family had to make any other kinds of financial sacrifices because of your cancer, its treatment, or the lasting effects of that treatment?” and completed the open-ended question describing these financial sacrifices. For the qualitative assessment, a codebook was developed based on initial review of the open-ended responses. Two trained staff classified each individual response, using codes that were applied as content dictated. We assessed the frequency of financial sacrifice and examined differences between two reported levels of medical debt (≥\$10,000 vs. 2 tests. The n’s indicate the frequencies of coded financial sacrifices.

Results: Among the 1656 respondents, a majority were women (71%), non-Hispanic white (87%), between the ages of 40-54 (50%), and married (68%). Approximately 33% of respondents reported medical debt ≥\$10,000. The most commonly described financial sacrifices included: cutbacks/significant budgeting (n=796); health care insurance/costs (n=406); career impacts (n=316); asset depletion/reduction (n=273); inability to pay bills (n=263); family/relationship burden (n=220); housing challenges (n=216); and increased debt/borrowing (n=184). The type of financial sacrifices differed by level of medical debt. A significantly greater proportion of respondents with debt ≥\$10,000 experienced inability to pay for bills and services, housing challenges, family/relationship burden, and increased debt/borrowing compared to those with debt

Conclusion: Findings provide insight into financial sacrifices made by cancer survivors under age 65 and underscore the sociocultural, individual, interpersonal impact on those who experience financial hardship.

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C034 6:00 PM-7:00 PM

EXPLAINING THE EFFECTS OF MINDFULNESS BASED STRESS REDUCTION ON FATIGUE IN CANCER SURVIVORS

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Cancer-related fatigue (CRF) is a significant problem for cancer survivors. In a recent, randomized, controlled pilot study, Mindfulness-Based Stress Reduction (MBSR) was compared to an
education/support control group to assess MBSR’s capacity to provide relief from fatigue. Breast (n=60) and colorectal (n=11) cancer survivors (stage 0-III) with persistent, moderately severe CRF were randomized to MBSR or ES. Outcomes, which included vitality, were assessed at baseline (T1), post-intervention (T2) and again 6 months later at follow-up (T3). Complete results are reported elsewhere (Johns, et al., 2016), but by T2, MBSR participants reported significantly greater vitality (p=0.003) compared to ES participants. To examine the possible mechanisms behind this difference, several potential mediating variables were identified on theoretical grounds, including self-regulatory ability, depressive symptoms, pain, attentional function, and the variables assessed by the Five Facet Mindfulness Questionnaire (FFMQ). Each potential mediator variable was tested using boot-strap procedures: indirect effects and the 95% confidence interval were computed for each of 5,000 bootstrapped samples. These procedures identified one significant mediator: attentional function. For attentional function, assessed by the Attentional Lapse Subscale of the Attentional Function Index (AFI), the indirect effect was 2.2602 and the 95% confidence interval ranged from .1147 to 6.9203. These findings suggest that relative to ES, MBSR exerted its effects, in part, by improving the attentional function of participants.

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C035 6:00 PM-7:00 PM

FACTORS ASSOCIATED WITH TELEVISION VIEWING TIME AMONG BREAST, PROSTATE, AND COLORECTAL CANCER SURVIVORS

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Introduction: Sedentary behavior is a distinct risk factor for poor physical and mental health outcomes independent of moderate to vigorous physical activity (MVPA). Television (TV) viewing time has been linked to increased risk of cancer mortality. Because cancer survivors are at higher risk for chronic disease morbidity and mortality and are more likely to be sedentary compared to individuals without a cancer history, there is need to examine correlates of TV viewing time in cancer survivors.

Methods: Data from 852 breast, prostate, and colorectal cancer survivors within their first year post-treatment were analyzed. Hierarchical ordinal regression was used to assess demographic (age, gender/cancer type, race, education, marital status), medical (months since treatment completion, treatments received, cancer stage, number of comorbidities, physical symptom prevalence), behavioral (smoking status, BMI, MVPA), and psychosocial predictors (depressive symptoms, social support, fear of recurrence) of elevated TV viewing time per day over the past month (< 2, 2-4, or >4 hours/day).

Results: 26.2% of participants reported viewing less than 2 hours, 41.2% reported 2-4 hours, and 32.6% reported more than 4 hours of TV viewing time per day. The odds of reporting elevated TV viewing time were significantly higher among non-whites compared to whites (OR=1.48; 95% CI=1.01, 2.18) and those with no college education compared to at least some college (OR=0.69; 95% CI=0.52, 0.92). Obese survivors compared to those of normal weight (OR=1.67; 95% CI=1.20, 2.33), current smokers compared to never smokers (OR=2.05; 95% CI = 1.27, 3.31), those not meeting MVPA guidelines compared to survivors who did (OR=1.66; 95% CI = 1.26, 2.18), and those with more comorbid conditions (OR=2.51; 95% CI = 1.61, 3.90) also reported higher odds of elevated TV viewing time.

Discussion: Subgroups of cancer survivors who have recently completed treatment may be at higher risk of deleterious physical and mental health outcomes due to elevated TV viewing time. Future research should validate these findings with objective measures. Modifiable risk factors, including smoking status, obesity, and MVPA should be considered when developing interventions aimed at reducing TV viewing among cancer survivors. Further, interventions

should consider targeting survivors with higher odds of TV viewing, including racial/ethnic minorities, non-college educated individuals, and/or those with multiple comorbid conditions.

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C036 6:00 PM-7:00 PM

GOAL DISRUPTION IN EARLY-STAGE BREAST CANCER SURVIVORS: AN EXAMINATION OF PREDICTORS AND CORRELATES

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Background: Disruption in meaningful life goals is common in cancer patients and has been shown to predict long-term decrements in well-being. However, to date, few studies have examined the factors that contribute to goal disruption, particularly in cancer survivors. To address this gap, we examined the relationship between demographic variables, cancer- and treatment-related factors, behavioral symptoms (depressive symptoms, fatigue, pain, and cognitive complaints), and cancer-related goal disruption in early-stage breast cancer survivors 1 year after the completion of primary treatment.

Methods: A cohort of early-stage breast cancer survivors (n = 190; M_{age} = 51.75) completed assessments following primary treatment with surgery, radiation, and/or chemotherapy, and again 6-months and 1-year later. We focused on the 1-year post-treatment assessment (n = 175) when participants were asked if they had experienced a cancer-related goal disruption. Behavioral symptoms included depression (Beck Depression Inventory-II), fatigue (Multidimensional Fatigue Symptom Inventory), pain (RAND SF-36 Pain Subscale), and cognitive complaints (Patients Assessment of Own Functioning Inventory). These symptoms were computed as a composite measure and also analyzed individually.

Results: Approximately 27% of women reported a goal disruption due to their cancer diagnosis. Cross-sectional analyses indicated that both receipt of chemotherapy and behavioral symptoms were significantly associated with goal disruption; no other demographic or disease-related factors were associated with goal disruption. In multivariate analyses, women were more likely to report a goal disruption if they had received chemotherapy (OR = 3.32, p = .003) and reported greater overall behavioral symptoms (OR = 1.26, p = .004); $\chi^2(2)$ = 26.03, p < .001. When analyzed separately, each behavioral symptom significantly predicted the likelihood of experiencing a goal disruption (ps ≤ .01), holding chemotherapy constant.

Conclusions: Many women reported a cancer-related goal disruption, even a year after treatment completion. Disrupted goals were reported as highly meaningful and spanned various life domains. Chemotherapy and behavioral symptoms were unique predictors,

suggesting that the impacts of chemotherapy extend beyond its influence on persistent behavioral symptoms. This is one of the first studies, to date, to examine goal disruption in early breast cancer survivorship.

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C037 6:00 PM-7:00 PM

HEALTH BEHAVIOR ENGAGEMENT, OBESITY, AND SYMPTOM MANAGEMENT IN LATINA BREAST CANCER SURVIVORS: A QUALITATIVE STUDY

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Background: Breast cancer survivors are at risk for weight gain, obesity, and diabetes. Relative to other ethnic groups, Latinas are at even greater risk of diabetes and obesity, and are more likely to experience other breast cancer-related symptoms, including fatigue and negative mood. Symptom burden is further compounded in this population by lower socio-economic status and limited access to resources (e.g., car transportation, specialty medical care). Importantly, engaging in health behavior change to achieve weight loss can significantly reduce the number symptoms and their severity among breast cancer survivors. Thus, understanding the complex interplay of obesity, health-behavior engagement, and symptom experience among a group of high-risk, under-resourced Latina breast cancer survivors is a critical next step for addressing this disparity.

Purpose: To obtain an in-depth understanding of Latina breast cancer survivors' perception of factors that contribute to their own health, and the potential connection between their engagement in particular health behaviors and whether these behaviors alleviated symptoms.

Methods: We conducted 17 focus groups in both English and Spanish with 70 Latina women who had undergone treatment for breast cancer to further understand the role of Hispanic culture in the breast cancer survivor experience, cultural-specific motivators and barriers, as well as symptom burden, to engaging in a healthy lifestyle during survivorship.

Results: A common theme that emerged from the focus groups was that a healthy lifestyle helped alleviate some of their symptoms. Some quotes to provide direct examples include: *"For me, the more that I exercise the more active I feel. I also want to be healthier and to feel better. When I do not exercise I feel more fatigued, more tired. The body is not the same after you have been through a lot."* In response to asking what made her start walking another patient said: *"Well, because I was feeling like I was not feeling good with myself. I was feeling*

bloated and the doctor said that it would probably help….So I did and I just felt better, you know. I know, so I started walking a lot and like 30-40 minutes a day.”

Conclusions: Findings suggest under-resourced, high-risk Latina breast cancer survivors recognize a potentially important link between healthy behavior and symptom management. This awareness has to potential be leveraged to create meaningful lifestyle modification programs.

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C038 6:00 PM-7:00 PM

HEART DISEASE VERSUS CANCER: UNDERSTANDING PERCEPTIONS OF POPULATION PREVALENCE AND PERSONAL RISK

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Americans are more likely to be diagnosed with and die from heart disease than cancer. However, many believe that cancer is the more common disease, and may regard their personal risk of cancer to be higher than their heart disease risk. Using the nationally representative 2013 iteration of the National Cancer Institute's Health Information National Trends Survey (HINTS 4 Cycle 3), we examined the prevalence of both of these relative risk beliefs (i.e., relative population prevalence estimates and disease-relative personal risk perceptions). Additionally, we examined sociodemographic (i.e. race, gender, age, education) and psychosocial (i.e., perceptions of ambiguity and fatalism) factors, as well as health behaviors (i.e., physical activity, colorectal cancer screening, fruit/vegetable consumption, soda consumption, sunscreen use, and mammography) associated with these beliefs. Consistent with past work, 42.81% of participants rated cancer as more common than heart disease. Moreover, 78.45% rated their own cancer risk as equal to or exceeding their heart disease risk. These beliefs were only modestly correlated ($r = 0.10$, $p = .013$), and correlates of the two beliefs differed. Specifically, beliefs about population prevalence were associated with fatalism (i.e., thinking about cancer leads to thoughts of death; $B = .16$, $p < .001$) and perceived ambiguity of cancer messages (i.e., perceive cancer recommendations as ambiguous; $B = .022$, $p < .001$), whereas perceived personal risk was not. Less educated ($r = -.14$, $p < .001$) and non-White individuals ($M_{non\text{-}White} = 2.50$, $M_{white} = 2.22$, $p < .001$) rated cancer as more common. Individuals who thought their personal risk of cancer was greater consumed more fruit ($B = .13$, $p = .002$) and vegetables ($B = .09$, $p = .04$), whereas those who believed cancer to be more common consumed more soda ($B = .12$, $p = .039$) and engaged in less physical activity ($B = .20$, $p = .013$). Overall, accuracy in beliefs about cancer and heart disease relative risk and prevalence is low. Future longitudinal research should explore the antecedents and consequences of these beliefs and explore *why* some people think their risk of cancer is greater than their risk of heart disease.

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C039 6:00 PM-7:00 PM

INCREASING PHYSICAL ACTIVITY AND CHANGES IN COGNITIVE FUNCTIONING IN BREAST CANCER SURVIVORS: A RANDOMIZED CONTROLLED STUDY

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Introduction: Increasing physical activity can improve cognition in healthy and cognitively impaired adults. However, the benefits of physical activity for cancer patients' cognition have not been previously reported.

Methods: Sedentary breast cancer survivors with cognitive difficulties were randomized to an Exercise intervention (n=43) or Control arm (n=44). At baseline and 12-weeks participants wore an accelerometer to measure activity and completed the NIH Cognitive Toolbox providing 9 scores (composite fluid and crystalized ability scores and scores for seven component tests). Intervention effects for change in each score over 12 weeks were tested using linear mixed effects regression models.

Results: Participants (n=87) were a mean of 57 years (SD=10.4), diagnosed with breast cancer 2.5 years ago (SD=1.3); 53% had chemotherapy and 70% were taking hormone therapy. At 12 weeks, 60% of the Exercise arm met the study goal of 150 min/week of moderate to vigorous physical activity (MVPA). Relative to Control, the Exercise arm had greater increases in MVPA (mean min/day increase 14.2 vs. -0.7, b=7.24, $p < .001$) and total activity (mean min/day increase 27.4 vs. 4.9, b=10.05, p=.02).

Of the NIH Toolbox's 9 scores, only the Oral Symbol Digit (a measure of processing speed) had significant improvement in the Exercise vs. Control (b=2.01;$p < .05$). The Exercise arm increased an average of 7 points while the Control arm increased an average of 3 points. There appeared to be an interaction between time since diagnosis and Oral Symbol Digit scores (p=.07). Participants ≤2 years from diagnosis had significantly more improvement in the Exercise vs. Control (b=4.00, $p < .01$); there was no significant improvement in patients who were >2 years post-diagnosis (b=-1.19, p=.40). No modification effect was found for BMI, years since diagnosis, chemotherapy or hormone therapy.

Within the exercise arm there was a significant dose response with greater increases in MVPA

associated with greater increases in Oral Symbol Digit (b=2.0, p=.02). Also, greater total activity was associated with greater increases in the Fluid Composite score (b=0.03, p=.04) and Picture Sequence (memory; b=0.04, p=.04).

Conclusion. Among breast cancer survivors, the exercise intervention only significantly improved processing speed. Moderator and dose-response analyses suggest that future trials should aim for greater increases in physical activity and target women closer to diagnosis to impact cognition.

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C040 6:00 PM-7:00 PM

INFLAMMATORY BIOMARKERS ARE ASSOCIATED WITH CHANGE IN SKELETAL MUSCLE MASS AND STRENGTH IN EXERCISING PROSTATE CANCER PATIENTS

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BACKGROUND: Decreases in skeletal muscle mass (SMM) and muscular strength are debilitating side effects of cancer and its treatments and are independently predictive of mortality. Recent studies suggest a negative association of inflammatory cytokines with SMM and strength. Exercise has been shown to positively regulate pathways that govern SMM and strength. This research study attempted to identify any associations among declines in SMM and strength and inflammatory biomarkers and to determine if exercise has an effect on these associations. **PURPOSE:** The purpose of this study was to assess the relationship among inflammatory biomarkers, indices of SMM and strength, and engagement in exercise among prostate cancer patients**. METHODS:** A secondary data analysis was performed on a two-arm randomized clinical trial examining the influence of a 6-week home-based aerobic and resistance exercise program. Participants included 57 sedentary prostate cancer patients aged 67 ± 8.05 years, who were undergoing cancer treatment or had been previously treated with hormone therapy and/or radiation therapy. Each participant was randomly assigned to usual care or usual care with exercise. SMM and muscular strength were measured along with biomarkers of inflammation (IL-6, IL-1b, IFN$_{\gamma}$, IL-10, IL-8, and TNFR1 proteins) at baseline and post-intervention. Pearson correlations and linear regressions were used to analyze the relationship among these variables. **RESULTS:** In the exercise group, changes in IFN$_{\gamma}$ and IL1b showed a moderate association with changes in SMM (IFN$_{\gamma}$ r =.442, p = .016, IL-1b, r = .543, p = .002) where increases in IFN$_{\gamma}$ (p =.016) and IL-1b (p = .002) explained 20% and 30% of the change in SMM, respectively. A trend towards a moderate relationship between IL-10 and leg muscle strength (r = -.348, p = .081) was found where decreases in IL10 explained 12% of the change in leg strength. No significant associations among any of these variables were found in the usual care group**. CONCLUSION:** Changes in IFN$_{\gamma}$, IL-1b and IL-10 may be associated with changes in SMM and strength in exercising prostate cancer patients.

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C041 6:00 PM-7:00 PM

INFORMATION AND SUPPORT NEEDS AMONG YOUNG ADULT RELATIVES OF BRCA 1/2 MUTATION CARRIERS

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Background: Young women from hereditary breast and ovarian cancer (HBOC) families face a unique set of challenges in managing their HBOC risk where obtaining essential information to inform decision making is key. Previous work suggests that the need for specific health information related to risk also comes at a time of heightened distress and greater individuation from family. Our study sought out to assess the information needs in this population and correlates of greater need.

Method: One hundred young women (M age= 25 years) who were first or second degree relatives of *BRCA1/2* carriers participated. Participants ages 18-30 were recruited through research registries and a national non-profit organization for a telephone interview. Using multivariable linear regression, we examined the association between clinical (age, tested status, number of cancer-affected relatives and age of youngest affected relative) and psychosocial (familial disruption, peer support, cancer-related distress and perceived cancer risk) variables and our outcome of information need.

Results: One third of the sample endorsed wanting HBOC information that they did not know how to obtain and 63% endorsed unmet HBOC information needs. Multivariate regression model results revealed that greater information need was associated with being untested (β=.30, p=.004) and greater familial disruption (β=.41, p=.002) and cancer-related distress (β=.21, p=.04).

Conclusion: Our results suggest that young adult women from HBOC families have unmet cancer genetic information needs. Untested women, as well as those with higher levels of distress and poorer familial connections, are specifically in need of support. Social support can mitigate distress and supplement familial relationships. Our results suggest that young adult relatives could benefit from a structured peer-led intervention that provides needed support and targets psychologic distress. Trained peers can offer structured social support guidance and assist with objectively weighing the pros/cons of personal HBOC risk management choices and lifecycle issues relevant to women in their 20's and 30's.

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C042 6:00 PM-7:00 PM

INTEREST IN WEIGHT LOSS AMONG FEMALE CANCER SURVIVORS WITH OVERWEIGHT OR OBESITY

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Obesity increases risk of cancer recurrence and decreases survival, yet many female cancer survivors are overweight or obese. We surveyed adult female cancer survivors with overweight or obesity via the internet on their awareness of the link between obesity and cancer recurrence and preferences in various intervention modalities (in-person, telephone, Facebook, Twitter, private website) and interest in 12 components of a Facebook-delivered intervention. Responses dichotomized as not at all/a little bit, neutral vs quite a bit/extremely interested. Survivors also reported preferred group composition (any cancer type, same cancer type, not focused on survivors, no preference). An open-ended question assessed interest in other weight loss group features. We conducted a content analysis of responses with two coders (kappa=0.84). Survivors (N=96) were on average 54.3 (SD: 9.6) years old, 89% white, with average BMI of 32.7 (SD: 5.8) kg/m^2; 87% tried to lose weight in the last year. Just over half (54%) reported that their weight at least somewhat affects their likelihood of cancer recurrence. Most (81%) reported being quite a bit/extremely interested in a program delivered via Facebook or private website (71%), while fewer were interested in telephone (37%) or in person delivery (34%). About three-quarters were interested in having a weight loss counselor lead the group (78%), healthy recipe links (73%), and free exercise videos (72%); interest in other program components ranged from 35%-69%. Survivors suggested features including information on effects of cancer treatment on weight (25%), a calorie tracker (21%), and exercise modifications for cancer survivors (17%). Almost half (43%) preferred a group with cancer survivors (19% same cancer type, 3% not focused on survivors, 33% no preference). Nearly half of survivors were not aware of the link between obesity and cancer. Survivors were interested in a weight loss program that addresses their specific weight loss needs, and the majority liked the idea of a Facebook-delivered program. Social media delivered weight loss interventions for female cancer survivors should incorporate information on the obesity-cancer link and features that address specific needs of this population.

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C043 6:00 PM-7:00 PM

IS ANTICIPATED REGRET A SEPARATE AND UNIQUE THEORETICAL CONSTRUCT FROM MOTIVATION IN THE CONTEXT OF HPV VACCINATION?

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Objective: Anticipated regret, a negative emotion stemming from the ability to reason counterfactually, has been shown to be a key predictor of various health behaviors (Brewer et al., 2016), but no studies have demonstrated that it is a unique construct from motivation. Anticipated regret is conceptually similar to introjected motivation from self-determination theory (i.e., motivation to avoid guilt and shame). In the context of HPV vaccination, we hypothesized that anticipated regret about not vaccinating a child would load more strongly on a factor with introjected motivation than autonomous motivation (i.e., motivation to engage in behaviors that reflect personal values). **Methods**: We collected data via telephone questionnaires from 223 parents of unvaccinated adolescents attending safety-net clinics. We assessed parents' anticipated regret, introjected and autonomous motivation, and intentions to vaccinate. **Results**: Using confirmatory factor analyses, a four-factor model including autonomous motivation (4 items), introjected motivation (2 items), external motivation (2 items), and 1 anticipated regret item provided a good fit to the data (TLI= .971, CFI= .983, RMSEA= .053, 90% CI: .013, .085). The anticipated regret item did not load significantly onto introjected motivation (.26) or autonomous motivation (.49). In a univariate regression model, anticipated regret predicted intentions to vaccinate (ß= .243, $p < .001$). A multivariable model containing introjected motivation and anticipated regret showed both to be significant predictors of intentions, but when tested simultaneously with autonomous motivation, anticipated regret was no longer a significant predictor of intentions. **Conclusion**: Anticipated regret is a distinct construct from motivation, and loads more strongly on a factor with autonomous motivation than introjected motivation for HPV vaccination. In addition, anticipated regret did not explain any variance in HPV vaccination intentions that is not shared with autonomous motivation. Implications for these findings will be discussed.

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C044 6:00 PM-7:00 PM

KNOWLEDGE, ATTITUDES, AND BELIEFS ABOUT HPV, GARDASIL, AND ACCESS DIFFER AMONG LATINOS IN A SMALL RURAL NEW DESTINATION SETTING

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The target vaccine coverage rate for HPV set by Healthy People 2020 is 80%. However, few if any communities meet this goal, yet. Latino populations in rural new destination settlements (areas in which Latino communities are growing rapidly) present unique challenges for local providers and public health staff (e.g., language capacity, cultural competence). To provide better information on the knowledge, attitudes and beliefs about HPV, Gardasil, and access to vaccines among Latinos in a new destination area in a rural Midwestern state, we conducted 72 intercept interviews with representatives of Latino households. Surveys were conducted at a local Catholic Church, a small Latino owned grocery store, a large grocery store, two Latino Festivals, a bakery and a restaurant. The survey included items assessing age, gender and vaccine status for all household members 9-26 years old, knowledge of HPV and Gardasil, best places to get vaccinated, trusted sources for health education and the best way to contact individuals for reminders. The sample was mostly female (67%), born in Mexico (59%) or the US (24%). Mean age was 39 (13.1), and average number of years lived in the US was 24 (13.2). A majority of households (57%) included at least one vaccine eligible female and 61% included an eligible male. A higher percentage of females (80%) reported knowing about HPV than males (57%). Of those that were familiar with HPV, 89% of females and 82% of males were familiar with Gardasil. Access to the vaccine was rated highest at the mobile clinic overall. The nearest pharmacy, (one town over) received significantly higher access ratings ($p < .05$) by individuals that were born outside the US but immigrated as minors (< 18). Churches and beauty salons received highest ratings as places to provide education. Beauty salons were rated higher by US born than minor ($p < .001$) and adult ($p < .003$) immigrants. Participants reported similar ratings for calls, texts, emails and postcards. Reaching and educating Latino populations in rural areas will be important in achieving vaccine coverage objectives in the Midwest. However, in predominantly white states, local efforts may focus more on larger non-Latino communities, further complicated by a lack of information about how these new communities access information about cancer and cancer prevention. This exploratory study can help inform useful strategies and tactics to reach these Latinos for HPV vaccine education and initiation.

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C045 6:00 PM-7:00 PM

LESSONS LEARNED: ASSESSING GRIP STRENGTH AND MOBILITY FUNCTIONS IN A BREAST CANCER SUPPORT GROUP SETTING

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Background: Functional impairments are associated with reduced quality of life and survival in breast cancer survivors. Currently, self-reported measures are most often used to screen survivors for functional deficits, and community-based measurement is rare. However, objective measures may better capture complex constructs, and community-based assessment would potentially allow earlier discovery of deficits in a broader population than is currently screened. Thus, the aim of this study was to evaluate the feasibility of using objective functional measures within a community setting of a breast cancer support group.

Methods: Baseline information from a 12-week pilot breast cancer support group intervention was used to evaluate participants' function. Grip strength—assessing muscular strength—was evaluated using the Jamal dynamometer and mobility function was assessed using the Short Physical Performance Battery (SPPB). Feasibility was evaluated based on number of participants completing both assessments and time required to conduct both assessments. Descriptive statistics were conducted.

Results: Nineteen survivors completed the grip strength and SPPB assessments. The majority of the participants were White (68%) with a mean age of 55±12 years and mean BMI of 32.4±7.9 kg/m^2. All participants completed three grip strength evaluations for both right and left hands despite 32% reporting peripheral neuropathy. Seven participants had grip strength below norms. All attempted the entire SPPB assessments with a mean score of 10±1.3 out of 12, indicating high functioning. However, 9 of 19 participants completed the 10 seconds tandem balance test with some difficulty. Approximately 25 minutes per person were required to complete both assessments using standardized protocols.

Discussion: Overall, we found that it is feasible to conduct grip strength and SPPB assessments in a breast cancer support group setting. Despite 47% of participants experiencing difficulty during the 10 seconds tandem balance test, the mean SPPB score was

high. This indicated a ceiling effect. A protocol modification to increase hold time from 10 seconds to 30 seconds may eliminate the ceiling effect we found and to help capture possible balance issues.

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C046 6:00 PM-7:00 PM

LIFESTYLE BEHAVIORS AND PSYCHOSOCIAL OUTCOMES AMONG LONG-TERM CANCER SURVIVORS

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Purpose: Cancer survivors represent a vulnerable population at increased risk of recurrence and poor physical and psychosocial long-term effects. These individuals are recommended to adopt healthy lifestyle behaviors that may reduce the risk of recurrence of certain cancers and improve overall health status. Further, it is often believed that a cancer diagnosis can represent a ‘teachable moment’ and prompt individuals to adopt healthy behavior changes. Despite this, there exists a paucity of research examining adoption of potentially protective lifestyle behaviors among long-term survivors, and how such behaviors may be associated with psychosocial outcomes.

Method: 407 long-term cancer survivors (73.3% female, average age 63.3 years, average time since diagnosis 14.6 years, 77.1%, White/European American, 19.1% African American) reported adoption of recommended lifestyle behaviors (regular exercise, non-smoking status, non-obese weight status) and measures of quality of life (FACT-G), and depression/anxiety (HADS). Survivors were further divided into groups based on their degree of adoption of protective health behaviors.

Results: Among a sample of long-term cancer survivors, 80.2% reported regularly exercising, 91.5% were non-smokers and 60.8% were not obese. Overall, 25.6% engaged in all three recommendations, while 3.9% engaged in none. Importantly, nearly 40% of the sample were obese and 8.5% reported currently smoking. Further analyses revealed that survivors who engaged in two or more of the recommended lifestyle behaviors had significantly better quality of life (114.36 vs. 106.49 $p < .001$) and fewer symptoms of anxiety (3.99 vs. 5.43, $p < .001$ and depression (2.86 vs. 4.33, $p < .001$) compared to those who engaged in one or zero behaviors. Further preliminary analyses revealed weight status and exercise to be primarily responsible for observed differences in psychosocial outcomes.

Conclusion: The importance of health promotion in cancer survivorship is becoming increasingly recognized. Among a sample of long-term survivors, approximately one-quarter of those surveyed had adopted general health recommendations, with greater engagement

associated with improved quality of life and lower rates of anxiety and depression. While encouraging, a number of challenges remain; nearly 10% of the sample still smoked and 40% were obese, with weight management continuing to be a critical challenge among survivors and the general population alike. Further research is needed to maximize engagement in healthy behaviors and enable professionals to actively and effectively promote lifestyle change among cancer survivors.

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C047 6:00 PM-7:00 PM

LIFESTYLE INTERVENTION EFFECTS ON MOBILITY AND BODY COMPOSITION IN PROSTATE CANCER PATIENTS ON ANDROGEN DEPRIVATION THERAPY

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Although exercise consistently results in significant improvements in clinically relevant outcomes in prostate cancer (PCa) patients undergoing androgen deprivation therapy (ADT), the synergistic benefits of promoting concomitant change in both exercise and dietary behavior could represent an optimal lifestyle intervention approach for offsetting the adverse effects of ADT on mobility performance and body composition experienced by PCa patients. The purpose of the single-blind, randomized controlled Individualized Diet and Exercise Adherence-Pilot (IDEA-P) trial is to evaluate the preliminary efficacy of a combined exercise and dietary (EX+D), implementing a group-mediate cognitive behavioral (GMCB) approach, relative to standard of care (SC) treatment upon change in mobility performance and body composition among PCa patients undergoing ADT. A total of 32 PCa patients (*M* age = 65 years) on ADT were randomly assigned to the EX+D (n = 16) or SC (n = 16) interventions. Measures of mobility and body composition were obtained at baseline and 2 and 3 month follow-up assessments. Results of intention to treat ANCOVA analysis of residualized change scores yielded a significant Treatment main effects for 400M Walk ($p < 0.01$) and stair climb ($p < 0.01$) performance and body composition ($p < 0.05$). Results of intention to treat analysis yielded a significant Treatment main effects for 400M Walk ($p < 0.01$) and stair climb ($p < 0.01$) performance and body composition ($p < 0.05$). The EX+D intervention resulted in superior improvements in mobility performance relative to SC at 2 and 3 months. Additionally, the EX+D intervention yielded significantly greater improvements in body weight, body fat percentage, and fat mass relative to the SC intervention at 3 month follow-up. Findings from the IDEA-P trial suggest that the EX+D intervention, implementing a GMCB approach designed to promote adoption and adherence to lifestyle behavior change, resulted in superior changes in mobility performance and body composition relative to a SC approach. These results underscore the utility of promoting concomitant change in both exercise and dietary behavior for enhancing mobility and body composition among PCa patients undergoing ADT.

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C048 6:00 PM-7:00 PM

LONGITUDINAL ANALYSIS OF THE PERCEIVED STRESS OF A NEW CANCER DIAGNOSIS AND PTSD-LIKE SYMPTOMS AT ONE YEAR FOLLOW-UP

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Cancer patients are at risk for psychological distress, including post-traumatic stress disorder-like (PTSD) symptoms reaching clinical levels of impairment. There is a lack of prospective studies examining early predictors of PTSD in cancer patients. The current longitudinal study examined the relationship between the appraisal of stress around the time of diagnosis and the onset of PTSD symptoms around the time of completion of treatment.

Colorectal cancer patients (*N=54;* stages I-IV, 61% female, 59% Hispanic, *M*=55 years old) completed questionnaires at around 3 and 12-months post-diagnosis. At the baseline assessment, patients completed the Perceived Stress Scale (PSS) measuring their perception of stress. The Impact of Event Scale (IES) measure of PTSD was administered at both time points and served as the outcome. Age, gender, ethnicity, and cancer stage were covariates.

Relatively small-to-moderate number of patients reported clinical levels of PTSD symptoms at 3-months and 12-months (13% at both times) post-diagnosis. On the other hand, the majority reported normative levels of perceived stress around the time of diagnosis (*M*=14.2, *SD*=5.94). Hierarchical linear regression revealed that after controlling for covariates, higher perceived stress around the time of diagnosis related to higher levels of PTSD symptoms around the completion of treatment (*B*=0.90, *p* < .01).

These longitudinal findings suggest that appraisal and perceptions of stress around the time of a cancer diagnosis may manifest into sub-clinical or clinical levels of psychological disorder in patients by the time they complete treatment. The results suggest the need for early psychosocial assessment to identify patients with high stress appraisals who could benefit from interventions aimed at stress management and cognitive restructuring.

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C049 6:00 PM-7:00 PM

MEDICAL TOURISM: A GOOD THING OR A BAD THING

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Background:Colorectal cancer (CRC) remains the most commonly diagnosed cancer among Korean Americans (KAs) in part due to low screening rates. Recent studies suggest that some KA patients engage in medical tourism and receive medical care in their home country. The impact of medical tourism on CRC screening is unknown. The purpose of this paper was to

1) investigate the frequency of medical tourism, 2) examine the association between medical tourism and CRC screening, and 3) characterize KA patients who engage in medical tourism.

Methods: This is a community-based, cross-sectional study involving self-administered questionnaires conducted from August 2013 to October 2013. Data was collected on 193KA patients, ages 50-75, residing in the Seattle metropolitan area. The outcome variable is up-to-date with CRC screening, defined as having had a stool test (FOBT or FIT) within the past year or a colonoscopy within 10 years. Predictor variables are socio-demographics, health factors, acculturation, knowledge, financial concerns for medical care costs, and medical tourism.

Results:In multi-variate modeling, medical tourism was significantly related to being up-to-date with colorectal screening. Participants who engaged in medical tourism had 8.91 (95% CI: 3.89-23.89) greater odds of being up-to-date with CRC screening compared to those who did not travel for healthcare. Factors associated with engaging in medical tourism were lack of insurance coverage (P=0.008), higher levels of education (P=0.003), not having a usual place of care (P=0.002), older age at immigration (P=0.009), shorter years-of-stay in the US (P=0.003), and being less likely to speak English well (P=0.03).

Conclusions: This study identifies the impact of medical tourism on CRC screening and characteristics of KA patients who report engaging in medical tourism. Healthcare providers in the US should be aware of the customary nature of medical tourism among KAs and consider assessing medical tests done abroad when providing cancer care.

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C050 6:00 PM-7:00 PM

METABOLIC SYNDROME AMONG OVERWEIGHT/OBESE AFRICAN-AMERICAN BREAST CANCER SURVIVORS VS. MATCHED NON-CANCER CONTROLS

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Background: Metabolic Syndrome (MetS) predicts multiple chronic diseases and is predominant in those who are overweight/obese, as well as minority populations. Emerging data now suggests MetS may also predict breast cancer (BC) recurrence and overall decreased survival; however, African-American (AA) BC survivors have been analyzed in aggregate.

Purpose: Therefore, the primary aim of this study was to establish the prevalence of MetS among an exclusive cohort of AA BC survivors and to compare these estimates with matched non-cancer population controls. This approach allowed us to assess the impact of BC treatment on the occurrence of MetS and to generate prevalence estimates affording comparisons with other BC populations.

Methods: We employed a case-control design. For the cases, we utilized baseline data from a behavioral weight loss intervention conducted in overweight/obese AA BC survivors (R01CA154406). To represent non-cancer population controls, we used cross-sectional data from the National Health and Nutrition Examination Survey. Overweight/obese AA women with treated Stage I-IIIa BC were matched 1:1 on age, race, sex and body mass index (BMI) category with non-cancer population controls (n=444 or 222 pairs). All measurements were procured by trained study personnel and certified clinical laboratories. Three of the following conditions were used to define MetS: HDL cholesterol < 50 mg/dL (1.3 mmol/L), serum triglycerides ≥ 150 mg/dL (1.7 mmol/L), blood glucose ≥ 100 mg/dL (or on treatment), waist circumference ≥ 88 cm, or ≥ 130 mm Hg systolic or ≥ 85 mm Hg diastolic blood pressure (or on treatment). Matched-pairs analyses were conducted.

Results: For BC cases, most women had self-reported Stage I (n=76) or Stage II (n=91) disease and were 6.9 (± 5.2) years post-diagnosis. Compared to non-cancer population controls, BC cases were more educated ($p < 0.001$) and had greater access to health insurance, specifically private insurance (< 0.001). MetS was significantly less frequent among BC survivors vs. non-population cancer controls (43.2% vs. 51.4%, respectively; $p < 0.05$) and did differ significantly

across any BMI category (Overweight 25.0% vs. 37.9%; Class 1 Obesity 38.1% vs. 44.8%; Class 2 Obesity 64.3% vs. 53.6% and Class 3 Obesity 39.0% vs. 73.2%, respectively.) However, a lower prevalence of ≥ 2 risk factors was observed for all BC cases vs. non-cancer population controls (80.2 % vs. 85.6%, $p < 0.05$).

Conclusions: While MetS occurred less frequently in our BC cases vs. non-cancer population controls, these estimates are nearly two times those reported in other BC investigations, suggesting important racial/ethnic differences that merit attention and greater intervention efforts. The prognostic implications of MetS among AA BC survivors remain unknown.

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C051 6:00 PM-7:00 PM

MINDFULNESS MEDIATES ASSOCIATION BETWEEN AGE AND DEPRESSIVE SYMPTOMS IN EARLY STAGE BREAST CANCER PATIENTS

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Mindfulness mediates association between age and depressive symptoms in early stage breast cancer patients

BACKGROUND: Diagnosis with breast cancer is highly stressful and is associated with elevated risk for depression, with negative implications for quality of life, treatment adherence, and other outcomes. Younger women are at elevated risk for depression in the aftermath of a breast cancer diagnosis. However, the underlying mechanisms that contribute to age differences in depressive symptoms in breast cancer patients have not been determined. Research suggests that acceptance of negative emotional experiences increases with age and may contribute to lower negative affect. Acceptance is closely related to mindfulness, the state of being attentive to and aware of one’s present moment experience in a nonjudgmental manner. In the present study, we examined whether dispositional mindfulness mediated the link between age and depression in women recently diagnosed with early stage breast cancer.

METHODS: 271 women diagnosed with Stage 0-III breast cancer (mean age=56.2 years, SD=11.5) were assessed after diagnosis but before starting adjuvant treatment (radiation, chemotherapy, endocrine therapy). Participants completed the Center for Epidemiologic Studies Depression Scale (CESD) to assess depressive symptoms in the past week, and the Mindful Attention Awareness Scale (MAAS) to assess trait levels of mindfulness. We used multiple linear regression models to examine the association between age and depression, as well as whether mindfulness mediated this relationship. All analyses controlled for potential confounds including disease characteristics, ethnicity, education, and income.

RESULTS: Older age was associated with lower depressive symptoms (B=-.24, SE=.06, $p < .001$) and with higher levels of dispositional mindfulness (B=.016, SE=.01, p=.002). Higher levels of mindfulness were associated with lower depressive symptoms (B=-5.00, SE=.70, $p < .001$), and mindfulness partially mediated the association between age and depressive symptoms, Sobel Test =2.87, SE=0.025, p=.004.

CONCLUSION: The findings suggest that mindfulness may increase with age and therefore be protective against depressive symptoms following breast cancer diagnosis. Mindfulness interventions may be aptly targeted toward younger breast cancer patients.

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C052 6:00 PM-7:00 PM

PATIENT-REPORTED AND GENETIC RISK FACTORS FOR CHEMOTHERAPY-INDUCED NAUSEA IN CANCER PATIENTS

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Purpose: Chemotherapy-induced nausea (CIN) is common among cancer patients even when anti-emetic prophylaxis is provided in accordance with clinical practice guidelines. Early identification of patients at risk for CIN may help physicians to better personalize anti-emetic therapies and reduce this undesirable side effect. The current study examined patient-reported and genetic risk factors for CIN.

Methods: Eligible individuals were a) age > 18, b) English or Spanish-speaking, c) chemotherapy naïve cancer patients, and d) scheduled to receive highly- or moderately-emetogenic intravenous chemotherapy for solid tumors at Moffitt Cancer Center. Participants completed a baseline sociodemographic questionnaire and provided a blood sample to measure genetic variants in *ABCB1* (rs1045642) and *HTR3B (*rs45460698)as well as *CYP2D6* activity score. Participants also completed a self-report risk factor questionnaire the morning of the first infusion and the MASCC Antiemesis Tool (MAT) 24 hours and 5 days post-infusion to assess the severity of acute and delayed CIN.

Results: Participants were 107 patients (50% male, *M*=61 years). Twenty-three percent of participants experienced acute CIN and 55% experienced delayed CIN. In univariate analyses, younger age, fewer hours slept the night prior to infusion, and a history of morning sickness with pregnancy were associated with more severe acute CIN; fewer hours slept the night prior to infusion and receipt of highly emetogenic chemotherapy were associated with more severe delayed CIN (*p*'s < .05). Of genetic variants assessed in 77 patients, only that in *ABCB1* was associated with acute CIN, with heterozygotes reporting more severe acute CIN. In multivariate analyses, *ABCB1* added an additional 4% predictive value beyond the 10% variance explained by patient-reported risk factors (*p* = .067). No genetic variants were associated with delayed CIN.

Conclusions: The current study identified patient-reported and genetic factors that may place

patients at risk for acute CIN despite receipt of anti-emetic prophylaxis. Additional studies examining other genetic variants are needed.

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C053 6:00 PM-7:00 PM

PATTERNS OF EXPERIENTIAL AVOIDANCE AND MISCARRIED HELPING IN PARENTS OF CHILDREN WITH CANCER

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Family expressiveness and conflict are known to affect child psychosocial adjustment to cancer. Two potentially pertinent interactional constructs yet to be examined in pediatric cancer populations are Experiential Avoidance in Parenting (EAP) and Miscarried Helping (MH). Higher EAP, parental inability to tolerate negative child affect, predicts poorer psychosocial outcomes in general clinical and pediatric samples. Higher MH, the more well-intentioned parental efforts to assist their ill children are met with child resistance, reflects more family conflict. This study of parent-child communication aimed to explore whether groups of caregivers differ meaningfully in patterns of EAP and MH.

Caregivers (*n*=161, *M* age=41, 86% female) of children with cancer (*M* age=9, 58% male) completed an electronic survey of self-reported medical background, the Parental Acceptance and Action Questionnaire (PAAQ; Cheron et al., 2009) and the Helping for Health Inventory (HHI; Harris et al., 2008), assessing EAP and MH, respectively. A two-step cluster analysis was conducted to create clusters based on PAAQ and HHI z-scores. Group differences were examined in follow-up one-way ANOVAs.

The average silhouette measure of cohesion and separation was 0.5, demonstrating that four clusters were a good fit. Parents in cluster 1 (*n*=28) were high in both MH (*M*=1.16, *SD*=.68) and EAP (*M*=1.28, *SD*=.65). Parents in cluster 2 (*n*=45) demonstrated higher MH (*M*=.47, *SD*=.54) than EAP (*M*=-.43, *SD*=.52). Parents in cluster 3 (*n*=56) exhibited higher EAP (*M*=.42, *SD*=.42) than MH (*M*=-.55, *SD*=.62). Parents in cluster 4 (*n*=31) were low in both MH (*M*=-.89, *SD*=.44) and EAP (*M*=-1.33, *SD*=.47). One-way ANOVA($F_{(3,\ 156)}$=6.60, *p*=.000) and post-hoc analyses indicated parents in cluster 1 perceived the probability of cure for their child as less likely than parents in cluster 2 (*p*=.002) and 4 (*p*=.018). Parents in cluster 3, too, perceived their child as less likely to be cured than parents in cluster 2 (*p*=.008).

This exploratory cluster analysis yielded 4 groups of caregivers. The group perceiving the worst medical outcome for their child had least tolerance for child negative affect and most parent-child conflict. The group perceiving the best probability for good outcome was moderately low in intolerance of child negative affect and moderately high in parent-child conflict. Future research into EAP and MH and their configuration may suggest productive new directions for interventions in clinical care.

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C054 6:00 PM-7:00 PM

POSITIVE AFFECT AND SLEEP QUALITY MEDIATE THE RELATIONSHIP BETWEEN STRESS AND DEPRESSION AMONG LUNG CANCER PATIENTS

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Background: Stress and depression evidence a robust association, and poor sleep and low positive affect (PA) have been hypothesized as mechanisms through which stress predicts depression. Although some researchers posit that poor sleep more strongly predicts low PA than the reverse, no studies have examined these variables as sequential mediators explaining the association between stress and depression. Lung cancer patients report high levels of stress, sleep disturbance, and depressive symptoms, and it is important to identify putative mechanisms, which can be harnessed for preventive efforts to reduce depression in this population. The present study tested two models of serial mediation to illuminate the role of poor sleep and low PA in explaining the relationship between stress and depression. **Method:** Participants (n=33) undergoing treatment for lung cancer completed a daily diary at home for seven days. Participants reported perceived stress and PA (i.e., happy, calm) at the end of each day, sleep quality each morning, and depressive symptoms at the end of the week. Serial mediation was conducted to compare two models: 1) Model 1 tested whether high stress predicts poor sleep quality, which in turn predicts low PA, which then predicts more depressive symptoms; 2) Model 2 assessed whether the results differed if low PA preceded poor sleep quality rather than vice-versa. **Results:** Low PA significantly mediated the association between stress and depressive symptoms (b = 5.68, SE = 1.79, 95% CI [2.42, 9.55]), but sleep quality did not (b = -.79, SE = 1.02, 95% CI [-3.55, .83]). Furthermore, low PA explained significant variance in the relationship between stress and sleep quality (b = -14.74, SE = 5.99, 95% CI [-29.07, -5.66]). Results from serial mediation analyses demonstrated that Model 1 (b = 2.14, SE = 1.16, 95% CI [.32, 4.97]), but not Model 2 (b = -.77, SE = 1.06, 95% CI [-3.50, .85]), significantly explained the relationship between stress and depressive symptoms. Unexpectedly, poor sleep quality was unrelated to depressive symptoms. **Conclusion:** Low PA mediated the relationship between stress and depressive symptoms and between stress and sleep quality. Future research should target PA to mitigate the effects of stress on depressive symptoms in adults diagnosed with lung cancer.

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C055 6:00 PM-7:00 PM

POSTOPERATIVE QUALITY OF LIFE IN PATIENTS AFTER BOTH TOTAL GASTRECTOMY AND ESOPHAGECTOMY

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Background: Patients with esophageal cancer and a history of previous gastrectomy or synchronous gastric cancer have neither an esophagus nor stomach after surgery. Few studies have evaluated quality of life (QOL) in these patients objectively. Health-related QOL includes physical, social, and psychological aspects, and can be assessed quantitatively. The Dysfunction After Upper Gastrointestinal Surgery (DAUGS) score was used to evaluate postoperative QOL in patients undergoing both esophagectomy and gastrectomy.

Methods: From January 1999 to December 2015, 41 patients underwent esophagectomy with previous or concurrent total gastrectomy at our institution. The proximal jejunal flap was brought up in a Roux-en-Y fashion subcutaneously together with a vascular pedicle and the divided vessels anastomosed to the internal thoracic vessels. Of these, 25 patients were surveyed because they were without recurrence and did not receive chemotherapy within three months of the survey. Patients were sent a DAUGS questionnaire, rating 20 items in seven categories related to postoperative dysfunction on a scale of 0 to 5, with higher scores indicating more dysfunction.

Results: A total of 19 patients (76%) completed and returned the questionnaire. Of these, 11 patients had a previous gastrectomy (mean 20.8 years before), and 8 patients underwent simultaneous esophagectomy and gastrectomy. The mean (±standard deviation) DAUGS20 score in these 19 patients is 25.1±14.0. Weight loss after surgery was 10.6±6.5 (%).

Conclusion: Previous reports describe a mean DAUGS20 score after gastrectomy alone of 27.8 and after esophagectomy alone of 36.1. Patients in this study had lower DAUGS scores (less dysfunction), despite resection of both esophagus and stomach, for which there are several possible explanations. The reconstruction used may reduce reflux symptoms. The majority (11/19) of these patients had undergone gastrectomy and were already impaired when they underwent esophagectomy. In addition, some patients may be satisfied with their postoperative QOL and dysfunction, simply by surviving their disease.

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C056 6:00 PM-7:00 PM

PREDICTORS OF HPV VACCINE INITIATION AMONG LOW INCOME, ETHNIC MINORITY ADOLESCENTS IN CALIFORNIA

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Prophylactic HPV vaccines have been widely heralded as a breakthrough in cancer prevention. However, uptake of the vaccine in the US remains disappointingly low. As part of a randomized trial to improve HPV vaccination rates among low income, ethnic minority adolescents in Los Angeles County, we conducted telephone interviews with caregivers of never-vaccinated adolescents (10-17 years) at baseline and 9-months post intervention (n = 211). The intervention, targeted to caregivers of adolescents and delivered through a telephone hotline operated by the county health department, demonstrated no significant effect on HPV vaccine initiation. Therefore, we examined baseline characteristics of caregivers (demographics, health care access, HPV-related knowledge/attitudes) and adolescents (demographics, health care access) that might predict vaccine initiation over the study period. The following caregiver factors predicted a greater likelihood of vaccine initiation at follow-up in bivariate analyses: Latino ethnicity, less than college education, Medicaid managed care insurance, having a usual source of care, higher perceived HPV risk, stronger beliefs about vaccine effectiveness, lower cost concerns, feeling sufficiently informed to make a decision about vaccination, higher self-efficacy to have child vaccinated, previous provider recommendation for HPV vaccination, and intention to have child vaccinated within 6 months ($p < .05$). No child-level factors were associated with HPV vaccination. These results suggest subgroups of caregivers that might be targeted for intervention (e.g., non-Latino caregivers). In multivariate analyses including study condition, demographics, and significant bivariate factors, only intention to have child vaccinated in the next 6 months (OR = 4.8, $p < .01$) and having received a previous provider recommendation for vaccination (OR = 4.5, $p < .01$) were significant. Results underscore the critical influence of behavioral intentions and provider recommendation on receipt of preventive health services. Only 18% of caregivers in our sample had received a provider recommendation for HPV vaccination for their child despite the fact that 90% reported their child had a usual source of care. These findings suggest that interventions targeting health care providers to reduce missed opportunities during health

care encounters may be an especially important strategy in efforts to improve HPV vaccine uptake.

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C057 6:00 PM-7:00 PM

PRELIMINARY FEASIBILITY OF A WEB-BASED COGNITIVE BEHAVIORAL THERAPY FOR INSOMNIA INTERVENTION DURING CANCER TREATMENT

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BACKGROUND: Insomnia is common in cancer, especially around the time of cancer diagnosis and at the onset of cancer treatment. Yet it is often unrecognized and untreated. Cognitive Behavioral Therapy for Insomnia (CBT-I) is gold standard for treating insomnia in cancer. Previous studies have largely used homogenous samples of White, well-educated women with breast cancer who are years post-treatment. CBT-I dissemination in oncology is further limited by a lack of available providers and resources needed to implement standard face-to-face treatment. A solution is to abbreviate standard CBT-I into low-intensity modalities that can be self-administered online. The current pilot study examined the feasibility, acceptability, and efficacy of implementing a 6-module online self-administered CBT-I intervention, Sleeping Healthy Using the Internet (SHUTi), with optional clinician support, during cancer treatment.
METHODS: Twenty-eight individuals who were on average 2 months post-cancer diagnosis (36% breast, 25% gastrointestinal, 21% head and neck) and met DSM-IV criteria for insomnia were randomized to treatment at usual (TAU) (n=14) or SHUTi (n=14). Participants were undergoing chemotherapy and/or radiation with curative intent, at an NCI-designated cancer center that is also a safety net hospital (mean age = 47; 79% female; 64% White, 32% Black; 54% reported income < $30,000; 18% were uninsured/indigent, 18% on Medicaid; 25% had only completed high school or less). Pre- and post-sleep diaries, and self-reported global sleep disturbances, psychological distress, and health-related quality of life were collected.
RESULTS: Over an 8-month period, 83% of individuals approached about the study were screened and 100% of individuals meeting study eligibility consented to participate. The overall retention rate was 84% with similar attrition for both the TAU (20%) and SHUTi (13%) groups. On average, participants completed the study in four months, due to delays before (13%) and during (37%) cancer therapies. In the SHUTi group, 91% of participants who completed all six modules accessed clinician support; Black participants and those who were unemployed or on disability more readily accepted clinician support. SHUTi participants rated the program moderately acceptable (M=3.6; 1-5 scale), easy to use (M=4.1) and easy to understand (M=4.8). Compared to TAU, SHUTi participants reported greater decrease in global insomnia severity ($p < 0.05$; d=0.60), subjective time awake after sleep onset ($p < 0.05$; d=0.49), and depressive symptoms ($p < 0.05$; d=0.43) post-intervention.
CONCLUSIONS: There is preliminary support for the feasibility and efficacy of addressing

insomnia during cancer treatment with a web-based CBT-I program. Some form of clinician support may be critical for patients, especially those from underserved groups, as they navigate unexpected delays during cancer treatment.

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C058 6:00 PM-7:00 PM

PREVALENCE AND CORRELATES OF SKIN CANCER SCREENING AMONG INDOOR TANNERS AND NON-TANNERS

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Introduction:

Millions of Americans who have indoor tanned are at much higher risk of melanoma than the general population. The FDA recommends indoor tanners be screened regularly for skin cancer. Very little research has examined the association between indoor tanning and skin cancer screening.

Methods:

This study used data from the 2015 National Health Interview Survey (NHIS). NHIS methodology is described in detail elsewhere (https://www.cdc.gov/nchs/nhis/). Potential correlates of skin cancer screening included demographic factors, skin cancer risk factors, and health care access variables. Multiple logistic regressions were conducted separately for indoor tanners and non-tanners, with potential correlates included as independent variables and skin cancer screening as the outcome. Analyses used survey weights to provide results representative of the US population.

Results:

The sample included 30,352 participants, excluding individuals with prior skin cancer. 16% reported ever having indoor tanned, and 22% of these had indoor tanned in the last year. 30% of ever indoor tanners, 20% of never indoor tanners, and 21% of the overall sample had ever been screened for skin cancer. Based on the multivariate logistic regressions, significant correlates of skin cancer screening for both ever indoor tanners and non-indoor tanners were older age, non-Hispanic ethnicity, higher income, looking up health information on the internet in the last year, sunscreen use, and receipt of a spray-on tan at a salon in the last year. In non-indoor tanners only, white race, health insurance, not worrying about paying bills, and sun-burning easily were also significantly related to skin cancer screening.

Discussion:

The likelihood of having been screened for skin cancer was higher among indoor tanners than non-indoor tanners. Screeners in both groups were older and more likely to engage in sun protection using sunscreen than non skin cancer screeners. Some never indoor tanners who are at risk for skin cancer have insurance/financial barriers to skin cancer screening. Findings suggest that: 1) high-risk individuals who do not use sunscreen need to be targeted for skin cancer screening, and 2) insurance, financial, and information barriers to screening may also need to be addressed.

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C059 6:00 PM-7:00 PM

PREVALENCE AND PREDICTORS OF HEALTH ANXIETY IN LYNCH SYNDROME PATIENTS

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Background: Health anxiety (HA) is characterized by fear or worry about ill health, ranging from a sense of indifference to intense health-related concerns (Salkovskis & Warwick, 1986). In particular, elevated HA has been frequently reported in individuals diagnosed with cancer (e.g., Grassi et al., 2004). However, little data exist on those at high-risk for *developing* cancer, such as Lynch syndrome, which is a genetic predisposition to adult onset cancers. Individuals with Lynch syndrome have a 60-80 percent chance of developing colorectal cancer in their lifetime (Aarnio et al., 1999). This study examined the severity of and predictors associated with health anxiety in Lynch syndrome patients.

Methods: Participants (N=209) were recruited from a genetic cancer registry and completed self-report measures assessing health anxiety (Short Health Anxiety Inventory; Salkovskis et al., 2002), depression and anxiety (Hospital Anxiety and Depression Scale; Zigmond & Snaith, 1983), cancer worry interference (Trask et al., 2001) and coping (Coping with Health Problems Inventory; Endler et al., 1998). Hierarchical multiple regression analyses were conducted to examine predictors of elevated HA.

Results: Results indicated that 30% of participants reported clinically significant levels of health anxiety. After controlling for gender, time since LS diagnosis, prior cancer diagnosis, and number of first-degree relatives with cancer, regression analyses indicated younger age, $\beta=-.12$, $p=.046$, increased use of the coping strategy of emotional preoccupation, $\beta=.28$, $p=.001$, more anxiety, $\beta=.25$, $p=.001$, more depression, $\beta=.18$, $p=.02$, and more worry interference, $\beta=.20$, $p=.002$, were all significantly associated with greater HA, $F(8, 180)=20.28$, $p=.001$.

Discussion: Findings suggest that health anxiety is of clinical significance for individuals with Lynch syndrome. Moreover, our results suggest that risk factors for high HA include younger patients who are struggling with general anxiety, depression, and cope with their problems using worry and rumination strategies. People with hereditary cancer conditions often feel like health care providers do not understand the negative impact of living with their condition

(e.g., Sheppard et al., 2013). Disseminating these findings to physicians and genetic counselors working with Lynch patients is critical, which will help to identify and health anxiety among this population. We will discuss avenues to disseminate information to both providers and patients, as well as future directions aimed at reducing the distress among Lynch syndrome carriers.

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C060 6:00 PM-7:00 PM

PREVENTIVE HEALTH BEHAVIOR PERCEPTIONS AMONG PARENTS OF YOUNG CHILDHOOD CANCER SURVIVORS

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Background: Childhood cancer survivors (CCS) face a lifetime of significantly elevated risks for a variety of chronic and life-threatening illnesses. A consensus has emerged on the need for preventive health behavior education to reduce long-term health risks among CCS, and yet little is known about preventive health behavior promotion upon completion of treatment and in follow-up care, especially regarding parents of young and adolescent CCS.

Methods: A cross-sectional survey of 114 parents of young and adolescent (< 13 years) childhood cancer survivors was used to assess perceptions of preventive survivorship health behavior promotion. Recruitment was conducted through the online social network communities of two childhood cancer non-profits that focus on parent wellbeing. The novel online survey given to parents included 15 questions about receiving survivorship-related preventive health behavior promotion from medical professionals, the extent to which parents perceive specific health behaviors to be important for survivorship preventive health, and the degree to which parents want help with these specific health behaviors.

Results: The percentage of parents reporting receiving any specific preventive health behavior advice from medical professionals (doctors, nurses, or other) ranged from 54% (promotion of “healthy diet”) to 20% (promotion of “healthy sleep habits”). Nevertheless, parents strongly endorsed specific health behaviors as being “very important” for survivorship health, ranging from 75% of parents for “healthy diet” to 63% for “healthy sleep habits.” However, fewer parents wanted “quite a bit” or “a lot” of help with changing specific preventive health behaviors, ranging from 44% for “healthy diet” to 33% for “physical activity.” Parents who reported receiving survivorship-related “healthy diet” promotion from a medical professional were more likely to report that each specific health behavior is important for survivorship health (for “healthy diet”, $p=.002$; for “physical activity”, $p=.009$; for “healthy sleep”, $p=.059$; for “stress management, $p=.035$; for “social support”, $p < .000$). Parents who reported receiving survivorship-related health behavior promotion were no more likely to want help changing any of the specific health behaviors.

Conclusions: Despite inordinate and lifelong chronic disease risks among childhood cancer survivors, parents do not report receiving uniform preventive health behavior promotion from medical professionals. When parents receive such promotion, they may be more likely to

believe specific preventive health behaviors to be important for their child’s long-term health.

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C061 6:00 PM-7:00 PM

PROMOTING CANCER LIFE MANAGEMENT VIA INTEGRATIVE HEALTHCARE: EFFECTIVENESS IN IMPROVING EMOTIONAL HEALTH AND IMMUNE FUNCTION

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Up to 50% of cancer patients experience significant depression, anxiety, and stress (Hopko et al., 2016). Depressed and anxious cancer patients experience decreased quality of life and immune system functioning, more rapid progression of cancer, more pain, and possibly increased mortality relative to non-depressed patients (Reddick et al., 2005; Spiegel & Giese-Davis, 2003). Among novel treatments developed to ameliorate the psychosocial impact of cancer is integrative healthcare (IH), which combines conventional Western medicine with adjunctive, complementary treatments (Deng & Cassileth, 2005). There is some evidence to indicate short-term benefits of IH usage for cancer patients (Helyer et al., 2006); however, the long-term efficacy of IH has not been systematically studied. The current study examines the effectiveness of IH for cancer patients, relative to treatment as usual (TAU), in reducing emotional and physical symptoms and improving immune functioning. Patients were recruited from the University of Tennessee Medical Center's Cancer Institute (n = 106) and were eligible to participate irrespective of cancer diagnosis and stage. Patients opted to continue TAU or engage in an IH program (services include: psychotherapy, massage therapy, reiki, acupuncture, yoga, and mind-body skills training). A subset of the sample (29%; n = 31) was randomized to a blood draw condition. Outcome variables included Patient Health Questionnaires (PHQ-9, GAD-7, and PHQ-15) and plasma cytokine levels (C-Reactive Protein [CRP] and Interleukin-6 [IL-6]). Patients were assessed at three intervals (baseline, 3-month and 12-month follow-up). 15% of the sample utilized IH services between baseline and 12-month follow-up, attending IH services an average of 4.31 times (SD = 6.81, range: 1 – 29). Latent growth curve models (LGCM) revealed patients utilizing IH services (0 = no usage; 1 = 1+ times) generally presented with higher anxiety and depression ($p < .05$). Reductions in depression occurred more rapidly with IH usage ($r = -.05$, $p < .05$), while change in anxiety was only marginally associated with IH usage ($r = -.05$, $p = .07$). IH usage was not significantly correlated with change in physical/somatic symptoms. Preliminary analyses did not offer support for change in plasma cytokines over time. Overall, findings offer preliminary support for long-term benefits of IH in reducing depression and anxiety in cancer patients. Study limitations and implications will be discussed.

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C062 6:00 PM-7:00 PM

PSYCHOLOGICAL DISTRESS AFTER PELVIC EXENTERATION FOR RECURRENT GYNECOLOGIC CANCER

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Background Pelvic exenteration (PE) has been performed historically in women with gynecologic cancer for palliation of recurrent disease. With advances in chemotherapy agents and operative methods, PE in the well-selected patient now produces 5-year survival rates as high as 60%. Thus, a greater proportion of women are living longer with a wide range of physical and psychological issues. Despite the recent increase in rate of PE performed for curative intent, there is a paucity of data on the long-term effects of PE. In the current study, we sought to characterize women's long-term psychological health after PE for recurrent gynecologic cancer and examine its associations with overall quality of life (QOL).

Methods As part of a larger mixed-methods study of the effects of PE on QOL, 21 women who underwent PE between 6 months and 10 years previously completed the Impact of Event Scale-Revised (IES-R), Center for Epidemiologic Studies-Depression Scale (CES-D), and EORTC-Quality of Life questionnaire.

Results Participants ranged in age from 43 to 75 years (mean=58) and were a mean of 4 years (range=0.7-8.8) post-PE. Mean IES-R total score was 21.2+19 and ranged from 0 to 69. Nearly one-third exceeded the cut-off for clinically significant distress. Mean subscale scores were 5.8+6 for hyperarousal, 6.7+6 for avoidance and 8.3+8 for intrusion. On the CES-D, 71% exceeded the cut-off for clinically significant depressive symptoms (CES-D total= 19.8+9; range=3-39). Participants reported above average physical functioning on the EORTC-QLQ (69+23; range=27-100). Self-reported global QOL was below average (42.5+22; range=0 to 66.7). In regression analysis, psychological health accounted for 49% of the variability in QOL.

Conclusions Findings suggest women's psychological health after PE is relatively poor and accounts for considerable variability in overall QOL. Findings suggest targets for clinical interventions to improve psychological well-being and enhance QOL in long-term survivors. This study highlights the need for clinicians to attend not just to women's physical symptoms following this life-altering surgery but to monitor and attend to women's psychological health

as well.

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C063 6:00 PM-7:00 PM

PSYCHOMETRIC PROPERTIES OF A 47-ITEM DISTRESS SCREENING TOOL FOR CAREGIVERS OF CANCER PATIENTS IN A COMMUNITY-BASED SAMPLE

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Background. The landscape of cancer care is changing with patients living longer and healthcare trending towards outpatient treatment. Consequently, family caregivers face their own distress. While validated distress screening for patients is essential to quality care, there’s an absence of validated measures to identify and address unmet psychosocial needs of caregivers. We developed and tested the psychometric properties of CancerSupportSource-Caregiver (CSS-CG), a 47-item web-based distress screening and referral instrument, including a 4-item depression subscale. **Methods.** Family caregivers rated their concerns about self-care (27 items), caregiving tasks (11 items), and patient care (9 items). Concurrent validity was determined by correlations with the Distress Thermometer (DT), the Center for Epidemiologic Studies Depression Scale (CES-D), the SF-12 mental and physical component scores (MCS, PCS), the Zarit Burden Interview (ZBI), and the Caregiver Reaction Assessment Scale (CRA). ROC curve analysis was used to determine sensitivity and specificity for a 4-item depression subscale compared to the CES-D. Test-retest reliability was assessed in a subsample (n=115) using the intra-class correlation coefficient (ICC). **Results.** Participants included 246 caregivers (median age 54 y) from 10 affiliates of a community-based organization. The 47-item tool and depression subscale demonstrated high internal consistency (Cronbach's alpha=0.96 and 0.79, respectively). The total distress score created using summed item scores correlated substantially (pConclusion. The CSS-CG shows strong psychometric properties and can be considered a valuable community-based instrument to screen for distress. Next steps include reducing the number of screening items to facilitate implementation and dissemination.

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C064 6:00 PM-7:00 PM

PUTTING EMOTIONS IN CONTEXT: FEASIBILITY, ACCEPTABILITY, AND VALIDITY OF AN EMOTION REGULATION ASSESSMENT FOR CANCER PATIENTS

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Objective: Authors have called for the study of emotion regulation (ER) in health psychology and psycho-oncology. However, self-report measures of ER may not be appropriate for cancer patients. ER assessment methodologies that incorporate specific contextual demands may perform better in this population. Thus, the purpose of the present study was to assess the feasibility and acceptability of a frequently-used assessment paradigm from the affective science literature in a sample of cancer patients.

Methods: Cancer patients (N=13) completed an ER task frequently used among samples of healthy young adults. Participants recalled 4 specific situations in which they had experienced emotions: (1) non-cancer, moderate intensity emotions; (2) non-cancer, high intensity emotions; (3) cancer-specific, moderate intensity emotions; and (4) cancer-specific, high intensity emotions. Participants then rated their use of 11 ER strategies (i.e., reappraisal, problem-solving, suppression, acceptance, etc.) in each of these situations. Following completion of the task, participants were asked for feedback on its acceptability (e.g., ability to comprehend instructions, ease of completion, etc.).

Results: For 52 prompts, 51 examples were generated (98% completion rate), indicating that the task is feasible and easy to complete. All patients reported that the task was pleasant. Minimal changes (e.g., providing instructions prior to session to facilitate situation recall) were suggested. Use of suppression differed between cancer and non-cancer situations (t=1.7, df=49, p < .05), such that participants suppressed emotions less frequently in cancer-related situations. Use of acceptance differed between moderately and highly intense situations (t=-2.3, df=49, $p < .05$), such that participants accepted emotions more frequently in highly intense situations.

Conclusions: Use of a context-specific ER task among cancer patients is feasible. Patients found the task acceptable and, consistent with validity hypotheses, demonstrated differences in ER strategy use depending on situation type and intensity. Future research should establish the reliability of this task.

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C065 6:00 PM-7:00 PM

QUALITY OF LIFE OF POSTMENOPAUSAL WOMEN WITH BREAST CANCER TREATED WITH ADJUVANT ENDOCRINE THERAPY

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Background: Breast cancer is the most common cancer in women with an estimated 246,660 new cases to be diagnosed in 2016, joining the over 3 million women living with the disease (ACS, 2016). To reduce cancer recurrence, postmenopausal women (highest incidence and prevalence of breast cancer) who test positive for hormone receptors in the tumors, are candidates for adjuvant endocrine therapy (i.e., aromatase inhibitors (AI)). Despite the benefits of AIs in the treatment for breast cancer, many women are at risk for complications, including osteoporosis and fractures all of which can adversely affect health-related quality of life (HRQOL). **Methods:** Postmenopausal women with breast cancer (n=174), ages 50 – 95 (*M*= 68.5), diagnosed with stage 1-3 disease, forty one percent on AIs, were recruited from an academic medical center in the Northeast. Demographic and quality of life data (Functional Assessment of Cancer Therapy-Breast (FACT-B) was collected via patient self-report and clinical data (AI use, bone health, comorbid conditions) was abstracted from patient medical records. **Results**: Preliminary analyses suggest women with a history of adjuvant AI therapy (compared to those without history of adjuvant therapy use) report better physical and emotional well-being. **Discussion**: Despite the well-known clinical benefits of AI therapy for disease recurrence, it is possible that particular QOL outcomes (i.e., physical, emotional) may also be positively affected. However, a diagnosis of osteopenia or osteoporosis and bone fractures, potential side effects of AI use, may put patients at higher risk for worse functional well-being. The benefits and risks (potential side effects that may affect QOL) of AI use should be discussed with patients.

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C066 6:00 PM-7:00 PM

RELATIONSHIP OF WORRY ABOUT CANCER TO PERCEIVED RISK AND POSITIVE AND NEGATIVE EFFECTS OF CANCER

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Background: Worry is associated with negative effects of cancer, such as worse physical functioning and higher perceived risk of disease progression, but associations with positive changes post-cancer, such as benefit-finding, have been studied less. We examined the relationship of worry about cancer to negative and positive effects of cancer and perceived risk of progression to inform whether worry may lead to negative effects after cancer.

Methods: We invited 1,376 long-term survivors (5–10 years post-diagnosis) to complete the survey and 615 (46%) were eligible and completed the survey. Of the 615, 594 survivors of cancer (breast, prostate, colorectal, lung, melanoma) completed the relevant questions. Respondents answered questions regarding worry about cancer recurrence/progression, negative effects of cancer on mental and physical function, perceived risk of recurrence/progression and benefit-finding (being a stronger person, coping better, making positive changes). Multivariable regressions estimated associations of worry with negative effects of cancer, perceived risk and benefit-finding.

Results: Worry was related to greater odds of negative effects of cancer (odds ratio (OR) range: 1.40 to 1.46, all all p’s < .01) and to higher perceptions of recurrence/progression risk (b=0.69, p < .01). Worry about cancer was unrelated to benefit-finding (all *p’s* >.10).

Conclusions: Worry about cancer is related primarily to negative, but not necessarily positive, effects of cancer and is related to greater perceptions of disease progression. More research on effective treatments for worry about cancer is needed.

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C067 6:00 PM-7:00 PM

SEDENTARY LIFESTYLE AND GREATER SYMPTOM BURDEN IN PATIENTS DIAGNOSED WITH ADVANCED CANCERS

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Background: Physical activity has been shown to improve symptoms such as depression, fatigue, insomnia, and pain. The aims of this study were to examine the link between physical activity and symptom burden in patients diagnosed with cancers affecting the hepatobiliary and pancreatic system.

Methods: Participants were administered a battery of questionnaires that included the Center for Epidemiological Studies-Depression (CESD) Scale, Brief Pain Inventory, Pittsburgh Sleep Quality Index, Functional Assessment of Cancer Therapy (FACT)-Fatigue, FACT-Hepatobiliary, and the International Physical Activity Questionnaire (IPAQ). The IPAQ can be categorized into sedentary, moderate and vigorous physical activity. Analyses included descriptive statistics and Analysis of Variance was performed to test hypotheses.

Results: Of the 395 patients enrolled in the study, the mean age at cancer diagnosis was 62 (SD=11); the majority were male (61.7%) and Caucasian (91.1%). Patients who reported sedentary lifestyle reported the highest levels of depressive symptoms (M=16.61, SD=11.2) vs those with moderate (M=13.64, SD=8.4) or vigorous physical activity (M =11.83, 9.9); F(2,394)=6.267, p=0.002. Patients who were sedentary also reported significantly higher levels of fatigue (M= 23.60, SD=13.1) when compared to those who were moderately active (M=19.70, SD=11.3) or vigorously active (Mean=16.95, SD=12.0), F(2,370)=9.390, $p < 0.001$. Levels of physical activity were not associated with pain (p=0.770) or sleep quality (p=0.524). Sedentary patients reported poorer overall quality of life (M=70.9, SD=17.2) vs those who were moderately (M=75.01, 14.3) or vigorously physically active (M=80.0, SD=16.6), F(2, 386)=10.607.

Conclusions: Sedentary lifestyle after a diagnosis of cancer was associated with increased symptom burden that was both statistically and clinically meaningful. Dissemination and

implementation of effective interventions to increase physical activity in cancer patients are warranted to decrease symptoms burden and improve quality of life

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C068 6:00 PM-7:00 PM

SUICIDAL IDEATION AMONG VETERANS LIVING WITH CANCER

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Background: Subgroups of Veterans (e.g., those with PTSD, depression, or pain) are at increased risk for suicide. Suicide rates are also higher among individuals living with cancer compared to the general population. A recent study of people with metastatic cancer found factors associated with suicidal ideation (SI) include race, PTSD, Panic Disorder, lack of spirituality, limited support, not feeling well physically, and seeking psychotherapy. However, little is known about SI among Veterans with cancer. *Objectives:* Identify factors associated with SI among Veterans with cancer. *Method:* Veterans with cancer (N = 101) who were referred for mental health evaluation completed a clinical interview and questionnaires, including Pain Numeric Rating Scale (PNS), Insomnia Severity Index (ISI), Patient Health Questionnaire (PHQ-2), Generalized Anxiety Disorder (GAD-7), and PTSD Checklist (PCL). SI was defined by endorsing "Thoughts that you would be better off dead or of hurting yourself in some way" on paper-and-pencil questionnaire or thoughts of killing oneself during clinical interview. *Results:* 29% reported SI. Compared to those without SI, Veterans with SI had higher ratings on PNS (t= 2.46, p= 0.016), PHQ-2 (t= 5.36, p< .001), GAD-7 (t= 4.41, p< .001), and PCL (t= 2.61, p= .011); they were also more likely to have a history of suicide attempt (χ^2 = 3.85, p= .050). There were no group differences on disease stage, ISI, race, social support, or religious prohibition against suicide (p-values >.05). To determine which factors account for the greatest proportion of variance in SI, a logistic regression was performed with history of attempts, PHQ-2, GAD-7, PCL, and PNS entered as predictors in separate blocks. The omnibus model was significant (p < .001). However, only PHQ-2 had a statistically significant contribution to the model (β = 0.56, p= .008). *Conclusion:* Although previous studies of SI among Veterans have emphasized the importance of pain and PTSD, this study is consistent with the literature showing the link between pain and suicide and PTSD and suicide disappear when depressive symptoms are considered. Results suggest that pain, PTSD, history of suicide attempts, and anxiety (including worry and fear) are important to consider when treatment planning for Veterans with cancer. However, anhedonia and hopelessness explain the greatest proportion of variance in thoughts of being better off dead or wanting to die and should be the focus of intervention.

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C069 6:00 PM-7:00 PM

ACTIGRAPHY-ASSESSED SLEEP EFFICIENCY IS ASSOCIATED WITH AMBULATORY BLOOD PRESSURE IN A COMMUNITY SAMPLE

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High blood pressure is a leading risk factors for overall disease burden, including cardiovascular disease. Likewise, emerging evidence suggests that various dimensions of sleep health are associated with cardiovascular health. However, less is known about the relationship between measures of sleep quality and blood pressure with much of the current literature reliant on self-reported sleep ratings. The aim of this study was to examine the association of actigraphic sleep efficiency and both ambulatory day and night-time blood pressure.

Participants were a community sample of 300 healthy adults (150 men, 150 women) ages 21 to 70 years enrolled in the North Texas Heart Study. The sample was stratified by age within gender and race/ethnicity, and the mean age at enrollment was 42.44 years (SD=12.76).

Actigraphy using AW Spectrum Actiwatches and sleep diary data were collected over a 48-hour period. Actigraphic sleep efficiency was defined as the ratio between total sleep time and time in bed. Ambulatory blood pressure (ABP) was collected at random times during 45-minute intervals over the corresponding 48-hour period, including one night. Person/day averages were calculated within day (7:00am to 10:00pm) and night (12:00am to 5:00am).

Higher average sleep efficiency over the two nights was associated with lower average nighttime systolic and diastolic ABP on the second night, all b’s < -0.44, t(208) = -4.05, p < .001. A temporal trend was also observed where higher sleep efficiency on night one predicted lower average systolic and diastolic ABP during the subsequent day, all b’s< -.17, t(245) = -2.29 , p < 05. All models were adjusted for age, race/ethnicity, gender, and BMI.

Although this study only provides a snapshot of sleep and blood pressure over a very limited period, the findings suggest that objectively assessed sleep efficiency may be related to cardiovascular disease risk through its effects on daily blood pressure. Studies using objective measures of sleep health and blood pressure are needed to further explore the role of sleep in cardiovascular disease risk.

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C070 6:00 PM-7:00 PM

ANGER STYLE AS A PREDICTOR OF 10-YEAR HEART ATTACK RISK

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The connection between anger and cardiovascular disease has been inconclusive; however, demographic and moderating factors may explain these inconsistencies. The current study investigated whether varying styles of anger expression predict heart attack risk in a sample of university students. Data was collected across two phases: Phase 1 included a self-report survey (n = 505; 71% female; mean age 21.39, SD = 4.78) and Phase 2 included a physiological assessment (n = 258). Fifty-eight percent of the sample self-identified as European American, 19% African American, 12% Latino(a), 8% Asian American, and 4% other ethnicity. The State Trait Anger Inventory-2 was used to assess anger styles. A 10-year heart attack risk score was determined using age, gender, total and HDL cholesterol, smoker status, and systolic blood pressure. Age was entered as 45 years for males and 55 years for females. Anger controlled out (t = 2.93, p = .004) predicted 10-year heart attack risk (R^2 = .05, $F(6, 251)$ = 2.31, p = .03). Ethnicity was associated with the type of anger expression employed by participants, Pillai's Trace = .93, $F(18, 1403)$ = 1.93, p = .01. European Americans reported the lowest levels of both state and trait anger in comparison to African Americans and Latinos, respectively. Though females reported greater overall expression of anger, males reported greater anger control in and out. Mindfulness skills and coping styles were examined as moderators of anger style to inform clinical recommendations aimed at prevention.

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C071 6:00 PM-7:00 PM

ANXIETY SENSITIVITY AND MEDICATION NONADHERENCE IN PATIENTS WITH SUSPECTED ACUTE CORONARY SYNDROME

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Background: Anxiety sensitivity - distress over the physical, social, or cognitive consequences related to the awareness of anxiety – has been associated with increased risk for cardiovascular disease. Poor adherence to cardioprotective medications may underlie this association. We examined whether anxiety sensitivity was independently associated with self-reported medication nonadherence after discharge for a suspected ACS.

Methods: Between 2013 and 2015, a consecutive cohort of patients was enrolled from the emergency department of a tertiary care hospital in New York City. One month after discharge, patients were contacted by telephone to have anxiety sensitivity and medication nonadherence assessed. Anxiety sensitivity was assessed using the Anxiety Sensitivity Index (ASI-3); a score > 23 was classified as high anxiety sensitivity. Medication adherence was assessed by asking “How much of the time do you take your heart medications?” Patients who reported missing their medications at least some of the time were categorized as nonadherent. Logistic regression was used to determine the association between anxiety sensitivity and adherence after adjusting for age, sex, race, education, comorbidity (Charlson score), prior history of established coronary artery disease, discharge diagnosis (ACS vs non-ACS), and depressive symptoms (8-item Patient Health Questionnaire score ≥10).

Results: Among 434 patients with data on anxiety sensitivity and adherence, the mean age was 62.2 (SD 12.7) years, 44.7% were women, 58.2% Hispanic, and 25.0% had elevated depressive symptoms (PHQ>9). 39.2% of patients had a confirmed ACS hospitalization and 36.2% had a prior history of CAD. A greater proportion of patients with high anxiety sensitivity were nonadherent than patients without high anxiety sensitivity (20.3% vs 11.8%; p=.02). In the adjusted model, anxiety sensitivity was associated with increased odds of medication nonadherence (AOR 2.1, 95%CI 1.2, 3.9; p=.02). Education was the only other variable associated with nonadherence in this model, patients with less than high school education were less likely to be nonadherent (p=0.03). The same pattern was observed when entering anxiety sensitivity as a continuous measure (adjusted ß=1.02; 95%CI 1.00, 1.04; p=.03).

Conclusion: High anxiety sensitivity was associated with nonadherence to cardiac medications among patients recently discharged for a suspected ACS. Our results suggest that educating patients on strategies to reduce their anxiety sensitivity may be useful for improving their medication adherence, and their elevated cardiovascular risk.

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C072 6:00 PM-7:00 PM

ARE PATIENTS WHO RULE OUT FOR ACUTE CORONARY SYNDROME AT RISK FOR POSTTRAUMATIC STRESS DISORDER?

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Background: Many patients diagnosed with acute coronary syndromes (ACS; unstable angina and myocardial infarction) develop posttraumatic stress disorder (PTSD) due to the experience. Less is known about risk for PTSD in patients who are ruled out for ACS during their hospital admission.

Methods: A consecutive sample of 500 patients presenting to an urban hospital emergency department (ED) with symptoms of a probable ACS were enrolled into an observational cohort study of PTSD after ACS. The reason for ACS symptoms at hospital discharge was determined through chart review. PTSD was assessed by telephone 1 month after discharge using the PTSD Checklist (PCL-S). Logistic regression was used to determine the odds of PTSD (PCL-S≥32), adjusting for demographics, coronary artery disease history, comorbidities, pre-existing psychiatric and psychosocial variables, and perceived threat in the ED.

Results: Compared to patients with a confirmed ACS, patients who ruled out for ACS had no significant differences in the presence of typical ACS somatic symptoms (p>0.1) or in perceived threat from the ACS symptoms (p=0.87). There were also no differences in the proportion of patients with and without a confirmed ACS who developed elevated PTSD symptoms (16.8% versus 19.3%; p=0.53), and risk for PTSD was no different in the adjusted model (adjusted OR 0.90, 95%CI 0.45, 1.78; p=0.77).

Conclusion: ED presentation with ACS symptoms is sufficient to trigger PTSD whether or not the etiology was truly due to a life-threatening ACS event. Patients ruled out for ACS should be targeted for interventions to decrease risk of PTSD.

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C073 6:00 PM-7:00 PM

ASSOCIATIONS OF GENDER IDENTITY AND SEX WITH INFLAMMATION LEVELS IN HYPERTENSIVE PATIENTS

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Background: Elevated inflammation, as evidenced by increased C-reactive protein (CRP), has been associated with a greater risk of developing hypertension. Sex (a biological construct) is also a risk factor for hypertension, with men generally being at greater risk than women. However, women have been found to have higher levels of CRP compared to men. The aetiology of this difference is not well understood. It is possible that certain aspects of gender identity (a sociological construct), may explain this. We investigated the specific role of gender identity and sex on CRP levels in hypertensive patients.

Methods: A total of 798 hypertensive patients (54.3% women, mean ± SD age (yrs) =67.9 ± 8.72) undergoing pharmacological stress testing with self-reported, physician diagnosed hypertension participated in the study. Patients completed a series of questionnaires, measuring socio-demographics, health behaviours and gender identity, using the Bem Sex Role Inventory, to determine masculine and feminine gender identity. Blood samples were taken to assess CRP levels.

Results: Adjusting for age, waist circumference, alcohol consumption, smoking status, education level and physical activity, separate general linear model analyses revealed a significant main effect of sex with men having lower CRP levels (F=24.51, $p < .001$) but no effect of masculine gender identity (F=0.19, p=.66). There was no effect of feminine gender identity (F=0.28, p=.60) on CRP levels despite a main effect of sex with lower CRP in men (F=24.98, $p < .001$). Inclusion of a sex by gender identity interaction term revealed a significant masculine gender identity by sex interaction (F=4.20, p=.041), but not a feminine gender identity by sex interaction (F=0.76, p = .38). Post-hoc analyses revealed that for women, higher masculinity may be related to lower inflammation levels, which was not found in men - indicating that lower levels of masculine gender identity were associated with higher levels of CRP in women but not men. There was no relationship between feminine gender identity and CRP

Conclusion: Results indicate that in women, higher levels of masculine gender identity might be related to lower inflammation in patients with hypertension. However, given the complex nature of defining and assessing gender, and that our study only examined the role of gender identity, our results need to be interpreted with care. Others, who have used a more comprehensive assessment of gender by assessing gender roles and/or norms, rather than solely gender identity, have shown femininity to be predictive of CVD events. Our results need further investigation and replication with a more comprehensive assessment of gender, and highlight the need to consider all aspects of gender, not just gender identity.

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C074 6:00 PM-7:00 PM

CARDIOVASCULAR EMOTIONAL DAMPENING OF THREAT PERCEPTION: A PRELIMINARY STUDY OF BLOOD PRESSURE AND FINANCIAL RISK-TAKING

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Elevated resting blood pressure is associated with emotional dampening, including reduced responses to painful stimuli, emotionally evocative photographic scenes, and reduced perception of affect in facial expressions and written narratives. Several current models of health behavior suggest that perception of threat is a critical motivator in avoidance of risky health-damaging behavior. We hypothesize that that blood pressure-associated dampening of threat assessment may influence decision-making, and may be especially important in propensity for various risk-taking behaviors. Work from our lab has recently shown that increased resting blood pressure is associated with: 1) increased self-report of risky behavior from a modified National College Health Risk Behavior Survey, and 2) risky driving behavior assessed in a high fidelity driving simulator. We seek to build upon these results by assessment of the relationship between blood pressure and financial risk-taking using a simulated paired-choice lottery game.

Forty-one healthy, normotensive adults (11 men, 30 women) 18-43 years of age were recruited for a laboratory study of resting blood pressure and financial risk-taking behavior using a simulated paired-choice lottery task. Blood pressures were determined over a 10 minute rest period using a calibrated Dinamap V100 monitor. Participants then played a simulated lottery task involving ten paired-choice decisions to assess propensity for financial risk-taking.

Average resting systolic blood pressure was 110.7 +/- 1.41 mmHg (mean +/- SE) and diastolic blood pressure was 66.5 +/- .68. As in previous studies, systolic blood pressure was higher in men than in women (p=.001), but there were no other significant sex differences in blood pressure or risk behaviors. Multiple regression predicting lottery risk-taking from systolic and diastolic blood pressures indicated that higher resting systolic blood pressure was associated with increased risk-taking (B= -.075, t= -2.215, p= .033).

These data suggest that cardiovascular emotional dampening may be associated with increased finanacial risk-taking. The body of data suggests that CNS mechanisms associated with resting blood pressure levels are possibly associated with dampened perception of threat. This dampened threat perception may reduce motivation to avoid risk-taking behavior and thus lead to increased risk-taking behavior in multiple domains. Better understanding of the integration of CNS circuits that influence visceral, emotional, motivational and, hence, cognitive function may give more insight into individual differences in propensity to engage in risk-taking behavior. This approach to understanding risk-taking may provide new strategies for basic and translational research to reduce health-damaging behaviors, and thus reduce risk for multiple chronic diseases related to unhealthy lifestyle choices.

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C075 6:00 PM-7:00 PM

DEPRESSION IN CARDIAC PATIENTS AND RESULTING THREAT PERCEPTIONS IN THE EMERGENCY DEPARTMENT

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Background: Patients that present to the emergency department (ED) with depression are more likely to develop posttraumatic stress disorder (PTSD) after an acute coronary syndrome (ACS) than their nondepressed counterparts. Threat perceptions during a traumatic event are associated with the severity of subsequent PTSD. Prior research, for example, suggests that depressed ACS patients are at increased risk of developing PTSD when they present to an overcrowded ED. However, no study has addressed the mechanism by which these ED threat perceptions influence PTSD risk. We tested whether depressed cardiac patients were more likely to perceive the emergency department as stressful during ED evaluation than nondepressed patients.

Methods: 581 patients being evaluated for acute coronary syndrome were enrolled in the Reactions to Acute Care and Hospitalization (REACH) study, an observational cohort study in the emergency department (ED), and provided complete data. Participants completed a baseline interview containing an Emergency Room Perceptions questionnaire that assessed perceptions of emergency room crowding, stress, and length of stay. They also completed the eight-item Personal Health Questionnaire Depression Scale (PHQ 8) to measure depression.

Results: Participants were 60.75 ± 0.6 years, 47% women, and 37.06% were depressed. Though perceptions of emergency room crowding did not differ [t= -1.292, p=.197], depressed patients perceived the ED as more stressful [t= -3.927, p=.000], perceived a one hour longer length of stay [t= -2.530, p=.012], and a 2.3 hour longer wait for a care plan [t= -2.701, p=.008].

Conclusion: Emergency Departments can be incredibly stressful environments and cardiac patients with depression are particularly vulnerable to the effects of ED perceptions. In this study, even though depressed patients did not perceive the ED as more crowded, they did perceive it as more stressful, their length of stay to be longer, and their wait for a care plan to be longer. This may be why previous research has found differential effects of ED crowding on depressed patients.

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C076 6:00 PM-7:00 PM

DEPRESSIVE SYMPTOMS AND MORTALITY IN HEART FAILURE: THE ROLE OF MEDICATION NON-ADHERENCE

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Introduction

Approximately 20% of individuals with heart failure (HF) experience depression or depressive symptoms. Depression is detrimental to prognosis in HF, roughly doubling all-cause mortality risk. However, the mechanisms underlying this relationship are not fully known. Medication non-adherence may contribute, as depressed patients are less likely to adhere to medication regimens.

Purpose

The present study evaluated the role of medication non-adherence in the relationship between depressive symptoms and mortality risk in adults with HF.

Method

Participants were 303 HF patients in a longitudinal, observational study of self-care behaviors. Participants completed 21 days of medication monitoring using an electronic pillbox. Medication adherence was treated as a continuous variable. Depression was defined as Patient Health Questionnaires scores ≥ 5. Mortality data were obtained from the Centers for Disease Control and Prevention's National Death Index. Cox proportional hazards regression was used to assess the relationship between depressive symptoms and mortality, with and without adjustment for demographic and medical covariates, and medication non-adherence.

Results

After adjustment for covariates, depression was associated with increased all-cause (HR: 2.07; 95% CI: 1.02-4.17), but not cardiovascular, mortality risk. When medication non-adherence was added to the model, non-adherence (HR: 1.01; 95% CI: 1.002 – 1.02), but not depression, was associated with increased mortality risk.

Conclusion

Medication non-adherence appears to contribute to increased risk of all-cause mortality conferred by depressive symptoms in HF. Depression and medication adherence represent modifiable risk factors for poor prognosis. Future research is needed to understand whether interventions that concomitantly target these factors can improve outcomes.

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C077 6:00 PM-7:00 PM

ELIGIBILITY CRITERIA FOR HYPERTENSION-RELATED BEHAVIORAL INTERVENTIONS: ARE BLACKS INCLUDED?

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Background: Despite higher rates of hypertension (HTN) in blacks compared to other racial groups, blacks have historically been underrepresented in HTN-related clinical trials and health research studies. Behavioral interventions have been shown to improve HTN management among Americans in addition to, and sometimes in lieu of, drug therapy. However, it is not clear how often blacks are specifically mentioned in protocols for HTN-related behavioral interventions.

Objective: To quantify and describe HTN-related behavioral interventions registered with ClinicalTrials.gov that explicitly include “black” or “African American” as part of the eligibility inclusion criteria.

Methods: Using a novel database developed by Zhe He et al. that summarizes key attributes of ClinicalTrials.gov, “Commonalities in Target Populations of Clinical Trials (COMPACT),” we queried COMPACT for variables of interest. Broadly, there were 323 interventional HTN studies using behavioral interventions between 01/2005 and 08/2015. “Interventional HTN studies using behavioral interventions between 01/2005 and 08/2015 with ‘black’ or ‘African American’ in the eligibility criteria” yielded 28 studies. After qualitative review of the studies, two were dropped, leaving a total of 26 studies. Descriptive statistics were run in IBM SPSS 24 for gender, whether blood pressure was included as a primary outcome, minimum and maximum age for recruitment, focus of the behavioral intervention, and range of enrollment for the studies.

Results: With regard to gender, 22 (85%) of the studies recruited both men and women, while four studies (15%) only recruited men. Blood pressure was included a primary outcome in 21 studies (81%), while five studies (19%) had other primary outcomes (e.g., insulin sensitivity, dietary change, medication adherence, and feasibility assessment). The most common minimum age was 18 (50%), followed by 21 (23%), and 50 (8%). Other age minimums included 19, 35, 40, and 60. Regarding age maximums, 23 studies (89%) did not have an upper age limit, while two studies had 79 as the cutoff and one study had 80 as the cutoff. The focus of the interventions included six motivational interviewing (23%), three lifestyle

change/counseling (12%), two DASH diet (8%), two health/patient education or support (8%), two nursing (8%), and two multimedia/mhealth including DVDs and text messaging (8%). The nine “other” studies (34%) included blood pressure screenings, personal health records, group visits, self-affirmation, community health workers, health literacy, and pharmacy interventions. The enrollment targets ranged from 25 to 3698.

Conclusion: More research is needed on how eligibility criteria and the focus of behavioral interventions may affect black enrollment in HTN-related research studies.

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C078 6:00 PM-7:00 PM

EMOTION REGULATION AND ILLNESS PERCEPTIONS: IMPLICATIONS FOR ADHERENCE AND NEGATIVE CARDIAC EVENTS

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African American women with heart failure (HF) have compounded stressors that negatively impact HF self-management and heighten the occurrence of negative cardiac events (visits to emergency departments, hospitalizations, and death for cardiac reasons). Perceptions of illness coherence and controllability and emotion regulation (the experiencing, processing, and modulating of emotional responses) are known to facilitate self-management in the face of stressors. Scant information exists to understand how cognitive and emotional components of illness may impact health disparities of African American women with HF. This prospective study examined the hypothesis that difficulties with emotion regulation and negative perceptions of illness coherence and controllability are detrimental to 1) HF self-management regimen adherence and 2) negative cardiac events in African American women with HF. African American women (n = 54) with HF ages 49 to 84 years participated in this longitudinal descriptive correlational study. Patients recruited from hospitals and heart failure clinics using convenience sampling completed interviews at intake and at 30 days, with medical records reviewed at 90 days. Linear and logistic regression models were used to assess predictors of HF regimen adherence and negative cardiac events. Of the 54 patients, 28 experienced a negative event for any reason over the 90 days, 57% of these being cardiac related. The only clear predictor of these events was greater New York Heart Association functional classification ($\beta = 1.47$, $p = .03$). No associations were found between predictors (emotion regulation, controllability, coherence, age, education) and HF regimen adherence. Despite the lack of significance with illness perceptions and emotion regulation, the individual impact on the outcomes prompts further inquiry. Emotion regulation showed a possible greater impact on negative cardiac events ($b = .80$, $p = .07$) than on HF regimen adherence ($b = -.10$, $p = .59$). Alternatively, perceived illness coherence showed less impact on negative cardiac events ($b = -.27$, $p = .51$) than on HF regimen adherence ($b = -.32$, $p = .08$). Findings indicated that a high percentage of women in this sample experienced negative cardiac events, with the hypothesized predictive factors remaining unexplained.

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C079 6:00 PM-7:00 PM

EXAMINING THE RELATIONSHIPS AMONG INFORMATION PRACTICES AND NEUROPROCESSING IN AFRICAN AMERICANS WITH PREHYPERTENSION

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Title: Examining the Relationships Among Information Practices and Neuroprocessing in African Americans with Prehypertension

Background: Self-management of blood pressure requires patients to find, understand, and use information – to set goals and act on them. Understanding information practices (seeking, sharing, use) in which African Americans with prehypertension participate and associated underlying neurobiological mechanisms may be key to designing more effective self-management interventions to reduce blood pressure. Previous studies have shown that African American women who participate in information sharing, a social activity where one patient gives information about blood pressure management to another peer or peers, were more likely to report using information to self-manage their blood pressure. Studies have also shown those who are able to switch between two neurocognitive networks – the task-positive network (hypothesized to be involved with using analytic skills, knowledge for problem-solving and goal-directed action) and the default mode network (hypothesized to be involved with socio-emotional and motivational cognition) are better self-managers.

Purpose: To explore associations among information practices and the neuroprocesses associated with the task-positive network (TPN) and the default mode network (DMN) in African Americans with prehypertension.

Methods: Participants (N = 19; mean age = 53; 53% males) completed questionnaires assessing information practices related to self-management of blood pressure and underwent brain imaging (fMRI) to: (1) evaluate ability to switch between the TPN and DMN and (2) identify activation in the ventromedial prefrontal cortex (associated with emotional processing).

Results: Findings reveal that information sharing was positively associated with activation in the ventromedial prefrontal cortex ($r = .49$, $p = .03$) and ability to task switch ($r = .38$, $p = .10$). Information seeking and use were not associated with the neuroprocessing variables assessed.

Conclusions: Uncovering this brain mechanism associated with information sharing suggests that interventions based on information sharing by African Americans at risk for elevated blood pressure may be a fruitful blood pressure self-management strategy.

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C080 6:00 PM-7:00 PM

HOSTILITY, DEFENSIVENESS, AND TELOMERE LENGTH IN INDIVIDUALS WITH AND WITHOUT CARDIOVASCULAR DISEASE

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Background: Shorter telomere length (TL) may indicate premature cellular aging and increased risk for disease. While individuals diagnosed with depression have been shown to possess shorter telomeres, data for potentially maladaptive personality traits related to cardiovascular disease (CVD), such as hostility and defensiveness, are sparse.

Objective: The purpose of this study is toevaluate the cross-sectional association of TL with hostility and defensiveness in individuals with and without CVD. Whether chronological age, sex and health status moderates the associations observed is also examined.

Methods: 781 men and women (M_{age} = 65.5 ± 6.8 yrs) with and without (N = 284) CVD completed the Marlowe-Crown Social Desirability Scale and the Cook-Medley Hostility Scale. Relative TL was measured via quantitative polymerase chain reaction of total genomic DNA samples. Hierarchical regressions were performed separately for hostility and defensiveness, and included interactions of hostility/defensiveness with age, sex, and CVD status (entered stepwise) in Block 3. Of the participants without CVD, only 37 were without other illnesses (i.e, were very healthy). These participants were examined separately in secondary analyses.

Results: As expected, women and younger individuals had longer TL compared to their counterparts (all *p*s < .05).In the primary analyses, defensiveness was not associated with TL. While no main effect of hostility emerged, a 3-way interaction of hostility with age and sex emerged ($\beta = -0.102$, $t=-2.820$, $p=0.005$). More specifically, greater hostility was associated with longer TL in older men and younger women, while in older women, the opposite was true. This effect remained significant after controlling for behavioural and physiological risk factors (e.g. smoking, exercise, IL6, systolic blood pressure).In healthy individuals, greater defensiveness was associated with shorter TL, though this did not reach significance due to lack of power ($\beta = -0.270$, $t = -1.701$, $p = 0.098$). This relation was not influenced by sex or age. Independence from covariates could not be examined given the sample size.

Conclusion: The association of hostility and defensiveness with telomere length was influenced by age, sex, and health status. Surprisingly, only a small fraction of the variance in TL was explained by the predictors and covariates included in the analyses. Whether this reflects disease spectrum bias or other factors remain to be determined, as does the implication of these relations for the progression of disease.

Key words: telomere length, hostility, defensiveness, age, sex , cardiovascular disease

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C081 6:00 PM-7:00 PM

'I BELIEVE HIGH BLOOD PRESSURE CAN KILL ME:' PATIENTS' PERCEPTIONS OF AN INTERVENTION TO CONTROL HYPERTENSION IN GHANA

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Objectives: In Ghana, hypertension represents the second leading cause of out-patient morbidity and mortality. Regular screening for and early detection of hypertension are necessary for controlling the burden of the disease, yet are made difficult by the severe shortage of health care workers. Task-shifting strategy is one such approach to address hypertension in light of an under resourced health system. Currently in Ghana, there is an on-going TAsk- Shifting Strategy for Hypertension (TASSH) program in which nurses are trained in hypertension management. While this study will provide useful information on the viability of this approach, it is not clear how patients in the intervention perceive hypertension, the task-shifting strategy, and its effects on blood pressure management. The objective of this paper is to examine patients' perceptions of hypertension and hypertension management in the context of an on-going task-shifting intervention to manage hypertension in Ghana.

Design: Forty-two patients participating in the TASSH program (23 males, 19 females, and mean age 61. 7 years) completed in-depth, qualitative interviews. Interviews were transcribed, and key words and phrases were extracted and coded using the PEN-3 cultural model as a guide through open and axial coding techniques, thus allowing rich exploration of the data.

Results: Emergent themes included patients' perceptions of hypertension, which encompassed misperceptions of hypertension and blood pressure control. Additional themes included enablers (e.g. patients' degree of commitment to intervention) and barriers (e.g. financial difficulties in obtaining antihypertensive medication) to hypertension management, and how the intervention nurtured lifestyle change associated with blood pressure control.

Conclusions: This study offers a unique perspective of blood pressure control by examining how patients view an on-going task-shifting initiative for hypertension management. The results of this study will shed light on factors that can help and hinder individuals in low-resource settings with long-term blood pressure management.

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C082 6:00 PM-7:00 PM

LIFESTYLE BEHAVIORS, TYPE D PERSONALITY AND PARASYMPATHETIC FUNCTIONING FOLLOWING A SOCIAL AND COGNITIVE TASK

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Heart rate variability has a well-documented relationship with negative health outcomes including coronary heart disease and all-cause mortality. Lifestyle behaviors, such as diet, exercise and sleep may contribute to the development of negative health outcomes. Stable personality traits suggest a means to assess chronic attributes of individuals that may be at risk for disease. The purpose of this study was to examine whether lifestyle behaviors such as sleep, caffeine consumption, alcohol consumption and eating habits as well as the trait Type D Personality were associated with parasympathetic functioning in a diverse sample of young adults. Participants (n = 95, mean age = 20.77, SD = 4.97) completed self-report measures including a Lifestyle Behaviors questionnaire, the Type D Scale-14 and a physiological assessment to compute heart rate variability during a baseline imagery task and following a social and cognitive condition. Participants (80% female) self-identified as European American (40%), Latino/a (36%), African American (7%), and “other” (17%). Descriptive statistics were revealed for average hours of sleep (7-8 hours = 42.1%), quality of sleep (fairly good = 65.3%), alcoholic beverages consumed each day (M = .17, SD =.613), average daily caffeine consumption (M = 1.09, M = 1.203), eats 3-5 servings of fruits/vegetables a day (yes = 38.9%) and Type D personality (participants with Type D personality = 24.2%). Bivariate correlations revealed that following a regular exercise routine was associated with greater parasympathetic function at baseline (r = .204 p 2 =.09, F (3, 85) = 5.18, p < .01). Diet, sleep, alcohol consumption and Type D personality were not significantly associated with parasympathetic functioning within this sample; however, Type D was associated with lower quantity of sleep (r = -.295, p < -.01), lower quality of sleep (r = -.43, p < .001) as well as lower average exercise per day (r = -.216, p < .05). These results suggest that it is important to continue to examine the complex relationships between lifestyle behaviors, personality traits and heart rate variability, as these relationships may lead to better health outcomes.

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C083 6:00 PM-7:00 PM

PSYCHOSOCIAL FACTORS AND AMBULATORY BLOOD PRESSURE INDEXES

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Ambulatory blood pressure (ABP) methods provide the opportunity to obtain robust BP data, including how BP may vary over the course of day and during sleep periods. However, in general ABP research has utilized largely mean measures, ignoring the oscillations in BP across the day. Given that both BP mean and variability independently predict morbidity and mortality, there is need to better what relates to ABP variability. The purpose of this study is to test the relationships between psychosocial factors and ABP measurements, comparing ABP mean with ABP variability and separately analyzing daytime and nighttime values. Community participants (*n*=291; 52.9% Male; age *M*=40.98; 59.4% Black/African America, 20.6% White, 7.3% Asian/Indian, 16.1% Latino/Hispanic; 63.3% Never married, 14.5% Married, 18.7% Divorced or Separated) completed measures of personality types, depression, rumination, anxiety, anger, and hostility. Afterward participants completed two 24-hour sessions of noninvasive ABP monitoring using Spacelabs 90207 ABP monitor spaced 2-4 months apart. Bivariate correlations tested the relationships between psychosocial factors and ABP measures (mean, standard deviation, and average real variability for systolic and diastolic BP). Mean measures (both day and night) related to more psychosocial factors than either variability measure, although the relationships were weak. During the day, openness to experience related to all three indexes although the relationship was inverse for mean and standard deviation but not average real variability. Hostility also related to both mean and standard deviation. Extraversion and Agreeableness related to mean only. Similar patterns were found in night time measures, although average real variability and mean measures showed more relationships to traits than during the day, included depression, rumination and anger. Several relationships exist between psychosocial traits and ABP indexes with mean measures related to the largest number and variety of traits. This is consistent with prior work and helps increase understanding about which personality traits relate to BP mean. Future work should address BP variability. Strong relationships between psychosocial factors and ABP variability were not identified. It is possible that while ABP mean does related to stable personality aspects, ABP variability may be better understood when considering considering context and potential state based psychosocial states rather than traits.

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C084 6:00 PM-7:00 PM

SOCIAL SUPPORT AND HEALTH BEHAVIORS IN CARDIAC REHABILITATION: ADHERENCE AND DEPRESSION AS MEDIATORS

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Limited social support and psychological distress (i.e., depression) have been linked to negative outcomes, such as recurrence and mortality, following a cardiac event. Further, these constructs have been associated with health behaviors in both the general population and within samples of patients with cardiovascular disease (CVD). Using a conceptual model as a framework, the purpose of this study was to examine the relationship between social support and health behaviors in individuals with CVD, and the mediating roles adherence to cardiac rehabilitation (CR) and depressive symptoms may play in this relationship.

CR patients ($n = 83$) completed questionnaires at Time 1 (beginning of CR), Time 2 (end of CR), and Time 3 (18 months following the end of CR). Participants completed self-report measures assessing emotional social support (Time 1), depressive symptoms via the Beck Depression Inventory-II (Time 1 and 2), and adherence to recommended health behaviors (Time 3). Adherence to CR was measured by number of sessions completed. The mean age of participants was 63.9 years, the majority were male (63.9%) and European-American (92.7%)

A path analysis was estimated in MPlus, with social support as the exogenous variable, CR session and depressive symptoms as mediators, and health behavior adherence as the endogenous variable. The model controlled for Time 1 depressive symptoms, Time 1 health behaviors, and risk stratification. Overall, fit indices suggested poor model fit ($SB\chi2\ [6] = 79.36$, $p \leq .001$; RMSEA = .39, 90% RMSEA CI [.31, .46]; CFI = .73; SRMR = .07). Social support and adherence to CR were not significantly associated with any of the variables in the path model. Results did suggest that depressive symptoms at Time 2 was negatively associated with adherence to healthy behaviors at Time 3 ($\beta = -.29$, $p = .001$). There was no evidence of mediation. The model in its entirety explained 24.5% of Time 3 health behavior adherence.

Results suggest that CR practitioners should identify individuals who are experiencing greater depressive symptoms following a cardiac event and promote intervention methods to address their heightened psychological distress. This approach would be complementary to the ultimate goal of CR—lifestyle modification to adhere to recommended health behaviors to reduce the likelihood of cardiac event recurrence and cardiac-related mortality.

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C085 6:00 PM-7:00 PM

THE ASSOCIATION OF RELIGIOSITY AND BLOOD PRESSURE AMONG SEXUAL MINORITIES: RESULTS FROM A NATIONALLY REPRESENTATIVE SAMPLE

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Objective: Hypertension is a major public health concern, given prevalence and morbidity. Among the general population, higher levels of religiosity have been associated with lower blood pressure (BP) compared to nonreligious individuals. However, no known studies have examined the relationship between religiosity and BP among sexual minorities (e.g., gay, lesbian, and bisexual individuals). Given that many world religions promote doctrines that include negative views toward sexual minorities, it is plausible that elevated religiosity among sexual minorities may be associated with increased BP.

Methods: The current study analyzed data collected from Wave IV of the National Longitudinal Study of Adolescent to Adult Health (Add Health), a publically available, nationally representative dataset. Participants were identified as a sexual minority if they identified themselves as 100% gay, mostly gay, or bisexual, or reported same sex attraction (N = 297, 25% Male, Mean age = 28.55, SD = 1.68 years). A religiosity variable was created by standardizing and averaging responses of two items assessing attendance of religious services and religious activities. BP was measured as systolic (SBP) and diastolic blood pressure (DBP) – each measured with three 30-second interval readings, with scores equaling the average of the second and third reading. Relevant covariates were controlled for in the models (i.e., age, gender, BMI, ethnicity, income, education, smoking and alcohol use).

Results: Complex Samples within SPSS (v23) was employed to account for the weighting, clustering, and stratification inherent to Add Health. Within Complex Samples, two separate General Linear Models were conducted, with SBP and DBP entered as outcome variables. Whilst controlling for relevant covariates, elevated religiosity was associated with increased SBP (b = 1.29, SE = .83, 95% CI: 0.35, 2.54, t = 2.045, p = .04) and DBP (b = 1.01, SE = 0.51, 95% CI: 0.003, 2.02, t = 2.00, p = .05).

Conclusions: Previous research has found religiosity to be a protective factor from hypertension among the general population. However, the results from the current study are the first to test and find an inverse effect among sexual minority individuals. There is a paucity of research examining the intersection of promoting health as a function of sexual orientation

and religion. Further research may benefit from examining the interaction of sexual orientation and religiosity in predicting hypertension.

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C086 6:00 PM-7:00 PM

NEW MOTHERS' USE OF NEW MEDIA FOR HEALTH INFORMATION & SUPPORT

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Electronic media are an important means for new mothers to obtain health information and support. Uses and Gratifications theory posits that needs of subgroups lead to differing media use. Understanding mothers' use of new media is key to patient education about electronic resources. The aim of this study was to determine new mothers' media use in 6 areas, and correlates (race/ethnicity, income, stress, emotional support, and number of children) of specific media use. Data for this study are from a random stratified survey sent to new mothers in Texas. Race/ethnicity and income level were stratifying variables. The adjusted response rate was 32%. Respondents had a mean age 31.4 y, SD = 5.4), were about 9 months postpartum, were African American (n = 35), Hispanic (n = 58), or White (n = 75), and most had between 1-3 children. The survey included items on demographic factors, perceived stress, emotional support, and mother- or baby-related media use. Data were analyzed by percentages and non-parametric tests (Kendall's tau, Kruskal-Wallis, and Friedman). Mothers' use of specific media was as follows: search for baby-related information (95%), search for mother-related information (87%), email to family or friends about baby (83%), read online sites for new mothers (78%), socialize on Facebook (77%), and watch YouTube videos on mother/baby care (46%). Types of media use differed significantly ($p < .001$). More often searching for mother- or baby-related information was correlated with having a lower number of children (-.30 and -.16, respectively). More frequent email use was significantly correlated with higher income (.33), lower stress (-.17), and lower number of children (-.17). Use of YouTube, Facebook, and online health reading had no significant correlates, indicating usage was relatively similar on correlate variables. Also, race/ethnicity and support were not related to media usage. In conclusion, these findings indicated that mothers' top media use was in searches about babies or mothers, with searches more frequent among those with fewer children. Race/ethnicity was not a factor differentiating use. These findings support patient education to identify credible sources (especially for first-time mothers) during health-related searches.

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C087 6:00 PM-7:00 PM

PARENT VERSUS CHILD PERCEPTIONS OF FEEDING CONTROL MECHANISMS

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The parental feeding practices that contribute to childhood obesity are both important and commonly investigated (Goyder 2007; Musher-Eizenman & Kiefner, 2013). One understudied area of this line of research that may relate to food preoccupation is within the differentiation of overt and covert feeding practices (Ogden 2006). This descriptive study sought to investigate the differences in perception of control practices and eating attitudes of parents and their children. It was hypothesized that parental unhealthy eating attitudes would relate to the unhealthy attitudes of their children, and these attitudes would differ depending on parental control mechanisms. Participants were 25 parent-child dyads (92% White, 60% had an income of $100k or over, child age ranged from 12-14 years). Children participated in their sixth-grade classroom and parents filled out paper surveys at home. Measures included the EAT, the CHeat, the EEQ, the CFPQ, and the Overt and Covert feeding scales (Birch et al. 2001; Arnow, Kenardy, & Agras 1995; Musher-Eizemann & Holub 2008; Norwika, Flodmark, Hales, & Faith 2014).

Parents' unhealthy eating attitudes were related to their child’s unhealthy eating attitudes. There was a positive relationship between parent-reported covert feeding control and both parental dieting behaviors and restriction of their children’s food for weight control (dieting $r = .45$, $p < .05$; restriction $r = .57$, $p < .05$), such that the more parents control feeding covertly, the more they also show dieting behaviors themselves and restricted their child’s food based on their child’s weight. Parent-reported covert feeding was positively related to children’s preoccupation with food ($r = .54$, $p < .05$). These findings were not found with overt control. These findings suggest that covertly controlling practices may relate to children’s unhealthy relationships with food if the child perceives the covert behaviors. However, not all forms of covert practices related to negative attitudes. For example, there is a negative relationship between children who use food for emotional regulation and parents who use covert control ($r = -.42$, $p < .05$).

Children who perceived that parents encouraged a balanced diet with a variety of healthier food choices also reported parents who used more overt control behaviors ($r = .42$, $p < .05$). Overt control was also related to children’s reports that parents wanted them to be actively involved in food preparation and food choices in the household (r = .41, p < .05) and reports that parents wanted to teach them the reasoning behind overt control (r = .42, p < .05). Our preliminary study suggests that parent and child perceptions of the different types of control mechanisms used in a household may be just as important in relation to child attitudes toward food, dieting, and weight as the actual control mechanisms.

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C088 6:00 PM-7:00 PM

PARENTAL MONITORING IN THE LINK BETWEEN EARLY DATING INITIATION AND DATING VIOLENCE AMONG DIVERSE ADOLESCENTS

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Dating violence (i.e. emotional, physical, and sexual) is prevalent among adolescents and can differ across race/ethnicity. Unhealthy romantic relationships can start early and have long-term influence on adolescent outcomes (e.g. depression and suicidal behaviors). However, positive parenting practices, such as parental monitoring, may play a role in reducing the likelihood of dating violence (DV) among adolescents. Yet, the association between early dating initiation and subsequent DV across race/ethnicity has not been examined, nor has the role of parental monitoring in this association. Using data from 3,295 (51% female) Black (26%), Latino (54%), and White (20%) adolescent participants from the *Healthy Passages* longitudinal cohort study, we first examined the prevalence of DV experienced and committed across racial/ethnic groups by 10th grade. Next, we explored longitudinal associations between early dating behaviors by 5th grade and subsequent DV by 10th grade, followed by the moderation of this association by parental monitoring. Among boys and girls, Latino adolescents reported significantly more physical, emotional, and sexual DV than Black adolescents, who in turn reported significantly more physical and emotional DV experiences than White adolescents (*p*s < .01). Also, adolescents who initiated dating early were more likely to experience physical DV among Latino boys (OR = 2.28), Latina girls (OR = 2.28), Black boys (OR = 2.91), and Black girls (OR = 3.19). Among all groups, early dating initiation was significantly related to a greater likelihood of committing physical DV (OR = 2.11 - 6.59). Early dating initiation was also related to a greater prevalence of emotional DV experiences among Latino boys (OR = 2.34), Black boys (OR = 4.11), and Black girls (OR = 4.64), as well as a greater likelihood of committing emotional DV among Black boys (OR = 4.68) and girls (OR = 2.22). Whereas White adolescent boys who initiated early dating were more likely to experience sexual DV (OR = 1.65) and White girls were more likely to commit sexual DV (OR = 1.53). Moreover, parental monitoring moderated this association regarding physical DV committed and experiences of physical DV, emotional DV, and sexual DV (*p*s < .05), but in different ways for different racial/ethnic and gender groups. Findings may have important implications for parental interventions and approaches to child dating.

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C089 6:00 PM-7:00 PM

PARENTAL RELATIONSHIP QUALITY AND QUALITY OF LIFE AMONG YOUTH WITH AND WITHOUT CHRONIC MEDICAL CONDITIONS

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Background: Family functioning is an important contributor to quality of life (QoL), particularly for families of youth with chronic conditions (YCC), as chronic conditions increase stress and distress for the affected individual and their family members. As family functioning and relationship quality may be particularly dynamic during adolescence and young adulthood, we evaluated trajectories of parental relationship quality (RQ) during this period for YCC compared to their healthy peers, and evaluated how these trajectories impacted individual QoL over time. **Methods:** Longitudinal data are from 3038 adolescents and young adults (ages 8-28 years) interviewed for the Panel Study of Income Dynamics, a national, population-based survey, between 2002 and 2013. We utilized multivariate generalized linear mixed models with natural cubic splines to model trajectories in RQ (MSALT scale, range 1-4) and their effect on QoL (MIDUS scales for emotional, social and psychological well-being, range 1-6) for youth with and without chronic conditions, adjusting for confounders. **Results:** Compared to their healthy peers, YCC (55% of sample) reported lower RQ with their mothers and fathers, particularly during late adolescence (2.86 vs 2.91, $p < 0.01$) and after age 20 (2.64 vs 2.73, $p < 0.01$) respectively. YCC also reported lower QoL than their peers across emotional, social and psychological domains (all $p < 0.01$); these difference persisted after adjustment for confounders. Better relationships with both mothers and fathers resulted in gains in all three domains of QoL and differences in QoL by parental RQ diminished with age. Nevertheless, disparities between YCC and their peers widened over time (particularly during emergent adulthood) for youth with lower parental RQ (e.g., average emotional QoL at age 16 was 0.24 (a quarter-SD) lower for YCC with low maternal RQ and 0.14 lower for those with high maternal RQ, but 0.36 lower at age 26 with low maternal RQ and 0.15 lower with high maternal RQ). **Conclusions:** Parent-child relationship quality appears to exert a significant effect on youth QoL well into young adulthood, especially so for YCC who may rely on support from their parents over a longer period of time than their peers. Practitioners and therapists may want to assess parent-child relationship quality to buttress resilience resources among patients with pediatric onset chronic disease.

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C090 6:00 PM-7:00 PM

PARENTING STYLES AND BODY MASS INDEX: A SYSTEMATIC REVIEW OF PROSPECTIVE STUDIES AMONG CHILDREN

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Parenting style is correlated with outcomes that impact eating and physical activity, and its classification schema provides a childhood obesity intervention target. Parenting style can be categorized into groups—authoritative, authoritarian, permissive, and neglectful—based on the response and demand dimensions. Reviews that evaluate the relationship between parenting style and weight have been largely based on cross-sectional studies, resulting in the inability to describe the interplay between parenting styles and obesity risk as children age. To address this, we systematically searched PubMed, Embase, and PsychInfo for studies published between 1995-2016 that evaluated the prospective relationship between parenting style and subsequent weight outcomes. We aimed to answer: 1) Is authoritative parenting associated with less body mass index (BMI) gains; and 2) Are there critical ages where parenting style has a more pronounced association with later weight outcomes?

We identified 11 prospective cohort studies. Among the 8 studies that categorized parenting style into groups, 5 provided evidence that authoritative parenting was associated with lower BMI gains. The 4 studies that conceptualized parenting styles along the response and demand dimensions offered less consistent evidence. Among the 6 highest quality studies, 4 suggested a protective role of authoritative parenting style against adverse weight outcomes. However, only one study controlled for a complete set of confounders. The small number of studies conducted within certain age groups precluded our ability to ascertain critical periods when parenting style is most strongly related to child weight. We found parents from minority populations were underrepresented, and all studies were conducted in the United States or Australia. Moreover, analyses in the included articles did not attend to the nuances of family structure, such as one-parent households, non-biological caregivers, or dual mother or father parenting, and only 4 studies measured paternal parenting style.

Authoritative parenting may be protective against later overweight and obesity, but to better define this relationship, future studies should consider paternal styles both independently and in combination with maternal parenting style, conduct studies of a longer duration to allow

the assessment of the critical period to intervene, more carefully control for child-related and parent-related confounding factors, and account for the nuances in family structure.

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C091 6:00 PM-7:00 PM

PARTICIPANTS’ EXPERIENCE AND ENGAGEMENT IN CHECK IT!, A POSITIVE PSYCHOLOGY INTERVENTION FOR ADOLESCENTS WITH TYPE 1 DIABETES

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Problems with adherence are common among adolescents with type 1 diabetes (T1D). Adolescents and their families are responsible for managing a complex treatment regimen, which includes administering daily insulin, and monitoring blood sugar, diet, and activity levels. Positive psychology interventions are shown to improve health outcomes; however, they have not been used widely in pediatric populations. We tested the acceptability and feasibility of Check It!, a positive psychology intervention to improve adherence in adolescents with T1D.

Adolescents with T1D and their parents were randomized to a positive psychology intervention (via phone or text message) or an attention control (education) group. The intervention used positive psychology exercises, small gifts, and parent affirmations to increase positive affect (PA). Adolescents in both groups received education packets. Exit interviews and satisfaction surveys were conducted with adolescents and parents (n=58) to assess the acceptability and feasibility of Check it! from a representative sample of each group. Participants rated the acceptability of Check It! using a 5-point Likert scale, with higher scores indicating more favorable ratings. Interview transcripts were independently coded, and then reviewed to reach consensus. Adolescents were 15.4 ± 1.6 years old; 50% female; 8.6% non-White; 53.4% on insulin pump; with a T1D duration of 6.6 ± 4.1 years; and A1c of 9.1 ± .90%. Parents were 41 ± 9.7 years old; 85% female; 8.3% non-White; and 42% had annual family income >$80,000. Participants rated the helpfulness (3.4 ± 1.1) and enjoyment (3.5± 1.0) of Check It! favorably. Parents and adolescents indicated that the intervention provided support for the adolescent, offering the chance to discuss emotional topics in an age-appropriate way. Parents appreciated the reminders to provide affirmations to their children, as they offered an opportunity for self-reflection and helped the parent-child relationship. Adolescents also enjoyed the parental affirmations, and the opportunity to set adherence goals and learn about diabetes. However, feasibility of the phone delivery was low: fewer adolescents in the phone group completed PA phone interviews, as compared to those in the text group (14% vs. 67%; t=7.97, p < .001).Parents and adolescents reported that technical issues with cell phones, timing of calls and text messages, life events, and diabetes-specific factors presented challenges to participation. Participants rated Check It! favorably, but some feasibility problems were identified, particularly in the phone group. Adolescents and their parents enjoyed Check it! and found the intervention helpful. Findings indicate that text messages are more feasible than phone calls for interventions with adolescents, but determining optimal times to send text messages is important.

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C092 6:00 PM-7:00 PM

POSTTRAUMATIC STRESS AND DEPRESSION PREDICTING PEDIATRIC TRANSPLANT OUTCOMES: RESULTS FROM A MULTISITE PROSPECTIVE STUDY

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Introduction

Caregivers of children with chronic medical illnesses often experience posttraumatic stress symptoms (PTSS) as well as symptoms of depression in the wake of their child’s illness or its treatment. The potential effects of these symptoms on child medical outcomes have not been investigated prospectively. We evaluated whether caregiver PTSS and depression symptoms predict robust behavioral (adherence to medications) and medical (rejection) outcomes in a prospective, multisite study: Medication Adherence in Children who had a Liver Transplant (MALT).

Methods

Pediatric liver transplant recipients (n=400) ages 1-17 and their primary caregivers (n=386) were recruited from five pediatric liver transplant centers in the United States. Parents completed the Impact of Events Scale (IES) to measure caregiver distress and the Center for Epidemiologic Studies Depression Scale (CES-D) to measure caregiver depression. Patient medical variables and outcomes were followed for a two-year period. Medication Level Variability Index (MLVI), which is the level of variability of immunosuppressant levels in the blood, was used to determine adherence while centrally-read, biopsy-confirmed organ rejection was the primary medical outcome.

Results

There were no significant associations between IES (PTSS) scores and either adherence or rejection outcomes. In contrast, there were significant correlations between higher CES-D (depression) scores and higher MLVI (lower medication adherence); r=.13, p < .01). A trend towards higher scores on the CES-D was found among those whose children had experienced rejection (mean=12.4, SD=10.9) in comparison to those who did not (mean=9.1, SD=8.6; p=.07).

Conclusions

Caregivers' PTSS were not a risk factor for poor child outcomes in this cohort, whereas caregivers' depression symptoms were associated with nonadherence. These findings suggest that symptoms of depression as opposed to PTSS in caregivers confer greater risk for child well-being and therefore may be a priority for identification and intervention.

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C093 6:00 PM-7:00 PM

PREGNANT AND POSTPARTUM WOMEN'S AWARENESS OF EXISTING COMMUNITY SUPPORT PROGRAMS

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Background: Research consistently provides evidence that mothers have a critical role in the well-being of their children and the family as a whole. Specifically, a mother's mental and physical health is an integral component to her family's well-being. In order to ensure communities are providing programs that meet the mental and physical needs of mothers, it is imperative to understand perceptions of available programs for mothers as well as their desire for additional programs.

Purpose: The purpose of this study was to determine the awareness of existing community programs that pregnant and postpartum women are aware of and their desire for related programs.

Methods: Women who were pregnant or up to one-year postpartum (n=527) were recruited primarily through social media to complete a 32-question survey within a Midwestern community. The questionnaire contained several open-ended questions regarding use of current programs, awareness of other programs they did not use, and desired information they felt could help them to become better parents. Data were analyzed using a content analysis approach.

Results: Less than have of all mothers (43.8%) reported participating in a program that provides assistance or support to mothers who are pregnant or up to one year postpartum. Of those who participated, mothers primarily took part in governmental programs such as WIC (41.1%) or breastfeeding support groups (17.7%). A portion of women (26.1%) noted they were familiar with other programs (35.8%) but did not use them because their services were not needed (23.4%), they had no time (15.2%) or they didn't qualify (13.9%). Importantly, 46.8% of women reported not participating in any programs and 32.1% of women reported not being aware of any programs that provide support for this population. Almost a quarter of all women reported their primary needs for more information were in the areas of parenting concerns (e.g., discipline, starting solid foods) and mental or emotional support (e.g., stress management, support groups for single or working moms).

Discussion: A third of women were not aware of programs that could support them and their primary need for more information (parenting concerns and mental/emotional support) did not align with the programs that women were primarily aware of. Efforts are needed to ensure that 1) community programs are available that meet women’s needs and/or 2) women are aware that these programs exist.

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C094 6:00 PM-7:00 PM

PRELIMINARY EFFICACY OF A PILOT INTERVENTION FOR EMOTIONAL OVEREATING AND BINGE EATING AMONG ADOLESCENTS

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Background: Overeating to cope with stress develops in adolescence and may progress into binge eating disorder (BED) in early adulthood. Emotional overeating (i.e., eating in excess to soothe emotions) can be conceptualized as a subclinical symptom of BED that can lead to physical and mental health risks and thus it merits intervention among youth. The affect regulation model, in which overeating occurs in an attempt to regulate emotions, is an explanatory model for emotional overeating and binge eating (i.e., eating large amounts of food in a short time with loss of control). The model is consistent with a Dialectical Behavior Therapy (DBT) approach. In this study, we examined a DBT skills intervention for emotional overeating in adolescents and young adults (AYA).

Method: AYA aged 14-18 were recruited from a pediatric hospital to participate in a 10 week outpatient DBT skills group which introduced mindfulness, distress tolerance, emotion regulation, and interpersonal effectiveness, all in the context of emotional overeating. Three cycles were implemented (final post-attrition N = 9 [n per group = 3]; 100% Black, 67% Female; M_{age} = 15.22 years). AYA completed the Emotional Eating Scale for Children and Adolescents (EES-C), Eating Disorder Examination Questionnaire (EDE-Q), and Binge Eating Scale (BES) at baseline and post intervention.

Results: Baseline to post intervention means and standard deviations were compared. Mean scores on the EES-C decreased from 48.33 (SD = 16.45) to 44.33 (SD = 19.58; Cohen's d = 0.22), the EDE-Q Global Score decreased from 3.28 (SD = 1.20) to 2.71 (SD = 0.84; d = 0.55), and the BES decreased from 11.67 (SD = 10.10) to 8.33 (SD = 7.16; d = 0.38). Mean binges per month decreased from 6.00 (SD = 6.36) to 4.00 (SD = 6.10; d = 0.32), and the number of participants meeting BED criteria decreased from five to three.

Discussion: Findings support the preliminary efficacy of an outpatient DBT skills group for decreasing binge eating and emotional overeating in AYA. This streamlined modality provides opportunities for individuals with fewer economic resources to pursue needed treatment and

thus may increase scalability. Future directions include conducting a well-powered randomized controlled trial to determine intervention efficacy.

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C095 6:00 PM-7:00 PM

PRENATAL CARE AND PREGNANCY-RELATED OUTCOMES AT CHULA VISTA MEDICAL PLAZA

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ABSTRACT

Background: The CenteringPregnancy model is a nationally recognized prenatal care program that emphasizes education, risk assessment, and supportive care in a group environment. Assessing outcomes between women in CenteringPregnancy and women in traditional care will shed light upon the possible benefits of group prenatal classes for a population of predominantly Latina women. Previous research has found the CenteringPregnancy model to be associated with lower rates of preterm delivery, lower rates of low birth weight babies, and higher breastfeeding rates, when compared to traditional care. However, these findings have been mixed among Latina women.

Objective: To determine if women in the CenteringPregnancy program at Chula Vista Medical Plaza (CVMP) and women in traditional care at CVMP have different pregnancy outcomes.

Methods: Through an audit of electronic medical records (EMRs), outcomes between women in two different types of prenatal care were evaluated. Indicators and outcomes that were evaluated include: maternal weight gain, preterm delivery, infant birth weight, Apgar scores, feeding type at discharge, and feeding type at follow-up. Chi-squared and t-tests were used to test for differences between the two groups.

Results: Women in the two groups differed significantly in terms of risk level (*p*pp=.083), the percentage of low birth weight (LBW) infants (0.0% for Centering versus 10.2% for traditional care, *p*=.028), and exclusive breastfeeding at discharge (71.2% for Centering versus 39.0% for traditional care, *p*=.014). No significant differences were found between the two groups for preterm birth, Apgar scores, or breastfeeding rates at follow-up.

Conclusion: The CenteringPregnancy program may offer certain benefits to mothers and their infants. Future directions in this area should include a qualitative component that explores the opinions of the mothers and the providers involved in the CenteringPregnancy program.

Keywords: prenatal care, group prenatal care, CenteringPregnancy, pregnancy

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MINDFULNESS, YOGA PRACTICE, AND WELL-BEING: PREDICTING SELF-REGULATION OVER A STRESSFUL TRANSITION

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Mindfulness has been associated with well-being in many domains, and may be especially adaptive during periods of high stress and adjustment, such as the transition to college (Jimenez et al., 2010). Yoga practice, which often includes aspects of mindfulness, has also been suggested as a means of promoting well-being during periods of stress (Netz & Lidor, 2003). However, few studies have examined the roles of either mindfulness or yoga practice in reducing distress during stressful transitions. In order to better understand the connections between mindfulness, well-being, and experience with yoga in the context of stress, the present study examined these variables in a sample of first-year undergraduates.

Online surveys were administered to 157 undergraduates at the beginning and end of their first semester (M age=17.8; 80% female; 79% White). At semester start, students completed self-report measures of mindfulness (CAMS-R, Feldman et al., 2007), experience with yoga practice (yes/no and how often), and emotional (depression, anxiety, and stress; DASS-21, Lovibond & Lovibond, 1995) and spiritual (meaning/peace and faith; FACIT-Sp, Peterman et al., 2002) well-being. At semester end, well-being was re-assessed.

On average, emotional well-being did not change significantly across the semester, but average levels of meaning/peace and faith both decreased (ts (128) =2.20 and 2.16, ps= .03). Regression analysis revealed that mindfulness was negatively associated with individual increases in depression, anxiety, and stress (βs = -0.17, -0.17, and -0.16, ps< .05) over the semester, such that greater person-level mindfulness predicted smaller increases in symptomatology. In contrast, mindfulness was not associated with changes in spiritual well-being. Prior experience with yoga, reported by 55% of participants, was not associated with mindfulness or measures of well-being other than depression (β= -0.15, p < .05). Just 2% (N=3) of participants reported a current weekly yoga practice.

Despite its well-established association with well-being in the literature, mindfulness appeared to protect only against reductions in emotional, and not spiritual, well-being in our sample. Experience with yoga practice also appeared to protect against increases in depression, but was not strongly associated with mindfulness; however, very few participants had a regular weekly yoga practice, which may yield the greatest benefits for self-regulation.

The finding that mindfulness and experience with yoga were both somewhat predictive of emotional well-being over a period of stressful adjustment suggests that both may be helpful to include in interventions and programming targeted at new college students. These findings did not extend to spiritual well-being, however, and future research is needed to examine other variables that may promote resilience in spiritual domains.

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C097 6:00 PM-7:00 PM

NEUROPHYSIOLOGICAL INVESTIGATION ON DIFFERENTIAL EFFECTS OF COMPUTER-GENERATED-MODAL MUSIC – IMPLICATION FOR MUSIC THERAPY

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Objective: The present study examined the neurophysiological effects of seven modal music (Ionian, Dorian, Phrygian, Lydian, Mixolydian, Aolian, & Locrian). **Method:** Thirty-three healthy adults (12 men & 21 women) listened to seven modal music generated by FractMus software (2-minute-long each) and their 16-channel-electroencephalogram (EEG), pulse wave, electrodermal activity, and respiration rates were measured. Fast Fourier Transformation (FFT) was applied to each of the EEG channels, leading to the mean power computation at alpha (8-13 Hz) and beta (13-30 Hz) frequency bands. FFT was also applied to pulse-wave interbeat intervals (IBIs) for the evaluation of autonomic nervous system, while pulse rate itself was also submitted to further analyses. Subjects rated their six basic emotions on 10-point-Likert scales (happiness, sadness, anger, surprise, fear, & disgust) before and after each music and the differences between pre- and post- ratings were computed. Mixed Design ANOVAs ('gender' as between and 'measurement stages' as within factors) were applied to each parameter. **Results:** Mixed Design ANOVAs for the mean power of alpha frequency bands elicited significant main effect on F7 (left frontal lobe) while listening to Ionian and its post-hoc-t-test with Bonferroni correction suggested that females had higher alpha power than males ($p < .05$). Mixed Design ANOVAs for the mean power of beta frequency band demonstrated a stage difference on T5 (left temporal lobe) where beta power was significantly higher during Locrian than during Mixolydian ($p < .05$). A Mixed Design ANOVA for pulse rate demonstrated a significant interaction between gender and measurement stages ($p < .05$) and its post-hoc t-tests with Bonferroni correction suggested that males had significantly lower pulse rate than females during both Phrygian and Aolian ($p < .05$). Further, Mixed Design ANOVAs for Basic Emotions demonstrated the main effects of 'Happiness' and 'Disgust' ratings ($p < .05$) and their post-hoc-t-tests suggested that ‘Happiness’ was higher in females than in males during Phrygian ($p < .05$) while ‘Disgust’ was lower in males than in females during Aolian ($p < .05$). **Discussion:** The results suggested differential physiological response depending on the musical modes, which also interacted with gender. Higher alpha power in females during Ionian suggested that women were more relaxed while listening to Ionian, whereas higher beta power during Locrian than during Mixolydian suggested that Locrian produced higher mental tension, regardless of gender. Higher pulse rate in females during Phrygian suggested higher excitement in women during Phrygian, while lower pulse

rate in males during Aolian implied the increased calmness in men during Aolian. Further investigation will be the key to a deeper understanding of the mechanism behind the effective music therapy.

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YOGA OFF THE MAT: A DAILY DIARY STUDY EXAMINING THE EFFECTS OF YOGA TO ENHANCE SELF-COMPASSION AND SOCIAL CONNECTEDNESS

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While the yoga literature has certainly proliferated over the past decades demonstrating a wide array of salutary benefits, there is a lack of research examining the relational outcomes that may be derived from yoga practice. Moreover, the majority of previous research has been conducted in lab-based contexts; hence, whether the benefits of yoga translate “off of the mat” in the context of one’s day-to-day life has yet to be determined. Through a daily diary approach, the overarching aim of the present study was to examine the daily effects of yoga practice on the relational variables of self-compassion and social connectedness. Community-dwelling yoga practitioners (N = 110; age range 18-76 years) with a yoga practice of at least once a week were recruited for a 21-day daily diary study. At the end of the day, practitioners were asked to complete daily Internet surveys which included questions in regards to one’s yoga practice and relational items of self-compassion and social connectedness. Multilevel analyses indicated substantial variability on self-compassion (ICC= .38) and social connectedness (ICC= .39) on a day-to-day basis at the within-person level. In concurrent models that controlled for weekend effects, mindfulness, and yoga experience, yoga practice days were associated with greater self-compassion (B=2.59, $p< .05$). A within-person association with the duration of yoga practice and self-compassion also emerged such that practitioners reported greater self-compassion on days in which one practiced more yoga (minutes) than what is compared to one’s usual (B=1.41, p < .05). In multilevel models predicting social-connectedness, yoga practice days and the duration of yoga practice demonstrated no effects on one’s daily social connectedness (B=.19, p=.76 ; B=.04, p=.92; respectively). In this community-based sample of yoga practitioners, these results suggest yoga practice has positive influences in boosting one’s self-compassion on a day-to-day basis, which may lead to enhanced health and wellbeing outcomes.

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C099 6:00 PM-7:00 PM

GOAL-SETTING IN DAFNE: CONTENT AND FIDELITY EXPLORATION OF THE GOAL-SETTING COMPONENT IN A TYPE 1 DIABETES EDUCATION PROGRAMME.

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BACKGROUND

Type 1 diabetes (T1DM) is one of the most challenging public health issues (Guariguata et al., 2014). T1DM treatment includes continuous self-management by the patient (Ahola & Groop, 2013). To provide patients with knowledge, and skills, diabetes self-management programmes such as ‘The Dose Adjustment For Normal Eating (DAFNE)’ have been arising. The DAFNE programme is quickly becoming part of routine care globally, and is now available in Europe and Australia while looking into expanding to the United States. The programme includes 5 days of structured education in T1DM self-management, with an emphasis on insulin dose adjustment using flexible dietary intake and detailed estimation of dietary carbohydrate intake as the basis for insulin dosing. However, while DAFNE is well received, it often fails to help patients instil key self-management practices into their lives on a long term basis (Speight et al., 2010). A core component of DAFNE is goal setting. Goal setting can help facilitate long term behaviour change (Miller & Bauman, 2014). However, little is known about how the DAFNE goal setting component is delivered and received. To improve and further implement DAFNE, putting this goal setting session under a microscope and exploring its inner mechanisms could be beneficial. A first step in exploring the goal setting session, is assessing its content and levels of intervention fidelity (the extent to which an intervention is implemented as intended). Since DAFNE is delivered by different educators, variation in fidelity is expected. Therefore, we aimed to explore the content and the fidelity of delivery of the goal-setting session in DAFNE.

METHOD

The content of the goal setting session, as defined in the DAFNE handbook for delivering the intervention, was coded using a reliably taxonomy of behavioural change techniques (BCTs; Michie et al., 2013). A checklist was developed, listing the identified BCTs. To assess fidelity of delivery of the BCTs, a set number of DAFNE goal-setting sessions were observed and audio-recorded. Patient participation was observed and qualitatively described.

RESULTS
‘Problem solving’ and ‘action planning’ were the most frequently identified BCTs within the goal setting session. Preliminary results reveal different levels of intervention fidelity across various educators. Furthermore fidelity per BCT varied as certain BCTs had higher levels of fidelity than others.

CONCLUSIONS
This study showed that the content of the goal-setting component of DAFNE is relatively limited and could benefit from additional behaviour change techniques. Furthermore, the importance of fidelity checks for the delivery of interventions is highlighted, as differences in quality of intervention delivery increase the possibility of inconsistent intervention effects (Michie, Jochelson, Markham, & Bridle, 2009).

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C100 6:00 PM-7:00 PM

COMPARING DIABETIC & HEALTHY OLDER WOMEN ON DESIRE TO IMPROVE HEALTH, HEALTH SCREENING BEHAVIORS, AND COGNITIVE FUNCTIONING

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The incidence of breast cancer peaks in late life; thus, breast cancer screening is important for older women, and particularly for those already living with a serious health condition such as diabetes. The latter increases the risk of breast cancer and breast cancer mortality, thus adequate breast cancer screening in older women with this condition is important. Moreover, establishing a significant relationship between diabetes and cognitive impairment would have important clinical and public health implications. The findings of published research suggest that diabetic as well as pre-diabetic older women often experience impaired cognitive performance and are at greater risk for developing cognitive impairment: this represents a significant threat to their ability to follow medical advice and to keep their diabetes in check. To our knowledge, there are no studies on diabetic versus healthy older women concerning receiving preventative medical services. To fill a gap in the literature, we compared 36 diabetic older women to 36 healthy older women (i.e., respondents who reported having no physical illnesses) on: desire to improve their health (hypothesized as being higher in the diabetes group), receiving mammograms and regular health screenings (analyzed without any hypotheses, due to the lack of evidence on this topic), as well as cognitive functioning (hypothesized as lower in the diabetes group, based on prior research findings). Participants (N=72, Mean age= 69.29, SD= 6.579, Age Range=50-90) were multiethnic, non-institutionalized women over the age of 50 residing in Los Angeles County who completed our research packet. The latter contained the first author's demographics List and the Older Women's Health - Qualitative Protocol, as well as the well-known MiniCog (Borson, 2000). The results of an ANOVA showed that, as hypothesized, diabetic women desired to improve their health more than the women in the control group [F (1,70)=11.87, $p < .05$, $\eta 2$=.15]. Additionally, upon implementing Chi-square analyses, we found that diabetic respondents were significantly more likely to receive mammograms [$X2$(1)=5.87, $p < .05$] and general health screenings [$X2$(1)=4.51, $p < .05$] than healthy respondents. Surprisingly, in contrast with prior literature's findings, cognitive health in the diabetic group obtained marginal significance in an ANOVA as being better than the cognitive health of the control group [F(1,68)=3.30, $p < .10$, $\eta 2$=.05].

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DEPRESSION AND DIABETES SELF-CARE AMONG BLACK AMERICAN ADULTS: MODERATING EFFECTS OF REASONS FOR LIVING AND SPIRITUAL COPING

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African Americans are significantly more likely than European Americans to be diagnosed with Type 2 Diabetes Mellitus (T2DM) and to experience severe diabetes-related complications; this is true also when SES is taken into consideration (Tull & Roseman, 1995). Compared to other ethnic groups, African Americans are significantly less likely to meet recommended blood pressure and LDL cholesterol goals (Casagrande et al., 2014).

Compared to non-diabetic adults, adults diagnosed with T2DM are also twice as likely to be depressed (Anderson et al., 2001; Nouwen et al., 2010). Importantly, higher levels of depression symptomatology are associated with decreased self-care behavior and considerably higher health care costs (Egede, Zheng, & Simpson,2002; Lustman et al., 2000). Among African Americans, depression is more debilitating in part because African American adults are among those least likely to seek clinical care for depression-related pathology (Williams et al., 2007).

Though there have been some efforts to address the dual need for integrated depression and diabetes care (Bogner et al., 2012), unique cultural factors associated with self-care among African Americans diagnosed with T2DM are understudied. We hypothesize that having “reasons” for living (RFL) buffers the association for depression symptomatology and self-care among African American adults.

Data were collected for 211 community-based, African American men and women (M_{age}=55.07, *SD*=8.79) who were prescribed medication or taking insulin for T2DM. Participants completed the Summary of Diabetes Self-Care Activities measure (SDSCA) as well as self-reported, well-validated measures of depression symptoms and reasons for living. The majority of participants (n=118; 51%) reported having graduated from high school or having some college or specialized training. Female participants were the majority (n=154; 73%) of the sample.

We found that higher ratings of depression symptoms were associated with poorer diabetes self-care for the total sample of African American women and men [b=-.31, p=.010]. Follow-up stratified analyses showed that, for women, there was a significant main effect for depression [b=-.32, p=.047] and a depression X RFL interaction predicting self-care that approached significance [b=.25, p=.074]. We followed up on this potential interaction effect by plotting self-care and depression symptoms for women who reported high and low RFL. Based on that plot, it appeared that depression was related to self-care for women who reported low [r=-.57, p < .001] but not high [r=-.06, p=.625] RFL. In stratified analyses, RFL did not moderate the depression - self-care association for African American men perhaps due to the limited sample size.

Future studies should examine how cognitive bias can impact self-care behavior particularly for African Americans who are diagnosed with T2DM.

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EAT, MOVE, LIVE: A FEASIBILITY STUDY MEASURING BEHAVIORAL AND BIOLOGICAL OUTCOMES IN MEDICALLY VULNERABLE

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Background: Despite the tremendous need and enormous efforts to develop public health recommendations for appropriate exercise levels, especially among families at risk for diabetes, we still have no exact prescription to give the public. Obesity, unhealthy diet and physical inactivity are linked to increased diabetes and cancer risk. Our Eat Move Live (EML) program was implemented in collaboration with the City of Duarte and the Duarte Unified School District (DUSD). The goal of the program focuses on diabetes and chronic disease prevention through lifestyle, nutrition and physical activity. The program aimed to assess the possible positive effects of a nutrition and exercise intervention on metabolic components among underserved, Latino women at high-risk of diabetes.

Methods: The EML intervention is a series of weekly, culturally and community informed nutrition and physically activity workshops delivered by health educators. The target population is low-income Latina mothers who have elementary-aged children in the DUSD. Demographically matched schools were assigned to the intervention (n=2) or wait-list control (n=2). Participants were recruited through passive (fliers, home mailer) and active recruitment strategies. The intervention approach was community engaged, and school-based. The intervention design was a feasibility trial with a pre-test – post-test, wait-list control. Participant's weight and A1c was measured at baseline and following the 3month intervention.

Results: A total of 40 participants were enrolled in the study, 20 in the intervention and 20 in the wait list control conditions; there was just 1 attrition from the control-group. All participants reported elevated A1c and were at least over weight. As a result of participating in the EML program, 69% of intervention group saw a significant reduction of A1c compared to 28% control group (p

Conclusion: Our study shows that a community responsive approach implementing cultural exercise, nutrition, shopping and food preparation knowledge and skills combined with social support enhanced intervention acceptability and effectiveness. The results support our hypotheses that increasing level of exercise to CDC recommendations and providing nutrition

and physical activity skill-building workshops can improve A1c and BMI status among Latinas at high-risk of diabetes.

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C103 6:00 PM-7:00 PM

EFFECT OF DOSE OF BEHAVIORAL OBESITY TREATMENT ON HBA1C IN ADULTS WITH PREDIABETES

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Introduction: Standard behavioral weight-loss interventions typically produce an 8-10% reduction in body weight and are associated with reduced diabetes risk. The optimal intensity (i.e., dose) of behavioral treatment for achieving maximum glycemic improvements remains unclear. Previous findings from the Rural LITE Trial indicated that moderate (16 sessions) and high (24 sessions) doses of treatment produced significantly larger weight losses at 6 months than low dose (8 sessions) treatment and a diet education control group (8 sessions). In this study, we examined the effect of dose of behavioral treatment on changes in HbA1c (A1c) and explored the mediating effect of weight loss.

Methods: The study included 315 adults with obesity (female=77%, Caucasian=78%; M±SD age=55±11 years, BMI=36.2±3.9 kg/m^2) who exhibited baseline A1c levels in the prediabetes range (5.7-6.4%). Intervention content was the same for the high, moderate, and low dose treatments. Participants in the control group received diet education without behavioral strategies. A1c and weight were measured at baseline and month 6. The effect of treatment dose on A1c was evaluated by a one-way ANOVA with Bonferroni adjusted post-hoc testing. The mediating effect of weight loss on A1c change was evaluated using the Preacher and Hayes model.

Results: There was a significant main effect of treatment dose on weight loss ($p < .001$) and on A1c (p=.005). A1c reductions were significantly greater in the high (-.131%) vs. the control (-.003%) conditions (p=.004). The association between treatment dose and A1c (p=.003) became non-significant when weight change was added to the model (p=.493). The indirect effect of dose through weight loss was significant (95% CI: .019-.043), suggesting full mediation.

Discussion: We found that a high dose of behavioral weight-loss treatment was required to achieve significant reductions in A1c compared to a diet education control group and that the relationship between treatment dose and A1c was fully mediated by weight loss. While most lifestyle interventions implement a moderate dose, these findings suggest that a higher dose of treatment resulting in greater weight loss may be necessary to maximize improvements in diabetes risk.

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EXPLORATORY DEVELOPMENT OF A METHOD TO CLUSTER ADULTS WITH TYPE 2 DIABETES BASED ON SELF-MANAGEMENT STYLE

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Background: Adoption and engagement with Type-2 Diabetes (T2DM) self-management interventions vary across individuals. This may be related to the degree to which the intervention's mode of delivery and functions match the individual's self-management style.

The goal of this exploratory study was to determine whether a combination of a modified q-sort survey and k-means analysis could be used to develop a brief questionnaire that would cluster adults with Type 2 Diabetes according to their self-management style.

Methods: We conducted a web-based survey among adults with T2DM. Participants sorted 31 statements using a modified q-sort methodology. The first two sets of statements addressed intentions to change current self-management behaviors and individuals' desire for external support. The next five sets of statements addressed self-management functions that interventions often target: Teaching, Goal-setting and Planning, Feedback, Reminders, and Social Support. Participants sorted each statement to represent the degree to which the statement reflected their way of thinking on a bipolar scale (i.e., strongly agree to strongly disagree). For example, in the set of statements related to social support, participants sorted statements such as, "I am more likely to attend a support group to meet other people with diabetes;" and "I am more likely to join an online social network to meet other people with diabetes."

A k-means cluster analysis was performed to extract homogenous groups for each self-management function. The Big 5 Personality Traits and Regulatory Focus (collected at the start of survey) were assessed as cluster discriminators.

Results: For each self-management function, the k-means algorithm divided the cohort (n=1783, age= 59±10 years; 64% female; mean Hemoglobin A1c=7.4±1.6%) into two clusters: "Techie" and "Old style." Individuals were varied in their style: of the 64 possible permutations of Techie vs. Old style for each of 5 self-management functions, the ten most frequent clusters only accounted for 55% (n=977) of the sample. Interestingly, age,

socioeconomic status, personality traits and regulatory focus did not differ significantly between clusters.

Conclusions: A modified q-sort methodology combined with a k-mean clustering algorithm appears to capture individual differences in T2DM self-management style. Future work to test the resulting brief questionnaire will be discussed.

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C105 6:00 PM-7:00 PM

SLEEP DURATION, POSTPRANDIAL METABOLIC FUNCTION, AND THE ROLE OF INSULIN RESISTANCE IN NONDIABETIC INDIVIDUALS

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In preclinical diabetic dysmetabolism, there is an insulin secretion upregulation during postprandial periods to compensate for diminished insulin sensitivity. It is not known whether there is an association of shortened sleep duration with elevated postprandial insulin secretion in nondiabetic persons, or whether this relationship is moderated by insulin sensitivity. This study examined these interrelationships, while controlling for age, sex and cardiovascular risk factors (smoking status, visceral adiposity volume, systolic blood pressure, triglycerides, total cholesterol/HDL ratio), and postprandial metabolic indices (β-cell glucose sensitivity, early insulin secretion rate sensitivity, and insulin secretion potentiation). The 143 healthy, nondiabetic men and women, aged 18-55 years, had no diagnosed sleep, psychiatric or cardiometabolic conditions. Habitual sleep function was assessed using actigraphy for 1 week. Insulin sensitivity was derived using a euglycemic hyperinsulinemic clamp. Postprandial metabolic indices were derived using a 2-day in-patient evaluation, wherein serial blood sampling was performed before and during 4 mixed-meal tests/day. Meals had identical fat and protein content, but carbohydrate content was manipulated. Hence, in randomized order, meals included standard carbohydrate load (300 kcal) on one day, and double carbohydrate load (600 kcal) on the other day. Metabolic indices were derived using quantitative decomposition modeling. Regression analyses assessed carbohydrate loading separately, examining the prediction of total daily postprandial insulinemia by sleep duration (SDur), insulin sensitivity (IS), and the interaction of these factors (SDur x IS). For the 300 kcal/meal day, the analysis indicated a significant SDur x IS interaction ($\beta=0.149$, $p=.031$) and a significant main effect for IS ($\beta=-0.394$, $p < .001$). For the 600 kcal/meal day, both the SDur x IS interaction ($\beta=0.161$, $p=.034$) and main effect for IS ($\beta=-0.486$, $p < .001$) remained significant. In sum, these findings show that the association of shorter sleep duration with more elevated postprandial insulinemia is linked with poorer insulin sensitivity in otherwise healthy persons, independent of age, sex, traditional cardiovascular risk factors and other metabolic measures. Thus, preclinical diabetic risk, when poorer insulin sensitivity emerges, may not only include a

compensatory adaptation of postprandial insulin regulation, but also a decrease in sleep duration.

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C106 6:00 PM-7:00 PM

USING THE TRANSTHEORETICAL MODEL TO PROMOTE BEHAVIORAL CHANGE WITH DIABETES SELF MANAGEMENT

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Background: Success in chronic disease self management education programs require lifestyle change and not all participants may find themselves ready or willing to modify their behavior. Few studies have examined the relationship between insufficient sleep and motivation for change in behavior for persons with type 2 diabetes mellitus.

Purpose: This study uses data from a Diabetes Self-Management Education Program to explore the relationship between insufficient sleep and the participant’s stage of behavioral change as identified by the transtheoretical model. This study will use descriptive and anova analysis to examine these relationships.

Results: One hundred and one persons with T2DM (mean HbA1c = 8.79 ± 2.42) participating in a DSME Program at a southern urban community non profit hospital enrolled in this study. The majority of these patients were obese (mean BMI=38.56±8.20) . Only 11% reported normal sleep, with 41% reporting short sleep (< 6 hours). Pre-contemplative stages of change were related to more insufficient sleep (69%) [x^2(3, N=97=8.67, p < .05].

Conclusions: Participants in a DSME program were more likely to be motivated to change their behavior when they reported adequate sleep. Future studies should more closely examine sleep quality and quantity to more discriminately articulate this relationship as it relates to people desiring to better control their diabetes. Future interventions could integrate healthy sleep hygiene education into existing DSME programs to improve participant’s motivation. This could potentially improve the successful uptake of life style modifications for persons with T2DM.

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C107 6:00 PM-7:00 PM

MERITORIOUS AWARD WINNER

A “DEFAULT OPTION” TO ENHANCE DIETARY QUALITY IN PARTICIPANTS IN THE SUPPLEMENTAL NUTRITION ASSISTANCE PROGRAM

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Introduction: Diets consumed by participants in the Supplemental Nutrition Assistance Program (SNAP) are of relatively lower quality, compared to eligible non-participants, leaving them at increased risk for adverse health outcomes such as type II diabetes. The effectiveness of psychoeducation or use of monetary incentivizes to enhance diets in SNAP participants remains limited and cost can be prohibitive. In behavioral economics, the “default option” refers to the option a consumer selects if s/he does not make an active choice (e.g., opting out vs. opting in to organ donation programs). We sought to assess if use of a default option would result in healthier food purchases within the constraints imposed by SNAP, compared to monetary incentives and psychoeducation. **Methods:** Female undergraduates (*n*=53, mean BMI=24.26, *SD*=5.12, age 20.24, SD=5.49) filled out a baseline questionnaire and were then given a budget of $48.50 and instructed to purchase “nutritious, affordable, and tasty food for a week” using the online shopping service of a local grocery store (T1). Before completing the task again (T2) they were then randomized to: (1) receive a $10 “incentive” if they selected groceries that met recommended nutritional guidelines, (2) read an “educational” brochure adapted from materials currently utilized by SNAP, and (3) be presented with a “default” pre-filled online shopping cart containing a nutritionally balanced selection of groceries and told they could make changes as they wished. **Results:** There was a significant difference among the 3 groups in average daily calorie consumption (*F* (2, 49 = 3.76, *p* = .03). Average daily caloric consumption decreased in all three groups, but the default group had the largest decrease and was significantly different from the education group. There was a significant difference among the three groups in average daily sodium intake (*F* (2, 49) = 3.43, *p* = .04), and average daily cholesterol intake (*F* (2, 49) = 3.92, *p* = .03). The default group showed significantly greater decreases in calories and sodium compared to the education group and a significantly greater decrease in cholesterol compared to the reinforcement group. **Discussion:** Although the initial focus of SNAP was on providing sufficient quantities of food to program participants, the importance of the quality of the food made accessible to benefit recipients is thus becoming increasingly clear. SNAP currently uses education to promote healthy eating even though it appears that education may not be very effective. This data shows that research regarding default menus is necessary as it is the least costly intervention

option. Preliminary data suggests this option may be the most effective intervention strategy in reducing unhealthy decisions surrounding food choices.

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C108 6:00 PM-7:00 PM

A COMPARISON OF DIET-RELATED RISK FACTORS FOR CHRONIC DISEASE BETWEEN BLACK AND WHITE MEN: FINDINGS FROM NHANES, 2007 - 2012

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Compared to men of different racial/ethnic backgrounds, African American men experience higher rates of chronic disease such as cardiovascular disease and type 2 diabetes. Diet quality has been shown to be a key risk factor for chronic disease. While gender differences in dietary quality are well documented, the research literature is limited on evidence-based results targeting dietary quality in men. Furthermore, literature on the diet quality of specifically African American men is sparse. Using cross-sectional data from the National Health and Nutrition Examination Survey (NHANES) years 2007-2012, this study aimed to examine difference in diet quality, nutrient intake, and household food security status between African American and White men. Data on 5,050 male participants (31.3% African American; 68.7% White) over 20 years old were extracted and analyzed. Information on demographics and household food security was self-reported by study participants. Information on dietary intake was collected via 24-hour recall. Healthy Eating Index (HEI) 2010 total and component scores were calculated for each participant. Multivariable adjusted linear regression models were used to determine if African American race was associated with HEI-2010 total score. Compared to White men, a higher percentage of African American men were obese according to their body mass index (37.8% vs. 34.0%; $p < 0.0001$. A lower percentage of African American men were food secure (67.1% vs. 80.6%; $p < 0.0001$. Mean dietary fiber intake (18.6g ve. 14.7g; $p < 0.0001$) and sodium intake (4,126.3mg vs. 3,725.9mg; $p < 0.0001$) for White men was significantly higher than African American men. Mean HEI-2010 total score was significantly lower among African American men compared to White men (46.4 vs. 48.9; $p = 0.0003$). After adjusting for demographics (e.g. age, education level, marital status) and body mass index, African American race was found to not be associated with HEI-2010 total score ($\beta = 0.35$; $SE = 0.60$; $p = 0.57$). In conclusion, while household food security may significantly differ between Africian American and White men, diet quality was similar after accounting for factors such as education level. Future research on this subject will highlight the importance of developing interventions that target nutrition education among African American men.

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C109 6:00 PM-7:00 PM

"WEIGHING" THE OPTIONS: ENHANCED SELF-AWARENESS OF BODY WEIGHT IMPACTS FOOD CHOICE

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Though enhanced self-awareness has been shown to reduce transgressive behaviors like cheating, few studies have examined how self-awareness of a health indicator, body weight, impacts food selection. The present study investigated how short-term self-awareness enhancement of body weight influences the nutritional content of foods chosen and hypothesized that those who weighed themselves prior to (vs. after) food selection would choose foods lower in calories, saturated fat, and sugar. Two hundred and twenty students participated in the study at a laboratory featuring a mock grocery aisle with a range of slow-to-perish food items including fruit juice, cereals, chips, and pasta. Participants were randomly assigned to weigh themselves on a calibrated scale either before or after making a selection of four food items that they could have had the opportunity to take home with them by winning a raffle drawing. After selecting their four food items, all participants completed an electronic questionnaire assessing their demographic information and some basic information about the food items chosen. *T*-tests revealed that participants chose foods approximately 9% lower in calories ($t(217) = -2.50$, $p = 0.013$) and 18% lower in saturated fat ($t(217) = -2.61$, $p = 0.010$) when they were asked to weigh themselves before rather than after selecting their food items from the mock grocery aisle. Further results indicated that average sugar content in the food items chosen did not significantly differ as a function of when participants weighed themselves. Such findings are consistent with self-awareness theory, and hold important intervention implications by suggesting that consumers who are reminded of their body weight before a food choice is made may make more healthful decisions related to that choice.

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C110 6:00 PM-7:00 PM

APPLYING PROSPECT THEORY TO EATING: ENDOWED FOOD IS WORTH MORE

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Applying Prospect Theory to Eating: Endowed Food is Worth More

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Introduction

Dual process theories of decision making, such as Prospect Theory, have rarely been used to study eating behaviors. The “endowment effect” from Prospect Theory is evidenced when people place a higher value on something if they own it compared to if they do not own it, reflecting loss-aversion. The endowment effect has been demonstrated with non-food objects like mugs and pens, but it has not been applied to food items. Risk-sensitive Foraging Theory suggests that foods with greater energy density are preferred to foods with lower energy density. Deriving from Prospect Theory and Risk-sensitive Foraging Theory, we hypothesized that participants would rate owned / endowed snacks as higher in value, and that this effect would be stronger for energy dense foods.

Method

The present study comprised four conditions based on two factors: whether the presented food was endowed to the participant or not (ownership), and whether the food had high energy density (candy) or low energy density (vegetables). A total of 59 undergraduates (age=19.5; 72% women) were randomized to evaluate either a pint of candy or vegetables in a clear container, which were of equal retail cost. They were told they either “get to keep” or “don’t get to keep” the snack when they were done with the evaluation. Participants rated how much they believed the food to be worth and how much they would personally pay for their food item. ANOVA was used to examine the main effects and interaction of endowment and energy density on perceived food value, using body mass index as a covariate.

Results

Endowed items were valued more highly than non-endowed items, *F*(1,54)=4.188, *p*=.046. Participants ranked the vegetables as more valuable than the candy, *F*(1,54)=5.668, *p*=.021. Endowment and food type did not interact, *F*(1,54)=.027, *p*=.870.

Discussion

Our results are consistent with the endowment effect, such that participants placed a greater value on endowed food items. In contrast to our hypothesis, vegetables were consistently rated as more valuable than candy. Dual process theories such as prospect theory can be applied to eating behaviors, which may yield insights relevant to the obesity epidemic.

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C111 6:00 PM-7:00 PM

ATTENTIONAL MECHANISMS UNDERLYING LEARNING TO READ NUTRITION LABELS

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Individuals who use nutrition labels tend to eat healthier diets (Ollberding et al., 2010), still, many individuals avoid using labels because they are too difficult or time consuming to read (Guthrie et al., 2015). Eye tracking methodology has been used to shed light on the attentional mechanisms underlying nutrition label comprehension (e.g., Bialkova et al., 2014; Miller et al., 2015), however, relatively less work has focused on eye movements while learning to read nutrition labels. In the present study, we examined changes in attention as individuals completed a nutrition label reading training tool.

40 college students (75% female) participated in the study. The training began with a 7-minute slide presentation on general nutrition information, followed by a label reading task requiring participants to select the more healthful product using two nutrition labels, presented side-by-side on a computer screen. Participants used a mouse to select their choice, and were told if their choice was correct or incorrect before moving on to the next comparison. There were 24 comparisons in each of 3 blocks of practice. Eye movements were monitored using a video-based eye tracker to determine if training is accompanied by a reduced number of sweeps between choices prior to making a decision, reflecting greater efficiency. Participants provided usability ratings on the training tool at the end of the session.

Individuals improved their accuracy across practice blocks, $t(35)=7.1$, $p < .001$, with the greatest improvement from block 1 to 2, $t(35)=5.8$, $p < .001$, but significant improvement also evidence from block 2 to 3, $t(35)=2.2$, $p < .05$. Importantly, eye tracking data showed significant decreases across the 3 blocks in the number of sweeps between the labels for both the to-be-limited nutrients (e.g., saturated fat), $t(35)=3.4$, $p < .01$, and the non-limited nutrients (e.g., protein), $t(35)=4.5$, $p < .001$. Usability ratings indicated that participants generally agreed that the tool was very easy or easy to use (76%), very useful or useful (77%), and was fun (72%). Participants also indicated that it was very likely or likely (88%) that they would continue to improve their skills if they continued practicing. In general, label training can increase accuracy and reduce attentional demands associated with label reading. Additional research is needed to determine whether increased efficiency can translate into sustained, healthier food choices.

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DEVELOPMENT OF LA VIDA INC, A MOBILE-ENABLED INTERACTIVE COMIC TO PROMOTE HEALTHY EATING AMONG LOW-INCOME HISPANIC YOUTH

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Background: Childhood obesity continues to be a serious clinical and public health issue in the US, with increased prevalence particularly among low-income Hispanics. Effective, yet innovative interventions are needed to capture the attention of children in a technology and media-dense environment. Digital health interventions have potential to reach and engage with culturally diverse and hard-to-reach communities. We aimed to: 1) identify factors influencing child dietary behaviors, 2) assess technology use, and 3) identify preferred character profiles based on popular youth media.

Methods: Hispanic parent-child dyads were recruited using convenience sampling in East Harlem, New York City. Participants completed a survey and participated in a semi-structured interview. Question domains included: knowledge, attitudes and practices around eating/health and technology, popular media/storylines, preferred character profiles, and possible intervention components. Audio-recordings were transcribed and translated, and analyzed by two coders using Dedoose software.

Results: Thirteen dyad and two triad interviews were conducted (parent: n=15, mean age 37.4 ±5.1; child: n=17, mean age 10.4 ±1.3). Most child participants were female, self-identified Mexican and bilingual; all were US-born. All reported their mother being primarily responsible for food shopping and preparation. Family food-related practices, culture, and food taste/texture strongly impacted child eating behaviors and food preferences. Nearly all children and parents identified eating fruits/vegetables and drinking water as the most important habits/behaviors for being healthy. All children used mobile apps regularly mainly for homework, games, and watching videos. Children preferred characters who evolve over time to develop traits or powers to help others, fight evil, or solve problems. Children expressed willingness to receive information to help make healthy choices and understand the benefits of different foods through interactive gameplay. They preferred built-in

motivation (e.g. unlocking game elements) as opposed to external/monetary incentives to encourage continual health tool use.

Conclusions: Findings will inform the design of a mobile-enabled interactive nutrition comic prototype that will be used in a 2-group pilot randomized study targeting behaviors to reduce childhood obesity risk. Our user-centered approach will help develop culturally-tailored material and may increase potential intervention adoption, engagement, and sustained use.

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DIETARY INADEQUACY AMONG SMOKELESS TOBACCO USER HOUSEHOLDS IN BANGLADESH

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Tobacco users on average have less adequate diet as compared to non-users. While the majority of the studies are from developed countries, less is known about the influence of tobacco on dietary composition in developing countries where malnutrition is a major public health challenge. Additionally, the effect of smokeless-tobacco use on dietary composition are unknown. We present a household-level analyses that compares diet using the nationally representative Household Income Expenditure Survey (HIES-2010) from Bangladesh. Overall, 71% of the households reported expenditure on tobacco (smoking and/or smokeless), and were considered tobacco users. Out of 12240 households, 2061 used smoking tobacco only (16.8%), 3284 used smokeless tobacco only (26.8%), and 3348 were dual-users (27.4%). After controlling for household expenditure, household size, place of residence, and education, smokeless-tobacco user households consumed significantly lower mean per capita daily total calories ($\beta = -342.88$; $p < 0.0001$) as compared to non-users. Dietary analyses revealed smokeless-tobacco users consumed significantly lower daily mean per capita of vegetables ($\beta = -19.65$ g/day; $p < 0.0001$), milk and dairy ($\beta = -9.81$ g/day; $p < 0.0001$), fish ($\beta = -9.84$ g/day; $p < 0.0001$), meat ($\beta = -10.9360$ g/day; $p < 0.0001$), legumes ($\beta = -3.23$ g/day; $p < 0.0001$), eggs ($\beta = -1.60$ g/day; $p < 0.0001$) as compared to non-users. However, mean per capita daily intakes of cereal products ($\beta = 39.26$ g/day; $p < 0.0001$) was significantly higher among smokeless-tobacco users as compared to non-users. Corresponding to these profound dietary differences, the intake of total dietary protein ($\beta = -10.01$ g/day; $p < 0.0001$), dietary fat ($\beta = -27.55$ g/day; $p < 0.0001$) were significantly lower, and dietary carbohydrate ($\beta = 94.32$ g/day; $p < 0.0001$) was significantly higher among smokeless-tobacco users as compared to non-users. The study provides evidence to inform policy for addressing dietary inadequacy and malnutrition burden among smokeless-tobacco user households in Bangladesh.

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C114 6:00 PM-7:00 PM

EATING FREQUENCY AND CHRONIC DISEASE RISK AMONG POSTMENOPAUSAL WOMEN

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Background/ Objective: Eating frequency, defined as eating events at least 30 minutes apart, has been associated with risk for chronic disease including obesity, CVD, and cancer. However, the findings are sparse and inconsistent. Efforts to expand on these results in order to develop guidance in regard to this modifiable behavior are warranted.

Methods: 24-hour dietary recall data collected at year 3 of study from a sub-sample of postmenopausal women (age 50-80 y) enrolled in the Women's Health Initiative Diet Modification Trial (n=2460) provided the eating frequency exposure data for this analysis. Adjudicated disease outcomes included incident cardiovascular disease (stroke and coronary heart disease combined), myocardial infarction, and cancer; self-reported diabetes was also evaluated. Risk for disease was assessed using Cox proportional hazards regression models, adjusted for potential confounders.

Results: Most women reported 3 (31%), 4 (33%), or 5 (20%) eating events over a 24-hour period. Higher eating frequency was reported in younger women, those with higher neighborhood socioeconomic status, non-Hispanic whites, and women with lower body mass index. Eating frequency was not associated with a higher risk for cardiovascular disease, myocardial infarction, or cancer. A significant association between eating frequency and diabetes was demonstrated such that women reporting eating 4 times per day showed 36% greater risk for developing diabetes than women reporting eating 1–3 times per day (HR, 1.36; 95% CI, 1.04–1.79); however, there was no difference in risk between women eating 1–3 versus ≥ 5 times per day.

Conclusion: An inverse U-shaped association between eating frequency and diabetes was demonstrated in this cohort of postmenopausal women; relationships between eating frequency and other obesity-related chronic diseases of aging were not found.

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C115 6:00 PM-7:00 PM

EFFECTS OF HEALTHY-EATER SELF-SCHEMA AND NUTRITION LITERACY ON HEALTHY-EATING BEHAVIORS

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Unhealthy-eating behaviors contribute to obesity and chronic illness. Researchers have increasingly recognized the role of healthy-eater self-schema (reflects the healthy-eating as an important aspect of the self) and nutrition literacy (reflects the competence of healthy-eating) in healthy-eating behaviors. However, the relative contribution of healthy-eater self-schema and nutrition literacy is unknown. This study aimed to determine the unique effects of healthy-eater self-schema and nutrition literacy on healthy-eating behaviors in undergraduate students

Participants were 1,216 students from three national and three private universities in Taiwan. Healthy-eating behaviors were measured with a 13-item frequency rating scale. Healthy-eater self-schema was measured by rating three key phrases – healthy eater, someone who eats in a nutritious manner, and someone who is careful about what I eat – according to self-descriptiveness (1-11) and importance (1-11). Ratings of at least two of the three descriptors as both very descriptive (8−11) and very important (8−11) were considered evidence of a healthy-eater self-schema. Nutrition literacy was measured with an 8-item scale. Known determinants of eating behaviors (nutrition-related information, health status, nutrition knowledge needs, gender, and residence) were covariates. Hierarchical multiple regression was conducted.

Results showed that healthy-eater self-schema ($\beta = 0.27$, $p < .001$) and nutrition literacy ($\beta = 0.37$, $p < .001$) were significant predictors of healthy-eating behaviors. A healthy-eater self-schema explained 9% of the variance in healthy-eating behaviors and nutrition literacy explained additional 12% of the variance in healthy-eating behaviors.

Findings suggest that a healthy-eater self-schema and nutrition literacy have additive effects on healthy-eating behaviors. Nutrition literacy has relatively stronger effect on healthy-eating behaviors than a healthy-eater self-schema. Intervention to improve healthy-eating behaviors may be more effective if they incorporate the enhancement of both personal value of healthy eating and nutrition literacy at the same time.

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C116 6:00 PM-7:00 PM

EMPOWERING INDIVIDUALS TO MAKE HEALTHY FOOD CHOICES THROUGH NUTRITION LABEL READING SKILLS

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Nutrition labels are an important tool for navigating healthful food choices. However, labels tend to be underutilized, partly because they are difficult to interpret (Cowburn & Stockley, 2005). Research has shown that label reading skills can be improved (Jay et al., 2009), however, it is unclear whether skill improvement is accompanied by changes in attitudes toward healthy food choices (Dukeshire et al., 2014). That is, do consumers feel more empowered to make healthy food choices after nutrition label training? We examined changes in self-perceptions and motivation before and after using a web-based nutrition label reading training tool.

Participants were 44 young adults (ages 18-29, 59% female, with an average of 18 years of education). The training tool included a 20-minute nutrition overview followed by 3 blocks of intense self-paced label reading practice with feedback. For the practice task, participants compared two nutrition labels, presented side-by-side on a computer screen, to determine which was more healthful. Feedback was provided after each comparison, as well as at the end of each of the 3 blocks of comparisons (24 in each block). Attitudes toward healthy food choices were assessed using the following 4 items: My ability/willingness to select healthful foods when I'm offered many, many choices (large grocery store, online shopping, restaurant) is ___: and "My ability/willingness to interpret nutrition information on food labels in order to select healthful foods is ___:" Participants used a slider bar to select a value between 0 (very low) and 100 (very high).

Results showed significant increases in objectively assessed label reading skills from the first to last practice block, $t(43)=2.4$, $p < .05$, Moreover, we found improvements in self-perceptions of both ability and willingness to use food labels and to select healthy foods, from pre- to post- training, $p < .05$, for all four t-tests. These data are consistent with the notion that label reading skills empower individuals to make healthy food choices. Future work in this area is needed to determine if label reading skills and feelings of empowerment can be sustained with additional training and can translate into more healthful food choices in the long run.

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C117 6:00 PM-7:00 PM

HEALTHY DIETS IN THE AFRICAN AMERICAN COMMUNITY: APPLYING THE THEORY OF PLANNED BEHAVIOR IN FAITH-BASED SETTINGS

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Diabetes and heart disease are two major health concerns for African Americans, who tend to have worse nutritional intake than Whites. Black churches, which serve primarily African Americans, are influential institutions in the African American community that can assist with promotion of healthy eating behaviors. Although church involvement has been associated with healthier dietary beliefs and behaviors, church settings can also impede healthy eating due to social pressure to consume unhealthy foods. To contribute to better design of church-based dietary intervention studies, there is a need to understand psychosocial influences, particularly beliefs and intentions to eat a healthy diet. Yet, there is a gap in the literature on studies that have examined this key predictor of dietary behaviors among church-affiliated African American populations. The Theory of Planned Behavior (TPB) is an established theory that has been demonstrated to explain the relationships between behavioral beliefs, normative beliefs, control beliefs, intentions to perform a health behavior and the behavior itself. The purpose of the current study is to examine intentions to eat a healthy diet and dietary behaviors (i.e., F/V and fat intake) in a sample of African-American church and affiliated community members using the TBP. Participants (N = 352) were recruited from six Black churches in the Kansas City metropolitan area and completed surveys exploring TPB constructs and health behaviors. Participants were primarily female (68%), with an average age of 54 years. Results showed that path models testing fat intake and F/V intake had good overall fit (RMSEA = .058, PCLOSE = .334; and RMSEA = < .001, PCLOSE = .963, respectively). Findings indicated behavioral (β = .240, p < .001) and normative beliefs (β = .171, p < .05) predicted intentions to eat a healthy diet, even when controlling for covariates (i.e., age, sex, BMI, religiosity, baseline fat or F/V intake). Control beliefs predicted fat intake (β = -.011, p < .05). Intentions predicted fat (β = -.217, p < .05) and F/V intake (β = .313, p < .001). These

findings provide support for the use of the TPB in examining dietary behaviors among church-affiliated African Americans and suggest church-based healthy diet interventions should emphasize promotion of behavioral and normative beliefs. This study represents an opportunity to understand dietary beliefs and behaviors in the African-American faith community, with potential to inform dietary interventions in key African American faith-based settings.

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C118 6:00 PM-7:00 PM

IMPACT OF FRONT OF PACKAGE NUTRITION LABEL TYPE AND EXPLANATION ON PERCEPTION OF PRODUCT HEALTHINESS AND FOOD CHOICE

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Background: Front-of-package (FOP) nutrition labels are increasingly used to present nutritional information to consumers. A variety of FOP nutrition schemes exist, each of which presents condensed nutritional profiles in a different manner. The present study was designed to directly compare two policy-relevant symbolic FOP labeling systems –traffic light and star-based labeling schemes – with specific regard to healthiness perception and purchase intention for a variety of food products. Additionally, we sought to determine which method of message framing (gain, loss, gain+loss) would best enable customers to effectively utilize the FOP labeling schemes.

Method: Participants (n = 306) viewed food packages featuring either the star or traffic light FOP labels and rated both the healthiness of each product and their likelihood of purchasing the product. Within each label type, participants were presented with differing instructions regarding how to make use of the labels (i.e., differently-framed instructions).

Results: Participants who viewed the star labels rated products with the lowest healthiness as significantly less healthy and rated products with the highest healthiness as significantly healthier compared to participants who viewed those same products with traffic light labels. Purchase intention did not differ by label type. Additionally, including any type of framing (gain, loss, or gain+loss) of the labeling systems assisted consumers in differentiating between foods with mid-range nutritional value and foods with little nutritional value.

Conclusions: In our study, the star-based labeling system led to healthy foods being seen as even healthier and to unhealthy foods being seen as even less healthy compared to the same foods with traffic light labels. Additionally, our results indicate a benefit of including framing information for FOP nutrition label use instructions, however our study did not provide clear support for a particular method of framing. While ratings of product healthiness were influenced by the framing and the label type, purchase intention was not impacted by either of these factors.

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IMPULSIVITY AND ITS ASSOCIATION WITH FOOD PURCHASING BEHAVIORS AND THE HOME FOOD ENVIRONMENT IN SOUTHEAST ALABAMA

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Background: Food purchasing behaviors such as the emphasis on certain food characteristics and the use of food labels while grocery shopping have been associated with purchasing decisions. Home food environment has also been shown to influence dietary behaviors, which in turn is associated with level of impulsivity. However, little is known about the relationship between impulsivity, food purchasing behaviors, and healthfulness of the home food environment.

Objective: To determine the relationships between impulsivity, food purchasing behaviors, and home food environment among employed adults.

Methods: A cross-sectional, online survey of employees of a southeastern university was conducted with participants recruited through mass electronic mailing. Main Measures: Impulsivity, consideration of food quality (nutrition, taste) and grocery characteristics (price, ease of preparation, shelf life) while shopping (5 items), use of food labels (2 items), and home food environment (4 items). Impulsivity is assessed by the area under the delay discounting curve (AUC), which is estimated using a binary choice delay discounting task incorporating hypothetical monetary rewards. Greater AUC reflects lower impulsivity. Structural equation modeling (SEM) was used to allow impulsivity to simultaneously predict purchasing behaviors and home food environment. SEM were conducted using Mplus.

Results: A total of 477 participants completed the online survey. The sample population were mostly female (n = 329), married (n = 332), and held at least an associate's degree (n = 407). More than half (55%) of participants reported a household income of $70,000 or more a year. AUC was positively associated with food label use and emphasis on nutrition and taste when grocery shopping ($p < 0.001$), meaning that individuals who were less impulsive were more likely to use food labels and placed greater emphasis on these factors. In the final model, AUC was shown to be positively associated with healthful foods in the home and emphasis on food quality and grocery characteristics when purchasing foods. About 33% of the variance in consideration of food characteristics, 5% of the variance in food label use, 7% of the variance in availability of healthful foods, and 4% of the variance in the availability of unhealthful foods

was explained by impulsivity.

Conclusions: Individuals with low impulsivity appear to be more thoughtful in making food purchasing decisions and perhaps as a result, have healthful foods available in the home more frequently compared to individuals with higher levels of impulsivity.

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C120 6:00 PM-7:00 PM

SNACK IT UP FOR PARENTS: A PILOT TRIAL TO IMPROVE CHILDREN’S SNACKS

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Purpose. Nearly one-quarter of children’s daily energy intake comes from snacks, typically energy-dense and nutrient-poor sweet and salty foods. The objective of the Snack It Up for Parents study was to test the feasibility and preliminary effectiveness of a parent intervention to improve snacks for children. Intervention strategies were designed to address the frequently-cited barriers of time and cost.

Methods. In this quasi-experimental, 7-week pilot study, a 3-arm intervention design was used. Four parent-child dyads received a $5 per week per child incentive for a local grocery store; seven received a brief nutrition education video (viewable on any device), with accompanying tip sheets with information on providing palatable snacks at low-cost and with minimal time; and five received both. Parents of children ages 8-12 were included in the study and were recruited based on enrollment of their child in the American SCORES Soccer for Success program for under-resourced youth. Outcomes included psychosocial factors (measured by survey) and snack quality (measured using web-based 24-hour recalls, ASA24). Key informant interviews with parents were also conducted to assess perceptions of change in children’s snacking habits, parents’ shopping habits, and experiences with the intervention activities.

Results. Across study arms, there was no increase in vegetable snacks from pre to post. Consumption of fruit as a snack increased in the video and incentive arms ($p < 0.05$). Only the video arm showed improvement in self-efficacy for providing healthier snacks ($p=0.003$). In key informant interviews, parents described an increase in the variety of snacks provided. Other themes were that the intervention activities provided an opportunity to evaluate household eating habits, consider healthier options, and experiment with new ideas for snacks. However, some parents identified on-going barriers to providing healthy snacks including limited income, food waste, food prices, and time constraints.

Discussion. Results suggest promise of these low-burden intervention strategies to reach parents to improve snacking in children, although barriers of time and cost remained an issue for some parents.

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C121 6:00 PM-7:00 PM

THE EFFECT OF ADHERENCE TO DIETARY TRACKING ON WEIGHT LOSS: USING HLM TO MODEL WEIGHT LOSS OVER TIME

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The role of dietary tracking in weight loss has received little research attention despite being part of multiple diabetes and weight management programs. The Diabetes Prevention and Management (DPM) program was a 22-session, yearlong program that asked participants to track what they ate for the whole program. Participants were provided booklets to record food and beverage intake, and a Calorie King book was given to look up fat, carbohydrate, and fat content. A participant was considered to have tracked if they wrote down at least one food or beverage item for the day. This minimal requirement for dietary tracking provided data to explore the impact of a bare minimum effort to track dietary intake. A scatterplot of days tracked versus total weight loss revealed a non-linear relationship, to fit this relationship the total number of possible days to track was divided by 3, creating the following 3-groups: rare trackers (< 114 total days tracked), inconsistent trackers (114-228 total days tracked) and consistent trackers (>228 total days tracked). The tracking groups were split and dummy coded with the rare tracking group as the reference group. Multiple models were built to first best fit the weight loss data and then to determine the best controls control variables. A cubic model provided the best fit for weight loss change over time at level-1. At level-2, a model with initial BMI and A1c, gender, and week-1 weight loss was the best fit for the data, explaining 5.29% of within person variance and 6.26% of between person variance in total weight loss. Adding tracking further improved the model, explaining an additional 2.15% of within person variance and 15.31% of between person variance in total weight loss. After controlling for initial BMI, initial diabetes status, week-1 weight loss, and gender only the group that consistently tracked lost a statistically significant amount of weight (-10.58 pounds), the weight change for rare (-2.99 pounds) and inconsistent trackers (1.98 pounds) did not statistically differ from zero. None of the control variables were significant predictors of total weight loss. In addition, the weight loss trend for the rare and inconsistent trackers followed a non-linear path, with the holidays slowing weight loss and the onset of summer increasing weight loss. However, the consistent trackers weight loss trend more closely followed a linear relationship, with consistent loss throughout the year. These results show the importance of dietary tracking in long-term weight loss success. The implications and limitations of these results will be discussed.

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C122 6:00 PM-7:00 PM

EXAMINING MOBILE IMAGING, PERVASIVE SENSING, SOCIAL MEDIA AND LOCATION TRACKING (MISST) RESEARCH USING NIH REPORTER DATABASE

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Background: Researchers are using Mobile Imaging, pervasive Sensing, Social-media and location Tracking (MISST)technologies to intervene with and/or observe personal health behaviors. Studies using MISST methods/tools raise new challenges for Institutional Review Boards (IRBs) charged with protecting research participants. This study explores the MISST landscape by identifying the nature and scope of studies supported by the National Institutes of Health (NIH).

Objectives: Due to the novelty of MISST use in research, we sought to: 1- examine the extent to which the NIH is supporting this research and, 2- identify how these tools are being used in currently funded research. A high level aim is to conduct a systematic evaluation of how IRBs carry out their obligations to protect participants and facilitate high quality scientific research.

Methods: MISST research supported by the NIH and its agencies and centers were identified through a search of the NIH Research Portfolio Online Reporting Tools (RePORTER) database using 43 key words and phrases during 2005, 2010 and 2015. Relevant abstracts were coded by the technology used, theme of the research, funding institute/center, amount of funding, and funding recipient.

Results: Results reveal MISST use in research is relatively novel as funded projects using these devices accounted for only approximately 1% of the total NIH budget in 2015. However, the number of awards allocated to MISST research increased 384% from 2005 to 2015. Additionally, the types of MISST devices used in research has shifted from geographic information systems (GIS) being the most widely used tool in 2005 to mobile devices/application being the most widely used tools in 2015. The number of institutes, agencies, and centers supporting MISST research has also increased by roughly 50% and the scope of MISST research has widened, with its increasing use in diverse fields ranging from tracking disease transmission via analysis of social media content to personalizing medicine through mobile health applications.

Conclusions: Evolving research practices and methods enabled by technological advances are rapidly changing how research is conducted. This study sheds light on studies using MISSTE technologies and the institutes supporting this research.

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C123 6:00 PM-7:00 PM

ANALYSIS OF A MOBILE HEALTH APPLICATION TO INCREASE WILLINGNESS TO ASK FOR A LIVING KIDNEY DONATION IN BLACK RENAL PATIENTS

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Rates of living donor kidney transplantation (LDKT) are greater in White renal patients while the burden of renal disease disproportionately affects the Black population. The Living Organ Video Educated Donors program (LOVED) was designed to address this disparity using a distanced-based education platform delivered on 10” tablet computers to aid Black renal patients who had difficulty approaching others to ask for a living kidney donation (LKD). The 8-week culturally tailored mobile health (mHealth) education program consists of short weekly video education modules and online video chat sessions led by a Black former patient “navigator” who has had a LDKT. A parallel convergent mixed method approach was used to triangulate quantitative data from pre-post surveys and qualitative data from end of trial focus group transcriptions. Four LOVED groups (n=25, 11 men; mean age = 48.6 years (SD14.6)) using 2 navigators were conducted between 2014 and 2016. Analysis showed an increase in LDKT knowledge ($p=0.02$), lower LDKT concerns ($p=0.03$), and higher self-efficacy/willingness to speak with others about LDKT ($p < 0.001$). Thematic analysis of qualitative data using NVivo 10 (QSR International Ltd.) showed that social support and self-efficacy were two key constructs. Results showed: 1) Video chat sessions were viewed positively as an opportunity to develop social support, LDKT knowledge, and behavior skills to seek a potential LKD. The co-learning that occurred through shared conversations with other participants increased a sense of self-efficacy, which converged in agreement with the survey results. 2) The positive opportunities for interaction outweighed the barriers of connectivity and adaptation to video chat as a mechanism for communication. However, some individuals needed technical support or stronger cellular or network signals to achieve consistently good connectivity to outweigh live group interactions. 3) Participants viewed the content of the video modules as informative, helpful, and conducive to generate requests for a kidney donation. This increase in knowledge lessened barriers to ask others for a LDKT 4) A sense of increased empowerment resulted from the interactions between group members through mentoring activities and practicing asking others for a LDKT. Overall, the video education modules and video chat sessions were inherently interdependent with the results and findings

were positive. Refinement of content and presentation material was made and LOVED is undergoing a small scale efficacy RCT. Further study would be needed to determine if self-efficacy can be maintained without the video chat sessions to support asking for a LDKT.

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C124 6:00 PM-7:00 PM

COLLEGE STUDENTS’ USE OF MOBILE APPLICATIONS FOR WEIGHT LOSS

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Understanding college students’ use of and preferences for health-related mobile applications is needed to inform the development of mhealth interventions for this population.

As part of an annual survey of college student health, students were asked: “have you ever used a mobile application (“app”) for weight loss?” Users, those who reported using an app for weight loss (WL) reported on their most and least liked feature of the WL app they used the most; Non-users, who never used a WL app, reported on desired features for a WL app. Responses to these open-ended questions were categorized by 3 coders (percent agreement 78-88%).

Of all participants (n=1906; 67% women; 30% overweight/obese), almost one-third (31%) were users. Among overweight/obese students 44% were WL app users compared to 26% of normal weight students (p

Of the users (n=586), 43% reported using a WL app for both exercise and diet, 23% for exercise only, and 32% for diet only. Three in 10 (29%) reported using the app for 1-2 months; 39% for less than one month; 16% for 3-4 months; and 15% for 5 months or longer. Most users (57%) reported daily use. Users reported that tracking/self-monitoring (64%) and tutorials/instructions (9%) were their most liked features. Least-liked features included tracking/self-monitoring (38%) and financial/time cost (6%). Non-users (n=1320) reported needing features related to tracking/self-monitoring (18%) and tutorial/instruction (12%). Users and non-users infrequently reported preferences for other features such as goal setting, motivational features, social networking.

For the two most liked features among users, more men liked tutorial features (26% of men) than women (10% of women; p=.002). Most liked feature did not differ based on weight status. No differences for gender or weight status were observed for least liked or needed features.

Almost one third of college students have used an app for WL, although most have used them for less than 2 months. Tracking is important to this population, and satisfaction with tracking appears important to attract and maintain users. Other features that are part of empirically-supported weight loss treatment were reported infrequently and may not feature prominently into users’ experiences (i.e., goal setting and motivational features to maintain engagement). College men are underrepresented among app users.

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C125 6:00 PM-7:00 PM

FEASIBILITY AND ACCEPTABILITY OF A SMARTPHONE APPLICATION FOR MEASURING TIME USE (LIFE IN A DAY) IN BREAST CANCER SURVIVORS

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Background: Advancements in mobile technology allow innovative data collection techniques such as measuring time use (i.e., how individuals structure their time) for the purpose of improving health behavior change interventions. To advance technology-based measurement of time use, the current study examined the acceptability of a five-day trial of the Life In A Day (LIAD) smartphone app measuring time use in breast cancer survivors. **Methods:** Feasibility and acceptability data were collected from participants (N=40; 100% response rate) using a self-administered survey after 5 days of LIAD use. **Results:** Overall, participants had a mean age of 55 years (SD=7.96) and completed 16 years of school (SD=2.08). Participants generally agreed that learning to use LIAD was easy (82.5%, N=33) and preferred to log activities using LIAD over paper and pencil diary (72.5%, N=29). Most felt that completing LIAD for 5 consecutive days was not too much (60%, N=24) or overly time consuming (67.5%, N=27). LIAD was rated as easy to read (87.5%, N=35)) and navigate (70%, N=32). Participants also agreed that it was easy to log activities using the activity timer at the start and end of an activity (89.7%, N=35). Only 12.5% (N=5) downloaded the app on their personal phone while 63.3% of the remaining 35 would have preferred to use their personal phone. Overall, participants felt that the LIAD app was “good” or “very good” (76.9%, N=30). Those who agreed it was easy to edit activities were significantly more likely to be younger when compared with those who disagreed (M=53 vs 58 years, $p < .05$). Similarly, those who agreed that it was easy to remember to log activities were more likely to be younger (M=52 vs 60 years, $p < .05$). Qualitative coding of two open-ended survey items yielded three common themes for LIAD improvement (i.e., convenience, user interface, and reminders). **Conclusion:** A smartphone app is a feasible and acceptable time use measurement modality. Improving convenience, user interface, and memory prompts while addressing the needs of older participants are needed to enhance app utility.

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C126 6:00 PM-7:00 PM

MFIT (MOTIVATING FAMILIES WITH INTERACTIVE TECHNOLOGY) STUDY: A RANDOMIZED PILOT TO PROMOTE PHYSICAL ACTIVITY & HEALTHY EATING

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BACKGROUND: The purpose of the Motivating Families with Interactive Technology (mFIT) study was to test the feasibility, acceptability, and effectiveness of two remotely-delivered family-based health promotion programs for improving physical activity (PA) and healthy eating (HE).

METHODS: Thirty-three parent-child (child age 9-12 years) dyads were randomized to one of two 12-week mobile interventions to increase PA and HE, which included weekly email newsletters and the use of pedometers. The programs differed in focus of content (individual vs. family) and method of tracking (paper vs. mobile website). At baseline and 12 weeks height and weight were measured, and participants completed questionnaires about dietary intake (BRFSS and YRBSS), and feedback on and engagement in the mFIT program. Descriptive statistics and linear mixed effects models were used to analyze program data; all analyses were conducted in SAS 9.4.

RESULTS: Of the 33 randomized dyads (parents: 43+6 years, 88% female, 70% white, BMI 31.1+8.3 kg/m^2; children: 11+1 years, 64% female, 67% white, BMI 77.6+27.8 percentile), 31 (94%) had follow-up data. There were no between-group differences for PA or HE, but there was an overall significant increase in average daily steps and servings of fruit during the intervention and excellent adherence to self-monitoring protocols. Most parents (97%) and children (86%) would recommend the program to a friend.

CONCLUSION: The mFIT program showed excellent feasibility and acceptability as a low-cost, remotely-delivered family intervention for PA and HE promotion, and could serve as a disseminable model for public health interventions.

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C127 6:00 PM-7:00 PM

MYLIFE: USING DIGITAL HEALTH TECHNOLOGY TO ENCOURAGE HEALTHY BEHAVIORS IN PATIENTS AT RISK FOR LIFESTYLE-RELATED DISEASES

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Background:
Many patients at risk for lifestyle-related chronic disease struggle to adopt and maintain healthy behaviors despite health education and lifestyle recommendations from their physicians. Digital health technology could improve patient-provider communication and patient health outcomes if integrated into the health delivery workflow. MyLife is a 16-week digital health program that uses wearable activity trackers, mobile messaging, and data analytics to encourage healthy behaviors in patients at risk for lifestyle-related chronic diseases.

Methods:
UCLA primary care providers (PCPs) referred patients for enrollment. Upon intake, study personnel gave patients a Jawbone UP3 tracker and instructions for using the mobile application. Patients set exercise goals, identified barriers and discussed solutions. Patients received follow-up calls every 2 weeks and 4-6 text messages per week for 16 weeks. PCPs were given periodic reports on patient progress and helped promote patient engagement. PDSA cycles were used to evaluate and refine the MyLife program based on changes in patient bodyweight, physical activity (PA), motivation and feedback. The Behaviour Change Wheel and Behavior Change Techniques (BCT) Taxonomy were consulted to guide iterative improvements.

Results:
Participant baseline characteristics (cycle 1, n=12; cycle 2, n=10) included mean age 42 ± 11 years, 50% female, mean BMI 35.4 ± 7.5, mean PA 34.5±38 min/wk, and mean patient activation measure 42 ± 5 (raw score, stage 3 of 4). Patients who completed the 16-week program increased their baseline PA by more than 200% and lost an average of 5% of their bodyweight. Based on results and patient feedback from the first cycle, which focused on

increasing PA, the second cycle will also address patient dietary choices and patients will have a designated health coach. In total over 100 unique, branching logic messages that leverage several key BCTs including Goal Setting + Behavioral Contract, Problem Solving + Graded Tasks, Action Planning, and Review Behavior Goals were developed.

Conclusions:

Our pilot digital health intervention demonstrated significant improvement in PA and weight among participants after 16 weeks. Digital health technology may be a powerful tool to prevent lifestyle-related chronic diseases when integrated into the health system. In the future, we hope to improve our program by using more interactive messaging and real-time analytics to leverage proven behavior change techniques.

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C128 6:00 PM-7:00 PM

REGIONAL CHALLENGES OF USING DATING APPS AMONG MSM IN RURAL AREAS

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Background: Little is known about the challenges of using dating apps to meet potential partners among MSM residing in different geographical locations of the United States. This study explored MSM's experiences of using dating/hookup apps to meet potential sexual and romantic partners within different US regions and areas of varying population density.

Methods: Semi-structured qualitative interviews were conducted with 20 MSM between the ages of 18-60 years currently residing in rural areas. Eligibility criteria included identifying as a man who dates or has sexual relations with other men, being at least 18 years of age, and residing in a non-metropolitan area of the United States. Interviews were transcribed verbatim and analyzed in NVivo 11 by a diverse coding using grounded theory approaches.

Results: Results reveal a number of challenges MSM face when using dating/hookup apps to meet partners in rural areas, specifically regarding regional characteristics, comfort being "out," and population size. Population density and sprawling regional characteristics limit the number of openly identifying MSM who use dating/hookup apps in rural areas. This leads to a limited number of partner matches on the apps and respondents therefore cycle through multiple dating/hookup apps to increase their dating pool. Rural areas with populations predominantly comprised of university staff or students ("college towns") also present issues for finding potential matches online. Respondents indicated that they did not feel comfortable being "out" within the context of their rural community, which deterred them from meeting partners in that area. This was not perceived to be an issue in large urban areas where respondents had more anonymity and many preferred to use dating/hookup apps when they were visiting metropolitan cities with larger communities of MSM.

Conclusion: These findings reveal that the regional environment plays a key role in the success of using dating and hookup apps to meet potential partners among MSM. The regional environment also impacts MSM's comfort openly identifying as gay within their community and seeking partners in rural areas. Health professionals should therefore consider regional characteristics and partner-seeking behavior using dating/hookup apps when designing interventions for MSM in rural areas.

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C129 6:00 PM-7:00 PM

SELF-EFFICACY FOR EXERCISE-SPECIFIC MEMORY AND PROSPECTIVE MOBILE HEALTH APPLICATION USE

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As smart phone devices become more prevalent in today's society, so do mobile health (mHealth) applications (apps). Tens of thousands of mHealth apps are commercially available that target health and fitness, yet minimal research has identified antecedents associated with continued use. Research has consistently associated self-efficacy and memory with physical activity behavior. Exercise-specific memory is a construct that has received little attention, yet there is reason to believe high levels of self-efficacy for exercise-specific memory (SEFESM, i.e., confidence in one's ability to remember public health recommendations, modifications, and how to evaluate progress with respect to aerobic, strength, and flexibility training) might contribute to the frequency and continued use of exercise-related mHealth apps. To test this hypothesis, a survey was administered on two occasions: baseline (126 initiated; n=94 completed; M_{age}=38 years; 64% female) and one-month follow-up (n=76). Path modeling with robust maximum likelihood estimation was conducted using MPlus (version 7.4) to assess theorized direct and indirect effects of SEFESM on weekly app use ("...to assist me with my exercise program;" assessed via an 8-point ordinal scale ranging from 0 to 30+ times) at baseline and at one-month follow-up, while statistically adjusting for age, gender, education, access to technology (e.g., "Do you own a smartphone/tablet/wrist device?"), and self-reported moderate-to-vigorous physical activity levels (derived from the Godin Leisure-Time Exercise Questionnaire). The overall model fit the data (χ^2=20.908 (19), p=.34, RMSEA=.03, CFI=.99, SRMR=.07). Results indicated that SEFESM and access to technology had significant ($p < .05$) direct effects on app use at baseline (β=.235 and β=.177, respectively). App use at baseline also had a direct effect at one-month follow-up (β=.667); also found was a marginal indirect effect of SEFESM on weekly app use at follow-up via app use at baseline (β=.157, p=.06). These results support our hypothesis that self-efficacy for exercise-specific memory contributes to an individual's use of exercise-related apps and should be an important consideration when designing mobile interventions.

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C130 6:00 PM-7:00 PM

THE EHEALTH ACTIVITY ASSESSMENT: PRELIMINARY FINDINGS AND IMPLICATIONS FOR CANCER SURVIVORSHIP AND USER-CENTERED DESIGN

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There are an increasing number of eHealth interventions targeting cancer survivors but little is known about eHealth preferences and experiences in this group, areas that are central to user-centered digital design. The current study presents early data from an ongoing, population-based study of eHealth activity among African American (AfAm) and white cancer survivors that will establish “survivor-centered” design principles to be translated in the development of a survivor resource app. Investigators created the eHealth Activity Assessment (eAA), a mixed methods interview examining 17 eHealth activities across 5 domains: informational, communal, self-care, expert care, and transactional. Dimensions of activity examined included direct versus surrogate engagement, frequency, the extent to which an activity served a cancer-related need, and future interest. Participants were 96 survivors (mean age= 61 years; 64% AfAm; 78% breast cancer) enrolled through the Metropolitan Detroit Cancer Surveillance System - SEER. Quantitative findings are presented here. In this sample of internet users and non-users, 89% reported at least one eHealth activity but only 6% reported any surrogate engagement (i.e., others conducted activity on their behalf). The median number of activities was 6 (min=1; max=14). The most common activities were online search for health information related to symptoms, treatments, or procedures (81%), online search for healthy lifestyle information (62%), and use of technology to reduce stress (60%). In terms of frequency, a substantial proportion of those who used technology to manage medications (100%), reduce stress (54%), and track weight, diet, or exercise (50%) did so on a daily basis. On average, 16% of reported activities addressed cancer-related needs post-treatment. Across the sample, future interest was highest in online search for ways to reduce healthcare costs (37%) and looking at medical records or test

results online (31%). T-test results showed that, compared to white survivors, AfAm survivors engaged in fewer eHealth activities (4 vs. 8, p < .0001). Fisher's exact tests showed that a significantly lower proportion of AfAms engaged in 9 of the 17 eHealth activities, most notably in the communal and informational domains. AfAms also reported fewer activities related to cancer needs post-treatment (11% vs. 22%, p < .0003). Finally, a significantly greater proportion of AfAms indicated strong interest in connecting with similar others online (p < .001) and using technology to reduce stress (p < .04) if they had never done so. Findings suggest that in-depth assessment of eHealth activity may reveal trends that can inform and enhance the user-centeredness of new and existing digital interventions for cancer survivors, especially among specific subgroups, thereby increasing the likelihood of adoption and meaningful impact.

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USABILITY TESTING OF AN MHEALTH INTERVENTION TO IMPROVE ADOLESCENTS' HEADACHE SELF-MANAGEMENT

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Adolescents who experience recurring headaches report lower quality of life as headaches become more frequent and severe (Donovan et al., 2011; Sillanpaa, 1983). Self-management skills training has been shown to increase self-efficacy for healthful behaviors as part of multidisciplinary care for chronic health conditions (Burckhardt, 2005). To facilitate adolescents' self-management of recurring headaches, we developed the Headzup App for the iPhone. Features of Headzup include a daily headache tracker, evidence-based self-management strategies that were developed with clinician and end-user input, and a "stats" view showing recent tracking trends (e.g., pain level, suspected headache etiology).

Nine adolescents who experience >4 "bothersome" headaches per month (mean age = 14.33 years) were recruited via online resources. They were asked to use Headzup daily for 14 days, then participate in a one-hour interview about their use of the app. At the end of the interview participants were asked to complete the 10-item System Usability Scale (Brooke, 1996). The SUS is a standard measure to assess ease of use with new programs/products. Participants were paid $50 for participating in the interview.

All participants completed the headache tracker on > 11 days (M = 14.33; range from 11 to 21 days). SUS scores >68 indicate above-average usability; the mean SUS score for the Headzup App was 88.6 on a 100-point scale. All but one of the participants reported that using Headzup helped them to cope with headache pain. When asked which specific feature was most worth keeping, 6 teens (66.7%) advocated for the tracker. While 7 participants did not notice the stats feature until they were directed to it during the interviews, all said it was "helpful" and "really interesting." Common "wish list" items included the ability to provide free-text answers to a tracker question about suspected headache cause and stats reports that display a longer (>7 days) tracking period.

The present study suggests that the Headzup app has good usability and includes features that teens find useful for headache self-management. Developers of future mHealth interventions for adolescents should consider including highly visible features that provide data that helps users identify patterns in the co-occurrence of certain health behaviors and chronic disease symptoms. The relationship between longer-term use of Headzup and adolescents' headache frequency, coping, and self-efficacy is currently being evaluated in a clinical trial (Clinical Trials # NCT02475005).

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AN ASSESSMENT OF PARTICIPANTS' EXPERIENCES WITH TWO EHEALTH INTERVENTIONS

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Objective: During the last 30 years, computer-based intervention for changing health behaviors have been developed and demonstrated to be effective in clinical trials. However, the effect sizes have been small due to a lack of engagement by a significant proportion of the population. Relational Agents (RAs) represent one of the recent innovative eHealth approaches to increasing engagement. RAs are computational figures designed to engage participants in the change process. A recent study tested the effectiveness of RAs, combined with existing computer-based interventions, to increase regular exercise and sun protection behaviors. The study demonstrated that these interventions can be effective but need further development. This study focuses on examining the participant's experiences of using the RA, using mixed methods approaches.

Method: Thirty-four participants completed a standardized semi-structured open-ended interview. A 25-question interview guide assessed different components of participants' experiences with the intervention, including motivation, engagement, satisfaction/ dissatisfaction, quality of their interaction with the RA, and behavior change. Quantitative assessment of satisfaction was based on a scale of 1 to 10, with 1 representing *least satisfied* and 10 representing most *satisfied.* A summative analytic approach was used to assess individuals' qualitative responses. An ANOVA examined levels of satisfaction by gender.

Results: The results showed individuals were motivated by and satisfied with the intervention, viewed the RA as *supportive*, *informative*, and *caring*, and reported positive behavior change in both exercise and sun protection. Some participants felt that the RA was less judgmental and less "overbearing" compared to a human counselor, others said that the interaction was sometimes repetitive or overly general. The majority of participants viewed the RA as an important contributor to their behavior change for exercise, sun protection, or both. Levels of

satisfaction ranged between 7 and 10. Gender differences were not noted for levels of satisfaction.

Conclusion: RAs provide an innovative and attractive platform to increase exercise and sun protection behaviors. This component can serve as an effective medium to increase other health behaviors. Nevertheless, improvement of this component to include a broader database of tailored messages to decrease receptiveness of information will further increase its appeal.

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AN UPSTREAM APPROACH TO ADDRESS ALCOHOL & SUBSTANCE USE: INTEGRATING SBIRT IN HEALTH PROFESSIONAL TRAINING PROGRAMS

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Misuse of alcohol and drugs is the third leading cause of preventable death in the United States. Despite strong research evidence that standardized screening, brief intervention and referral to treatment (SBIRT) changes behavior and improves patient outcomes in diverse practice settings, its adoption lags best practice recommendations. The Substance Abuse and Mental Health Services Administration (SAMHSA) has identified a need to move SBIRT implementation approaches further upstream, including the integration of SBIRT within medical residency and multi-disciplinary health professional training programs. We studied the implementation of SBIRT training into psychology, social work, nursing and family medicine residency programs at a state University. A standardized SBIRT curriculum was adapted to allow implementation within core and elective courses, in conjunction with opportunities to practice skills with standardized patients through the University's Simulation Center. Over eight academic terms, 704 students and 30 residents received the course curriculum. Student surveys administered before and after receiving the SBIRT curriculum, indicated significant increases in curriculum knowledge, confidence to apply SBIRT skills with patients related to alcohol and drug use, and perceived level of responsibility to use SBIRT skills with patients related to alcohol and drug use ($p < .001$ for all). Effect sizes were $\eta^2 = .00$ for responsibility to use SBIRT, $\eta^2 = .04$ for confidence, and $\eta^2 = .25$ for knowledge. Recommendation from students included more hands-on opportunities to practice SBIRT skills, which may also improve the effectiveness of the training in increasing student confidence to apply SBIRT with patients. Recommendations from faculty included more discipline-specific SBIRT skills demonstration videos for students, and resources, such as articles and discussion materials, that would help instructors fit the SBIRT curriculum content into courses already constrained by limited classroom time—a key implementation challenge. While use of videos and readings was reported to improve implementation feasibility, maintaining SBIRT within program curricula may require changes to professional accreditation and credentialing standards, as well as dissemination of SBIRT within practice settings, to ensure upstream training of healthcare professionals is necessitated by its midstream use in clinical practice as a standard of integrated evidence-based care.

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THE GROW! PARENTING PROGRAM: A HYBRID TYPE III DESIGN STUDY

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Background: The development and dissemination of evidence-based parenting programs is a major focus of researchers and practitioners in the social and behavioral sciences. Traditionally, these programs have focused on enhancing specific parenting skills, such as assertive discipline and labeled praise, in an attempt to improve parent and child mental health outcomes. The *Grow!* parenting program (*Grow!*), for parents of five-to-eight year olds, emphasizes these same parenting skills, but is unique in that it also underscores evidence--informed stress management and health promotion skills (e.g., child feeding, physical activity, and screen time behaviors) in an effort to impact parent and child health holistically.

Methods: In 2015, a Hybrid Type III design study was conducted in two Pennsylvanian communities. Implementation data were collected from facilitators and participants throughout program delivery and at program completion. Treatment data were collected from participants at pretest, posttest, three-month, and six-month follow-up using measures assessing positive parenting practices, stress management, and health promotion. Responses from 15 participants who completed measures at all four time points were analyzed using Friedman's ANOVAs and appropriate follow-up tests.

Findings: Overall, participants and facilitators were satisfied with the program. Participants were engaged during the sessions and indicated the material was useful. Facilitators also delivered the program with a high degree of fidelity (i.e., adherence rating = 94%). Repeated measures analyses showed statistically significant ($p < .05$) improvements on several stress management and health promotion measures with some parenting measures approaching significance ($p < .10$). Effect sizes (i.e., r) for significant outcomes ranged from .29 to .48.

Implications for D&I Research: Dissemination and implementation research seeks to translate knowledge into practice. This study contributes to that mission by expanding the focus of parent programming to include evidence-informed stress management and health promotion strategies. The findings demonstrate that implementing *Grow!* with fidelity in community populations is feasible and well received. In addition, the results indicate *Grow!* has the

potential to produce changes in stress management and health promotion outcomes. These findings will help to stimulate greater thinking about how best to develop, disseminate, and evaluate parenting programs that influence all aspects of children's health.

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C135 6:00 PM-7:00 PM

ONLINE EDUCATION TO ENHANCE DISCUSSION ABOUT COMPLEMENTARY THERAPIES BETWEEN HEALTH CARE PROVIDERS AND CANCER PATIENTS

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Background: Nearly 50% of cancer patients report using complementary therapies (CTs) since diagnosis and evidence supports the use of CTs in conjunction with usual cancer treatment. However, both patients and health care practitioners (HCPs) report a lack of knowledge about the benefits and potential adverse effects of CTs, and research indicates there is little discussion between HCPs and cancer survivors about CT use. The present study examines whether an online CT education program delivered to HCPs can improve attitudes toward CTs as well as increase discussion about CTs between patients and providers.

Methods: All HCPs affiliated with the Tom Baker Cancer Centre in Calgary, Canada (approx. 300) were invited to enroll in a 3-module online course, which included information about patient CT use, how to talk to patients about CTs, and a summary of evidence for CTs. Attitudes towards CTs and CT-specific clinical practice behaviours with patients over the past 30 days were assessed at baseline and two months later following completion of online modules. HCPs were assessed at follow-up regardless of whether they completed all modules. Quantitative and qualitative data were examined.

Results: Of the HCPs who were invited, 105 expressed interest, 83 enrolled in the study, 73 completed all assessments and 61 completed all three modules. Both those who completed all modules and those who did not reported an increase (80% and 10%, respectively) in asking their patients about CT use. However, only completers provided more information about CTs (+11.5% vs -16.7%), made more recommendations for CTs (+14.7% vs 0%), and discussed the evidence supporting CTs (+18.1% vs -8.3%). While HCPs saw the value in knowing about CTs to help counsel interested patients, they felt that they did not have sufficient depth of knowledge and expressed interest in having a support staff with specialized CT knowledge.

Conclusions: The online education course appeared to increase the frequency of HCPs asking their patients about CT use, but only those who completed the course were able to engage in more meaningful discussions about CTs. Interested HCPs may benefit from more advanced seminars about CTs. Further, a designated position for a CT practitioner in a Cancer Centre may be valuable given the great patient interest in CT use.

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A MIXED METHODS APPROACH TO DESIGNING A SOCIAL MEDIA INTERVENTION FOR MOTHERS OF ADOLESCENT GIRLS IN TENNESSEE

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Reducing indoor tanning (IT) is critical to preventing melanoma among young women. Mothers strongly influence whether daughters engage in IT, and teen girls often initiate IT with their mothers. Furthermore, girls who first experience IT with their mothers begin at an earlier age, become more habitual tanners, and are more resistant to change. Thus, mothers of teen girls are a significant target for IT interventions. Currently, 27 states, including Tennessee (TN), require parental permission for minors to IT. To ensure these laws have maximum prevention benefits, we developed a social media health intervention aimed at motivating mothers in TN to withhold IT permission. Because mothers who use IT might not be motivated to join a program designed to change their attitudes about tanning, we designed an approach in which tanning messages are embedded in an intervention about health topics of high interest to moms. To identify high interest topics, trained facilitators conducted key informant interviews with TN coordinated school health (CSH) personnel and focus groups with mothers of teen girls. Interviews and focus groups were recorded and transcribed and content analyzed. CSH interviews (n=19, representing 40 high schools) indicated that mental health (stress, bullying), substance abuse (tobacco, alcohol, prescription drugs), and obesity (physical activity, nutrition) were the topics of greatest interest. Results were confirmed in the focus groups with mothers (n=10), who also cited body image and healthy peer relationships. Intervention content was then designed using theory-driven messages to address IT plus these other health topics to maintain mothers' interest throughout the social media campaign. An initial prototype of a Facebook group was used by mothers (n=8) for 1 week, who then attended a focus group to provide feedback. Mothers reacted positively to the intervention, appreciating the diversity of topics delivered over a popular platform, felt more aware of important teen health issues, and used the posts as a 'checklist' that often prompted mother-daughter communication. Using 5-point Likert-type agreement scales, participants rated the IT posts on interest (avg. rating = 3.99), clarity (avg. rating = 4.70), credibility (avg. rating = 3.81), and appropriateness for social media (avg. rating = 4.43). Results were used to refine the intervention, which was launched in fall 2016.

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“IT’S NOT JUST SKIN CANCER”: UNDERSTANDING THEIR CANCER EXPERIENCE FROM MELANOMA SURVIVOR STORIES SHARED ONLINE

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Cancer survivors narrate their stories in unique ways, articulating different aspects of cancer experience. The purpose of this study was to analyze the content of cancer stories that melanoma survivors share online in order to present the ways that survivors narrate their cancer experience, to identify survivors’ motivations for sharing, and to better understand the ways in which survivors are impacted by and cope with the diagnosis and treatment of cancer. In order to accomplish the objective, we conducted a qualitative analysis of melanoma survivor stories shared online. The sample consisted of 95 unique melanoma survivor stories, accessed from the Melanoma Research Foundation in November 2015, that were inductively and deductively coded for key themes and sub-themes. Emergent themes described different aspects of the melanoma experience from pre-diagnosis (identification of self-phenotype, putative behavioral causes of melanoma, suspicious findings, delay in diagnosis), diagnosis (communication of diagnosis, emotional responses), transition from diagnosis to beginning treatment (second opinion), treatment (positive reframing of attitude, proactive cancer management, side effects), and post-treatment phases (social support, vigilance behaviors post-treatment). Two themes that cut across all phases of the cancer journey were recognizing and dealing with uncertainty and survivors’ motive for sharing stories. The time period between undergoing a diagnostic test and receiving results is rife with uncertainty and anxiety, and the stories described uncertainty across three time periods: between diagnostic test and receiving results, while undergoing treatment (uncertainty about efficacy of a new drug used/clinical trial), and the period after finishing treatment and getting the next PET scan to assess the effectiveness of the treatment in shrinking tumor/eliminating cancer. In addition, survivors expressed interest in sharing their stories for a variety of reasons, frequently related to lessons they had learned through the trajectory of their illness and a desire to pass on their knowledge. Many survivors additionally expressed a strong desire to improve public awareness of melanoma and draw attention to the difficulty, and often deadliness, of the disease. These findings have implications for understanding how melanoma survivors may benefit personally from sharing their cancer experience online as well as the potential for survivor narratives to motivate behavior change and facilitate coping among

readers. Finally, this study presents immense potential to inform melanoma prevention health communication campaigns and interventions, and to help inform supportive models of care for other melanoma survivors

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DO US HOSPITAL HOMEPAGES PROVIDE ACCESSIBLE CONTACT MODES FOR PEOPLE WITH HEARING LOSSES? A NATIONALLY REPRESENTATIVE STUDY

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Background: A hospital's homepage is like a virtual "front door" that can function to either welcome diverse patients or discourage entry. Patients with hearing losses are a medically underserved priority population who may use hospital homepages to identify non-hearing dependent contact modes for accessing medical or mental health services. No prior study, to our knowledge, has assessed the extent to which a nationally representative sample of US hospital homepages provide accessible contact modes for patients with hearing losses.

Methods: From an initial database of 3,484 US hospitals that accepted Medicare in 2015 (www.medicare.gov), we used stratified cluster random sampling (stratified by hospital type and clustered by US state) to obtain a representative sample of 526 hospitals. The homepages and immediate relevant linking pages (e.g., contact information pages) of these hospitals were coded for the presence vs. absence of five contact modes: telephone, email (address or online email form), text message, TDD/TTY, and sign language services. Coding was done by two independent raters who were trained to use a scripted search strategy that simulated how a typical patient might search for contact modes. Discrepancies between the initial two raters were resolved by a third independent rater.

Results: Cohen's kappa across all five patient contact modes averaged 0.82, with a range of 0.73 to 0.91, p's < .0001, indicating good to excellent inter-rater agreement. Of the 526 hospitals, 4 had no website and 4 were closing. Of the remaining 518 hospitals, almost all (99.4%) provided a phone number on their homepages. Among contact modes accessible to both deaf and hard-of-hearing populations, 74.9% of hospitals provided email contact information (62.7% had an online email form, and 18.5% had an email address), while just 0.4% provided text messaging information. Among contact modes typically used by deaf populations, only 9.1% of hospital homepages provided a TDD/TTY number, and just 0.6% described the availability of sign language services. One in five (20.3%) of the hospital homepages failed to provide any non-hearing dependent contact mode that would be accessible to deaf or hard-of-hearing populations.

Conclusions: Many hospital homepages provide limited contact information for people with hearing losses. The limited diversity of contact modes suggests a need to update existing website design guidelines in the Americans with Disabilities Act and related policies. Some of the contact modes studied, such as email and text messaging, could also offer collateral benefits to those with language barriers or those with limited availability during working hours. As hospital homepages provide an initial access point to healthcare for many patients, providing more diverse contact modes could help reduce public health disparities.

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C139 6:00 PM-7:00 PM

EXPLORING IDENTITY RECONSTRUCTION IN PEOPLE LIVING WITH MULTIPLE SCLEROSIS

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A person's identity shapes one's perspective of life's possibilities and aspirations for the future. Quality of life can be adversely impacted by changes in indentity that lead to downshifts in beliefs about future possibilities and in engagement in participatory roles in life. Understanding how a person's identity is reshaped by experience of chronic disease is therefore important to exploring attitudes that may impact treatment interventions and restrict rehabilitation outcomes.

Ninety people living with Multiple Sclerosis (MS) and receiving services from a clinic in the southeastern United States responded to the query of “how, if at all, has MS changed the way you think about yourself?” Responses were analyzed using grounded theory and a number of themes emerged. People indicated that their identity had been impacted by loss of focus on the present, including lack of continuity between one’s present self and one’s past or future selves. Additionally, sense of self was affected by changes in social relationships and threats to one’s integrity. Being forced to slow down, even when core components of self were preserved, was enough to disturb one’s identity, forcing identity reconstruction. These effects may be moderated by the role of faith, spirituality, or religiosity in influencing the person’s perspective on the valence of altering one’s identity. The salience of these themes was also compared across demographic groups such as age and race/ethnicity and these findings will be discussed.

Findings suggest that people may have difficulty focusing on the present due to a narrowing of perspective that either overemphasizes past abilities or riddles a person with anxiety about the future. Being unable to concentrate on the present or to perceive continuity between present and past, or present and future, may likely stymy the rehabilitation objective of meeting people where they are to move them forward.

Additionally, people living with MS appear to view being forced to slow down or being interdependent as steps backward in their treatment trajectory, escalating the perception of lost identity. While engagement of important others in one's care is often a vital source of support, it is important then for the clinician or provider to recognize that involvement of others may exacerbate a person's sense of identity disturbance rather than facilitating identity sustainment or reconstruction. Realizing how people with MS communicate barriers to identity reconstruction, in addition to disease management, will likely provide an interdisciplinary rehabilitation team with better understanding of obstacles to psychosocial functioning and overall quality of life.

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C140 6:00 PM-7:00 PM

HEALTH INFORMATION SEEKING AMONG SEXUAL MINORITY PEOPLE IN THE HEALTH INFORMATION NATIONAL TRENDS SURVEY (HINTS)

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Background. Seeking health information about health outcomes is associated with a reduction in health risk behaviors, more informed healthcare decision making, and better health outcomes. The general population increasingly uses the internet as a source for health and cancer-related information. However, all subgroups within the population may not use the internet at the same rate. Sexual minority people (SMP; i.e., lesbian, gay, and bisexual people) are considered "early adopters" of technology and therefore may be more likely to use the internet as a source of health and cancer-related information. However, there is no published evidence concerning health information seeking behaviors among sexual minority people as compared to heterosexual people (HP). The current project addresses this gap.

Methods. Data from the 2015 Health Information National Trends Survey (HINTS) FDA Cycle were used to describe and summarize health and cancer-related information seeking among SMP (n=103) and HP (n=1443). Differences in health and cancer-related information seeking were tested using chi-squared tests.

Results. More SMP in this sample reported having access to the internet (92.4%) than HP (79.4%; *p*=.001). SMP people were equally as likely as HP (59% vs 58%) to report unintentional exposure to health information while online (*p*=.21). SMP used the internet for a broad range of health information seeking activities. SMP used the internet most often to seek health information for themselves (88.1%) and least often to participate in online support groups (4.2%). The only statistically significant difference between SMP and HP was the use of health related videos on YouTube; SMP (37.2%) were more likely than HP (22.5%) to watch health-related videos on YouTube (*p*=.001). Multi-variable logistic regression did not reveal differences by sexual orientation in information seeking.

Conclusion. SMP are a difficult-to-reach population that experience significant health disparities. Our findings confirm that SMP access the internet at high rates and seek out health information online. This provides empirical evidence that online interventions could be a valuable way to address and reduce health disparities that affect SMP.

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C141 6:00 PM-7:00 PM

HOW ARE NON-NUMERICAL PROGNOSTIC STATEMENTS INTERPRETED AND ARE THEY SUBJECT TO POSITIVE BIAS?

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Background: Frank, clear communication with surrogate decision makers for terminally-ill or incapacitated patients has important implications for satisfaction with care and sound decision making. Negative numerical prognostic statements have been found to be interpreted in a positively-biased manner. Less precise non-numerical statements, particularly those using threatening terms, may be even more subject to such biases.

Objective: This study examined whether there is an optimistic bias in the interpretation of non-numerical prognostic statements and the extent to which this might vary by the severity of the prognosis portrayed and the language used to convey them.

Methods: 200 participants interpreted 14 non-numerical prognostic statements about a hypothetical patient with varying levels of risk framed in terms of dying or surviving. They indicated what they believed the likelihood of survival to be, on a scale from a 0% to a 100%.

Results: The most negative prognostic statement, “They will definitely not survive,” was interpreted significantly more optimistically (18.82%), in that it was significantly further from its reference point of 0% survival, than the most positive prognostic statement, “They will definitely survive,” (92.77%) was from its reference point of 100% survival, $t(199) = 6.59$, $p < .001$. A 2 x 2 within-group ANOVA was used to examine the main effects of framing and prognostic outcome in response to the statements “It is very likely that they will die,” “It is very unlikely that they will die,” “It is very likely that they will survive,” and “It is very unlikely that they will survive.” There was no main effect of framing, $F(1, 199) = .119$, $p = .731$, and no interaction of framing and prognostic outcome, $F(1, 199) = .66$, $p < .001$. However, there was a main effect of outcome, again suggesting that statements that conveyed a poorer prognosis were more likely to be interpreted in a positively biased manner, $F(1, 199) = 61.01$, $p < .001$.

Conclusions: In addition to using suggested strategies, such as inquiring about how much individuals wish to know about prognoses, practitioners should be aware of the ways in which commonly-used non-numeric language will be understood in numeric terms during prognostic discussions, and check recipients' understanding for potential positive bias.

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C142 6:00 PM-7:00 PM

ILLUSTRATING CANCER RISK: DEVELOPMENT OF BREAST CANCER RISK COMMUNICATION MATERIALS FOR A NOVEL BRCA1/2 GENETIC MODIFIER TEST

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Background: Breast cancer risk estimates by age 70 range from 31-78% for *BRCA1/2* carriers. Recent research has identified a set of genetic variants that modify breast cancer risks among female *BRCA1/2* carriers. These variants will be used as part of a clinical genetic modifier test (GMT) to help healthcare providers more accurately predict *BRCA1/2* carriers' breast cancer risk. To prepare for the future availability of GMT, It is critical to develop effective strategies for communicating this risk information to *BRCA1/2* carriers.

Method: We conducted in-person interviews with 30 female *BRCA1/2* carriers about their perceptions and preferences regarding sample GMT risk communication materials. Participants (aged 25-80 years; 87% Caucasian; numeracy M=4.8 on a scale ranging from 1-6) were randomized to receive one of three sample GMT results (indicating low, moderate, or high breast cancer risk). Participants were shown results in four different formats (panel of genes, social comparison icon array, verbal risk estimate, and graphical risk estimate) and asked how likely they would be to get breast cancer in their lifetime (rated from 1=*very unlikely* to 5=*very likely)* in response to each format.

Results: The preferred format across the three breast cancer risk levels was the graphical estimate, alone or in combination (often with the verbal estimate). Participants described positive, neutral, and negative emotional responses to the formats; however, the icon array evoked only negative emotions. The perceived lifetime risk of developing breast cancer significantly differed among participants in the three groups in response to the verbal risk estimate (Low M=3.06*;* Moderate M=3.75*;* High M=4.65; $p < .001$) and graphical risk estimate formats (Low M=2.85; Moderate M=3.55; High M=4.33; p=.002*);* no differences across risk groups were observed in response to the panel of genes or icon array formats. Overall, interest in obtaining GMT was high, and the majority of participants reported that GMT results would make their cancer risk management decisions easier.

Conclusion: The minimal amount of necessary information to include in GMT test results

appears to be graphical and verbal estimates of risk. Information presented in these formats is acceptable to patients, influences their breast cancer risk perceptions, and may assist in decision making about risk management. These findings will inform future efforts to translate GMT into care consistent with patients' preferences.

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C143 6:00 PM-7:00 PM

OVERCOMING BARRIERS TO A SCHOOL BMI SCREENING PROGRAM

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Body Mass Index (BMI) screening in schools has been scrutinized due to privacy issues and costs associated with communicating BMI screening results to parents. To overcome these barriers a web application was developed to decrease the burden of staff training, easily generate BMI Report Cards (BMI RC) and send them electronically to parents via email. The current research compared parental satisfaction of BMI screening in schools and utilization of BMI RC. Methods: In 2011, paper copies of BMI RC were sent via a sealed envelope addressed to the parents of 2557 elementary school children. In 2015, emails were sent to parents of 2718 elementary school children that included their child’s BMI RC. Parents responded to a survey that was sent approximately ten days after delivery of the BMI RC. In 2011, 971 parents completed either a paper or email survey. In 2015, the survey was administered only via email with 503 parents responding. The survey consisted of thirteen closed-ended questions regarding BMI RC content, parent perceived importance of BMI screening in school, and parent intention for behavior change. Results: The response rate in 2011 was 38.0% and 18.5% in 2015. Nearly all respondents (95%) reported they read all or most of the BMI RC in both 2011 and 2015. More than three-quarters (76.4%) of respondents reported it was somewhat or very important to include height and weight measurement as part of their child’s yearly health screening in 2015, compared to 88.4% in 2011. In 2011 and 2015, respectively, parents with children equal to the 85th percentile or above reported that after they had received the BMI RC that they had already or intended to create a better eating plan at home (41.7%, 64.7%), decrease TV/video time (59.9%, 56.9%), and increase exercise or physical activity (33.8%, 72.5%). The electronic calculation of BMI percentile decreased staff time and electronic generation and distribution of BMI RC decreased printing costs by $0.15 per student. Discussion: Using email to send BMI RC allowed schools to address concerns through protecting children and peers from seeing the BMI RC. In both survey years, parents reportedly read all or most of the BMI RC, which included nonjudgmental language about student BMI percentiles and their use as a screening tool, importance of lifestyle changes for better health, suggested actions for parents, as well as, local and national resources on healthy lifestyles. Parents also continued to respond that it is somewhat or very important to include height and weight as part of yearly health screenings. These findings are consistent with past research suggesting when schools communicate BMI screening results with parents they are more likely to support healthy lifestyle changes for their children. Schools who utilize a BMI RC as part of their BMI Screening program should consider safeguards and cost saving methods such as email-based communication.

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C144 6:00 PM-7:00 PM

PATIENT REPORTS ABOUT COMMUNICATION WITH THEIR PHYSICIAN AND ASSOCIATIONS WITH PATIENT ACTIVATION

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Patient activation involves 4 developmental stages 1) patient recognition of the importance of their vital role in health management 2) patient development of confidence and acquisition of information necessary to be an active participant in health management 3) actively participating in health actions, and 4) maintenance of active health management despite challenges, such as stress. The relationship and communication between physicians and patients may play an important role in supporting patients in the process of becoming activated: patients with positive interactions with their providers may be more likely to develop the necessary skills and tenacity to maintain active involvement in health maintenance. Understanding patient-provider communication factors that contribute to activation is important to support patients in developing greater activation. A survey of 810 patient participants receiving care in primary care clinics in rural communities was conducted to understand patient experience in primary care clinics. Patients with at least one chronic illness were more heavily recruited to ensure that participants had a need for regular follow-up care and interaction with their provider. The participants were likely to report a chronic illness (79%) and were largely female (61%, 39% male) with 42% over age 65 and mean education level above high school graduation. In a telephone survey, participants were asked to relate their experiences with their primary care physician over the preceding twelve months. Participants reported on two communication areas - how often their physician listened carefully to them and whether their physician was helpful when talking with the patient about problems or concerns. Participants also completed the 13-item Patient Activation Measure (PAM). A regression model examining patient reports of activation demonstrated that age, and two items about communication with their provider were related to patient activation whereas patient gender was not. Patient reports that the doctor really listened ($\beta = .10$; p .05) was not (F (4, 600) = 13.10; $p < .01$). Results suggest that sensitive communication style from a primary care physician may be an important contributor to patient activation. Implications include interventions to support providers in developing communication skills to foster patient activation particularly for older patients.

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C145 6:00 PM-7:00 PM

THE PROVIDER-PATIENT RELATIONSHIP AND SATISFACTION WITH CARE AMONG HIGH AND LOW ACCULTURATED LATINA BREAST CANCER SURVIVORS

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Due to advances in breast cancer detection and treatment, the average 5 year survival rate is 89%. Thus, efforts to improve health outcomes during survivorship are a high priority. Converging evidence suggests that the quality of the provider-patient relationship is not only associated with satisfaction with care, but also associated with improved health outcomes and better quality of life.

Important factors in the provider-patient relationship have been shown to include participatory decision making (PDM), trust in the physician, and being treated as an equal partner. Several recent studies have identified disparities in PDM with Latina patients exhibiting the lowest rates of PDM and poorest physician-patient communication; however, this group generally has the highest ratings of satisfaction with care. This paradoxical finding may be attributed to the fact that prior studies have not considered acculturation factors, including English language proficiency, which are likely to impact physician-patient communication and patients' confidence in initiating participation in treatment decision making.

Objective: This study aimed to address this gap in the literature by examining: 1) Associations among three factors important to the provider-patient relationship: PDM, trust in physician, and being an equal partner, 2) Associations between these qualities and satisfaction with care, and 3) Whether acculturation differences moderate the association between these qualities of the provider-patient relationship and satisfaction with care.

Method: Data were derived from 70 surveys completed by Latina breast cancer survivors.

Results: PDM scores were positively correlated with trust ($r = 0.48$, $p < 0.001$) and satisfaction with care ($r = 0.39$, $p < 0.001$), irrespective of acculturation status. In higher acculturated women, lower trust ratings were associated with lower satisfaction with care; however, associations between trust and satisfaction with care were not observed in women with lower acculturation status (F (1,66) = 5.43, p=0.02). Being treated as an equal partner was not significantly associated with ratings of satisfaction with care in either of the acculturation groups of our sample.

Discussion: High-acculturated patients may have greater familiarity with the healthcare system, and thus have adapted expectations that are in-line with those of non-white Hispanic women. Low-acculturated patients, in contrast, may not have the same expectations of trust for contributing to their ratings of care. Implications for providing high-quality care for diverse women will be discussed.

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C146 6:00 PM-7:00 PM

THE RELATIONSHIP BETWEEN FORGIVENESS, WELL-BEING AND HEALTH-INFORMATION SEEKING BEHAVIOR IN A SAMPLE OF LGBTQ INDIVIDUALS

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Forgiveness has been found to be beneficial to human health in previous research, suggesting that this construct may be protective of health. Well-being also appears to promote health as those who are lower on life satisfaction tend to have poor to fair general health and that life satisfaction was related to positive health outcomes. Forgiveness and well-being both tap into the health-information seeking behavior (HISB) construct as part of the overall health construct. Previous studies regarding HISB have mostly looked at the general population; therefore, the purpose of this study was to see if a relationship exists between forgiveness, well-being and HISB in a minority (LGBTQ) population.

Participants (N = 136) for the study were recruited through social media and the Q Center – a safe space for Portland's LGBTQ community - and asked to take an online survey through Qualtrics, a survey-building website. The survey consisted of a consent form, demographic information, Heartland Forgiveness Scale, Flourishing Scale, Krantz Health Opinion Survey and a thank you note. Participants were asked to complete the survey in one sitting to ensure privacy and anonymity and took less than 30 minutes to complete.

Multiple regression analysis found marginal significance between well-being and behavioral HISB (b = .044, SE = .023, p = .059) with higher well-being scores indicating less behavioral involvment in healthcare needs. Situational forgiveness and informational HISB was significant (b = .135, SE = .059, p < .05) as situational forgiveness increased, information seeking declined. Finally, well-being and informational HISB was significant (b = -.086, SE = .20, p < .01) indicating that LGBTQ individuals who scored higher on well-being were more likely to be actively involved in seeking out information regarding their healthcare needs.

These findings reveal that a relationship exists between forgiveness, well-being and HISB in this sample; therefore, it would be prudent to utilize this connection in future studies as tools

to better combat health disparities in the LGBTQ population, as previous studies denote that this community does not seek out health information and treatment on par with the general population due to prejudice and discrimation.

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C147 6:00 PM-7:00 PM

TOBACCO INFORMATION SEEKING AND SOURCES OF HEALTH INFORMATION AMONG RACIAL/ETHNIC GROUPS

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Introduction

Racial/ethnic differences in tobacco use may be explained by different levels of access and use of tobacco-related health information. The objectives of the study are to describe the different sources of health information and the different types of tobacco-specific information that are sought after among specific racial/ethnic groups.

Methods

We analyzed cross-sectional data from HINTS-FDA 2015, a nationally representative survey of non-institutionalized U.S adults. Weighted bivariate analyses assessed differences in first sources of health information and types of tobacco information sought among racial/ethnic groups. Racial/ethnic groups examined included non-Hispanic (NH) White, NH-Black, Hispanics, NH-Asian and Pacific Islander, and NH-Other.

Results

A significantly higher proportion of NH-Whites (13%) compared to NH-Asians and Pacific Islanders (4%) reported ever searching for information related to cost/coupons for tobacco products.

Among NH-Other, a higher proportion of respondents who sought health information from print media and traditional sources (59%) or the Internet (34%) reported searching for information related to the health effects of tobacco compared to those who sought information from interpersonal health sources (< 1%).

Among NH-Blacks, respondents who sought health information from print media and traditional sources had a significantly lower proportion of those who ever searched for

information related to quitting (1%) compared to those who sought information from the Internet (12%) or the interpersonal health sources (30%). A similar same pattern was found among Hispanics with regard to information related to cost/coupons: print media and traditional sources (< 1%), Internet (7%), and interpersonal health sources (26%).

Among NH-Blacks, non-current tobacco users had a significantly higher proportion of those who sought health information from the Internet (70%) compared to those who sought information from print media or traditional sources (12%) or interpersonal health sources (18%).

Conclusions

Information seeking behavior varies by information type and source of the information across racial/ethnic groups. The current research suggests that different strategies, such as culturally tailoring messaging and leveraging the use of preferred information channels, could more effectively reach specific racial/ethnic groups.

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C148 6:00 PM-7:00 PM

PENNSYLVANIA POLICYMAKERS’ ATTITUDES & KNOWLEDGE REGARDING WATERPIPE TOBACCO SMOKING & ELECTRONIC NICOTINE DELIVERY SYSTEMS

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Introduction. While youth smoking of traditional cigarettes is decreasing, waterpipe tobacco smoking (WTS, also known as hookah smoking) and use of electronic nicotine delivery systems (ENDS, such as e-cigarettes) are rapidly increasing. However, most current nicotine and tobacco regulations, do not apply to WTS and ENDS. Furthermore, legislatures have been slow to update policy measures related to them. Therefore, we sought to assess knowledge of and attitudes toward WTS and ENDS among members of the Pennsylvania legislature.

Methods. We approached all standing members of the key health and welfare committees for both the Pennsylvania House and Senate. Recognizing that this is a notoriously difficult population to assess, we developed a complex protocol that allowed completion via mail, email, or fax. To assess knowledge, we asked participants to self-report familiarity with these products using a visual analogue scale. We also asked 14 factual items related to WTS and ENDS; items were based upon recent data reports including the 2014 National Youth Tobacco Survey. To assess attitudes, we included 5 items based upon current pending legislation concerning substance regulation. Additionally, participants ranked different substances of abuse from highest to lowest legislative priority. We also included four open-ended items, and three independently working researchers analyzed responses to these items using thematic analysis.

Results. We received responses from 13 of 25 eligible individuals (52%). On a scale from 0 (not at all familiar) to 100 (very familiar), participants ranked their familiarity with WTS and ENDS as 28 (SD=15) and 50 (SD=13), respectively. Participants answered a mean of 27% (SD=20) of knowledge items correctly. With regard to legislative priority of substance abuse, WTS ranked eighth (least urgent) and ENDS ranked fifth. Thematic analysis revealed that the most

common sentiment was that policy makers were eager for additional information and guidance around these substances.

Conclusion. Despite the fact that tobacco use remains a leading cause of preventable death worldwide, lawmakers exhibit a lack of knowledge concerning newer forms of tobacco and nicotine and consider them to be relatively low legislative priorities. However, respondents did express a desire for more information about these substances, suggesting the potential for public health entities to promote effective policy development via improved dissemination of information.

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C149 6:00 PM-7:00 PM

DEVELOPING A BIOBEHAVIORAL HIV INTERVENTION FOR HIGH-RISK DRUG USERS: TAKING INTO ACCOUNT IMPACT OF NEUROCOGNITIVE IMPAIRMENT

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Introduction: There is an urgent need for innovative approaches to the prevention of HIV transmission. Innovative 'combination' approaches can be comprised of both evidence-based biomedical and behavioral interventions while incorporating strategies to accommodate a wide range of neurocognitive deficits (NCI) for many people who use drugs (PWUDs). We therefore conducted formative research aimed at systematically adapting and combining evidence-based interventions that integrates HIV risk reduction, strategies to accommodate cognitive deficits, and encourage uptake and adherence to pre-exposure prophylaxis (PrEP) to implement among drug users in treatment.

Methods: Between May and June 2016, we conducted structured focus group sessions with treatment providers (n=10) and members of the target population (n=20) who were enrolled in a community-based methadone maintenance program in New Haven, Connecticut. Data analysis followed a thematic analysis approach utilizing several qualitative data analysis techniques, including inductive analysis and cross-case analysis.

Results: Given the parameters that were suggested, it seemed appropriate to refine the CHRP intervention – an evidence-based behavioral intervention that has demonstrated efficacy in reducing drug- and sex-related HIV risk behaviors – by focusing primarily on a range of relevant topics pertaining to reducing sex- and drug-related HIV risk behaviors. We also concluded that greater emphasis would be given to certain strategies to accommodate participants with NCI in order to help them to better concentrate, learn, and remember details. Additionally, it was noted that the revised intervention should cover content specific to PrEP, including basics about PrEP, potential motivation driving PrEP use (e.g., pros and cons of achieving high levels of adherence to PrEP), problem solving (e.g., improving strategies for identifying and overcoming obstacles to adherence), facilitators to PrEP adherence (e.g., learning memory aids for improving adherence), enhancing decision-making related to PrEP, and overcoming stigma related to being on PrEP.

Conclusion: The current study details the formative research process in preparation to adapt and to enhance an EBI – taking into account both published empirical evidence and input from target population and treatment providers – for use with high risk PWUDs and are in drug treatment. The resulting bio-behavioral intervention, the CHRP-NCI, is designed to address the HIV-related risk behaviors and PrEP uptake and adherence as experienced by many the drug users in treatment. We hope that the process and outcome of this formative research will help to inform similar work in the future as a growing number of EBIs have become widely available, but may not yet be in optimal form for implementation among individuals with neurocognitive issues.

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C150 6:00 PM-7:00 PM

FOOD INSECURITY, DEPRESSION, AND ALCOHOL USE IN PERSON'S LIVING WITH HIV

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Background: Food insecure persons living with HIV/AIDS (PLWHA) suffer desperate economic circumstances and are at a higher risk for poorer mental health outcomes, which in turn may lead to maladaptive coping behaviors, such as alcohol use. Due to a compromised immune system and the need to be on anti-HIV medication in order to suppress HIV replication, the use of any alcohol places PLWHA at greater health risks. Furthermore, the association of food insecurity and Alcohol use may be co-facilitated by depression.

Aims: The aim of this study was to assess the impact of depression on alcohol use in food insecure PLWHA.

Methods: Analyses were carried out on a 171 PLWHA in Atlanta, Georgia. Participants were recruited as part of an intervention trial aimed at decreasing alcohol use in PLWHA. Baseline data was collected at enrollment where participants were consented and asked to complete an anonymous survey that included the Center for Epidemiologic Studies Short Depression Scale (CESD-10) and the Alcohol Use Disorders Identification Test (AUDIT) as well as a measure of food security.

Results: Our sample was primarily Black (94%), 64% were male and 36% female, mean age was 47.2 years, SD = 9.3. A mediation model was constructed to assess the affects of depression on food insecurity and alcohol use, with AUDIT score as the continuous outcome variable, CESD-10 score as the continuous mediator variable, and food insecurity as a dichotomous predictor. The model displayed a statistically significant indirect effect as expressed by a 95% confidence interval that is above zero (CI = .352 – 1.82). The indirect effect showed that relative to participants that were food secure, participants with food insecurity scored, on average, .97 units higher on the AUDIT as a result of the effect of food insecurity on depression, which, in turn, affected their alcohol use. The direct effect was not statistically significant, which suggests that when accounting for depression there was no effect on food security in their AUDIT score.

Conclusion: Our findings suggest depression mediates the use of alcohol in food insecure PLWHA; however, results may not be generalizable to other PLWHA. Even so, these results

suggest important findings that should be further explored and considered in future intervention development for PLWHA living in poverty.

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C151 6:00 PM-7:00 PM

PATIENT REPORT VS “OBJECTIVE MEASURES” IN PREDICTING EVERYDAY FUNCTIONING OUTCOMES IN HIV+ ADULTS

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Functional disability is a common and growing problem in older HIV+ adults. Due to the new generation of antiretrovirals, HIV+ individuals are living longer, producing an emerging need for researchers to identify and treat real-world functioning problems. This study assesses ways to predict such problems in older HIV+ adults by evaluating functional capacity and cognitive complaint constructs as they relate to everyday functioning. One hundred HIV+ adults (Mean age=50 years; range: 35-65 years) completed a comprehensive neuropsychological and neuromedical battery, including a measure of functional status (IADL Dependence vs. IADL Independence), an objective measure of functional capacity (UCSD Performance-Based Skills Assessment-Brief [UPSA-B]) and a self-report measure of cognitive complaints (Profile of Mood States [POMS]-Confusion/Bewilderment subscale). Higher UPSA-B scores were related to better global neuropsychological ability, but unrelated to functional independence ($p>0.05$). Conversely, while POMS scores were unrelated to global neuropsychological ability or the UPSA-B, lower POMS scores were significantly associated with functional independence (*p*p < 0.001) than the area of no information (AUC of 0.50). A cutoff score of 7.5 best discriminated between functional dependence vs. functional independence, with a sensitivity of 73.1% and specificity of 71.3%. This study found that the POMS demonstrates good support as a brief screening tool for functional dependence among adults living with HIV. Functional disability among adults HIV+ is still not well understood and is likely multifactorial in nature. Self-appraisals of cognitive status may be just as important (or perhaps even more so) than actual cognitive or functional ability in understanding real-world problems in everyday functioning.

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C152 6:00 PM-7:00 PM

PERCEIVED RISK OF HIV TRANSMISSION APPRAISAL AMONG MSM WHO ARE PREP AWARE VERSUS PREP UNAWARE

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New diagnoses of HIV in Men who have sex with men (MSM) are 44 times that of men who do not have sex with men (CDC, 2015). Current HIV treatments, daily-dosed antiretroviral therapy (ART), reduce the amount of HIV in the body preserving immune functions. Additionally, ART serves as a prevention strategy, treatment as prevention (TasP), preventing transmission to others (CDC, 2015). Although TasP is efficacious in preventing transmission, it remains unclear how MSM perceive the relative risks of condomless receptive anal sex with a partner who is using TasP. Moreover, the perceived risk of sex with an HIV positive partner using TasP may be associated with awareness of using ART as pre-exposure prophylaxis (PrEP). PrEP is the use of a daily dose of ART in HIV negative individuals to prevent infection if exposed to HIV. Previous research has indicated that a central predictor of attending to health information and engaging in health behavior is perceived risk (Gerard et al., 1996). Therefore, perceptions of sexual risks with a partner using Tasp may be related to knowledge of PrEP. The present study examined whether perceptions of risk associated with engaging in condomless anal sex with a TasP-using partner generalizes across MSM who are aware of PrEP and those who have no prior knowledge of PrEP.

Participants (267 MSM) were surveyed during the 2015 Atlanta Pride Festival. Surveys assessed demographics, sexual behaviors, and health care experiences. Risk perceptions were assessed through four 5-point measures under two condition; (1) condomless anal with an HIV positive partner using TasP, and (2) condomless anal sex with an HIV positive partner not receiving treatment. For each condition participants rated risks for both receptive and insertive anal sex.

Results demonstrated that MSM who were aware of PrEP reported significant differences in receiving health care in the past year, and being open about their sexual orientation Additionally, PrEP aware MSM did not report a significant difference in engaging in condomless receptive anal sex compared to PrEP unaware MSM, p =.96. Regarding perceived risk of engaging in condomless anal sex, PreP aware MSM reported significantly greater risk perceptions of engaging in the highest risk behavior, condomless receptive anal sex with an HIV positive partner not receiving treatment, than those who were not aware of PrEP p = .02. However, risk perceptions of engaging in lower risk behavior, condomless insertive anal sex

with an HIV positive partner using TasP, were not significantly different for PrEP aware MSM compared to PrEP unaware MSM p = .09. These findings suggest that PrEP awareness is associated with HIV TasP risk perceptions reflecting a realistic view of risks, whereas unawareness of PrEP may be related to misperceptions of risk related to TasP. These results have implications for educating MSM more generally about HIV prevention treatments to increase PrEP uptake.

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SELF-EFFICACY MEDIATES THE ASSOCIATION OF DEPRESSION TO ANTIRETROVIRAL MEDICATION ADHERENCE AMONG HIV-POSITIVE OUTPATIENTS

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Adherence to prescribed antiretroviral therapy (ART) is a central feature in the clinical management of HIV. Although several studies have documented the negative effects of depression on ART adherence, little is known about the mechanisms underlying this association. In this study, we test the hypothesis that medication-taking self-efficacy will mediate the relationship of depression to medication adherence utilizing a sample of HIV-positive outpatients recruited during routine care (*N* = 206). Participants (*M* age = 46.5; 62% male) completed the Center for Epidemiological Studies – Depression Scale (CES-D), as well as self-report measures of ART adherence for the previous week. Across the sample, 62% endorsed clinically significant depressive symptomatology on the CES-D. Nevertheless, participants reported missing few antiretroviral doses in the past week (*M* = 0.10, *SD* = .26). Mediation analyses confirmed that depressive symptoms were negatively associated with medication-taking self-efficacy (*b* = -1.20, *SE* = .29, *p* < .001), and there was a significant correlation of medication-taking self-efficacy with the number of missed antiretroviral doses for the past week (*b* = -.06, *SE* = .01, *p* < .001). Although depressive symptoms were not directly associated with ART adherence (*b* = -.03, *SE* = .04, *p* = .38), a test of the indirect effect of depressive symptoms on ART adherence via medication-taking self-efficacy was significant (*b* = .07; bootstrap 95% CI: .03, .14). Thus, findings support the hypothesis that medication-taking self-efficacy mediates the association between depressive symptoms and ART adherence assessed for the previous week. Behavioral interventions to enhance self-efficacy may benefit from the inclusion of content focusing on alleviating depressed mood as a means of enhancing ART adherence.

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VARIATION IN THE FORMS AND SOURCES OF SOCIAL SUPPORT FOR CARE-SEEKING ACROSS THE HIV CARE CONTINUUM IN THE RURAL SOUTH

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In spite of progress towards understanding the importance of social support for improved health outcomes in Persons Living with HIV (PLWH), more remains to be known about which sources and forms of support are most beneficial at each stage of HIV treatment. In this study, we use a qualitative analytic approach to investigate the mechanisms of social support that have been deemed most integral to the HIV diagnosis, care linkage, engagement, and retention behaviors of a diverse sample of rural PLWH (N=18). The in-depth interviews used for this study were collected during the qualitative phase of a larger mixed methods needs assessment for the Northeast Georgia health district. A deductive-inductive analysis of participant narratives revealed variation in the perceived importance of particular forms and sources of social support during the initial versus advanced stages of HIV care. Participants identified the emotional, informational, and appraisal support provided by family as critical for emotional stability, coping, and care linkage during the initial stages of diagnosis and treatment. Once in care, participants emphasized informational and instrumental forms of support from care providers and appraisal support from peers as key influences in care engagement and retention. Increased understanding of how social support contributes to the HIV treatment behaviors of PLWH can fill important knowledge gaps in research and inform the efforts of health care providers seeking to leverage HIV patients' social networks towards improving treatment and health.

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BEHAVIORAL HEALTH NEEDS ASSESSMENT OF AN UNDERSERVED URBAN FAMILY MEDICINE CLINIC

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Title: Behavioral Health Needs Assessment of an Underserved Urban Family Medicine Clinic

Objective: Family medicine clinics are a common access point for mental health care for underserved populations. These patient groups often have limited access and other barriers to receiving adequate mental health services, which can place the burden on physicians to provide extensive behavioral healthcare. In 2015, integrated behavioral healthcare (IBHC) services were added to a safety net family medicine clinic to address these needs. Currently, psychology doctoral students provide pro-bono, IBHC sessions at this clinic. The present study describes this population and delineates behavioral health needs of this vulnerable population.

Methods: As part of regular patient monitoring, English or Spanish versions of the Patient Health Questionnaire-9 (PHQ-9), the Generalized Anxiety Disorder-7 (GAD-7), and Pediatric Symptom Checklist-17 (PSC-17) are administered to screen for depression and anxiety in adults and externalizing/internalizing behaviors in children, respectively. Presenting problems and session length/type are also documented daily.

Results: The family medicine clinic provided services to more than 3,500 unique patients resulting in 10,000 medical visits annually. The population was 58.3% African American, 24.2% Caucasian, 22.9% Hispanic/Latino, and 17.5% other race/ethnicity. Further, 28.8% of patients were

In the initial year of IBHC clinic, 687 unique patients (19.4% of the clinic population) were provided IBHC services for 1560 sessions. The PHQ-9 and GAD-7 for an initial sample of 105 patients (64% African American, 22% Caucasian, 7% Hispanic/Latino, 7% other) indicated that those who are referred to the IBHC team have moderately severe levels of depression (*m*=15.2) and moderate levels of anxiety (*m*=13.1). Descriptive statistics for presenting problems, length of sessions, and session interventions will be provided.

Conclusion: This sample provides a unique view of the needs of a largely minority urban population with limited access to mental healthcare. Early indications show that patients referred to the IBHC team have significant behavioral healthcare needs that were likely unmet prior to initiation of these critical services.

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PATIENT RETENTION: THE KEY TO SUCCESSFUL SHARED MEDICAL APPOINTMENTS.

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Shared medical appointments (SMA’s) optimize patient and provider time through a team based, interprofessional approach. SMA’s have been shown to reduce hemoglobin HbA1C, blood pressure, and LDL cholesterol; boost adherence to ADA standards of care; and decrease hospitalization rates. Although research has demonstrated that SMA’s improve health related outcomes, literature also indicates that poor retention rates of patients have affected health related outcomes. We undertook a mixed-methods study to explore why our SMA program had a high rate of retention and achieved success.

This study took place at a Joint Commission certified Primary Care Medical Home. Patients with poorly controlled Type 2 diabetes, determined as HbA1C greater than 8.0% were invited to participate in the project. A total of 21 patients chose to participate. Four SMA group cohorts were formed—participants joined whichever meeting time was convenient for them. Ultimately, group sizes ranged from 4-6 participants. In order to maintain cohesion, new patients were added to these groups once per year.

At the end of year one, 18 of the 21 participants (86%) who attended the first SMA continued to participate. At this time, we performed a quantitative pre/post study of clinical outcomes and survey responses. Quantitative tools included the Patient Health Questionnaire-9, the Diabetes Lifestyle Survey, and the Full Circle Diabetes Program. A1C and other biometric screenings were analyzed. Qualitative investigation included four semi-structured interviews that assessed: barriers patients faced before joining SMAs; how patients increased control over diabetes; changes in mood; patients’ overall experiences of SMAs; perceptions of the value of SMAs; and patients’ confidence in sustaining learned coping behaviors. These interviews were held at the conclusion of the year two.

Quantitative and qualitative findings depicted patients experiencing increased psychosocial wellbeing and improved adherence to treatment regimens. Qualitative findings highlighted that SMAs reduced barriers to self-management, through the accessibility of resources provided by the inter-professional team.

First, the presenter will highlight the implications of SMA’s. Second, the presenter will discuss the findings of this study. Third, the presenter will highlight the importance of retention in SMAs and how to achieve this.

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PROVIDER PRACTICES AND PATIENT PERSPECTIVES REGARDING THE MANAGEMENT OF MULTIMORBIDITY AMONG OVERWEIGHT AND OBESE VETERANS

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Roughly 77% of veterans are overweight or obese (Kahwati, Lance, Jones, & Kinsinger, 2011). Among primary care patients, overweight and obesity is associated with a greater likelihood of multimorbidity (Booth, Prevost, & Guilford, 2014), defined as the prevalence of one or more conditions (Valderas et al., 2009). Because multimorbidity is associated with increased cost of healthcare expenses, increased mortality, and greater healthcare utilization (Wolff, Starfield, & Anderson, 2002), it is imperative for research to identify facilitators and barriers to reduce the prevalence and consequences associated with multimorbidity. To date, existing research has not examined primary care provider practices in the management of multimorbidity among patients who are overweight and obese, in conjunction with patients' perspectives regarding these practices. The purpose of this study is to examine primary care provider referral practices for multimorbidity among a sample of overweight and obese veterans. A secondary goal of this study is to examine patients' perspectives regarding the management of multimorbidity. We examined chart data and performed telephone-based interviews for overweight and obese primary care patients (*N* = 45) who screened positive for four annual behavioral health screens (i.e., at-risk drinking, tobacco use, depression, and PTSD). On average, veterans had 3.6 (*SD* = 1.34) comorbid conditions, and were prescribed 3.4 (*SD* = 2.77) medications. Results indicated primary care providers were more likely to place behavioral treatment referrals for smoking cessation (60%), depression (44.4%), weight management (44.4%), and PTSD (26.7%), as compared to alcohol use (15.6%) and sleep (8.9%). Meanwhile, veterans were more likely to attend referrals for PTSD (50%), depression (45.0%), alcohol use (28.6%), and sleep (25.0%), as compared to weight management (10.0%), and smoking cessation (3.7%). These findings highlight the need for using a multidisciplinary treatment approach amongst members of the primary care team in the management and treatment of patients with multimorbidity. Limitations and future directions will be discussed.

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SELF-MANAGEMENT STRATEGIES FOR STRESS AND ANXIETY USED BY NON-TREATMENT SEEKING PRIMARY CARE PATIENTS

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The majority of individuals with anxiety disorders and subthreshold symptoms do not seek or receive formal mental health treatment. One of the most common reasons for this is a preference to manage emotional concerns on one's own. Self-management refers to the strategies or techniques that individuals use on their own (i.e., without professional guidance) to manage their symptoms. If promoted as the first step in a stepped care model of primary care treatment for subthreshold and mild anxiety symptoms, self-management holds great potential for prevention and early intervention. However, little research has examined self-management for anxiety. Therefore, the objectives of this study were to describe patients' anxiety self-management strategies, identify which types of strategies were perceived to be effective, and explore potential correlates. Participants were 182 non-treatment seeking Veteran primary care patients (*M* age=58.3 years, *SD*=14.9) who reported current anxiety symptoms (≥8 on the Generalized Anxiety Disorder-7, *M*=14.2, *SD*=3.7). Self-management strategies were assessed via telephone and coded by two independent raters into one of 7 categories (kappa=.85) and 23 subcategories (*M* kappa=.82). Participants reported nearly universal (98%) use of self-management, with an average of 2.96 (*SD*=1.2) strategies used in the past three months, and 91% of all strategies perceived as effective. Self-care (37.0%), cognitive (15.8%), and avoidance (15.1%) strategies were reported most commonly; more specifically, the most prevalent strategies were exercise (11.0% of all strategies), redirecting thoughts (9.1%), and family/friends (8.1%). Sex, age, and depression screen status were associated with self-management strategy use. This study demonstrates the ubiquity and high perceived effectiveness of self-management for anxiety among primary care patients. Further research should explore the utility of promoting evidence-informed self-management for anxiety in primary care, given its potential as a wide-reaching initial step in a population-based approach to stepped care. Primary care providers and integrated behavioral health providers can encourage patients to use healthy, effective self-management strategies to cope with anxiety symptoms.

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THE ELEPHANT IN THE EXAM ROOM: MEDICAL PROVIDER PERCEPTIONS OF AND COMFORT IN DISCUSSING WOMEN'S BEHAVIORAL HEALTH NEEDS

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Primary care has become the defacto mental health system in the country, with 70-90% of all visits entailing a psychosocial or behavioral component. Similarly, OB/GYN practices address women’s health needs across the lifespan. Research is limited on behavioral health integration into specialty care clinics, like OB/GYN. This grant funded study aimed to 1) ascertain women’s health specialty provider perceptions of patient behavioral health needs and 2) understand attitudes and perceived barriers to referral to and collaboration with behavioral health.

Methods: Two distinct, 90-minute focus groups were conducted and recorded by an independent moderator trained in focus group facilitation. Focus group discussions centered on participant awareness of the mental and behavioral health needs of patients, barriers to behavioral health referral and access, and strategies for remediating problems. The groups consisted of 1) physicians and advanced practitioners and 2) nursing staff and medical assistants. A trained research assistant transcribed the recordings, and the research team coded the transcript for themes.

Results: Analysis revealed three main themes: Patient needs, barriers to access and solutions. Within the main themes, subthemes were evident. Patient needs were identified according to life transition (ante- and post-natal periods, menopause, infertility, sexual health, cancer diagnosis), health behaviors (smoking, obesity, pain management), traditional mental health and substance abuse, and domestic violence and relationship conflicts. Barriers to access included: provider experience with and knowledge about behavioral health integration; issues around patient access (cost, transportation, time commitment, stigma/reluctance to consult); provider access to behavioral health during the office day (lack of warm hand offs and same day appointments, limited presence in clinic, uncertainty about outcome of referrals). Solutions included improving workflow (referral process, office space, billing, creating opportunities for warm hand offs and same day appointments), use of telemedicine to increase patient access and increase the presence of behavioral health in the clinic.

Discussion: Results suggest that focus group participants are aware of patients’ psychological distress and problematic health behaviors yet lack knowledge of the role of behavioral health in integrated care settings. At the same time, participants enthusiastically welcomed the

integration of behavioral health into the specialty women's setting. While barriers to access were identified, participants also generated several possible solutions to enhance integration efforts. Future research will focus on how provider education impacts patient acceptance of behavioral health referrals, and whether services improve overall patient health and wellbeing.

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THE IMPACT OF URGENT VISITS ON DELIVERING HOME-BASED PRIMARY CARE TO HOMEBOUND SENIORS

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Background: Home-based primary care (HBPC) is a multidisciplinary care delivery model that provides comprehensive longitudinal care to medically complex seniors in the home. Recent studies demonstrate HBPC can result in better quality of care at a lower cost for homebound older adults. The over four million homebound seniors in the US represent a significant proportion of the most costly Medicare beneficiaries. These seniors are typically frail with multiple chronic conditions, behavioral health conditions, and functional disabilities. Without easy access to primary care, homebound seniors resort to the emergency department and hospitalizations when they experience exacerbations of their chronic conditions. In fee-for-service Medicare, the number of patients visited per day by the provider can impact the sustainability of the practice.

Methods: A clinical practice quality improvement project was undertaken at one mid-Atlantic HBPC practice to determine potential efficiency solutions. The nature and impact of urgent visits on nurse practitioners' (NPs) daily workflows was examined to determine ways to improve how the practice managed these unscheduled appointments. GPS software on mobile tablets tracked patient visits of 5 NPs from September 29th to December 24th in 2015.

Results: During the data collection period NP's visited 416 of the 589 patients in the practice (71%) at least once. A total of 711 visits were tracked and matched out of 1448 visits (49%) logged in the practice's arrival database. The majority of house call visits were scheduled regular visits (79%), 6% were follow-up visits after hospitalization, and 15% were urgent visits. Patients with a greater number of visits had a greater proportion of urgent visits ($X^2_{(5)} = 32.7$, p $2_{(4)} = 30$, $p < .001$), but urgent visits did not vary by time of day. Travel time and visit-duration at patients' homes did not vary by visit type. The top three most frequently used ICD-9 codes, regardless of visit type, were for hypertension, constipation, and immunization. When ICD-9 codes were used for billing a home visit, 70% of urinary tract infection, 53% of insomnia, and 50% of Type 2 diabetes with peripheral angiopathy codes were used for urgent visits.

Conclusions: Although NPs reported they reserve time in their schedules in anticipation of urgent visits, these visits only occurred 15% of all house call visits. In many respects, urgent visits did not differ in nature from routine house call visits. The commonly used ICD-9 codes across all visit types suggest some urgent appointments might not need a same-day visit. Changing the work flow and management of urgent visits across NPs in the practice might allow for an increase in the volume of house call visits/day without decreasing quality of care delivery.

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WILLINGNESS TO ENGAGE IN TOBACCO AND ALCOHOL INTERVENTIONS DEPENDS ON FOCUS BUT NOT FORMAT OF THE INTERVENTION

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Background. Integrated primary care is an optimal setting for the delivery of interventions for tobacco use and at-risk drinking, but rates of implementation are low. Patient perspectives on the focus and format of interventions they would be willing to engage in may help to improve the rates at which these types of interventions are received. *Objective.* We examined the extent to which willingness to engage in an intervention was influenced by the described (1) focus and (2) format of the intervention. *Design.* This was a one-time telephone survey. *Participants.* Patients who had recently attended a primary care appointment and who screened positive for tobacco use and at-risk drinking were eligible to participate. Data from patients who used cigarettes and met criteria for at-risk drinking in the last 30 days (N=53) were included in analyses. *Main Measures.* Participants rated a number of scenarios based on their willingness to engage in different services in primary care on a scale from 1 (“highly unlikely”) to 5 (“highly likely”). *Key Results.* Participants reported that they would be more willing to engage in services focused on helping them reduce their risk of medical problems than in services focused on discussing cigarette or alcohol use. They did not indicate a preference related to whether the intervention was delivered by a behavioral health provider during a primary care appointment, immediately following a primary care appointment, or as a scheduled follow up. *Conclusions*. Framing services for tobacco use and at-risk drinking as a way to reduce patients’ risk of medical problems may increase willingness to attend these interventions. Patients reported being equally receptive to receiving brief interventions in several different formats available in integrated primary care settings.

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WOMEN’S PELVIC EXAM EXPERIENCE: A PATIENT-CENTERED VIEW

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Background: Women commonly describe the pelvic exam (PE) as a negative experience. Yet it is also a routinely conducted and important examination. Given these factors, researchers in medicine, psychology, and public health have explored factors that influence women’s pelvic exam experiences to inform patient-centered best practices for this routine procedure. However, little of this research is focused on urban low-income and ethnically diverse groups within the United States.

Methods: In depth interviews were conducted with 11 cisgender women, recruited from a federally-qualified community based health center network providing integrative care in NYC. Participants reflected the center’s diversity (46% African-American/Black; 55% Latina; 64% heterosexual). Forty-six percent reported at least some college or post secondary vocational training). Interviews explored participants understanding of the purpose of the PE; early and recent experiences of the PE; descriptions of PE’s that went well and PE’s that went poorly; and recommendations for improving the PE. Interviews were transcribed verbatim, and transcripts were evaluated using a thematic content analysis approach consisting of coding and interpretation of the data by team consensus.

Results: Among participants, first-time PE’s often were experienced in the context of a stressful medical/reproductive circumstance. The PE remained (to varying degrees) a stressful experience, but for some participants, it was also described as a “self-care” activity that allowed them to exercise agency in relation to their body/health. Study findings highlight emotional (e.g., anticipatory anxiety) and behavioral (e.g., avoidance) responses to the PE, and participants’ PE coping strategies. Strategies for improving the PE suggested by participants include improved communication/explanation and acknowledging the patient experience. Several participants expressed a preference for a female provider. Findings are contextualized in relation to participants’ self-reported trauma history.

Conclusions: Although many women view the PE as a stressful medical experience, these findings highlight both negative *and* positive dimensions of the PE among study participants.

Further, these results highlight strategies for improving practitioner training, and support the approach of trauma-informed care.

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A SYSTEMATIC REVIEW OF MENTAL HEALTH AND WELLNESS INTERVENTIONS FOR MEDICAL STUDENTS

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Background: Medical students have some of the highest rates of depression, anxiety diagnoses, suicide, stress, and burnout. Programs developed to prevent or treat these issues are being conducted and evaluated. Methods: A systematic review of programs/interventions was conducted. PsychInfo, Pubmed, SCOPUS, and EMBASE were searched for articles from Jan 1990 to June 2016 based upon predetermined inclusion criteria. The search yielded a total of 1743 titles/abstracts. Thirty-eight articles were coded after reviewing the titles/abstracts and removing duplicates. Results: Of the 38 articles coded, 27 were intervention studies (9 were randomized controlled trials [RCTs]) and 11 were focused on the medical school curriculum. Most of the programs involved first year students only or students from all four years of medical school. The types of programs were categorized as course/curriculum modification (e.g., new course or program change), psychological intervention (e.g., mindfulness), wellness program, mental health referral program, and other. The majority of the programs were psychological interventions (n=15), followed by course/curriculum modification (n=11). The duration of the program was highly dependent on the type of intervention provided to the students, such that curriculum changes were over a semester or ongoing, whereas RCTs ranged from 4 to 8 weeks. The number of participants ranged from 5-1,008. Fourteen psychological intervention studies (n=7 RCTs) provided results; twelve of the fourteen demonstrated significant improvement on measures of stress, anxiety, depression, and/or mindfulness. For the course/curriculum modification studies, all but one study had significant findings which showed a positive change in stress, anxiety, and/or depression. Conclusion: This systematic review suggests that psychological interventions and course/curriculum modifications benefit medical students on important mental health outcomes. However, many of the studies did not include a comparison group, which limits one’s confidence that the intervention lead to the improved mental health outcomes. The long-term impact of these interventions/programs is not well documented given the minimal amount of follow-up evaluations. Further research should be conducted to address these limitations.

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ACTIVE DUTY: THE ROLE OF INCOME, DEPRESSION, AND STRESS ON HEALTH BEHAVIORS AMONG MILITARY SPOUSES

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Active Duty: The role of income, depression, and stress on health behaviors among military spouses

Aaron Swank, Emily Mailey, Brandon Irwin

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Introduction

Military spouses report high levels of stress and depression and low participation in health behaviors. Barriers such as frequent moves, isolation from family and friends, uncertainty of the spouse’s well-being, inability to find work, and sole caregiving responsibilities contribute to poor health in this population. Interventions to improve health in military spouses are needed and could focus on reducing financial burdens or improving access to mental health services. The purpose of this investigation was to enhance our understanding of factors related to health behaviors among military spouses by examining the relationships between income, stress and depression and physical activity (PA) and nutrition behaviors.

Methods

Military spouses (N=300) completed questionnaires online. Surveys included the PA and nutrition subscales of the Health Promoting Lifestyle Profile, the Perceived Stress Scale, and the Hospital Anxiety and Depression Scale. Participants also reported their annual household income. A series of multiple linear regression analyses were conducted with PA and nutrition as the dependent variables. Each analysis included income and one mental health outcome (i.e., perceived stress or depression) as an independent variable.

Results

Income was significantly assoicated with PA (B=.122, p=.03), but the relationship was no longer signifcant when depression (B=-.300, p < .001) was added to the model (B=.092, p=.11). Similarly, perceived stress was more strongly associated with PA (B= -.266, p < .001) than

income (B=.080, p=.16). Income remained significantly associated with nutrition when depression (B= -.404, p < .001) and perceived stress (B=-.315, p < .001) were added to the models.

Discussion

Both income and mental health status are significantly associated with health behaviors such as PA and nutrition, however mental health variables (e.g., depression and perceived stress) are more strongly associated with PA than income. Interventions to improve health among military spouses should address individual, social, and environmental barriers to PA and healthy eating, and should explicitly include strategies for actively managing stress and depression. These results support the position that investing in the mental health of military service members and their families should be a higher priority in military populations.

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C165 6:00 PM-7:00 PM

ACUTE STRESS DISORDER SYMPTOMS AFTER EVALUATION FOR ACUTE CORONARY SYNDROME PREDICT 30-DAY READMISSION

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Introduction: Both costly and common, 30-day readmissions are a major concern for U.S. hospitals. Numerous readmission risk prediction models have been developed, but their performance has been modest, and few predictors are modifiable. Potentially life-threatening medical events that prompt patients' index hospitalizations, along with experiences during hospitalization, can trigger psychological stress, including posttraumatic stress reactions. Stress may increase risk of adverse post-hospitalization outcomes. We examined whether posttraumatic stress days after evaluation for acute coronary syndrome (ACS)—termed acute stress disorder (ASD) symptoms—was associated with 30-day all-cause emergency department (ED) and hospital readmission.

Methods: The REactions to Acute Care and Hospitalization (REACH) study is an observational cohort study that enrolls patients during ED evaluation for ACS. During inpatient stay or by phone after discharge (median 3 days after enrollment), participants reported their ASD symptoms with respect to the event that brought them to the ED using 14 items from the Acute Stress Disorder Scale (range=14-70). Scores ≥28 suggest probable ASD. ED and hospital readmissions in the month after discharge were identified by contacting patients and reviewing electronic health records. Readmissions were confirmed by research nurse record review. Participants were excluded if they were readmitted before ASD symptom assessment or died within 30 days of discharge, resulting in an analytic sample of 974 adults (mean age=60.9±13.2 years; 45.7% female; 55.7% Hispanic; 20.7% black). Logistic regression was used to determine the association between ASD symptoms and 30-day ED/hospital readmission with and without adjustment for demographics, clinical characteristics, ACS discharge diagnosis, and depression.

Results: There were 123 ED/hospital readmissions in the 30 days after discharge. A 10-point ASD symptom increase was significantly associated with increased 30-day readmission risk in the unadjusted model, odds ratio (OR)=1.32 (95% CI, 1.12-1.56), *P*=.001, and adjusted model,

OR=1.24 (95% CI, 1.02-1.51), *P*=.03. Results were consistent when using a dichotomous probable ASD variable based on the 28+ cutoff score: unadjusted OR=1.92 (95% CI, 1.29-2.87), *P*=.001; adjusted OR=1.65 (95% CI, 1.04-2.63), *P*=.04.

Conclusions: The psychological stress that often follows ACS evaluation was associated with greater odds of 30-day ED/hospital readmission, independent of demographics, clinical characteristics, and ACS discharge diagnosis. Research is needed to examine if preventing or treating ASD symptoms may reduce readmission risk.

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ASSOCIATIONS BETWEEN NEUROPSYCHIATRIC SYMPTOMS, COGNITIVE FUNCTION, AND DAILY FUNCTIONING IN ELDERLY WITH EARLY DEMENTIA

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Background: Elderly with early dementia suffer from progressive deteriorations in cognitive functioning such as memory, spatial navigation, movement and language, leading to interferences in daily functioning. The present study aims to examine the associations between neuropsychiatric symptoms, psychosocial well-being, cognitive functioning, and daily functioning in elderly with early dementia.

Methods: The study sample was 86 elderly who were diagnosed with early dementia via a clinical dementia rating rating of 0.5 to 1. The mean age of the sample was 81.1 years old and the majority of them were female (83%), widowed (58.8%), and had at most primary education (75%). Data on neuropsychiatric symptoms, psychosocial well-being, cognitive functioning, and daily functioning were collected from the participants via cognitive tests (Digit Span Test, Fuld Object Memory Evaluation and Trail Making Test) and self-reported scales (Geriatric Depression Scale, Neuropsychiatric Inventory, Loneliness Scale, and Instrumental Activities of Daily Living).

Results: Male participants showed greater neuropsychiatric symptoms and older participants showed worse digit spans, memory storage and recall, and daily functioning. Controlling for gender and age, neuropsychiatric symptoms were negatively correlated with backward digit span, memory storage and recall. Loneliness was positively associated with depression but not with any other variables. Digit spans, particularly backward digit span, were correlated with memory storage, memory recall, trail making time and daily functioning. Higher memory storage and recall and shorter trail making time were associated with better daily functioning among the participants.

Discussions: The study findings suggest that better episodic memory, executive functioning,

and visuospatial construction are linked to fewer neuropsychiatric symptoms and better functioning in daily lives. Further studies could explore the effects of non-pharmacological interventions on ameliorating cognitive impairments and improving prognosis of dementia.

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DEPRESSIVE SYMPTOMS IN PATIENTS WITH COPD PARTICIPATING IN A PRAGMATIC TRIAL OF A PHYSICAL ACTIVITY COACHING INTERVENTION

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Depressive Symptoms in Patients with COPD Participating in a Pragmatic Trial of a Physical Activity Coaching Intervention

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Background: Depression is common in chronic obstructive pulmonary disease (COPD) with prevalence rates ranging from 20-50%.

Aim: We aimed to compare depressive symptoms between patients randomly assigned to standard care (SC) vs. a 12-month physical activity coaching intervention (Walk On!).

Methods: Walk On! is a pragmatic individual-level randomized trial testing the effectiveness of a 12-month physical activity coaching intervention compared to SC on the primary composite outcome of hospitalizations, emergency department visits, observational stays and death.

Patients assigned to Walk On! were contacted to participate in study activities, whereas SC patients were contacted to complete only the surveys without knowledge of the intervention. Participants completed an assessment of depressive symptoms using the modified Patient Health Questionnaire (PHQ-8) either during a baseline visit (Walk On!) or via postal mail/telephone (SC).

Results: A total of 235 patients completed the PHQ-8 (Walk On!=158, SC=77). Mean age of the sample is 72 (10) with 56% females and 25% non-Caucasian. Mean PHQ-8 scores were higher for SC 7.3 (6.4) compared to Walk On! 5.7 (5.0) (p=.05). The overall prevalence of PHQ-8 scores >10 was 33% vs. 15% in SC and Walk On! When patients were grouped into severity of

depressive symptoms (19=severe), more SC patients were severely depressed compared to Walk On! (8% vs. 3%, p

Conclusions: Standard care patients reported higher depressive symptoms compared to Walk On! patients. Patients who consent to participate in a 12-month physical activity coaching program are likely more activated and have better psychological well-being than patients who are responding to a mailed survey that does not ask for a high level of engagement.

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C168 6:00 PM-7:00 PM

DISPARITIES IN HEALTHCARE UTILIZATION AND FUNCTIONAL LIMITATIONS IN U.S. ADULTS WITH SERIOUS PSYCHOLOGICAL DISTRESS

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Objective: The study’s purpose was to compare healthcare utilization in adults age 18 years and over with and without serious psychological distress. Approximately 3.4% of U.S. adults have serious psychological distress, defined as having mental health problems causing moderate to serious impairment in social, occupational, or school functioning, requiring treatment. Serious Psychological Distress is associated with substantial comorbidity and up to 30 years premature mortality compared to the general population, representing the greatest U.S. health disparity. Methods: The 2006-2014 National Health Interview Survey was used to compare nine indicators of healthcare and functional impairments: no healthcare coverage, delays in healthcare, insufficient money for healthcare, change in usual place of healthcare, change in usual place of healthcare due to insurance, more than 10 doctor visits in 12 months, insufficient money to buy prescription medications, having seen a mental health provider, insufficient money for mental healthcare, limitations in ability to work and activities of daily living. Results: Compared to adults without serious psychological distress, adults with serious psychological had diminished healthcare utilization and functioning after controlling for other health conditions and sociodemographic characteristics. From 2006-2014, we observed an increasing trend in the proportion of adults with serious psychological distress who lacked healthcare coverage, experienced delays in healthcare, lacked mental healthcare and/or money to buy prescription medications. Conclusions: Our study suggests a need for greater attention to factors underlying healthcare utilization in the mentally ill, and to identify mechanisms for improving access to care.

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C169 6:00 PM-7:00 PM

EFFECT OF INDIVIDUAL DIFFERENCES ON RELATIONSHIP BETWEEN SUBJECTIVE DISTRESS AND HEART RATE DURING 7.5% CO2 CHALLENGE

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Literature suggests that an individual's self-reported experience during psychological distress is associated with their psychophysiological response. However, studies examining synchrony and concordance in these measures have found inconsistent results. Individual differences have been found that affect the relationship between physiological response and self-report. This study examines the effects of individual differences in Anxiety Sensitivity (AS) and baseline heart rate variability (HRV) on the relationship between heart rate (HR) and Subjective Units of Distress (SUDS) ratings within an undergraduate sample (n=179, M_{age}=20.1, 55.3% female, 27.4% African-American) during CO2 challenge. The CO2 challenge reliably elicits changes in physiological responding and self-reported distress. Participants breathed a steady state of 7.5% CO2 gas mixture for 8 minutes, preceded and followed by 5-minutes of breathing room air. Average HR and SUDS were collected every 2 minutes. A series of multilevel models were employed to assess whether SUDS, AS, and baseline resting HRV (a physiological measure of emotion regulation) predicted HR. An unconditional model revealed that 76% of the criterion variance in heart rate was at the between-participants level. Entry of SUDS, AS, and HRV in the model led to an improvement in model fit, *difference of -2 log likelihood = 141.48, p < .05*. The coefficient relating SUDS to HR was positive and statistically significant (γ = 0.12, p < .001), indicating that higher heart rate covaried with higher SUDS ratings. The coefficient relating AS to HR (γ = 0.05, p = 0.58) was positive but not statistically significant and HRV to HR (γ = -5.03, p < .001) was negative and statistically significant, indicating that HR during C02 challenge was lower for people with higher baseline HRV. The addition of a random slope term in the next step led to an improvement in model fit, *difference of -2 log likelihood = 16.76, p < .05*. However, a cross-level moderator analysis found no evidence to suggest that this slope variability was explained by AS (p = 0.57) or HRV (p = 0.09). Thus, while individual differences in HRV, but not AS, predicted HR during a CO2

challenge, neither variable significantly predicted synchrony between HR and self-reported distress.

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FORGIVENESS AND PSYCHOLOGICAL WELL-BEING OF ADULT MALE SURVIVORS OF CHILDHOOD SEXUAL ABUSE BY CATHOLIC PRIESTS.

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Forgiveness and psychological well-being of adult male survivors of childhood sexual abuse by Catholic priests.

Purpose: The purpose of this study was to (a) explore the mediating effects of forgiveness with the psychological well-being of adult male survivors of childhood sexual abuse by Catholic priests and (b) elucidating relationships may enhance interventions. Characteristics of abuse include age of first occurrence, frequency, length of time abuse continued, and types of abuse.

Methods: A non-experimental, cross sectional design was used to examine the relationship between forgiveness and psychological well-being among adult male survivors of childhood sexual abuse by Catholic priests. This quantitative, descriptive, correlational study employed self-administered questionnaires that were distributed through the Internet to obtain information from the 67 participants. Descriptive statistics were used to summarize data. Additionally, t test and analysis of variance was used to compare men's abuse characteristics across forgiveness and psychological well-being. Pearson's correlation was conducted between forgiveness and psychological well-being. Simultaneous multiple regression was performed to ascertain the effects of the various characteristics of abuse and forgiveness on prediction of psychological well-being.

Results: The results found the highest number of men were first abused between 11 and 14 years of age; the abuse continued over a period of few years; frequency was three to 10 times; and a total of 355 types of abuse noted, for an average of 5 to 6 types of abuse per participant. The only t-test results that were statistically significant were forgiveness (absence of negative) and age of first occurrence, with the second category (11 to 17 years) having higher forgiveness (absence of negative). Pearson's correlation showed moderate to high significance. The multiple regression revealed forgiveness had the highest variance in predicting psychological well-being.

Conclusion: While this study identified facilitation of forgiveness as a possible intervention to improve psychological well-being in male survivors of child sexual abuse by Catholic priests,

the small size limited the possibility of discovering the role the other factors of abuse may have in well-being. Of importance is that while the characteristics of abuse cannot be altered, forgiveness was the only variable that can be modified.

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HIGHER PERCEIVED THREAT UNDERLIES GREATER POSTTRAUMATIC STRESS SYMPTOMS IN YOUNGER ADULTS WITH ACUTE CORONARY SYNDROME

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Introduction

Acute coronary syndrome (ACS) is a traumatic event that can trigger posttraumatic stress symptoms (PSS). Younger age is linked to elevated risk for PSS after ACS. Younger individuals may perceive an ACS event as particularly threatening as it may be their first life-threatening illness, and thus may be more vulnerable to develop post-ACS PSS. We examined associations between age and PSS in the acute aftermath of evaluation for ACS in the emergency department (ED) and whether perceived threat in the ED mediated this association. We hypothesized that younger age would be associated with greater ED perceived threat and PSS and that perceived threat would mediate, in part, the age-PSS relation.

Methods

The Reactions to Acute Care and Hospitalization (REACH) study is an observational cohort of patients presenting to the ED with suspected ACS. Demographics and perceived threat were assessed in the ED. PSS were measured upon hospital admission. The analytic sample comprised 871 participants (mean age=60.9±12.9 years; 45.8% women; 56.6% Hispanic; 19.7% black). Regression analysis was used to test if perceived threat mediated the association between age and PSS; bootstrapping with percentile-based confidence intervals (CIs) was used to test the indirect effect.

Results

Each year of age was associated with lower PSS (*b*=-0.12, *p* < .001), adjusting for demographic and medical covariates. Older age was also associated with lower perceived threat (*b*=-0.05, *p* < .001). Greater perceived threat predicted greater PSS (*b*=0.94, *p* < .0001). The indirect effect was negative (-0.04) and statistically different from zero (95% CI, -0.07, -0.02).

Conclusions

Compared to older individuals, younger individuals were at risk for greater PSS after ED evaluation for ACS, and elevated perceived threat in the ED partially mediated this association. These findings begin to explain why younger age predicts PSS after ACS. Understanding age differences and the potential impact of age on threat perceptions may help inform treatment in the ED.

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HOW DEPRESSED PATIENTS AND THEIR CAREGIVERS INTERACT AROUND SELF-CARE

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Objective: To characterize enhanced collaboration between depressed patients and their caregivers.

Methods: Patients were recruited after receiving a yearlong research intervention involving interactive voice response (IVR) system for depression self-care. Each patient participated with an in-home caregiver and a non-cohabitating caregiver (“CarePartner”). All participants underwent individual semi-structured interviews. Interviews were professionally transcribed, coded using Atlas.ti, and analyzed via rapid analyses techniques using grounded theory.

Results: We interviewed 10patients (mean age 39.6±16.2 years; 60% female), 8 CarePartners (56.3±12.1 years; 100% female), and 6 in-home caregivers (46.8±15.7 years; 33.3% female). Emergent themes were: (1) Communication, (2) Roles, and (3) Barriers to self-care. Patients collaborated with both caregivers, yet the caregivers seldom collaborated with each other. Both types of caregivers provided emotional and instrumental support, but differences were noted in their roles. For instance, CarePartners often encouraged outside activities, socializing, and engaging in hobbies, whereas in-home caregivers were more involved with daily management such as household chores, medication and appointment reminders, and monitoring symptoms. All respondents noted at least one barrier to depression self-care. Patients’ barriers tended to be logistical, motivational, or mood related. Caregivers were concerned about violating the patients’ privacy and noted that this was a barrier to initiating and maintaining discussions about depression care. Participating in the intervention program gave caregivers explicit permission to discuss patient’s depression more openly with the patient. For all participant types, intervention appeared to increase open communication, leading to increased mutual awareness of the patient’s mood status.

Conclusions: Patients and caregivers often play unique roles in depression self-care.Assigning a role to a close family member or friend improves communication with the patient about their depression. Given the lack of communication between the two types of caregivers, the

patient’s role remains central to depression self-care.

Impact: In depression, the role of an outside caregiver may be critical in ensuring optimal self-care. Specific aspects of social interaction among the patient and caregivers can be bolstered to better impact patient health outcomes.

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INDIRECT EFFECTS FROM NEUROLOGICAL SIGNS TO FUNCTIONAL OUTCOMES VIA PSYCHIATRIC SYMPTOMS IN CHINESE SCHIZOPHRENIA PATIENTS

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Background: Neurological soft signs (NSS) in motor coordination and sequencing of complex motor acts occur in the majority of schizophrenia patients and are an intrinsic sign of the underlying neural dysfunctions of schizophrenia. The present study explored the longitudinal relationships among NSS, psychiatric symptoms, and functional outcomes in patients with chronic schizophrenia.

Methods: The present study recruited a sample of 151 Chinese patients with chronic schizophrenia from a residential care hostel in Hong Kong. The participants completed the Neurological Evaluation Scale for NSS at Time 1, Positive and Negative Syndrome Scale for psychiatric symptoms at Time 1 and Time 2 (3-month follow-up), Activities of Daily Living (ADL) index and Instrumental Activities of Daily Living (IADL) scale for daily functioning at Time 3 (6-month follow-up). Direct and indirect effects of NSS on functional outcomes via psychiatric symptoms were evaluated using path analysis in Mplus 7.2 under bootstrapping.

Results: The path model showed an adequate model fit to the data ($\chi^2(38) = 45.11$, $p = 0.20$, CFI = 0.99, TLI = 0.96, RMSEA = 0.04, SRMR = 0.05). Time 1 motor coordination and motor sequencing NSS did not have any significant direct effects on Time 3 functional outcomes in the path model. However, motor coordination NSS exerted significant and negative indirect effects on ADL via positive and disorganized symptoms and on IADL via negative and disorganized symptoms.

Discussions: The current results contribute to a better understanding of the determinants of functional outcomes by demonstrating significant indirect pathways from motor coordination NSS to functional outcomes via psychiatric symptoms. The finding that motor sequencing NSS did not affect functional outcomes either directly or indirectly may be explained by their trait marking features.

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PSYCHOLOGICAL FUNCTIONING IN LUNG TRANSPLANT CANDIDATES

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Background: Lung transplant candidates are in a highly critical state of physical health and experience a marked reduction in their vitality and quality of life. Existing literature suggests that up to one-fourth of patients with end-stage pulmonary disease awaiting lung transplantation meet diagnostic criteria for a mood or anxiety disorder. Understanding the interrelationships between depressive symptoms and other biopsychosocial variables relevant to lung transplant candidacy may help to identify patients who are high-risk from a psychological standpoint.

Methods: 81 patients with end-stage lung diseae completed a packet of clinical questionnaires prior to their pre-transplant psychosocial evaluation. Scores on the PHQ-9, a multipurpose depression screening tool, were summed and categorized into depression severity. One-way ANOVA was used to examine differences across categories.

Results: 56.8% of the sample (N=46) did not endorse depression, 29.6% (N=24) endorsed mild depression, and 9.9% (N=8) endorsed moderate depression. Patients with moderate depression exhibited higher anxiety (p=.003), higher use of denial (p=.050) and substance use (p=.003) as coping strategies, more family dissatisfaction (p=.034) and poorer medication adherence (p < .001) than patients with no depression. Endorsing mild or moderate depression was associated with higher stress (p < .001), worse shortness of breath (p=.009), more fatigue (p < .001), worse quality of life (p=.006), and higher use of disengagement (p=.037) and blaming (p=.004) styles of coping when compared to patients with no depression.

Conclusions: Depression predicts reduced quality of life, poor medication adherence, and maladaptive coping among a sample of patients with ESLD, each of which has been shown to predict poor outcomes pre- and post-lung transplantation. This finding highlights the importance of referring depressed candidates for behavioral health treatment as early as possible in the pre-transplant period. The PHQ-9 is a user-friendly depression screening tool that can be used in multiple clinical settings to identify patients endorsing depressive symptoms, enabling transplant teams to intervene proactively to improve patients' physical

and psychological well-being, engagement in health behaviors, and overall candidacy for transplantation.

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PSYCHOLOGICAL OUTCOMES OF HEALTH ANXIETY IN CHRONIC ILLNESSES: A SYSTEMATIC REVIEW OF THE LITERATURE

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Purpose. Health anxiety (HA) is a prevalent, highly preoccupying belief that is apparent in individuals living with chronic medical conditions, such as diabetes, cancer, cardiac disease, and multiple sclerosis. Despite its debilitating effects on chronically ill patients, HA remains a vastly understudied topic. This study was part of a larger systematic review conducted to comprehensively examine the literature on HA in individuals living with a chronic illness, with a specific focus on psychological correlates of HA. **Methods.** A systematic review of the literature was undertaken on HA in individuals living with a chronic illness. Relevant studies were identified via PsycINFO, PubMED, CINAHL, Web of Science, and SCOPUS, from January 1996 to October 2014. A total of 244 articles and abstracts were retained for data extraction. A standardized data spreadsheet was designed and utilized to extract and summarize data. **Results.** The most prevalent illnesses included cancer (n = 95), Parkinson's disease (n=47), diabetes (n=43), and cardiac illnesses (n=27). Results indicated strong evidence of a relationship between HA and depression (r=0.21 to 0.67), general anxiety (r=0.29 to 0.71), trait anxiety (r=0.25 to 0.58), state anxiety (r=0.22 to 0.56), mental health (r = -0.25 to -0.67) and quality of life (r= -0.25 to -0.74). Moderate evidence was found in relation to HA and mood, and limited evidence was found in stress, and post-traumatic stress disorder symptoms. A moderate relationship between HA and avoidance strategies was found (r=0.17 to 0.60). Mixed and limited results were found in other coping strategies and HA. **Conclusions.** These results suggest that HA is associated to negative psychological functioning including symptoms of depression, general anxiety, state and trait anxiety, lower mental health and lower quality of life across diverse chronic illnesses. It also appears that avoidance may be a coping strategy utilized by this population. This emphasizes the importance of screening for and addressing HA in patients living with chronic illnesses to promote psychological wellbeing.

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SOCIAL MEDIA USE DURING CRISIS: THE UTILIZATION OF FACEBOOK IN RESPONSE TO CAMPUS VIOLENCE

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Social media has become an important resource during and after crises. Platform affordances such as real-time information sharing and broad network reach have the potential to facilitate previously unprecedented communication among victims, witnesses, and their associated social network members. However, little is known about how social media is used in response to trauma, and how it may influence (long-term) well-being. Given the reliance on virtual communication during crises, as well as the importance of social support and emotional expression in promoting recovery after trauma, the current study assessed Facebook use for the purposes of seeking information, seeking social support, and expressing emotions in response to the acts of violence carried out at the University of California, Merced in November of 2015. Students (*n* = 552) reported their uses of Facebook on the day of the attacks and their current depressive and post-traumatic stress disorder (PTSD) symptoms five months after the attacks. Results showed that many students were experiencing psychological distress even after five months. The majority of students reported using Facebook more, and in different ways than normal in response to the events, with most reporting using it to seek information. Although students reported short-term affective change, using the site to seek information, seek social support, or express emotions was not significantly associated with depressive or PTSD symptoms five months later. Findings highlight the lasting impact of campus violence on psychological well-being as well as the function and impact of social media use during crisis.

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THE IMPACT OF A MIND-BODY PROGRAM ON MULTIPLE DIMENSIONS OF RESILIENCE AMONG PATIENTS WITH NEUROFIBROMATOSIS

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Introduction: The neurofibromatoses (NF) comprise of a group of genetic disorders (NF1, NF2, and schwannomatosis) that predispose patients to develop nerve sheath tumors, which often cause: significant morbidity, including disfiguring cutaneous tumors (NF1); complete hearing loss, facial weakness, and poor gait (NF2); and chronic disabling pain (schwannomatosis). There is currently no cure for NF, treatments are primarily focused on symptom management (e.g., via surgery and palliative measures), and patients with NF have been found to report psychological distress and impaired quality of life. Resiliency –the ability to bounce back when faced with chronic stressors – is a multidimensional construct that may be particularly relevant to patients with NF, who have to adjust to leaving with a chronic incurable condition. A recent randomized controlled trial (Vranceanu et al., 2016) demonstrated that the 8 session live video Relaxation Response Resiliency Program adapted for patients with NF (3RP-NF) produced sustained increases in both physical and psychological quality of life, relative to an attention placebo control The purpose of this secondary analysis is to further examine the effects of the 3RP-NF versus control on multiple dimensions of resilience.

Method: Sixty-three patients (46 female, 56 White) were randomized to 3RP-NF (*N* = 32, *M*age = 43) or control (*N* = 31, *M*age = 40), and completed pre- and post-intervention measures. Of these, 52 completed a 6-month follow-up assessment. The multidimensional assessment of resilience included measures of coping, social support, gratitude, optimism, spirituality, and mindfulness.

Results: Repeated measures ANOVA with linear contrasts indicated that the 3RP-NF produced sustained increase in multiple measures of resilience. Participants randomized to 3RP-NF

demonstrated greater improvements from pre- to post-intervention in coping (6.68; 95% CI: 1.78–11.58; *p* = .008), social support (9.16; 95% CI: 0.82-17.50; *p* = .032), and mindfulness (2.23; 95% CI: 0.16–4.29; *p* = .035), relative to control, and these improvements were maintained at 6-month follow-up. Although, on average, participants in 3RP-NF showed improvements at in optimism and spirituality, they were similar to those in HEP-NF.

Conclusion: The 3RP-NF improved multiple dimensions of resilience, and produced increases in coping, social support, and mindfulness that were over and above those observed in the control condition. Improvements were sustained at six-month follow-up. Results suggest that psychosocial intervention can promote resilience among patients with NF and that 3RP-NF may be efficacious in targeting multiple dimensions of resilience.

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C179 6:00 PM-7:00 PM

THE PREVALENCE OF PSEUDOBULBAR AFFECT IN A MENTAL HEALTH CLINIC

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Objective: Pseudobulbar Affect (PBA) is a neurological condition affecting the brain, characterized by frequent uncontrollable laughing/crying episodes often unrelated to mood or social context. Our main objective was to determine if the Center for Neurologic Study-Liability Scale (CNS-LS), the only scrrening tool for PBA, could be a valuable primary tool for clinicians to use in an outpatient mental health clinic to screen for PBA.

Methods: We administered the CNS-LS scale to 223 outpatients who came in for their regularly scheduled outpatient mental health appointment. A score of 13 or higher on the scale is felt to coordinate with a high likelihood that PBA may exist.

Results: It was found that 44.39% of the patients had a score of 13 or greater, indicating that further questioning for possible PBA was warranted.

Conclusion: To my knowledge this is the first screening for PBA utilizing the CNS-LS Scale in an outpatient psychiatric clinic. The high prevalence of positive screening that was found suggests that PBA may be more common than previously recognized in the psychiatric setting. With newly approved pharmacologic treatments now avaialble for PBA, regular assessments for PBA in the mental health clinic may lead to improved outcomes for patients.

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USING THE TRANSTHEORETICAL MODEL TO PREDICT PHYSICAL ACTIVITY AMONG OVERWEIGHT ADULTS WITH SERIOUS MENTAL ILLNESS

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Introduction: While physical activity (PA) is widely recommended among adults with serious mental illness (SMI), most of them are inactive or insufficiently active. In this context, the transtheoretical model (TTM) could provide a theoretical framework to understand the motivational factors associated with PA practice. However, the TTM has been rarely used among adults with SMI.

Objectives: Analyze whether TTM components are related to PA practice among overweight adults with SMI

Methods: Cross-sectional study. Participants completed questionnaires assessing TTM components: stages of change (SOC), decisional balance (pros and cons), self-efficacy and processes of change (POC; experiential and behavioural). PA was evaluated using the GPAQ questionnaire.

Results: 43 participants with SMI (27 males; mean age of 29.0 ± 6.64; mean body mass index: 31.91 ± 5.10 kg/m^2; 30% (n = 13) with schizophrenia, 23% with bipolar disorder) were included. Among them, 44% (n = 19) were physically inactive and 81% (n = 35) reported no vigorous PA at all. PA was positively correlated to SOC ($p = 0.008$), experiential POC ($p = 0.01$), behavioural POC ($p = 0.002$) and perceived Pros ($p = 0.01$). SOC, behavioural POC and age explained 47% of PA variance. Physically active participants had higher score in behavioural POC ($p = 0.04$) and perceived Pros ($p = 0.0001$).

Discussion: Our results confirm the validity and interest of taking into account the TTM in PA promotion planning. Future studies should create PA plans using behavioural POC (e.g., social support, counter-conditioning) and perceived Pros (enlist advantages to exercise).

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C181 6:00 PM-7:00 PM

“I DON’T KNOW MY RISK”: ADDITIONAL EVIDENCE THAT DON’T KNOW RESPONDING TO RISK PERCEPTION QUESTIONS IS DUE TO KNOWLEDGE DEFICITS

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Purpose: There are competing explanations for why survey takers respond “don’t know” to survey questions. Correspondingly, there is debate over whether don’t know options should be included in surveys and how these responses should be treated in analyses. The purpose of this study is to test whether people respond “don’t know” to perceived risk questions because they lack knowledge about risk factors or because such a response is less time consuming and effortful, i.e., satisficing.

Methods: Participants were 280 MTURK workers (median education = some college; 80% White; mean age = 34 (SD = 9)) who completed a one-time on-line survey. We used logistic regression to test whether actual knowledge (number of correct responses to risk knowledge questions) or perceived knowledge about risk was associated with lower don’t know responding (DKR) for both absolute risk and comparative risk for diabetes and colorectal cancer. We controlled for satisficing (time to complete the survey), race/ethnicity (white vs. minority), level of education, income and age in all four models.

Results: Participants’ perceived knowledge (mean=2.8 vs. 2.2), and actual knowledge (mean=4.1 vs. 3.8) about risk factors were higher for diabetes than colorectal cancer ($ps < .002$). They were more likely to indicate that they did not know their risk for colorectal cancer (31.8% for absolute and 18.2% for comparative risk) than for diabetes (14.3% for absolute risk and 5.4% for comparative risk). The hypothesized association between lower risk factor knowledge and higher DKR was confirmed for both colorectal cancer models ($ps \leq .01$). Only lower actual knowledge was associated with higher odds of DKR for comparative risk for diabetes ($p=.03$) and lower perceived knowledge of risk factors was associated with higher DKR for absolute diabetes risk ($p>.12$).

Discussion: Evidence is mounting that knowledge deficits result in uncertainty about personal risk and DKR to perceived risk questions. These responses appear to be meaningful and should be assessed and analyzed. Furthermore, despite decades of risk messaging about both

diseases, the public has persistent uncertainty and incorrect beliefs about risk factors for common diseases, even among relatively well-educated individuals. Novel approaches to risk communication are warranted.

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DEVELOPING AND VALIDATING AN INSTRUMENT MEASURING THEORY-BASED DETERMINANTS OF SUGARY DRINK CONSUMPTION OF OVERWEIGHT ADULTS

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Interventions directed towards obesity prevention and treatment are greatly needed, and planning for such interventions should include community participation. The purpose of this study was to develop and validate a new theory-based instrument with overweight and obese adults to assess theory-based determinants of the behavior “To stop drinking regular soda and other sugary drinks for the next 6 months”. The theoretical underpinnings of this study were housed within the Integrative Model of Behavioral Prediction (IMB). According to the IMB, individual behavior is predicated upon having sufficient intentions to behave in certain ways, barring any deficiency in skills and abilities to perform the behavior, and environmental constraints. Behavioral intentions are further influenced by three factors: attitudes towards a behavior, perceived norms (PN), for which there are two types (injunctive and descriptive norms) and perceived behavioral control (PBC). The IMB is a Value Expectancy Theory, and as such, each construct of the model is measured via direct methods (i.e. asking respondents to evaluate whether engaging in a behavior is Good/Bad or Pleasant/Unpleasant), and indirect methods (i.e. asking respondents to judge the likelihood an outcome of a behavior (behavioral beliefs) and value associated with each value (outcome evaluation). In order to operationalize all of the direct and indirect measures of the IMB, this study was conducted over 2 phases. During Phase 1, an elicitation of behavioral, injunctive normative, descriptive normative and control beliefs was accomplished, using a brief survey with open-ended items to a sample of overweight and obese adults attending a weight loss clinic (n=30) in a Southwestern city. Results were then thematically analyzed into codes, and the top codes were used for instrument development and validation in Phase 2. For Phase 2, the newly developed 65-item instrument was first tested for face and content validity by a panel of 6 experts, and pilot tested with a small sample within the target population (n=10). Next, the survey was administered to 410 patients. Psychometric properties next tested the instrument for construct validity (confirmatory factor analysis(CFA)), and internal consistency reliability (Cronbach’s alpha). Initial results from CFA models suggested some scales required respecification by removing weak items. After model respecification, all scales appeared to be valid and reliable. Results from this study can be used to facilitate other researchers in survey development when using behavioral prediction models.

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ETHNIC DIFFERENCES IN SOCIAL NETWORKS AND SUPPORT: MEASUREMENT CONSIDERATIONS, AND IMPLICATIONS FOR DISPARITIES RESEARCH

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Social relationships, and the quality of these relationships are associated with health. Racial/ethnic, and cultural differences in valuing social relationships are increasingly hypothesized as important moderators of these effects. However, there is little published research documenting the size and quality of social networks across different ethnic groups. The aims of this study were to 1) test whether Hispanics and non-Hispanics (NH) respond similarly to classic measures of social networks and support, and 2) examine whether there are significant between group differences on these measures.

A sample of 3,283 undergraduate participants (37.3% Hispanic) from 3 population bases (Texas, Utah, Georgia) completed the Social Network Index (SNI; Cohen, et.al., 1997), Social Provisions Scale (SPS; Russell, et.al., 1984), and the Interpersonal Support Evaluation List (ISEL; Merz et al., 2014) as part of a larger online survey study.

To assess whether groups responded similarly to the measures, a confirmatory factor analytic model was used to test for the invariance of factor covariance and mean structures in three latent constructs: SNI, SPS, and ISEL. Configural, weak factorial, and strong factorial invariance was found using the change in comparative fit index < .01, and model fit indices (Little, 1997). These findings indicate that Hispanics and NHs respond in similar ways to the measures and that a reasonable between groups comparison can be pursued.

To test for ethnic differences in network size and support, a multiple indicator, multiple causes (MIMIC) model was used to determine mean differences in these latent constructs. Model fit indices indicated adequate overall model fit, $\chi 2(60, N = 3283) = 1208.63$, $p < .001$; RMSEA = .076 (90% CI: .073, .080); CFI = .96; SRMR = .04. Contrary to expectations about Hispanics and high support, we found that NHs reported larger social networks ($p < .001$), and greater social provisions ($p < .01$).

Results are limited to the specific measures employed here and other measures emphasizing a particular source of support (e.g., family) may yield different findings. This study represents an important first step to understanding how size and quality of social networks and social support vary across ethnicity with implications for studying racial/ethnic health disparities.

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C184 6:00 PM-7:00 PM

FACTORIAL INVARIANCE OF DECISIONAL BALANCE AND SELF-EFFICACY MEASURES FOR BLOOD DONATION INTENTIONS AMONG BLACK ADULTS

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Black adults in the United States donate blood at lower rates than non-Hispanic Whites despite significant need for antigen-matched blood to treat medical conditions that disproportionately affect Blacks (e.g., sickle cell disease). Measures and tailored interventions were previously developed, guided by the Transtheoretical Model (TTM) of behavior change with all Black samples to increase blood donation. This study aimed to establish factorial invariance of these measures to support their generalizability and the validity of the items as measuring the same underlying constructs across population subgroups. Participants were 716 Black adults recruited from the northeastern U.S. in two studies conducted to develop and pilot TTM measures for decisional balance (DB) and self-efficacy (SE) to donate blood. Measurement invariance was conducted using three sequentially more restrictive models: configural (unrestricted), metric/weak (factor loadings restricted), and strong (factor loadings and error variances restricted). Invariance of measures was evaluated across gender (male/female) and age groups (18-25; 26-39; 40-54; 55-75). For DB, strong factorial invariance was achieved for gender with good model fit [CFI = .960, RMSEA = .063 (90% CI = .053-.072)]. Metric invariance was not achieved for DB across age groups as this model did not provide better fit than the unrestricted model [ΔCFI = .018]; though the DB measure did show adequate model fit across all age groups [CFI = .964, RMSEA = .07 (90% CI = .06-.08)]. Invariance of SE measures was not achieved across gender or age groups, and configural invariance showed poor model fit for gender [CFI = .886, RMSEA = .17 (90% CI = .16-.19)] and age [CFI = .875, RMSEA = .18 (90% CI = .17-.20)]. The existing measure of blood donation DB was found to have strong invariance across gender groups and weak invariance across age groups. Results of this study indicate that potential differences between gender and age groups may exist for confidence to donate blood that are not captured by this scale. Future efforts aimed at exploring blood donation SE across subgroups and multicultural populations could ensure that measures reflect meaningful behavior change. This study will inform future TTM interventions aimed at examining DB and SE for blood donation in minority groups.

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INTERACTIVE GROUP-BASED ORIENTATION SESSIONS TO IMPROVE ADHERENCE AND DATA COMPLETION IN PRAGMATIC CLINICAL TRIALS

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Recruitment and retention are challenging for intensive behavior change intervention trials requiring high patient engagement. Specifically, pragmatic clinical trials typically do not use incentives and rely on patient-reported outcomes, underscoring the need for successful recruitment and retention strategies. Guided by methods employed with success in behavioral weight-loss (Goldberg & Kiernan, 1995) and chronic disease self-management studies, we developed an interactive group-based orientation session to improve participant understanding of our chronic pain intervention, address ambivalence about behavior change, and emphasize the importance of assessing patient-reported outcomes for pragmatic trials in general. During the orientation session attendees learn about the intervention components, randomization process, and methodological impact of not completing assessments. They engage in a small group motivational enhancement-based activity, identifying pros and cons of being or not being in the study. The facilitator uses reflective listening and remains neutral regarding study participation.

The Pain Program for Active Coping and Training (PPACT) is a pragmatic trial conducted in Kaiser Permanente Northwest (NW), Georgia, and Hawaii that evaluates the integration of a primary care-based intervention versus usual care among chronic pain patients. The intervention, delivered by an interdisciplinary team, includes comprehensive intake and end-of-treatment evaluations, 12 weekly cognitive behavioral therapy skills training group sessions, individualized coaching calls, and physician consult. The primary outcome assesses patient-reported pain-related severity and functioning using the 4-item Brief Pain Inventory-short form (BPI) collected quarterly over a 1-year period. Given initial trial adherence, we conducted interviews with non-adherent participants (attended ≤6 sessions) that revealed confusion about intervention and trial requirements. Thus, we began requiring orientation session attendance prior to enrollment.

Before orientation session implementation (3/2014-12/2015), 234 patients enrolled in NW. 88% completed the3-month BPI assessment and 86% the 6-month; completion varied greatly between intervention and usual care groups. 115 NW patients were randomized to the intervention, 30% attended 0 sessions and 34% attended 9-12 sessions. After orientation session implementation (1/2016), 110 enrolled; 97% completed the 3-month BPI and 98% the 6-month with no difference between study groups. 47 were randomized to intervention, 12% attended 0 sessions whereas 56% attended 9-12 sessions. The interactive orientation sessions show promise as a method to improve adherence and data completion for pragmatic trials.

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PREDICTING POST-TRAUMATIC STRESS DISORDER: A MACHINE LEARNING APPROACH

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Introduction: Post-Traumatic Stress Disorder (PTSD) is an anxiety disorder that involves a specific set of symptoms which develop after experiencing, witnessing, or confronting stressful and traumatic events. With repeated exposure to such traumatic events, firefighters are at great risk for developing post-traumatic-stress (PTS) symptoms and related problems such as alcohol misuse, especially if they use alcohol as means of coping with stress. The purpose of our study was to build an automated predictor of PTSD in municipal firefighters, using three machine learning algorithms.

Methods: 740 municipal firefighters completed assessments of PTS symptoms, alcohol consumption, alcohol problems, drinking motives, and coping with stress as part of a larger study. We used data on PTS symptoms and alcohol related outcomes to train and test the machine learning algorithms, including Neural Network (NN), Naïve Bayes Method, and Decision Tree, to build and validate the automated predictor of PTSD in municipal firefighters.

Results: The results of this study indicated that the automatic predictors can successfully predict PTSD with the accuracy of 88.65% using Naïve Bayes and 91.76% using both NN and Decision Tree.

Conclusions: Even though the results are not 100% perfect, they are highly promising and show a great potential for quick and early identification of firefighters susceptible to PTSD and potentially alcohol related problems, which could help focus on less intense interventions among firefighters, such as education and simple advice rather than counseling, diagnostic evaluation, and treatment in more severe cases when firefighters with health related problems are identified in later stages.

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PROMIS MEASURES FOR PATIENT CENTERED CARE

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INTRODUCTION:

Measuring treatment response is an indicator of not just an objective treatment outcome but also the patient-perceived value of treatment. The responsiveness of patient-reported outcome (PRO) instruments, their ability to detect change over time, is particularly meaningful when linked to the patient's report of meaningful change. This study evaluated the responsiveness of several Patient-Reported Outcome Measurement Information System (PROMIS) instruments pre to post treatment in patients with hand and upper extremity disorders and provided comparisons with the legacy qDASH instrument.

METHODS:

Patients presenting at an orthopaedic hand clinic completed the PROMIS and qDASH PROsprior to the doctor visit. The responsiveness of the PROMIS Upper Extremity (UE) v1.2, the PROMIS Physical Function (PF) v1.2, the PROMIS Pain Interference (PI) v1.1, and the qDASH was assessed. Changes in functional outcomes from baseline visit to follow-up were evaluated by paired-sample t-test, effect size, and standardized response mean (SRM) at four different follow-up periods (3-6 months or more) after initial assessment. Institutional Review Board approval was obtained prior to study commencement.

RESULTS:

The study sample consisted of 255 patients (131 females and 124 males) with an average age 50.75 years (SD = 15.84). Effect sizes for all measures were large and ranged from 0.80-1.48

across the four different follow-up time-points. Responsiveness was high, with SRMs ranging from 1.05 to 1.63. Changes in patient scores were significant for all instruments (*p* p=0.253).

DISCUSSION:

The three PROMIS instruments and the qDASH demonstrated the ability to detect patient-reported health changes at various follow-up time points. This high level of responsiveness in an orthopaedic hand population provides the necessary information to assess treatment outcomes in clinical and research settings. Having instruments that can effectively measure a patient's response to treatment is critical for informing clinical care. When treatment response is adequately measured and studied it becomes a valuable aspect of patient-centered care, allowing doctors to help patients set expectations for treatment outcomes.

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PSYCHOMETRIC PROPERTIES OF A SELF-EFFICACY SCALE AMONG VETERANS WITH HYPERTENSION

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Background: Hypertension in adults remains a major risk factor for cardiovascular disease, the leading cause of death in the United States. We conducted a 6-month RCT that followed 533 adult veterans with uncontrolled hypertension, which demonstrated that a tailored stage-matched intervention was more effective at improving blood pressure control than non-tailored health education intervention and the usual care. The aim of the current study is to examine the psychometric properties of the self-efficacy scale utilized in the original study.

Methods: This self-efficacy instrument is comprised of three subscales that assess diet self-efficacy (DSE), exercise self-efficacy (ESE), and medication adherence self-efficacy (MSE). We examined the psychometric properties of this self-efficacy instrument in order to determine its validity and reliability. Cronbach's α coefficients were calculated in order to determine internal consistency. Spearman's Rho correlation coefficients were used in the determination of convergent and divergent validity, test-retest reliability, as well as exploratory factor analysis.

Results: The self-efficacy instrument demonstrated strong internal consistency with relatively high values for Cronbach's alpha: DSE (α=.81), ESE (α=.82), and MSE (α=.74). Between baseline and 6-month follow up, the instrument showed only some test-retest reliability. Analysis showed that the instrument possesses both convergent and discriminant validity. Factor analysis and the Skree plot demonstrated three distinct factors, which correspond to the three subscales in our self-efficacy instrument.

Conclusion: The results of this investigation have demonstrated that the self-efficacy instrument utilized in our parent hypertension study for adult male veterans in the United States suffering from uncontrolled hypertension is a valid and reliable instrument.

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REDUCING "DON'T KNOW" RESPONSES AND MISSING SURVEY DATA: IMPLICATIONS FOR MEASUREMENT

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“Don’t know” (DK) responses are common in health behavior research among underserved populations (Hay et al., 2015; Waters et al., 2013). These responses are typically treated as missing data which can limit interpretation of a study’s findings (Waters et al., 2013). Effects of methodologic approaches to minimize DK responses are not well understood.

Methods: As part of a larger study, parental responses to psychosocial variables about adolescent HPV vaccination (intentions, perceived susceptibility, perceived benefits) were collected through a telephone survey with DK responses coded as missing data. After one year, to reduce the large number DK responses, survey procedures were changed and research assistants were instructed to remind participants of survey response options and encourage use of the Likert scale (i.e., “We just want to know your opinion. Does your opinion match with any of the following choices…?”)

Analyses: To assess methodologic effects, survey data were compared before and after procedural changes in three ways: (1) number of participants providing DK responses; (2) magnitude of correlations between psychosocial variables; and (3) invariance of the factor loadings for these latent constructs.

Findings: The percentage of participants responding DK 1 or more times declined from 66.5% pre- to 22.5% post-procedure change. Mean number of total DK responses per survey was 3.6 vs. 1.3, respectively, out of 41 possible responses. The magnitude of correlations between scales consistently increased post-change (e.g., for intentions and benefits the correlation increased from .404 to .589). Confirmatory factor analyses comparing participants pre- and post-change showed invariance in the factor loadings for all factors ($\Delta \chi^2 = 14.88$, $p = .317$) and Cronbach's alpha >.70.

Implications: Reminding participants of survey response options appears to be a useful approach to reduce "don't know" (missing) responses. Although the measurement properties of latent variables were consistent over time, having less missing data increased observed correlations between variables. Our findings suggest that simple reminders of survey response options can reduce missing data, improve measurement reliability and concurrent validity, and thus reduce Type II errors.

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RESPONSIVENESS OF THE PROMIS INSTRUMENTS FOR PAIN AND FUNCTION

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INTRODUCTION:

Healthcare is increasingly concerned with providing treatment that meets the patient's expectations and needs. Patient reported outcomes (PRO)s are a way to measure treatment outcomes from the patient perspective. A PRO that can measure the level of response to treatment must be sensitive enough to detect change over time. This study reported the responsiveness to change of two Patient-Reported Outcomes Measurement Information System (PROMIS) instruments – PROMIS Physical Function (PF) v1.2 and PROMIS Pain Interferences (PI) v1.1, in an orthopedic sample with foot and ankle ailments pre- and post-treatment.

METHODS:

Patients aged 18 and older presenting to an orthopaedic foot and ankle clinic between the years 2014 and 2016 responded to the PROMIS PF and PROMIS PI while in the clinic waiting area at the initial clinic visit as well at follow-up visits at 3-6 months and beyond. Analysis of responsiveness to changes in functional and pain outcomes were analyzed by paired sample t-test, effect size, and standardized response mean. In order to assess change levels that were considered meaningful from the patient perspective, analyses were anchored by patient responses to the question: "How much relief and/or improvement do you feel you have experienced as a result of your treatment?" Institutional Review Board approval was obtained for this study.

RESULTS:

A total of 1,715 patients completed follow-up measures either at three months and/or six months (1,010 females and 704 males). Their average age was 52.01 years (SD = 16.54). Effect sizes for the PROMIS PF ranged from 0.92 and 1.14 and for the PROMIS PI ranged from 0.89 and 1.02. PROMIS PF and PI's standardized response means had a narrow range across time points of 1.04-1.28. Paired sample t-tests indicated these changes from pre to post treatment were significant ($p < 0.05$) for the PROMIS PF and PI at all four different follow-up periods.

DISCUSSION:

As the use of the PROMIS instruments becomes more widespread in health outcomes research, it is important that these instruments are responsive to medical treatment. The PROMIS PF and the PROMIS PI were sensitive to patient-reported health changes in this lower extremity orthopaedic population. Clinical access to information about treatment response levels made available by research conducted with responsive instruments will assist clinicians in setting expectations with patients about likely treatment outcomes.

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LIFE AND TREATMENT GOALS OF VETERANS WITH GULF WAR ILLNESS

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Gulf War Illness is characterized by multiple medically unexplained symptoms. Current guidelines for Gulf War Illness focus on improving quality of life through behavioral treatments (e.g., Cognitive Behavioral Therapy, Graded Exercise). There is a need to better tailor behavioral treatments for Gulf War Veterans to improve adherence and outcomes. Life and treatment goals impact motivation for treatment. Identifying Gulf War Veterans' goals for their life and treatment is important as they could be used to tailor treatments.

Methods: We recruited 117 Gulf War Veterans with Gulf War Illness for a randomized controlled trial comparing Problem-Solving Therapy to Health Education. At baseline, Veterans were asked their goals for life and their goals for treatment. We developed codes based on Veterans' responses.

Results: The most prevalent life goals were to improve their quality of life (interpersonal relationships (21%), career (13%), a good life (13%), live longer (9%) and spirituality (6%)) and to improve heath (both physical (20%) and emotional (14%)). The most common treatment goals were to improve health (both physical (31%) and emotional (20%)), improve quality of life (15%), to engage in treatment (10%), and understand health (10%).

Conclusions: Current treatment recommendations for Veterans with Gulf War Illness are primarily to improve quality of life. This is consistent with Gulf War Veterans' own primary life goals (to improve quality of life (47%)). Gulf War Veterans' goals for treatment are more focused on improving (51%) and understanding (10%) their health. Current treatment recommendations for Gulf War Illness are more consistent with Veterans' goals for their life than their goals for treatment. Behavioral treatments should focus on explicitly connecting treatments to Veterans' goals for their life, and addressing inconsistencies between Veterans' goals for treatment and what behavioral treatments can be expected to achieve.

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POST-TRAUMATIC STRESS DISORDER AND DEPRESSION ARE ASSOCIATED WITH TINNITUS HANDICAP IN A SAMPLE OF MILITARY VETERANS

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Tinnitus is the most common disabling condition among veterans, with an estimated two billion dollars spent annually by the U.S. government in disability compensation. Psychological distress is frequently co-morbid with tinnitus, however, few studies have examined tinnitus, PTSD, and depression in veterans. Thus, the purpose of the current project was to explore the relationship of PTSD and depression with tinnitus handicap among United States veterans with tinnitus. Data were retrospectively extracted from patient medical records at a tinnitus clinic for ninety-five veterans ranging from 31-84 years of age (*M* = 62.00) at a veteran's administration hospital and included audiometric information, data on tinnitus, and measures on PTSD and depression. PTSD was considered present if the veteran had an ICD-9 code of Post-Traumatic Stress Disorder in their medical records. Furthermore, depressive symptomatology was measured using the Hospital Anxiety and Depression scale depression scale (HADS-D). Tinnitus was assessed using the Tinnitus Handicap Inventory (THI) total score. On average, veterans with tinnitus and PTSD reported significantly higher levels of tinnitus handicap (*M* = 59.75, *SD* = 22.12) than those with tinnitus alone (*M* = 39.86, *SD* = 26.78), *t*(93) = −3.01, *p* = .003, 95% CI [-33.02, -6.76], *d* = 0.74. A simple linear regression analysis regressing tinnitus handicap on depression found that a significant proportion of the total variation in tinnitus handicap was predicted by the HADS-D, $R^2 = .319$, *F*(1, 93) = 43.50, *p* < .001, 95% CI [2.04, 3.79]. Lastly, a multiple linear regression identified that a significant amount of the variance in THI scores was accounted for by the combination of PTSD and depression; $R^2_{adj} = .321$, *F* (2, 92) = 23.24, *p* < .001, 95% CI [13.90, 36.91] with depression (b = .52, p < .001), but not PTSD (b = .14, *p* = .129) being a significant predictor. Findings suggest that both PTSD and depression are associated with tinnitus handicap among military veterans. Future research needs to explore effective strategies (e.g. SSRIs, CBT, sound therapies, etc.) to reduce the risk of tinnitus severity among veterans experiencing psychological distress.

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THE ROLES OF PAIN AND INJURY IN THE CURRENT STRESS-PTSD RELATIONSHIP AMONG OEF/OIF/OND VETERANS

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Pain and PTSD co-occur at prevalence rates as high as 16.5% among OEF/OIF/OND veterans. To explain the high comorbidity, Sharp and Harvey (2001) proposed the mutual maintenance model of pain and PTSD, in which properties of one condition feed into the escalation of symptoms for the other. The relationship is maintained, in part, because pain triggers reminders of the trauma, which may be particularly salient for veterans injured during combat. Psychological states also alter pain perceptions, such that current stress increases pain perceptions. However, the mediating role of pain in the current stress-PTSD relationship has yet to be tested. The present study tested a moderated mediation model to examine if sustaining a combat-related injury moderates the pain-PTSD relationship, and if the strength of the indirect effect of current stress on PTSD is conditional on whether an injury is sustained. The current study is limited to the 729 veterans from the Survey of the Experiences of Returning Veterans study who completed phone surveys at baseline, 3-months, and 6-months. Consistent with our hypotheses, pain partially mediates the effect of current stress on PTSD. Further, greater pain predicted greater PTSD ($B=4.07$, $p < .001$), particularly for veterans with a combat-related injury ($B=.92$, $p < .001$). Overall, the moderated mediation model explains more of the effect of current stress on PTSD ($B=2.85$, $p < .001$) than did the direct effect of current stress on PTSD ($B=2.64$, $p < .001$). Our study shows that pain is a mechanism by which current stress affects PTSD, which may be particularly important for veterans with combat-related injuries. Our findings about the pain-PTSD relationship support and build upon the mutual maintenance model by demonstrating that the relationship can unfold over several months. Given that many veterans perceive mental health care as stigmatized in military culture, veterans may be more amenable to targeting pain as an indirect way of treating PTSD. Treatments targeting pain may provide a less stigmatized and more comprehensive approach to improving well-being.

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ACCULTURATION AND WEIGHT CHANGE IN ASIAN-AMERICAN CHILDREN: EVIDENCE FROM THE ECLS-K:2011

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Background: Despite relatively low rates of overweight and obesity among Asian-American children, disparities exist based on acculturation, socioeconomic status, and Asian ethnicity.
Purpose: The purpose of this study was to examine the association between acculturation and weight change in Asian-American children. Secondary aims were to compare changes by Asian ethnic group and acculturation x socioeconomic status.
Methods: Participants included 1,200 Asian-American children from the Early Childhood Longitudinal Study, Kindergarten Class of 2010-11, a longitudinal study of U.S. children attending kindergarten in 2010-2011. Multinomial logistic regressions were conducted to predict weight change, which was categorized based on body mass indices in kindergarten (spring 2011) and second grade (spring 2013): consistently healthy weight, consistently overweight/obese, healthy weight change, and unhealthy weight change. Models included demographic, household, socioeconomic status, and acculturation measures, specifically mother's English proficiency and percentage of life spent in the U.S.
Results: Overall, 72.3% of children were at healthy weights in kindergarten and in second grade. Filipino children, when compared to Chinese children, had higher odds of being in the "consistently overweight/obese" category than "consistently healthy weight" (OR: 2.26, $p < .05$). In addition, mother's English proficiency significantly predicted unhealthy weight change (OR: 0.83, $p < .001$) and healthy weight change (OR: 0.75, $p < .001$), relative to "consistently healthy weight." English proficiency also predicted being consistently overweight/obese but only for children with less educated mothers.
Conclusion: Findings enhance our understanding of obesity disparities within Asian Americans and highlight the need to disaggregate the population. Specifically, obesity interventions are needed for Filipino children and families with low socioeconomic status but high English proficiency.

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MERITORIOUS AWARD WINNER

ADOLESCENT DEPRESSION MEDIATES LONG-TERM IMPACT OF CUMULATIVE MATERNAL DEPRESSION EXPOSURE ON ADOLESCENT'S BODY MASS INDEX

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Introduction

Prior research shows that maternal depressive symptoms may influence child's risks of both depression and obesity. However, the potential mediating role of child's depression in the linkage of maternal depression to adolescent's obesity remain unclear in the literature. In this study, we use existing data from the Eunice Kennedy Shriver National Institute of Child Health and Human Development Study of Early Child Care and Youth Development (SECCYD) to evaluate the mediation effects of adolescent's depression on the pathway from cumulative maternal depression exposure to adolescent's BMI at age 15.

Method

The analysis sample size includes 844 children and their families from child's age 1 month to 15 years old. Weight and height measured at age 15 years were used to calculate BMI and define overweight/obesity status. Maternal depression reported by mother of the study child as repeated assessed from child's age 1 month to grade 6 by the Center for Epidemiological Studies Depression Scale (CES-D). Cumulative measures of exposure to maternal depression were developed to capture the dynamic variation across time and were used to prospectively link to adolescent's BMI and overweight/obesity status. Children's Depression Inventory (CDI) at age 15 years was used as the mediator in the analysis. Multivariate linear regressions were employed and mediational effects were estimated with bias-corrected bootstrapping resampling approach to obtain 95% confidence intervals for indirect effects. Covariates included child's gender, mother's delivery age, mother's minority status (dichotomous), mother's educational level (years), and income-to-need ratio at grade 5 were also included in the analysis.

Results

Prospective analysis linking cumulative exposure to maternal depression by grade 6 of the study child to child's BMI percentile at age 15 revealed a statistically significant positive relationship (total effect = 0.35, p = 0.03, 95% CI: 0.02, 0.67). The child's depression at age 15 was included as a mediator and a statistically significant mediation effect was observed (indirect effect = 0.06, 95% CI: 0.01, 0.12). The direct effect of cumulative maternal depression by grade 6 on child's BMI percentile at age 15 was not statistically significant (direct effect = 0.29, 95% CI: -0.03, 0.61).

Conclusion

Our findings revealed a prospective positive effect of cumulative exposure to maternal depression from age 1 month to grade 6 on adolescent's BMI percentile at age 15, which was fully mediated by adolescent's depression. The observed significant pathway from maternal mental health to child's mental health status, which in turn has impact on child's obesity risk. Our findings highlight the needs to incorporate mental health efforts in pediatric obesity prevention.

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AN EXAMINATION OF DIETARY COMPOSITION PRECEDING LAPSES FROM A WEIGHT CONTROL DIET

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Traditional behavioral weight loss programs instruct participants to consume less than a target number of daily calories as the primary mode of weight loss. Though programs typically recommend a low-fat, high-fiber diet, they rarely address absolute and relative intake of macronutrients, sugar, and fiber. In these programs, frequency of lapsing from one's diet plan (e.g., eating a "forbidden food," eating when one had not planned, or eating more than planned) predicts less weight loss. Preliminary evidence suggests that feelings of hunger, cravings, and deprivation increase likelihood of lapsing, yet little is known about whether and how the quality of one's diet predicts lapsing independently, which is examined in the current study for overweight individuals following a self-directed Weight Watchers® (WW) plan. Adults (n=12) completed six weeks of dietary self-monitoring using the WW mobile phone app, and responded 6 times per day to EMA prompts from another app regarding whether a lapse had occurred since the last prompt (90.9% of prompts completed). Separate generalized estimating equations were used to examine whether dietary intake at one time of day (morning or afternoon) prospectively predicted lapse occurrence at the following time of day (afternoon or evening). Reported here are results from study Phase I; Phase II ($n=30$) will also be reported for presentation. Results indicated that WW PointsPlus (β=-.04, p=.04) and fiber (β=.032, p=.07)—but not calories, fat, carbohydrate, protein or sugar (βs < .01, ps>.05)—negatively predicted lapsing at the following meal time, such that greater points consumption (but lower fiber consumption) predicted lower likelihood of lapsing. Because WW points are a composite score (reflecting macronutrient composition) which represent the balance of calories and macronutrients in a meal, meals with relatively higher WW points may be more satiating, thus decreasing likelihood of future lapse. An alternative explanation for our findings is that participants lapsed less frequently because they were simply less hungry; however, null findings for the predictive validity of calorie intake alone suggest that lapsing is not necessarily a result of hunger or low energy, and that higher energy intake alone is not protective against lapsing. Future work in this domain may help weight loss programs construct dietary plans that best facilitate adherence and weight loss.

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MERITORIOUS AWARD WINNER

BEHAVIORAL PHENOTYPES IN OVERWEIGHT AND OBESE ADULTS: PATHWAYS TO THE ONSET AND MAINTENANCE OF OBESITY

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Even our best behavioral weight loss treatments produce sub-par outcomes in a large proportion of those receiving them. Better understanding the heterogeneity within obese populations, especially in the differential pathways to obesity, could inform enhancements to standard behavioral treatments. Identification of distinct pathways comprised of potentially malleable psychological factors associated with obesity (such as food reward sensitivity, susceptibility to internal and external cues, depressive symptoms, and impulsivity) would be especially relevant for treatment development. As such, the current study utilized latent profile analysis to identify obesity phenotypes within a treatment-seeking sample of overweight and obese individuals (n=190).

Indicator variables included self-report measures of susceptibility to external cues, emotional eating, depression, food reward sensitivity, and a behavioral measure of impulsivity. A five-class solution emerged from latent profile analysis (LPA), comprised of (1) an “unknown vulnerability” class (low food and emotional responsivity, low impulsivity, low hedonic hunger); (2) an “impulsive” class (high impulsivity, but otherwise better than average across other measures); (3) an “impulsive plus” class (high impulsivity, elevated other measures relative to the “impulsive” class); (4) a “cue reactive” class (high food and emotion responsivity, low general impulsivity); and (5) a “disinhibited-hedonic” class (high food and emotion responsivity, poor impulsivity, high hedonic hunger). Additionally*, post-hoc* analyses revealed that classes differed on both baseline physical activity levels and weight loss following a behavioral weight loss intervention.

To our knowledge, this was the first study to utilize LPA to identify phenotypes of obesity within a treatment-seeking sample of obese adults. The findings that these behavioral phenotypes may effectively discriminate between both baseline and post-treatment measures of weight-related behaviors strongly support the hypothesis that combinations of reward sensitivity, susceptibility to cues, depression, and impulsivity do relate to the

maintenance and etiology of obesity. Future research should incorporate these ideas when attempting to create and refine refine obesity treatment and prevention programs.

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CONSCIENTIOUSNESS AND BODY MASS INDEX: MEDIATION BY EATING BEHAVIORS

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Background: Over 30% of American adults are obese. This high prevalence combined with the adverse consequences of excess adiposity support the need for continued identification of risk factors in obesity development and progression. Such research is essential given that obesity is resistant to treatment in the long term. Personality factors are now being examined in relation to health outcomes, and conscientiousness has emerged as the most robust personality predictor of obesity. Relatedly, conscientiousness may also predict food choices. It is less clear which facets of conscientiousness are related to obesity and whether disordered eating accounts for observed relationships. **Objective:** Thus, the objective of our study was to discover which facets of conscientiousness predict body mass index (BMI), and if any observed relationships are mediated by eating behaviors. **Methods**: Participants were 523 young adults (age: 19.9 ± 1.8 years, female: 400 (76.5%), non-white: 113 (21.6%), BMI: 25.0 ± 5.8 kg/m^2) who completed online self-report questionnaires assessing personality and eating-related variables. Conscientiousness (CN) was assessed with the M5-120. Excess adiposity was estimated continuously using BMI. Eating behaviors were measured with the Three Factor Eating Questionnaire (TFEQ) and its subscales of Cognitive Restraint, Disinhibition, and Perceived Hunger. Data were analyzed using PROCESS regression-based mediation macros in SPSS. Covariates included age, gender, race, parents' education, parents' occupation, and English as primary language. **Results**: Linear regression results indicated that total domain score of CN did not significantly predict BMI (*b* =-.07, *p*=.096). When the facets were examined Orderliness and Achievement Striving did predict BMI (*b* =-.15, *p* < .001; *b*=.13, *p*=.037). Mediation analysis of the Orderliness facet revealed that Disinhibition (*b* =-.08, *CI*[-.13, -.04], *p* < .001) mediated the relationship. The relationship between Achievement Striving and BMI was not mediated by eating behaviors. **Conclusions**: Results indicate that orderliness and achievement striving predict BMI in young adults. For orderliness, this relationship was mediated by disinhibited eating. As personality is an enduring, lifelong trait, it may be beneficial to provide tailored obesity prevention and intervention programs for individuals low in orderliness. Further research into the relationship between achievement striving and BMI is needed.

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DIETARY OUTCOMES WITHIN THE STUDY OF NOVEL APPROACHES TO WEIGHT GAIN PREVENTION (SNAP) RANDOMIZED CONTROLLED TRIAL

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Background: Young adulthood has been identified as a high-risk period for unhealthy dietary behaviors, as well as significant weight gain. Previously we reported that two innovative self-regulation approaches were effective in reducing this weight gain over 2 years. Here we examine changes in key dietary behaviors and their association with weight change.

Methods: Participants were 599 young adults, age 18-35 years with BMI of 21.0 to 30.0 kg/m^2 (27.4±4.4 years; 25.4±2.6 kg/m^2; 22% men; 73% non-Hispanic White), who were randomized to self-regulation with Small Changes (SC), self-regulation with Large Changes (LC) or Control (C). Both SC and LC emphasized frequent self-weighing to cue behavior changes. SC promoted daily small decreases in intake and increases in physical activity to produce a 200 kcal/day change. LC focused on making larger changes to produce initial weight losses of 2.3-4.5 kg to buffer against anticipated weight gains. Both approaches directly targeted high-risk dietary behaviors associated with weight gain in young adulthood, including fat, fast food, sugared beverages, alcohol, and breakfast consumption. Dietary behaviors were assessed at baseline, 4 months (i.e., post initial intervention) and 2 years using the Block Food Frequency Questionnaire and another questionnaire on dietary patterns. Weight was assessed objectively at baseline, 4 months, 1 and 2 years.

Results: Although the 3 groups all differed in weight gain over time (C>SC>LC), there were no significant differences between groups for changes in fast food or other meals away from home, or overall dietary quality as measured by the HEI-2010. However, compared to Control, both LC and SC trended toward greater decreases in alcohol intake (p=.08) and more frequent

breakfast consumption (p=.07) at 4 months. Moreover, the relationships of weight change at 4 months with improvements in breakfast consumption (p=.02), alcohol intake (p=.05) and overall dietary quality (p=.005) differed across the 3 groups, with significant associations with weight change in LC relative to C.

Conclusions: This study suggests that decreased alcohol intake, increased breakfast consumption, and improved dietary quality might be important dietary targets within weight gain prevention programs for high-risk young adults.

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GRIT'S EFFECT ON WEIGHT LOSS THROUGH INCREASED TREATMENT ADHERENCE: A PILOT STUDY

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Background: Obesity is a public health crisis affecting 37% of U.S. adults. Although existing interventions have proven successful in the short-term, long-term weight loss is rare – highlighting the need to identify factors that foster long-term success. One such factor is grit, defined as the perseverance/persistence for long-term goals. Lower levels of grit are associated with higher body mass index, suggesting grit may be linked to weight regulation efforts. Given that grit has been associated with greater adherence in the academic literature, higher levels of grit may also predict adherence and success to weight loss treatment.

Objective: To examine the predictive ability of grit on treatment adherence and percentage weight loss (%WL) among overweight/obese persons in a larger, ongoing NIH-funded behavioral weight-loss intervention. We hypothesized that grit would have a positive effect on %WL through increased treatment adherence.

Method: The pilot sample was 26 adults (BMI≥27 kg/m^2) enrolled in a randomized controlled trial for behavioral weight-loss (aged 41.81±11.13 years; 81% female). Baseline grit was tested using the 12-item GRIT scale, and treatment adherence was indexed by the percentage of treatment sessions attended. %WL was calculated as follows: (baseline weight – post treatment weight/baseline weight)*100. The hypothesized indirect effect was tested using 1,000 bootstrapped resamples.

Results: Results indicated a non-significant direct effect for grit (B=.3919, SE=2.6415, 95% BC [-5.2085, 5.9922]) on %WL. A significant indirect effect was found for grit on greater %WL through increased treatment adherence (B=2.6513, SE=1.5122, 95% BC [0.2014, 6.1875]. Participants with higher levels of grit had nearly 10% points higher adherence to treatment when compared to participants with lower levels of grit (79% vs. 70% adherence, respectively). Additionally, participants who attended 80% or more treatment sessions had a mean %WL of 8.91, while participants who did not had a mean %WL of 5.31.

Conclusions: Grit predicted a person’s ability to adhere to weight-loss treatment or not, which in turn predicted weight loss success or not. Though replication is clearly needed, grit may be a promising target for screening at-risk clients and improving outcomes. If the findings are

replicated (data collection is on-going), the next steps include determining whether enhancing grit is possible in an effort to foster greater weight loss success and maintenance.

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C202 6:00 PM-7:00 PM

HOW ACCURATE ARE RECALLS OF SELF-WEIGHING FREQUENCY? DATA FROM A 24-MONTH RANDOMIZED TRIAL

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Background: Recommendations for frequency of self-weighing during weight loss have not been determined but are needed. In order to properly assess the behaviors needed to create recommendations, methods of measuring self-weighing need to be compared and validated. The purpose of this analysis is to compare self-reported self-weighing frequency to objective self-weighing recorded via wireless scales.

Methods: Data come from the 24-month Tracking Study. All participants in the study received 12 months of a group-delivered behavioral weight loss program and were randomly assigned to receive 1 of 3 different self-weighing recommendations: 1) do not weigh at home, 2) weigh weekly at home (WEEKLY), or 3) weigh daily at home (DAILY). Those in the WEEKLY and DAILY conditions received Wi-Fi enabled scales that automatically recorded weights to a web-based platform. Participants were asked on a seven-point scale how frequently they weighed themselves (1=never, 7=more than once a day) during assessment visits every 6 months. Data from the WEEKLY and DAILY conditions at baseline, 12-month, and 24-month assessments are included here.

Results: Participants (N=223; age 46.6±10.2 years; BMI 33.0±3.6; 85% white; 66% female) were assigned to the DAILY or WEEKLY groups. At baseline, 57% of participants reported weighing themselves less than once per week while 9% reported weighing daily. At 12 and 24 months, 87% and 43% of DAILY participants reported weighing themselves daily while 91% and 62% of WEEKLY participants reported weighing themselves weekly (p’s < 0.001). During the intervention (from baseline to 12 months), DAILY participants weighed themselves an average of 4.8±1.8 times per week while WEEKLY participants weighed themselves 0.9±0.3 times per week ($p < 0.001$). Post-intervention (from 12 to 24 months), DAILY participants weighed themselves an average of 1.7±1.9 times per week compared to 0.6±0.8 in the WEEKLY condition ($p < 0.001$). At the 12 month assessment, regardless of assigned frequency, those who reported weighing themselves daily had weighed themselves an average of 5.3±1.6 times per week over the first year vs. 1.2±0.8 times for those who reported weekly self-weighing ($p < 0.001$). At 24 months, individuals who self-reported daily weighing weighed themselves 2.7±2.3 times per week between the 12 and 24 month assessments compared to 0.9±1.0 times per week in individuals who reported weekly weighing ($p < 0.001$).

Conclusions: Self-reported weighing frequency is able to correctly order frequency of self-weighing but may overestimate daily self-weighing. This overestimation was greater during the follow-up period without continued intervention contact. Future studies should assess the concordance of self-reported and objective weighing in the absence of specific self-weighing recommendations.

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HOW DO DIETARY LAPSES IMPACT WEIGHT LOSS? EXAMINATION OF LAPSES AND ENERGY INTAKE

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Failure to successfully adhere to a weight loss diet can be attributed to discrete instances in which an individual violates a dietary recommendation, i.e., dietary lapses. Research on the characteristics of lapses and the magnitude of their contribution to excess caloric intake is still in its infancy. To better understand if and how to target lapses in the context of a behavioral weight loss program, it is important to clarify the nature of lapses (e.g., frequency, size, macronutrient content) and investigate whether lapse frequency relates to broader weight loss failures. Participants (*n*=12) tracked dietary intake through Weight Watchers® mobile app for six weeks and used another app that repeatedly assessed lapses from the program's dietary prescription. Lapse frequency, nutritional content of lapse vs. non-lapse eating occasions, and the associations between lapse frequency, daily caloric intake, and dietary goals were examined. On average, participants lapsed 3.47 times per week (*SD*=2.41) and the number of daily lapses ranged from 0-2. Lapse frequency decreased over time spent in the program ($p < .01$). As expected, caloric intake at eating occasions when a lapse was reported (M=742.49, *SD*=536.26) was greater than occasions when a lapse was not reported (*M*=579.61, *SD*=551.20), indicating that lapse reports represented substantially higher caloric intake (p < .001). Converting macronutrient grams to calories, lapse eating occasions were higher in fat (mean difference=81.18, $p < .01$), protein (mean difference=22.77, $p < .01$), and sugar (mean difference=2.93, $p < .01$) than non-lapse occasions. Frequency of lapses was correlated with the degree to which participants exceeded their daily dietary goals (r=.26, $p <$ .001) and total number of daily calories consumed (r=.14, p< .001). Overall, results confirmed expected findings that lapses are related to excess caloric intake. Findings underscore the importance of interventions to reduce frequency of lapses in order to promote success in weight loss programs.

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C204 6:00 PM-7:00 PM

IMPACT OF ADVERSE CHILDHOOD EXPERIENCES ON RISK FOR FOOD ADDICTION AND SUBSTANCE USE IN OBESITY TREATMENT SEEKING INDIVIDUALS

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Personal history of adverse childhood experiences (ACE) is a known risk factor for psychopathology (Caslini et al., 2015; Clark et al., 2007) and substance misuse (Dube et al., 2003). In addition, there is a strong association between ACE and disordered eating (Moulton et al., 2015), and lifetime risk for developing obesity (Danese & Tan, 2014; Grilo et al., 2005). This is an important area of study as some survivors of ACE will also experience psychiatric symptoms after weight loss surgery (Clark et al., 2007). Food addiction has also been shown to have a positive relationship with ACE (Imperatori et al., 2016; Mason et al., 2013). The present study evaluated the risk for food addiction, alcohol abuse, and tobacco and drug use associated with a history of ACE. Participants were 1,609 individuals seeking obesity treatment (73.6% female) with (m_{age}= 48.48, SD = 13.07) and ($m_{BMI =}$ 45.57, SD = 9.17). Analyses included binary logistic regressions of three types of ACE (abuse, neglect, and family dysfunction) as well as total number of ACE and the risk for food addiction, alcohol abuse, and tobacco and drug use. Results indicated no significantly increased risk for alcohol abuse yet found an increased risk for tobacco and drug use with exposure to ACE, with odds ratio (OR) of Exp(B) = 1.25 (95% CI = 1.12-1.39), *p* = .000. Moreover, all types of ACE corresponded to increased risk for tobacco and drug use: abuse (Exp(B) = 1.43 (CI = 1.10-1.87), *p* = .008), neglect (Exp(B) = 1.79 (CI = 1.21-2.67), *p* = .004), and family dysfunction (Exp(B) = 1.57 (CI = 1.27-1.93), *p* = .000). There was also an increased risk for food addiction associated with ACE, with OR of Exp(B) = 1.14 (CI = 1.05-1.24), *p* = .002, and for all types of ACE: abuse (Exp(B) = 1.32 (CI = 1.09-1.60), *p* = .005), neglect (Exp(B) = 1.54 (CI = 1.14-2.08), *p* = .005), and family dysfunction (Exp(B) = 1.19 (CI = 1.02-1.40), *p* = .031). The present study demonstrated that a history of ACE, in general, as well as specific types corresponds to increased risk for tobacco and drug use and food addiction. Of note, those who endorsed neglect in childhood had the greatest risk for both tobacco and drug use and food addiction. Individuals seeking treatment for obesity should be carefully evaluated for history of ACE. For some patients, it might be important to provide evidence-based treatment for the impact of childhood trauma prior to or during with weight management intervention to enhance obesity treatment outcomes.

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C205 6:00 PM-7:00 PM

INVESTIGATING THE RELATIONSHIP BETWEEN PERCEIVED STRESS AND COPING SKILLS ON ADIPOSITY IN PRE-TEEN GIRLS

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Background: Elevated levels of acute and chronic stress have been hypothesized to be a risk factor for the development of childhood obesity. However, it remains unclear whether children who have better coping skills can mitigate these risks. The purpose of this research was to examine the relationship between perceived stress and coping skills on adiposity in girls.
Methods: Baseline data from the NIH's National Growth and Health Study (NGHS), an American longitudinal study, was used for these cross-sectional analyses. Measures of acute stress were taken from the Perceived Stress Scale, while coping was represented using the total score from the Coping Strategies Inventory. Measures of adiposity were: body mass index (BMI), BMI z-score, minimum and maximum below waist circumference, and % fat by skinfolds. GLM-like linear regressions examined the main and interaction effects of coping and stress on adiposity. Analyses were adjusted for age, race, maximum parental education, and household income.
Results: A total of 2287 girls were included in the study (mean age = 11.0 ± 0.57 yrs; white = 48%). Increased stress was found to be significantly related to higher BMI (β=0.03 ± 0.01, F=4.59, p=.033), minimum waist circumference (β=0.07 ± 0.03, F=5.89, p=.015) and maximum below waist circumference (β=0.06 ± 0.03, F=4.71, p=.030). When both stress and coping total score were entered into the models, only stress was significant for BMI (β=0.03 ± 0.01, F=4.24, p=.040), minimum waist circumference (β=0.07 ± 0.02, F=5.64, p=.018), and maximum below waist circumference (β=0.06 ± 0.03, F=4.40, p=.036). There were no relationships between coping and any measures of adiposity, with no evidence of a stress by coping interaction on adiposity.
Conclusion: Though more longitudinal and intervention work needs to be done, our findings indicate the potential importance of focusing on perceived stress when considering ways to prevent or manage obesity in girls.

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C206 6:00 PM-7:00 PM

IS SOCIAL MEDIA HARMFUL FOR THE BODY IMAGE OF YOUNG ADULTS WITH OVERWEIGHT/OBESITY? EXAMINING THE ROLE OF APPEARANCE COMPARISON

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Previous research has established that social media usage has increased significantly over the past decade. Approximately 10% of young adults reported using social media in 2005 and 90% of young adults reported using social media in 2015. Research has also shown that the relationship between social media use and body dissatisfaction is mediated by appearance comparison. However, this research has primarily focused on average weight young adult women, despite the prevalence of overweight/obesity in young adult women and men. The current study investigated appearance comparisons as a mediator between social media use and body dissatisfaction in young adults with overweight/obesity. Participants were 385 young adults (63.50% female) aged 18 to 29 (M = 19.40, SD = 1.67) with a body mass index (BMI) of 25 or greater (M = 30.03, SD = 5.89). They completed the Physical Appearance Scale, Eating Disorder Inventory-Body Dissatisfaction, and a social media questionnaire. Results indicate that approximately 23.9%, 18.8%, 22.6%, and 13.7% of young adults use Facebook, Twitter, Instagram, and other forms of social media for about one hour per day, respectively. Appearance comparisons was found to significantly mediate the relationship between the amount of time spent on social media (i.e., Facebook, Instagram, Twitter, or other) and body dissatisfaction (ab = .40, 95%CI [.26, .60], $p < .05$). As the amount of time spent on social media sites increases, body dissatisfaction increases via the effect of appearance comparisons. Findings suggest that individuals with overweight/obesity who spend greater amounts of time on social media websites may experience greater body dissatisfaction if they engage in more appearance comparisons. Further research examining the effects of social media on body image is needed, especially as social media usage has increased among young adults in recent years.

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C207 6:00 PM-7:00 PM

PRIOR BEHAVIORAL WEIGHT LOSS TREATMENT EXPERIENCE IS ASSOCIATED WITH BETTER OUTCOMES

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Introduction: Repeated attempts at behavioral weight loss (BWL) may be common given that, at the end of treatment, many individuals remain overweight and weight regain is typical. Prior BWL experience may be advantageous, as individuals may be more familiar with lifestyle changes required of treatment or may have greater self-efficacy for change given earlier success. Alternatively, repeated BWL efforts may be a marker of inability or low motivation to make or sustain adequate lifestyle change for weight control. No prior research has evaluated differences pre-treatment in psychological processes often associated with outcome (such as self-efficacy or motivation for behavior change) or treatment outcome between these groups.

Methods: Participants (n=281) entering a BWL program completed measures assessing self-efficacy for weight control, motivation, and prior weight loss experiences at baseline. Participants wore an accelerometer for seven days and were weighed at baseline, mid-treatment (6 months), and post-treatment (12 months).

Results: At baseline, individuals with prior BWL experience (60.8% of sample) had lower self-efficacy for weight loss when confronted with negative emotions (p=.02) and physical discomfort (p<.01). Additionally, individuals with prior BWL experience had greater weight losses at 6 (9.79% vs. 7.47%; p < .01) and 12 (10.75% vs. 8.09%; p < .01) months. Although at 6 months, groups had similar levels of physical activity (102.47 minutes vs. 90.66 minutes; p=.42), only those with prior BWL sustained this level (102.19 minutes vs. 65.96 minutes; p=.01) at 12 months.

Discussion: Individuals with prior BWL experience, as opposed to those without, had lower self-efficacy in several domains, but higher autonomous motivation. Additionally, they had better weight losses and higher physical activity than those without BWL experience.

Individuals with prior BWL may better anticipate and have higher motivation for behavioral changes required of treatment, and thus make greater behavioral commitment throughout treatment. Thus, experience with BWL may confer advantages for individuals entering new BWL attempts. Repeated exposure to BWL techniques and messages may be necessary for individuals to make sufficient lifestyle modifications to induce and sustain behavior change.

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C208 6:00 PM-7:00 PM

RACE, PLACE AND OBESITY IN NEW YORK CITY

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Race, Place and Obesity In New York City

Objectives: This study examined the relationships among race and ethnicity, neighborhood factors (“place”), and selected behavioral factors (nutrition and physical activity) associated with energy regulation in relation to obesity.

Methods: This study utilized data from 8,665 participants living in 34 neighborhoods who participated in the 2010 New York City Community Health Survey. Chi-square and ANOVAs were used to test univariate categorical and continuous variables. Linear and logistic regression models were used to examine the independent and joint effects of neighborhood, neighborhood factors (distance to fresh produce, neighborhood safety), and individual factors relevant to weight regulation (overall diet quality, meeting physical activity guidelines) on body mass index (BMI) and obesity (BMI > 30 kg/m2).

Results: Chi-square analyses revealed that the 34 neighborhoods considered in the NYC Community Health Survey differed significantly in rates of obesity (c2 (33) = 303.83, p < .0001). Obesity rates ranged from a low of 8.1% (Upper East Side) to a high of 38.2% (East Harlem).ANOVAs revealed significant differences in BMI across ethnic/racial groups (F (3, 8131) = 140.72, p < .0001) as did chi-square analyses (p < .001) indicating higher rates of obesity in black and Hispanic groups relative to white and Asian groups. Nominal logistic regressions using neighborhood to predict obesity while controlling for race and also using race/ethnicity to predict obesity while controlling for neighborhood demonstrated that both were significant in predicting obesity. Linear regression analyses revealed neighborhood factors (distance to produce, neighborhood safety), individual factors (overall diet quality, meeting physical activity guidelines), neighborhood, and demographic (race, income) variables were significant predictors of BMI, together accounting for 9.8% of the variance.

Conclusions: There exist striking disparities regarding obesity in NYC. Rates of obesity in NYC vary markedly by race and place, with significantly higher rates occurring in persons of color and in certain neighborhoods. The two neighborhoods with the lowest and highest rates of

obesity respectively were directly adjacent to each other. Moreover, both race/ethnicity and "place" were significant independent predictors of obesity.

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C209 6:00 PM-7:00 PM

SELF-MONITORING BEHAVIORAL CHARACTERISTICS AS PREDICTORS OF PHYSICAL ACTIVITY AND WEIGHT LOSS MAINTENANCE

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Despite moderately positive weight outcomes from behavioral weight loss interventions, behavior change maintenance resulting in sustained weight loss continues to be a challenge. Although high rates of physical activity (PA) are associated with better weight loss maintenance, strategies to improve PA continuation, and to identify individuals who show signs of behavioral disengagement are still lacking. In order to improve intervention efficacy and identify individuals in need of supplemental intervention support, interventionists may be able to use information from behavior tracking logs. This analysis aims to define and examine the effect of PA self-monitoring gaps during an active weight loss intervention on PA maintenance and weight loss maintained at 24-month follow-up.

Data were collected from 339 adults participating in a weight loss intervention study in Minneapolis, MN between July 2012 and August 2013. Participants were instructed to track diet and PA behaviors for the 12-month active weight loss intervention using electronic or paper logs. Tracking gaps were defined from these logs as ≥1 week of no activity logging. Short gaps were defined as gaps lasting 1-3 weeks, medium gaps were defined as 4-7 weeks, and long gaps were defined at 8-12 weeks of no behavior tracking. PA was self-reported at baseline, 6, 12, 18, and 24 months via the Paffenbarger Physical Activity Questionnaire. Weight was measured at the same time points by trained staff. The association between gaps in tracking and PA level and weight outcomes at 24 months was examined. All models were adjusted for gender, race, marital status, education level, age, baseline self-efficacy, and treatment arm.

Increases in total number of gaps in PA tracking (RR: 0.95 $p < 0.01$), average length of gaps in PA tracking (RR: 0.99 $p = 0.01$), and medium length gaps in PA self-monitoring (RR: 0.89 $p = 0.02$) were associated with lower PA level at 24 months. Late onset of PA tracking (RD: 6.31 $p < 0.01$), increased total gaps in PA tracking (RD: 0.77 $p < 0.01$) and increased gaps in dietary tracking (RD: 0.90 $p < 0.01$) were associated with higher weight at 24 months. Finally higher numbers in short gaps in both PA self-monitoring (RD: 0.58 p 0.04) and dietary self-monitoring (RD: 0.80 $p=0.02$) were associated with higher weight at 24 months. This analysis offers information about self-monitoring behavior during active weight loss interventions that may be utilized to improve intervention outcomes.

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THE IMPACT OF HEDONIC CAPACITY ON FOOD INTAKE AND NEGATIVE MOOD

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Background: Low hedonic capacity, a reduced ability to experience pleasure from things that are typically rewarding, could increase the risk of emotional eating. Low hedonic capacity is associated with increased substance use and similar reward mechanisms may influence food intake. We hypothesized that low hedonic capacity would predict greater food intake following negative mood induction relative to neutral mood condition and more rapid mood recovery following food consumption during negative mood states.

Methods: In study 1, participants (n=61; 74% female, 39% obese) underwent neutral, anxiety, and anger mood inductions and received 2400 kcal of palatable food. In study 2, participants (n=54; 67% female, 41% obese) underwent anxiety and anger mood inductions; after each they consumed a fixed amount of palatable food (1/5 of their total energy requirement). They completed the Profile of Mood States questionnaire at post-mood induction, post food consumption, and 15 and 30 minutes post food consumption. Hedonic capacity was assessed using the Fawcett Clark Pleasure Capacity Scale.

Results: For study 1, the interaction between mood condition and hedonic capacity did not predict food intake. Hedonic capacity predicted food intake, F(1, 177)=6.149, p=.014, such that participants with lower hedonic capacity consumed more calories. For study 2, a significant time by hedonic capacity interaction was observed for the anxiety condition [F(3, 192)=5.122, p=.002] and the anger condition [F(3, 191)=21.622, p < .001]. Simple slopes analyses showed that the lower the participant's hedonic capacity, the slower the recovery of negative mood.

Discussion: Those with lower hedonic capacity consumed more calories than those with higher hedonic capacity, regardless of mood, but negative mood recovered more slowly for them after consuming palatable foods. Future research should examine if low hedonic capacity is a risk factor for obesity.

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C211 6:00 PM-7:00 PM

THE NEIGHBORHOOD ENVIRONMENT IN THE CONTEXT OF A CHILDHOOD OBESITY INTERVENTION.

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This study examined potential relationships between neighborhood environmental factors and the reach and effectiveness of a family-based childhood obesity intervention. In this mixed method study reach and individual level data were collected as part of the intervention assessments and census data and maps were used to create a geodatabase for the region. Families' addresses were georeferenced and a 400 and 1600-meter buffer was used to determine existing food and physical activity resources (i.e. NEMS and PARA audits). Family participant demographic characteristics were compared with census data by block group. Spatial distribution was evaluated by location, distance, proximity and multiple ring buffer analyses. Multiple regression analysis was used to investigate environmental factors related to change in child outcomes. **Results.** Enrolled families (n=99) were representative based on census data with 36% from low income categories, with the exception of African American families who were over represented in the sample (74% vs 48% census). The majority of enrolled families (81%) were located 10 miles from the intervention location and a high proportion of those that declined participation (77%) were from more than 10-miles away. Physical activity resources were not within 400m of home for 70% of families and one third had no resources within 1600m. PA resources that were available were rated as having poor features (0.43±.14) and limited amenities (1.11±0.27). Families traveled an average 3.7 miles for their grocery shopping. Similar to PA resources, 74% of families did not have any type of food outlet within 400m of home and over half did not have any grocery store within 1600m. Further, grocery stores that were closer to participant homes were rated significant lower in availability of healthy items (27.05±6.46) when compared to those where families reported actually shopping (34.69±4.43). None of the investigated food and PA environmental factors were associated with changes in child outcomes. **Conclusions.** Spatial analysis indicated that distance from intervention site may be an important factor for reach and recruitment of families in this rural region. Enrolled families did not shop at the closest grocery store—but rather shopped at stores that were further away but had higher quality options. This is an important finding considering food access is most often conceptualized as distance in the food

environment literature. Expanding conceptual definitions of food access beyond distances an important next step.

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USING TELEHEALTH TO ENHANCE FAMILY-CENTERED CARE IN A CHILDHOOD OBESITY INTERVENTION

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Background: Family-centered interventions to address childhood obesity have been found to be effective. Incorporating digital technologies to provide parents with tailored behavior change support outside the primary care visit could increase family engagement in interventions.

Objective: To describe the use of telehealth to enhance engagement in a family-centered, randomized trial to improve weight-related outcomes in 2-12 year olds with a BMI ≥85th percentile.

Methods: Health coaches provided tailored behavior change support to families in the intervention arm of *Connect for Health*, a two-arm RCT. Coaching tools considered family preferences, needs, and residential location to improve their experience and study outcomes. Telehealth modalities used included: interactive text messaging to assess behavioral goals and provide counseling; video calls as an alternative option to in-person visits or phone calls with health coaches; and a GIS-mapping tool to identify neighborhood resources that support healthy living (i.e. healthy eating, physical activity).

Results: Between July 2014-March 2015, 360 children were randomized to the intervention arm of *Connect for Health*. From that group, 336 (93%) parents were sent text messages, with 99% responding to at least 1 text message question and 61% responding to more than half of the 46 text questions over a 1-year period. Among parents who completed the 1 year follow-up survey, 72% (226/314) were very satisfied and 23% (72/314) were satisfied with the text message content. Health coaches used a GIS-mapping tool to identify neighborhood resources for families at their first visit and 314 (87%) completed this visit; 95 (30%) parents completed at least one visit by video call, and at follow-up 96% (93/95) of them indicated they would recommend video calls for health coach visits, with 66% citing time saved on travel, 54% the face-to-face interaction, and 38% the money saved on babysitter/parking/travel as reasons to use this modality.

Conclusions: Telehealth enhanced engagement in a family-centered intervention to address childhood obesity. Follow-up analyses will assess how levels of engagement impacted study outcomes.

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WEIGHT STIGMA AND WEIGHT CHANGE OVER THE FRESHMAN YEAR

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OBJECTIVE

The purpose of this study was to assess how weight stigma predicted changes in BMI over the course of the academic year among college freshmen in the SPARC (**S**ocial impact of **P**hysical **A**ctivity and nut**R**ition in **C**ollege) study.

METHODS

Freshman students (n=527; 72% female; 49% white), residing on campus at a southwestern university had height and weight measured by trained research assistants at the start, and up to three additional times during, the 2015-2016 academic year. Participants completed surveys measuring weight stigma by 1) hesitating to have a romantic relationship with a person who is obese 2) being too embarrassed to participate in physical activity in public places because of your weight 3) rating who is most responsible when someone is obese. Response options for 1 and 2 were a four point likert scale and dichotomized to agree/disagree. Response options for 3 were 'The individual' and 'Other factors'. Growth curve models examined the relation between levels of weight stigmaand level of BMI change over the year, after adjusting for gender, race/ethnicity, Pell grant status, initial weight status, and clustering of students within dormitories.

RESULTS

On average, participants’ BMI at time one was 24.1 kg/m^2 and increased by 0.7 kg/m^2 over the academic year. The majority of BMI change occurred in the first semester. A significant non-linear effect of BMI change was observed (p2,95% CI: 0.58 to 2.13, p=0.001). Among those who were embarrassed, BMI change over the academic year was 0.32 kg/m^2 less than their counterparts (95% CI: -0.65 to 0.01, p=0.061). Participants who stated the individual was the most responsible for being obese had a BMI change of 0.37 kg/m^2 less than their counterparts over the year (95% CI: -0.62 to -0.11, p=0.005). Hesitating to have a romantic relationship was not related to BMI change.

CONCLUSIONS

Participants embarrassed about their weight status and who believed they were responsible for their own weight had significantly smaller changes in their BMI over the academic year. This suggests that freshman's attitudes towards obesity is related to weight gain, however, this finding needs to be interpreted with extreme caution. Future research should address potential mechanisms behind these changes.

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AN EXAMINATION OF FACTORS THAT ACCOUNT FOR RACE-RELATED DIFFERENCES IN PAIN INTENSITY AMONG INNER-CITY WOMEN

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Objective: Painful conditions disproportionately affect minority populations as compared to Non-Hispanic/Whites. However, little is known about the mechanisms underlying these race-related differences. The current study investigated 3 potential mediators of the relationship between Race and pain intensity from a diverse sample of women presenting to an inner-city Emergency Department (ED) for treatment of an acute pain complaint.

Methods: As part of an ongoing, longitudinal study examining the relationship between pain and trauma among inner-city women presenting to the ED, baseline ratings of pain catastrophizing [Pain Catastrophizing Scale; (PCS)], posttraumatic stress symptoms [PTSD CheckList; (PCL)], subjective sleep quality [PROMIS-Short Form; (SQ)] and pain intensity were collected from 177 women (M Age = 28.91 years; 65% Black, 20% Latina, 15% White). Three series of bootstrapped mediation models with contrast coding of racial status were conducted to examine whether PCS, PCL and SQ scores mediated links between Race and pain intensity

Results: Across all races, PSC, PCL, SQ and pain intensity scores were significantly correlated (all p's < .05). Significant relative indirect effects were observed for PCL on pain intensity for Black participants relative to Non-Black participants [Latina and Whites combined; (a_1b=0.233)] and Black participants relative to White participants (a_2b=.326). No significant relative indirect effects were observed for PCS or SQ for any race-related comparison on pain intensity.

Conclusion: Results suggest that Black participants reported higher pain intensity as compared to Non-Black and White participants, respecitvely. These effects may be partly accounted for by Black participants having the tendency to report greater PTSD symptoms. Significant race-related differences in pain intensity were not accounted for by race-related differences in Pain Catastrophizing or Sleep Quality. Instead, results imply that greater pain intensity among Black participants when reporting to an ED for acute pain may be due in large measure to their disproportionately greater exposure to traumatic events.

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C215 6:00 PM-7:00 PM

ARE PHYSICAL ACTIVITY RECOMMENDATIONS PROVIDED TOO LATE IN THOSE WITH ARTHRITIS AND OBESITY?

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Background: Physical activity is a key component of evidence-based guidelines to manage many forms of arthritis-related pain. However, implementation of guideline recommendations is suboptimal. Patient characteristics that may influence guideline implementation are not well examined.

Objective: To evaluate patient factors associated with receiving a health professional's recommendation for physical activity to help manage arthritis symptoms in a nationally-representative sample.

Method: Data from the CDC Behavioral Risk Factor Surveillance System 2011 were used. Binary logistic regression models examined the impact of weight status, symptom severity, sociodemographic factors, and health risk behaviors on likelihood of receiving a physician or health professional's recommendation to engage in physical activity to aid symptom management in overweight or obese individuals with arthritis (n=15,004).

Results: Among those with arthritis and BMI ≥ 25, 59.6% (n= 6,555) reported receiving a recommendation for physical activity. Individuals who met criteria for obesity were 1.5 times more likely to receive a recommendation compared to overweight peers (95% CI=1.4, 1.6). Pain and symptom severity were also associated with a recommendation for physical activity. Those reporting increased joint limitation (OR=1.2, 95%CI=1.1, 1.4), negative impact of pain on social function (OR=1.5, 95%CI=1.3, 1.8), and mild (OR=1.8, 95% CI=1.5, 2.1) to maximum pain (OR=1.6, 95%CI=1.3, 2.0) were all more likely to receive a recommendation. Several sociodemographic variables increased likelihood of receiving a recommendation for physical activity including female sex, Black race, and inability to work (p's ≤ .05)

Conclusions: Recommendations for physical activity in those with arthritis were associated with higher BMIs and more severe symptom presentations, and only occur in about half of those who may benefit from physical activity. Given barriers to physical activity for those with more persistent pain and the potential for even small amounts of physical activity to positively

impact arthritis outcomes across time, it is possible recommendations are being given too late in the disease course for maximal benefit.

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C216 6:00 PM-7:00 PM

COMORBIDITY OF CHRONIC PROSTATITIS AND FUNCTIONAL DISORDERS, A TWIN STUDY.

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Chronic prostatitis/chronic pelvic pain syndrome (CP/CPPS) is characterized by pelvic and perineal pains of unclear etiology. CP/CPPS frequently occurs with non-urological associated chronic somatic syndromes (NUAS) of unknown etiology. As part of the MAPP Research Network, we conducted a discordant twin study with men to investigate whether the comorbidity between CP/CPPS and NUAS may reflect a shared familial liability. Data from 1,947 male monozygotic and dizygotic twin pairs participating in the Vietnam Era Twin Registry were used. The twins were middle aged adults (mean age = 61.1 years; SD = 3.1) and self-reported lifetime physician diagnoses of chronic prostatitis (CP of which approximately 90% is CP/CPPS), fibromyalgia, chronic fatigue syndrome, irritable bowel syndrome, and temporomandibular disorder. The overall association of CP with NUAS was examined with a series of mixed effects logistic regression models controlling for twin status and age, resulting in ORs. To test for familial liability, prevalence rates in the non-CP member of discordant pairs were compared to rates in the non-CP control twins and ORs were calculated. A total of 59 twin pairs were discordant for CP and 1,886 pairs were classified as non-CP control pairs. Twins with CP were significantly more likely to also report all of the examined NUAS, confirming the comorbidity of these conditions. With the exception of the association with temporomandibular disorder (OR = 4.73; 95% CI = 1.93-11.58), none of the associations remained significant in analyses examining familial liability, possibly as a result of limited statistical power. There is substantial comorbidity between CP and a number of NUAS in men, but the comorbidity may reflect limited shared familial liability. Larger studies are needed to elucidate familial and environmental factors underlying the association of CP/CPPS with NUAS, especially with temporomandibular disorder.

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C217 6:00 PM-7:00 PM

COPING PROFILES AND HEALTH OUTCOMES AMONG INDIVIDUALS WITH SYSTEMIC SCLEROSIS: A LATENT PROFILE ANALYSIS APPROACH

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Systemic sclerosis (SSc) is a severe, chronic, and progressive rheumatic disease with an extensive impact on quality of life. Although coping has been identified as a mechanism by which individuals can exercise control over serious health challenges and adapt more successfully, to date most studies of coping with illness have examined the relationship of individual coping strategies to adjustment, rather than examining profiles of coping. Latent profile analysis (LPA) allows the identification of coping profiles that incorporate multiple strategies, and that can be used to distinguish subgroups of patients. The primary aims of this study were to (1) identify patient groups with distinct coping profiles using LPA, and (2) compare identified coping profile groups on physical and mental health outcomes.

Participants (*N* = 94) filled out psychological measures including the revised Ways of Coping Checklist (WCCL-R), Health Assessment Questionnaire (HAQ), Psychological Adjustment to Illness Scale (PAIS), and Modified Rodnan Skin Score (mRSS). Two LPAs were done to create profiles derived from participants' raw and relative scores on the eight coping subscales from the WCCL-R including problem-focused (PF), wishful thinking (WT), seeking social support (SS), avoidance (AV), self-blame (SB), blaming others (BO), counting one's blessings (CYB) and religiosity (RG).

A three-profile solution was supported using participants' raw scores. *Low Copers* (*n* = 7) exhibited below-average coping across all subscales; *High Copers* (*n* = 23) exhibited above-average coping across all subscales, and *Mixed Copers* (*n* = 64) exhibited relatively infrequent use of SB, WT, AV, and BO strategies versus frequent use of the PF, WT, CYB, and RG strategies. Two ANCOVAs examined group differences in physical health (HAQ) controlling for age and disease severity, and psychological health (PAIS) controlling for age. Significant differences were found on the PAIS, with *High Copers* exhibiting greater levels of psychological distress when compared with the other two groups.

A two-profile solution was supported using participants' relative scores. *Adaptive Copers* (*n* = 62) emphasized PF, SS, WT, and RG while *Maladaptive Copers* (*n* = 32) emphasized SB AV, CYB,

and BO. The ANCOVA comparing the groups on psychological health revealed that *Adaptive Copers* were significantly less distressed than *Maladaptive* Copers. The findings suggest that patient groups with profiles for coping with illness can be identified. These profiles can further impact patients' mental and physical adjustment to the disease, thus underscoring the importance of examining coping in a multidimensional way.

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C218 6:00 PM-7:00 PM

EVALUATION OF PAIN DISABILITY AMONG VETERANS: A TALE OF TWO MEASURES

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Purpose

A large proportion of Veterans experience chronic pain; however, studies assessing performance of different chronic pain measures in this population are lacking. The present study evaluates psychometric properties and responsiveness of two frequently used measures of functioning with chronic pain, the Oswestry Disability Inventory (ODI) and Pain Disability Questionnaire (PDQ), including both the Functional Status Component (FSC) and Psychosocial Component (PC).

Methods

In Study I, 1988 Veterans with chronic pain who were enrolled in a VA facility and seeking pain management services (10.5% female, *mean age* = 57.5, *SD* = 14.0) reported on locations of pain sites and typical pain levels over the past week, and also completed the ODI and PDQ. Correlations were examined between the ODI, PDQ, and the Veterans' typical pain levels.

In Study II, a subsample of these Veterans (n = 71; 22.5% female, *mean age* = 55.3, *SD* = 9.5) reported on the above measures before and after completing a 12-week Intensive Pain Rehabilitation Program, which included psychological, physical, and medical treatment modalities. A series of t-tests were completed to evaluate these measures' responsiveness to change among Veterans in treatment for chronic pain.

Results

Study I. The ODI demonstrated good internal consistency ($\alpha = .85$). PDQ and its component scales demonstrated good to excellent internal consistency ($\alpha = .92$ for total PDQ, $\alpha = .91$ for FSC, $\alpha = .82$ for PC). The ODI, PDQ-total, PDQ-FSC, PDQ-PC, and typical pain were all significantly, positively correlated (e.g., $r = .74$ for ODI and PDQ, $r = .41$ for ODI and typical pain, and $r = .42$ for PDQ and typical pain, all $p's < .001$).

Study II. Paired-samples t-tests comparing pre- and post-treatment scores revealed significant change in the ODI ($t = 3.1$, $p = .003$), PDQ-total ($t = 5.4$, $p < .001$) and both its subscales ($t =$

5.0, $p < .001$ for FSC, $t = 4.4$, $p < .001$ for PC), as well as typical pain ($t = 3.7$, $p < .001$) for Veterans who completed pain treatment.

Conclusions

Results suggest that both ODI and PDQ measures are useful in measuring pain-related disability among US Veterans with chronic pain. Both measures demonstrated good to excellent internal consistency, and were highly positively correlated with each other and moderately positively correlated with typical pain. Both scales detected change over a 12-week pain rehabilitation program. Future research is needed to better understand the differences in how these measures perform in samples with specific pain conditions.

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EXERCISE IS ASSOCIATED WITH RESILIENCE TO PAIN IN PEOPLE WITH SPINAL CORD INJURY

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Severe chronic pain is common among people with spinal cord injury (SCI), and interferes with medical treatment, quality of life, and adjustment after injury. Exercise has been broadly shown to help manage chronic pain. However, only a few studies have been conducted about exercise and coping with pain in the context of SCI, and these have focused on the efficacy of pain management programs. No studies using a mixed methods approach have examined personal perspectives regarding the association between exercise and resilience to chronic pain in people with SCI. The primary purpose of the present study was to examine the association between utilizing exercise to relieve pain and resilience to chronic pain.

Method

This mixed method study focused on positive (facilitators) and negative (barriers) contributors to individual experiences of living with chronic pain after SCI. The study consisted of 2 parts: (1) individual open-ended qualitative interviews (n=35) to identify common perspectives/themes, and convert them into statements; and (2) online survey (n=491) to quantify the agreement with each statement using Numerical Rating Scales (NRS). The present study utilized part of the data obtained from the survey, specifically regarding pain characteristics and associated psychosocial factors, resilience to pain, and utilizing exercise to relieve pain.

Results and Discussion

Participants (56.0%) reported severe pain (NRS > 6) in the past week. We performed two sets of stepwise regression analyses controlling for age, time since injury, gender, and average pain level. Utilizing exercise was shown to be positively and significantly related to resilience to pain ($\beta = .182$). Gender ($\beta = -.122$), perceived control over one's life ($\beta = .191$), and preferring treatment other than medication ($\beta = .155$) predicted utilizing exercise. Men reported engaging in exercise to relieve pain more than women ($\beta = .201$).

Overall, individuals with SCI who reported utilizing exercise to relieve pain also had higher agreement ratings on resilience to chronic pain. Utilizing exercise was predicted by gender, having greater life control, and preferring alternative treatments to pain medication. Clinical implications include encouraging women with SCI to utilize exercise to relieve their pain, offering additional non-pharmacological treatments, including psychotherapy focused on increasing perceived life control, and increasing physical activity. Study limitations include limited demographic and geographic variability, which may not be generalizable.

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C220 6:00 PM-7:00 PM

PAIN CATASTROPHIZING IN VETERANS: A PILOT STUDY INVESTIGATING PREVALENCE, CLINICAL CORRELATES, AND TREATMENT OUTCOMES

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Pain catastrophizing (PC) is a psychological construct comprised of three dimensions (rumination, magnification, helplessness) that is known to heighten chronic pain intensity and severity; however, research on this topic has been mostly limited to Civilian populations. To date, Veteran-specific investigations of PC have found that higher levels of catastrophizing are linked to increases in negative clinical outcomes (depression, pain severity) and that decreases in catastrophizing via Cognitive-Behavioral Therapy (CBT) explains decreases in these very outcomes. However, ongoing evaluation of this construct in the Veteran population is critical as results may better inform pain treatments. The current pilot study aims to fill a gap in the literature by examining 1) the prevalence and 2) the relationship of PC to clinical outcomes in Veterans with chronic pain in an intensive pain rehabilitation program (IPRP) (n=35; 71.4% male; age (36-68, M=56.2); pain duration in years (0.5-46.0, M=18.7)). Unlike prior Veteran studies, the IPRP is an integrated program which includes CBT but also contains Acceptance and Commitment Therapy and physical therapy. A retrospective study design evaluated pre- and post- treatment assessments of PC (using the 13-item Pain Catastrophizing Scale) in relation to pain intensity, depressive symptoms, pain disability, and kinesiophobia. Results indicated the prevalence of PC was similar to previous Veteran samples, and on average catastrophizing was not clinically significant (M =23.8, SD = 12.2). Pre-treatment Spearman's correlations indicated greater overall PC was related to greater depressive symptoms ($r = 0.57$, $p < .01$), fear of movement ($r = 0.56$, $p < .01$), and pain disability ($r = 0.46$, $p < .01$). In addition, Wilcoxon signed-rank tests comparing pre- and post-treatment measures indicated significant decreases in depression ($z = -3.61$, $p < .001$), pain disability ($z = -3.69$, $p < .001$), and participants' subjective "acceptable" level of pain ($z = -3.80$, $p < .001$), but not significant changes in current pain intensity ($z = -1.59$, $p > .05$). This suggests the administered treatment affected cognitions and emotions associated with chronic pain and subjects' perceived disability level, but had minimal effects on self-reported pain levels. These findings warrant further clarification on the role of PC in the experience and treatment of chronic pain in Veterans, as well as an investigation into mechanisms of change during treatment.

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C221 6:00 PM-7:00 PM

PAIN IN CHILDBIRTH

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Pain in childbirth receives little research attention. Although it may be seen as a biological imperative, pain experienced in childbirth is a predictable acute pain episode that has the potential to be well managed. Just like initial reluctance to use anesthesia in surgery, there seems some opinion that childbirth pain should be tolerated rather than treated. Previous research suggests anxiety is the strongest predictor of childbirth pain. A sample of 137 first time mothers were recruited nationwide in New Zealand. Data from 3 questionnaires is included in this analysis: 24 weeks gestation, pre-birth and post-birth. Caesarian and complicated births were excluded from analysis. A general linear model analysis of covariance was constructed to predict labour pain from both dichotomous and continuous variables. Socio-economic status, the use of hot/warm water, walking, and movement as pain management techniques, antenatal yoga for pregnancy, Plunket antenatal classes, how painful the woman expected her labour to be at 32 weeks, and a woman’s birth expectations at 32 weeks were found to significantly predict experienced labour pain. This data has implications for both birth preparation and managment and may be helpful for various practitioners involved in childbirth. Childbirth is both an emotional and painful experience and much is to be learned from examining the intersection of the various contributions to the pain experience.

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C222 6:00 PM-7:00 PM

RANDOMIZED CONTROLLED TRIAL OF A NURSING-DELIVERED CBT VERSUS SUPPORTIVE CARE TELEPHONE INTERVENTION FOR CHRONIC BACK PAIN

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Objective: To evaluate the efficacy of a nursing-delivered, telephone-based intervention of cognitive behavioral therapy versus supportive care for chronic low back pain.

Methods: Participants (N=57) were patients with chronic back pain (experiencing pain “on a daily basis” ≥ 6 months at a minimum intensity ≥4/10 on a 10-point scale) randomized to either an 8-week, 8-session, Cognitive-Behavioral Self-Management Skills Training (CBSST) or to a Supportive Care condition (SC) matched for contact frequency, format, and time, with each treatment delivered by a trained nurse. Primary outcomes included changes in Roland Morris Disability Questionnaire (RMDQ) and changes in pain and function as self-rated on the Patient Global Impressions Scale (CGI).

Results: Participants in the CBSST condition (n=29) showed significant improvements on the RMDQ (mean=11.3[5.6] at baseline versus mean=8.2[6.1] at post-treatment, $p < .05$) and on the CGI (83.6% reporting improvement). SC participants (n=28) also showed improvement on the RMDQ (mean=11.1[5.5] at baseline versus mean=9.0[5.3] at post-treatment, $p < .05$), with 48.1% reporting improvement on the CGI. Between groups comparisons showed no differences in changes on the RMDQ but significantly better outcomes for CBSST participants on the CGI ($p < .05$).

Conclusions: Results from this clinical trial suggest that telephone-based, nurse-delivered CBSST and SC treatments for patients with chronic back pain each offer potential benefits and may warrant further research for applications to hospital settings.

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SELF-REPORTED RATINGS OF PAIN: DIFFERENCES AT HOME AND AT THE HOSPITAL

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Background. Little work has been done to monitor how social-contextual environment influences subjective pain rating. In other vital signs, such as blood pressure, hospital-based recordings are often exacerbated compared to home-based assessments. We conducted an analysis comparing pain scores collected via home telehealth device to pain scores that were collected at the hospital by a medical provider.

Methods. Data was obtained for a two-year period from a home telehealth device designed to help Veterans with chronic illness monitor and manage their health on a daily basis. Veterans had an opportunity to rate their pain daily on the standard 0-to-10 pain scale. We also retrieved pain scores from each Veteran’s electronic medical record that were collected at outpatient hospital appointments during the same timespan. Veterans (N = 33) each completed an average of 94 pain ratings (range = 2-546) at home through the home telehealth system, without a provider present (n = 3102 total ratings). They rated their pain to a medical provider at an average of 7.88 outpatient medical appointments (range = 2-32) during the same timespan (n = 260 total ratings). Patient-averaged scores for pain were calculated and paired T-tests were conducted, and a discrepancy scores (home minus hospital pain scores) were associated with selected clinical characteristics.

Results. We found that pain ratings at home were significantly higher than those taken at the hospital, $t(32) = 4.16$, $p < .001$, with average at-home pain being rated as 5.42 (SD = 2.15) and average at-hospital pain being 3.79 (SD = 2.33), $d = .73$. We also found that discrepancy scores were associated with hospitalizations, such that higher pain at home than at the hospital was related to a lower likelihood of medical hospitalization, $r = -.38$, $p=.03$; note, 13 of the 33 Veterans were hospitalized. Discrepancy scores were also associated with suicide behaviors, such that higher at-home pain than at-hospital pain was related to a higher likelihood of suicide behaviors, $r = .40$, $p=.02$; note, 4 of the 33 Veterans had suicide behaviors during the two-year period.

Implications. In contrast to what might be expected from other home- versus hospital- based vital sign comparisons, results indicate that pain ratings are reported as being lower when taken at the hospital than at home. The findings suggest that there may be important

environmental cues and psychological processes that impact either actual perceptions of pain or willingness to disclose true pain that may differ according to environmental context. Systems for home-based telemonitoring of pain may need to consider these potential discrepancies in designing clinical response alerts. Future research directions regarding the associations of pain score reporting with hospitalizations and suicide behaviors will also be discussed.

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THE PAIN RELATED SELF-EFFICACY SCALE: A SHORT FORM

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Introduction: Pain-Related Self-Efficacy (PRSE) is a person's confidence that she or he can engage in activities despite chronic pain (CP). Self-reported PRSE is an important therapeutic target because it is more predictive of disability than measures of biomedical domains. Interventions that target and increase PRSE have been found to improve pain, mental health, and quality of life of people with CP. Brief, flexible, and psychometrically sound measures of PRSE facilitate development of effective strategies for managing CP. This study developed a short form (SF) for measuring PRSE.

Methods: The full PRSE item bank contains 35 items calibrated to Item Response Theory (IRT). Development followed rigorous psychometric methodology. CP experts and people with CP provided feedback. All items were administered to a sample of people with CP (n=583) including those with low back pain, multiple sclerosis, osteoarthritis, spinal cord injury, amputations, and diabetic neuropathy. Items for the SF were selected from the full item bank using the IRT parameters and representation of the subdomains. Validity of the IRT-based t-score based on the SF was examined by correlations with related constructs. Test-retest reliability was tested 40 to 80 hours after the first administration.

Results: A correlation between the 5-item SF and the full item bank score (r=.95) and the test-retest reliability (ICC=.90) were both excellent. The correlations of the SF score with related constructs were all in the expected direction and magnitude. The SF five items ask about a person's confidence in, despite having pain, maintaining personal hygiene, ability to do things she/he wants and enjoys doing, ability to cope with pain, and socialize with friends. The SF can be administered on the computer or by paper and pencil questionnaires. A lookup table that converts a simple summary score to an IRT-based t-score was developed.

Conclusions: A 5-item SF measures well across the PRSE continuum and covers important subdomains of PRSE. The results support the validity and reliability of the 5 item PRSE SF. The SF score is on the same metric and directly comparable to the t-score based on the whole item bank. Because the SF is brief it lends itself well for inclusion in clinical practice and research. The SF and the full item bank are publicly available to researchers and clinicians.

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VIEWING A DOCUMENTARY ON BEHAVIORAL MEDICINE APPROACHES TO PAIN REDUCTION INCREASES EMPATHY AMONG FUTURE HEALTH PROFESSIONALS

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In this experimental study, we tested whether viewing an original documentary created by the first author could reduce ageism and increased empathy among future health professionals such as psychology students. The film's duration is one and a half hours; it features several interviews with pain experts who are members of the American Pain Society and who discuss in simple terms: the findings of their behavioral medicine research in areas such as breast cancer-related pain; health disparity topics, including why pain medications may not work well for patients from ethnic minority backgrounds; as well as pain prevention and treatment strategies, emphasizing the difficulties concerning achieving effective pain management for older patients. Moreover, the movie contains accounts of living in chronic pain by several people age 50 and older. To our knowledge, no published literature is available on the effects of viewing a documentary covering prevention and treatment issues related to pain in older age on young people's empathy and ageism scores. We hypothesized that only those research participants who viewed our documentary would have reported lower ageism and higher empathy scores, not the control group participants, who watched a neutral/nature and park documentary of the same duration. Eighty psychology students (age 18 to 29) were randomized via tossing a coin to either the experimental or the control condition, with 40 people per group. Measures included a demographic list, the 17-item Jefferson Scale Empathy–Health Profession Students' version, and the 20-item Prescriptive Intergenerational-Tension Ageism Scale. An independent samples t-test approach was used to compare pre-test and post-test scores between the control and the experimental conditions. For empathy before viewing a film, scores of the control (M=87.44, SD=12.22) and the experimental (M=89.5, SD=13.84) groups were not statistically different, $t(75) = -.069$, $p>.05$. For post-viewing empathy, there was a significant difference in scores between the control (M=88.46, SD=13.43) and the experimental (M=95.66, SD=9.72) groups, $t(75) = -2.69$, $p < .05$, suggesting that viewing the experimental documentary influenced empathy scores. Ageism scores, contrary to our predictions, were not influenced by viewing our film, as we achieved non-significant findings on this variable. The study's limitations and clinical implications are discussed.

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IMPACT OF PROLONGED CLASSROOM SITTING TIME ON STUDENT PERCEPTIONS OF PHYSICAL DISCOMFORT AND ALERTNESS. HOW MUCH IS TOO MUCH?

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Background: Prolonged sitting has been shown to increase fatigue and risk of low back pain and injury in sedentary office workers. Conversely, regularly breaking up workplace sitting with standing bouts every 30 minutes has been shown to improve fatigue and musculoskeletal discomfort in office workers. It is not known whether prolonged classroom sitting similarly impacts fatigue and discomfort in college students and/or how much sitting is too much.

Objective: To explore the impact of prolonged bouts of classroom sitting on student's perceived physical discomfort and alertness. To determine the minimum duration of classroom sitting time needed to induce meaningful impairments in student's perceived physical discomfort and alertness. We hypothesize a positive association between sitting time and perceived discomfort, and a negative association between sitting time and alertness.

Methods: We recruited 58 undergraduate college students enrolled in a single 2.5-hour lecture. Students were asked to remain seated the entire lecture. Students completed the Stanford Sleepiness Scale (SSS; 1=feeling active, vital, alert, wide awake; 8=asleep) to measure altertness and the Shackel General Comfort Scale (SGCS; 0 = I feel completely relaxed; 10 = I feel unbearable pain) to measure physical discomfort every 15 minutes throughout the lecture. Pearson correlations were used to determine relations between sitting time, alertness, and comfort. Regression analysis was used to determine the time it took for student's to report a 4 (I feel uncomfortable) on the SGCS and a 3 (Awake, but relaxed; responsive but not fully alert) on the SSS as these values represent critical thresholds for discomfort and alertness.

Results: A positive association was observed between sitting time and perceived discomfort ($r = 0.31$, $P < 0.01$) while a negative association was observed between sitting time and alertness ($r = 0.47$, $p < 0.01$). Regression analyses indicate student's reported a 4.0 on the SGCS after 88.4 minutes and a 3.0 on the SSS after 26.8 minutes.

Conclusion: These findings suggest student's alertness and discomfort deteriorated over the duration of the seated class period. These findings also suggest students may also benefit from brief activity breaks every 30 minutes during class to minimize impairments in alertness. Future sedentary classroom interventions are needed to confirm these findings.

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ACCELEROMETER-ASSESSED PHYSICAL ACTIVITY AND SEDENTARY TIME IN LUNG CANCER SURVIVORS: ASSOCIATIONS WITH QUALITY OF LIFE

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Background: Few studies have examined physical activity and sedentary time among lung cancer survivors. These studies self-reported these behaviors, which may lead to biased results and incorrect conclusions. This study set out to determine associations of accelerometer-assessed moderate to vigorous intensity physical activity (MVPA) and sedentary time with health-related quality of life (HRQoL) and fatigue among lung cancer survivors. **Methods**: Lung cancer survivors in Southern Alberta (N=527) were invited to complete a mailed survey that assessed HRQoL (FACT-L: Functional Assessment of Cancer Therapy-Lung) and fatigue (FS: Fatigue Scale). Consenting participants wore an Actigraph® GT3X+ accelerometer on their hip for seven days. Average daily MVPA and sedentary time were derived from the accelerometer data, processed using 60-second epochs, and examined as quartiles. To examine associations between accelerometer outcomes and HRQoL, we used linear regression adjusting for wear time, demographic, and clinical variables. **Results:** A total of 127 lung cancer survivors participated (Mean age=71 years; Mean time since diagnosis=75 months) for a 24% response rate. MVPA was significantly associated with FACT-L (B=3.35, 95% CI, 0.37 to 6.32, p=.028) and FS (B=1.83, 95% CI, 0.17 to 3.5, p=.031). Total sedentary time was associated with FACT-L (B=-5.03, 95% CI, -8.45 to -1.61, p=.004) and FS (B=-2.63, 95% CI, -0.46 to -0.72, p=.007). Sedentary time accrued in 30-minute bouts was associated with FACT-L (B=-4.03, 95% CI, -6.97 to -1.09, p=.008). **Conclusion:** Objectively measured MVPA was positively associated with HRQoL and fatigue, while sedentary time was negatively associated with HRQoL and fatigue in lung cancer survivors. Differences in HRQoL and fatigue met thresholds for determining clinically meaningful differences. This is the first study to examine associations of accelerometer-assessed physical activity and sedentary time with HRQoL and fatigue in lung cancer survivors.

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BODY IMAGE AND SELF-EFFICACY AS PREDICTORS OF ACHIEVING PHYSICAL ACTIVITY GUIDELINES IN UNIVERSITY STUDENTS

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Declines in moderate-to-vigorous physical activity (MVPA) have been observed during developmental transitions particularly in young adults entering college. Negative body image, which also tends to become more negative in young adults, has been associated with lower levels of exercise self-efficacy and physical activity (PA). **PURPOSE:** To examine the role of body image and other predictor variables on meeting MVPA guidelines among university students at 2 campuses. **METHODS:** N=128 college students (28 males and 84 females, mean±sd: age, 21.6±3.1 yrs; BMI 31.6±3.7 $kg{\cdot}m^{-2}$) completed demographic questions (age, gender, race, BMI), the International Physical Activity Questionnaire (IPAQ), the Body Image Quality of Life Inventory Scale (BQLI) and physical activity self-efficacy (PA-SE). MVPA was calculated for each participant based on the days and minutes of self-reported activity, with meeting guidelines defined as 150 minutes/week of combined MVPA. **RESULTS:** When entered separately into logistic regression models, higher levels of PA-SE (*p*ppCONCLUSION: Among young adults with excess weight, physical activity self-efficacy was an important factor in predicting MVPA. While body image might play a role in the initiation of PA, further work should be conducted to determine the importance of the confidence young adults have to continue PA despite barriers (including negative body image).

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DOES TIME MATTER? ASSOCIATIONS BETWEEN REPORTED PARENT-CHILD TIME TOGETHER AND OBJECTIVELY MEASURED CHILD PHYSICAL ACTIVITY

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Background: Active parents tend to have active children but how much of this is due to encouragement and facilitation of activity compared with actual time spent being active with their children?US guidelines note that there is little research to fully substantiate how and how much parents influence child physical activity (PA).

Methods: We examined the effects of 1) daily waking parent-child time together (parent reported average over past month) and 2) parent-child time doing PA (parent-reported over the past week) on both moderate-vigorous intensity physical activity (MVPA) and sedentary time (min/d) of children in the following week. All variables were separated by weekend days (WE) and weekdays (WD). A low-income parent with obesity and her child aged 6-12 years wore accelerometers simultaneously for a week (minimum of 3 WD and 1 WE day). Linear regression was used to determine the effect of self-reported parent-child time together on objectively measured child PA adjusting for child age, child sex, parent BMI, child BMI %, and parent education.

Results: The initial 47 parent-child dyads with complete data from an ongoing study of 240 families were included. 96% of adult and 51% of children were female. On average, children performed MVPA for 17.6 (SD =10.9) and 17.7 (SD = 11.3) min/d for WD and WE days. Parents averaged 1.4 (SD = 1.44) hours total time participating in PA with their children on weekends (2 days) and 2.63 hours (SD= 2.61) over 5 WD. Parent MVPA (accelerometry) during the same week showed a significant effect on child MVPA on both WD ($\beta = 0.246$, $p = 0.044$) and WE days ($\beta = 0.428$, $p = 0.005$). However self-reported average daily waking time spent with children had no effect on sedentary time (WD β= 1.821, p=0.46; WE β=0.111, p=0.98) or MVPA (WD β= 0.158, p=0.63; WE β=0.255, p=0.60) in children. Neither did time spent in PA with children in the week prior affect sedentary time (WD β= -5.626, p=0.27; WE β= -0.784, p=0.95) or MVPA (WD β= 0.658, p=0.30; WE β=1.209, p=0.36).

Conclusions: Measurement of MVPA simultaneously with accelerometers showed an association between parent and child MVPA. However parent reports of waking time spent

with children and time spent in PA with children did not affect objectively measured child MVPA or sedentary time. Self-reported measures of time children and parents spend together may not be sufficient. Technology tracking movement and proximity to another person may be needed to understand these effects.

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ENHANCING INTERNAL VALIDITY IN WORK PERFORMANCE ASSESSMENTS WITH ACTIVE WORKSTATIONS: RECOMMENDATIONS FROM A CASE STUDY

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Background: As lack of time is a common barrier to exercise, many studies are investigating if adults can concurrently use active workstations (e.g., pedaling or treadmill desks) while accomplishing productive office work. Experimental studies that assess if concurrent physical activity affects work performance should be set up with high internal validity. However, there is a lack of established protocols to maximize internal validity in studies assessing the effects of active workstations on work performance.

Methods and Results: We present a case study of efforts to maximize internal validity in an ongoing lab-based experiment with approximately 90 sedentary adults that is comparing the effects of using a compact under-the-desk pedaling device at 17 and 25 watts vs. a standard seated condition on office-based work performance. First, to ensure a consistent pedaling speed at each wattage level, we designed a pedaling speed monitor that uses Hall effect sensors with a microcontroller to transmit participants' pedaling data to a computer in real-time. Participants substantively deviating from the targeted speed during our experiment have received real-time visual and auditory prompts, yielding typical adherence rates of over 85% to the pedaling speed protocol. Furthermore, on four separate trials, the 60 observed pedaling rotations corresponded 100% to the actual-measured pedaling rotations recorded by the speed monitor, indicating reliable and valid measurement. Second, to facilitate valid assessment of work performance at different pedaling speeds, we selected typing, reading, and phone/logic tasks with non-significant learning curves/improvement after performing two initial practice trials, and we developed scripted task instructions. Third, based on pilot-testing, to control confounding ergonomic/environmental factors we used an adjustable-height desk, a non-swivel and non-wheeled adjustable-height chair, non-slip equipment mats, and 30 second to 5 minute rest/hydration breaks between randomly-sequenced experimental tasks.

Conclusions: Assessing the effects of active workstations on work performance requires controlling measurement errors related to physical activity, work performance, and extraneous ergonomic and environmental factors. Grant proposals should budget funds for developmental work to maximize internal validity and journal editors should require describing this work, so that efforts to integrate active workstations into workplaces are based on valid and reproducible science.

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EXERCISE-RELATED ATTITUDINAL CHANGES AFTER 20 HOURS OF COGNITIVE TRAINING

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Explicit and implicit attitudes can influence motivation for engagement and maintenance of physical activity (PA) behavior. To date, no randomized controlled trial has been designed to change PA-related attitudes through cognitive training (CT). The aim of the NHLBI-funded Cognitive Regulation and Exercise (CORTEX) trial was to test the efficacy of a 20-hour CT program to increase exercise adherence for middle-aged adults by enhancing exercise self-efficacy and self-regulatory strategy-use. The CT intervention emphasized dual task training and self-as-exerciser priming while the control group watched health education videos. All participants were then enrolled in a 4-mo exercise program. In a secondary data analysis, path modeling was used to test mechanisms of exercise-specific cognitive change. Explicit attitude was assessed via a composite score from the *Exercise Self-Schema Questionnaire*. Implicit attitude was assessed via a PA-specific *Single-Category Implicit Association Task* (S-CIAT). Pre-post CT change scores were computed for both mediators. The total number of electronically-recorded fitness facility visits was the dependent PA behavioral outcome. The model (χ^2 (5)=10.93, p=.053, CFI=0.93, SRMR=0.03) adjusted for age, gender, education, race, baseline PA, injury, and pre-exercise dropout, fit the data with group having a significant direct effect on total visits (β=0.30, p= < 0.05), favoring the CT group. The results show significant (p= < 0.05) direct effects of group on changes in self-schema (β=-0.45), which had a direct effect on total visits (β=0.13) and a marginally significant indirect effect of group on total visits via exercise self-schema (β=-0.13, p=0.08). Group and total visits were not predicted by implict attitudes. In a simple regression model, baseline Implicit Assoication Task (S-CIAT) did predict lifestyle PA (β=0.22, p= < 0.05) assessed via Fitbit steps at program end. These findings are consistent with prior research, indicating that explicit self-schema influences goal-directed behavior and lifestyle PA may be more sensitive to effects from implicit attitudes. Changing explicit and implicit attitudes towards PA can increase adherence to exercise programs.

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FEASIBILITY AND EFFICACY OF A PHYSICAL ACTIVITY INTERVENTION FOR THE PREVENTION OF POSTPARTUM DEPRESSION: A RANDOMIZED TRIAL

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Approximately 10-13% of women experience postpartum depression. Furthermore, one-third of women who have a history of depression report depression following childbirth. Therefore, it is important to examine the efficacy of low cost, innovative interventions designed to prevent postpartum depression among women at risk. Research indicates that physical activity interventions prevent depression among the general population; however, few studies have examined the efficacy of these interventions for postpartum women. The purpose of this study was to examine the efficacy of a six-month physical activity intervention on the prevention of postpartum depression. Specifically, 450 sedentary postpartum women (participants were less than eight weeks postpartum) who had a history of depression prior to pregnancy and were not taking an antidepressant were randomized to one of three groups: (1) Telephone-based exercise intervention (based on social cognitive theory and self-determination theory); (2) telephone-based wellness/support intervention (topics such as sleep, stress, and healthy eating); or (3) usual care. Participants were recruited via online, email, and print advertisements. Participants were mostly married (72%), a majority had a college education (68%), and several were employed (65%). Forty-one percent of the participants identified as a racial or ethnic minority. Depression was assessed using the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I) and the Edinburgh Postnatal Depression Scale (EPDS). Physical activity was assessed using the 7-Day Physical Activity Recall Interview and the ActiGraph. Of the 423 participants due for their six-month assessments, 91% have completed this assessment. The assessments are currently ongoing and the six-month assessments will be available at the time of the conference presentation. Based on a 3-item questionnaire administered at 9 months, preliminary data indicate that 91% of the participants reported enjoying the program and found it useful. Our study indicated that a physical activity intervention is feasible and acceptable among postpartum women at risk for depression.

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FEASIBILITY OF A CLIMATE-BASED AFTER SCHOOL PHYSICAL ACTIVITY INTERVENTION FOR MIDDLE SCHOOL YOUTH; CONNECT THROUGH PLAY

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The proposed study tested the feasibility of the ‘Connect through Positive Leisure Activities for Youth (‘Connect’) afterschool physical activity (PA) program, a climate-based intervention that expands on the social-motivational constructs highlighted by Self-Determination Theoryand Achievement Goal Theory, to increase the PA of underserved (i.e., low income, minority status) middle school youth within afterschool programs (ASPs). The Connect intervention aims to improve the PA social motivational climate of pre-existing ASPs by emphasizing social benefits of PA (i.e., developing friendships, peer connectedness, staff-youth connections, and group belonging), as the primary goal, purpose and achievement of PA. The two primary components of the program involved “Get to know you” small group sessions aimed at providing youth guided social opportunities that facilitate peer acceptance, cooperation, and friendship, and a novel socially-oriented PA curriculum infused within ASPs free play sessions. For the current study, intervention feasible was evaluated by examining: 1) youth’s greater perceived connectedness and affiliation goal orientation toward PA from baseline to post-intervention (e.g., The Need for Relatedness Scale; Social Motivational Orientations Scale for Sport) using youth survey; 2) changes in targeted social climate components from baseline to post-intervention as measured by systematic observations (SOCARP and MCOT supplement) and youth surveys (e.g., Perceived Teacher Support Scale; Peer Motivational Climate in Youth Sport Questionnaire), and; 3) whether youth in the social climate program (vs. comparison) demonstrate greater increases in positive PA affect, and cognitions (e.g., The Intrinsic Interest Scale), and moderate-to-vigorous PA (accelerometer and SOCARP) from baseline to post-intervention. Comparison of ASPs receiving the “Connect” intervention (N=3 ASPs) with ASPs providing the typical curriculum serving as the control (N=3 ASPs) yield preliminary data on the effectiveness of social mediators for improving PA among at-risk youth that can inform future intervention design and youth programming policy. For example, preliminary analyses indicated changes in critical social climate components (e.g., positive peer interactions [$t(59)=3.60$, $p=.000$]; peer PA social support [$t(47)=2.46$, $p=.001$]), youth PA motivations (e.g., PA regulatory motives [$t(47)=2.12$, $p=.05$]; PA engagement [$t(59)=6.73$, $p=.000$]) and youth PA ([$t(59)=4.65$, $p=.000$]).

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HOW LONG DOES THE POSITIVE AFFECTIVE RESPONSE TO EXERCISE LAST? AN EMA STUDY.

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Background/Aim: Prior research has shown that many people experience a positive shift in affective valence from pre- to post-exercise. This study aims to describe the duration of this positive affective response in a natural setting.

Methods: Participants included 59 overweight or obese insufficiently active adults enrolled in a 6-month field-based exercise (i.e., walking) promotion intervention. Participants were asked to self-report via ecological momentary assessment (EMA) the beginning and end of each exercise session, and were then prompted to report their affective valence on the 11-point Feeling Scale (FS; from -5 [very bad] to +5 [very good] with zero as neutral) immediately prior to exercise, immediately following exercise, and 15 minutes after the end of exercise. Participants were also prompted to respond to the FS at random intervals throughout the day. The responses to the FS were used to characterize how long it took for the positive shift in affective valence from immediate pre- to immediate post-exercise to return to pre-exercise levels among those who experienced a positive shift from pre- to post-exercise.

Results: The data set included 2788 sessions of exercise of at least 10 minutes over the 6-month period from the 59 participants. Of these, 1169 (42%) displayed a positive shift in affective valence from pre- to post-exercise, 1135 (41%) showed no change, and 480 (17%) showed a negative shift. For 17% of the exercise sessions for which there was a positive shift in affective valence, participants' affect returned to pre-exercise levels within 15 minutes after exercise. Affective valence returned to pre-exercise levels in 25%, 31%, 41%, 47% and 51% of sessions by 1 hour, 2 hours, 3 hours, 4 hours, and 5 hours post-exercise, respectively, representing a significant dissipation of affective valence over time (Z=4.02, $p < 0.001$).

Discussion: The commonly experienced positive shift in affective valence from pre- to post-exercise dissipated over time, but nonetheless persisted in nearly 50% of exercise sessions by 5 hours post-exercise, suggesting a lasting positive effect of acute exercise on affective

valence in a significant proportion of exercise sessions. In future research we plan to identify predictors of the persistence versus dissipation of the positive effect of exercise on affective valence.

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IDENTIFYING UNIQUE PATTERNS OF DAILY ACTIVITY AMONG LATINAS ENROLLED IN A 12-MONTH PHYSICAL ACTIVITY INTERVENTION

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Background: Traditional randomized controlled trial physical activity interventions have relied on measuring physical activity during brief time points over the course of the intervention (baseline, 6 months, 12 months) to determine effectiveness. Adding a continuous measure of activity (pedometer) would allow interventionists to better understand the impact of intervention exposures on patterns of physical activity through the use of latent class analyses.

Objective: The purpose of the current study is to use a latent class model (LCM) to identify unique patterns of daily step counts over 12 months, among Latinas enrolled in a print-based physical activity intervention.

Methods: Participants were low-active females (N=122, mean age=41.1, SD=10.0) randomized to an individually tailored and linguistically adapted physical activity intervention. Objective daily steps were recorded using Omron HJ720ITC pedometers which were given to participants as part of the intervention. Steps were recorded daily for 12 months. Self-reported physical activity (as collected via the 7-day PAR) was the primary study outcome, and was collected at baseline, 6 and 12 months.

Results: Results suggested a 5-class model was best supported by the data. Based on the observed patterns, classes were labeled as “non-engaged” (26%), “steady adopters” (29%), “early attempters” (18%), “late attempters” (12%), and “unstable engagers” (15%). Analyses suggested a significant association between class and mean min/week of self-reported moderate to vigorous physical activity (MVPA), $p < .01$, such that "steady adopters" reported significantly more MVPA at 6 and 12 months compared to all other classes. Furthermore, "late attempters" reported significantly more MVPA at 12 months compared to "non-engaged", "early attempters", and "unstable engagers", $p < .05$. In addition, between-class differences were found in baseline demographics (BMI, household make-up), and changes in psychosocial constructs (self-efficacy, enjoyment, process variables) over time.

Conclusions: These findings identified five unique patterns of activity uptake among participants of a 12 month intervention. This information could be used to further enhance future interventions by identifying participants who are at risk of failing the intervention (e.g., “non-engaged”, “unstable engagers”) early in the process and providing those individuals with enhanced or additional treatment.

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LONGITUDINAL RELATIONSHIPS BETWEEN SELF-CONCEPT AND NEIGHBORHOOD SOCIAL LIFE AS PREDICTORS OF PHYSICAL ACTIVITY

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People are more likely to engage in physical activity (PA) when PA engagement is seen as a central to their self-concept (SC). Self-Determination Theory and Social-Cognitive Theory propose that volition (i.e., self-determined-motivation; SDM) and competency (i.e., self-efficacy; SE) are critical for PA, but these constructs may fluctuate across time as motivation and barriers change. SC, which is grounded more centrally in one's self-identity, should be a more stable predictor of PA. Little research has directly compared how SC, SE, and SDM predict longitudinal PA, with few studies testing these relationships among underserved groups. Furthermore, it remains unclear how well such individual-level factors predict PA when accounting for broader ecological factors including perceived neighborhood social life (SL) and neighborhood satisfaction (NS). We hypothesized that SC would be a stronger predictor of longitudinal PA (relative to SDM or SE) and that SL and NS would also predict PA. Data were collected from African Americans ($N = 417$, $M_{\text{age}} = 51.65$, 62% female, $M_{\text{income}} <= \$25,000$/yr) enrolled in the Positive Action to Today's Health randomized trial. PA was assessed using 7-day accelerometry-estimates and psychosocial data were collected at baseline, 12- and 24-months. Multilevel growth modeling was used to test for within- and between-person effects. Sex, age, time, BMI, income, and community were included as covariates (no community effects were observed). There were no significant within-person effects. At the between-person level, only average SC was significant, ($b = .58$, $SE = .24$, $p = .018$), which was not moderated by time. At baseline people with a higher average SC engaged in greater PA than those with a lower average SC, and the positive association between average SC and PA at baseline remained constant across time. A significant interaction between time and average SL ($b = .29$, $SE = .11$, $p = .010$) also showed that people with a higher average SL increased their PA over time compared to people with a lower SL. These results suggest that SC and SL are critical predictors of PA in African Americans, which should be considered in future interventions. These factors may be particularly relevant to long-term changes and maintenance of PA in underserved populations.

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MORE THAN JUST A GAME? A RANDOMIZED CONTROLLED TRIAL OF POKéMON GO ON PHYSICAL ACTIVITY HABITS

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Background: With only 20% of Americans meeting the federal physical activity guidelines, there is a need for scalable and effective interventions. Pokémon Go is a free, augmented reality game that encourages users to explore/walk to real locations to complete the game's objectives. While extremely popular (100 million downloads, 20 million active users daily), the efficacy of Pokémon Go for increasing physical activity habits has not yet been tested.

Objective: The purpose of this study was to test the efficacy of Pokémon Go for increasing daily steps as compared to a control group that did not receive Pokémon Go over eight weeks.

Methods: We recruited 100adults who owned a smart phone and reported having never played Pokémon Go previously. Upon enrollment, all participants were provided a Fitbit Zip to wear daily throughout the intervention as an objective measure of physical activity. Participants were randomized (1:1 ratio) to either: 1) Fitbit only (FB; N=50; 80% female, 37.3 ± 14.0 years; BMI=29.1 ± 6.6 kg/m^2); or 2) Fitbit + Pokémon Go (FB+P; N=47; 70% female; 39.1 ± 16.0 years; BMI=28.7 ± 6.5 kg/m^2). Average daily steps and number of daily active minutes ($\geq$100 steps/minute) over the 8 week intervention were analyzed with linear mixed models.

Results: The FB+P arm walked more daily steps/day (+539 steps/day; SE=630, t = 0.86) and completed more active steps (+5.0; SE=3.56; t = 1.14) than FB participants on average over the entire eight-week intervention but neither effect was statistically significant. However, by the end of eight-weeks, the FB+P arm completed significantly more active minutes than the FB group.

Conclusions: Pokémon Go appears to have had a modest, but positive, impact on physical activity levels among these participants. Given its widespread adoption and use, this innovative game and others like it hold significant potential for improving physical activity levels on a large scale. Future collaborative relationships between public health researchers and game developers are encouraged.

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OBESE ADULTS' FORECASTED AND ACTUAL EXPERIENCES DURING PHYSICAL ACTIVITY: IS THERE A DISCREPANCY?

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Affective experiences during physical activity (PA) are related to current and future PA behavior. Limited research has examined individuals' predictions of how they will feel during PA, despite the potential of such forecasts to affect PA decisions. The present study examined forecasted and actual affective (i.e., excitement, contentment) and physical (i.e., energy, strength, pain) experiences during PA, as well as the accuracy of forecasts based on current PA level, among 311 obese adults beginning weight loss treatment. Participants (M_{BMI}=35.6 kg/m^2, 78.5% female) completed a half-mile walk test on a treadmill in the laboratory. Prior to the task, participants forecasted how they would feel during the walk along five bipolar scales (bored-enthusiastic, irritable-content, exhausted-energetic, weak-strong, great pain-no pain). Negative ratings were anchored at 0; positive ratings were anchored at 100. Mid-walk, participants used the same scales to report on their actual experiences. After the walk, PA was measured for 7 days using accelerometers, and participants were classified as currently engaging in no PA (no bouted moderate-to-vigorous PA/week) or in some PA (≥10 min. of moderate-to-vigorous PA/week). Results revealed participants generally made favorable forecasts (*M*s = 64.3 to 82.8). Contrary to past research, participants' experienced enthusiasm (*M*=60.7) was *lower* than forecasted (*M*= 64.3; p=.01, partial eta squared=.02). However, there was a trend for experienced energy (*M*=70.7) being greater than forecasted (*M*=68.9, p=.07). Differences also were observed in forecasting accuracy for strength and pain based on 7-day PA level (no vs. some). While individuals engaging in some PA forecasted slightly greater strength and less pain than was experienced, individuals engaging in no PA forecasted lower energy and more pain than was experienced (*ps* < .03). Of note, however, all effect sizes and differences in forecasted and actual ratings were small. These findings suggest obese adults make generally favorable forecasts about PA experiences, though forecasts may not be completely accurate. Additionally, inactive individuals may make greater, more negative forecasting errors for some aspects of PA. As this is the first study to examine PA forecasting among obese individuals, additional research on this topic is needed. Future studies should examine whether forecasting errors impact PA decisions to help clarify the clinical significance of these findings.

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PHYSICAL ACTIVITY AND MULTIPLE SCLEROSIS: AN UPDATED META-ANALYSIS

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Introduction: Approximately 2.5 million people worldwide are living with multiple sclerosis (MS). Evidence suggests that persons with MS can manage the manifestations of the disease with physical activity. This meta-analysis examines physical activity levels in persons with MS compared with non-diseased and other clinical populations. Methods: We searched PUBMED, PsycINFO and Web of Science using the key words physical activity, exercise and physical fitness in conjunction with MS. Manual searches of bibliographies of the retrieved papers were included. We conducted a quantitative synthesis of the difference in physical activity levels among persons with MS compared with non-diseased and other clinical populations and then examined moderators that explain variation in the overall difference of physical activity using meta-analytic procedures. Results: Overall, 21 studies were included involving 5,303 persons with MS and yielded a mean effect size (ES) of -0.567 (95% CI= -0.763,-0.371). The weighted mean ES was heterogeneous ($Q=443.811$, $df=31$, $p < 0.001$). The magnitude of the ES increased when comparing non-diseased populations versus the MS population but decreased when comparing clinical populations with the MS population. Likewise, the ES was larger for objective measures of physical activity versus subjective measures of physical activity. Conclusion: The cumulative evidence suggests that persons with MS are less physically activity than non-diseased, but not clinical populations.

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QUALITY PARTICIPATION AND DELIVERY STRATEGIES OF PHYSICAL ACTIVITY PROGRAMS FOR VETERANS WITH A PHYSICAL DISABILITY

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Introduction: The number of physical activity programs for veterans with a physical disability has increased due to improved knowledge of the physical and psychosocial benefits of physical activity participation for veterans post-injury. When developing physical activity programs for veterans post-injury, it is important that program developers and staff focus not only on whether their participants are showing up (i.e. the quantity of a veteran's participation) but whether they are providing a quality program that fosters quality physical activity experiences. A quality program or experience can be conceptualized as including the following elements: autonomy; belongingness; challenge; engagement; mastery; and meaning. While the elements of quality participation have been identified, an important research gap exists when building evidence for how to develop and deliver quality experiences for veterans, particularly the need to understand what program delivery strategies result in quality physical activity experiences. The purpose of the current study is to identify strategies used to deliver physical activity programs to veterans with a physical disability, and interpret these strategies in relation to their potential utility for fostering quality participation.

Methods: Semi-structured interviews were conducted with program staff from three veteran physical activity programs, and program documentation collected. Each program represented a different country, with programs for veterans from the United States of America, United Kingdom, and Canada represented. Interviews and documents were first analyzed using a thematic analysis to identify delivery strategies. Strategies were then interpreted in relation to their potential links to fostering quality elements of participation.

Results: Four themes were identified as program delivery strategies: (1) foster social connections; (2) challenge participants; (3) tailor programs and outcomes to match participant needs; and (4) include knowledgeable coaches/instructors. All strategies linked to elements of quality participation.

Discussion/Conclusion: This study provides a first look at physical activity program delivery for veterans with a physical disability. The findings, evidence of real-world strategies used to deliver programming to veterans, provide indications of how future programs may potentially create and deliver quality physical activity experiences.

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SOCIO-DEMOGRAPHIC MODERATORS OF ENVIRONMENT-PHYSICAL ACTIVITY ASSOCIATIONS: THE INTERNATIONAL PREVALENCE STUDY RESULTS

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Background: Neighborhood environmental factors are related to physical activity (PA). Associations between environmental factors and PA may vary across socio-demographic factors, but evidence has been limited to single-country studies with little variability in geographic and population characteristics. We investigated socio-demographic moderators of associations between perceived environmental factors and self-reported PA using data from a multi-country study of adults' PA.
Methods: Questionnaires assessed socio-demographic factors, 7 perceived neighborhood environmental factors, and total physical activity as measured by the IPAQ short from 11,144 adults from 9 countries. Logistic models, weighted and adjusted for country site, examined associations of the perceived environment factors with meeting PA guidelines (PAG). To assess moderator effects, we tested interactions of age, sex, and education with each perceived environmental factor.
Results: 3 out of 21 interactions tested were significant ($p < .05$). Sex moderated associations of safety from crime and the presence of transit stops with meeting PAG. Perceived safety from crime was positively related to meeting PAG only among women (OR= 1.24, 95% CI: 1.07-1.45). Perceived presence of transit stops was positively related to meeting PAG only among men (OR=1.29; 95% CI: 1.03-1.62). Education moderated associations between perceived presence of transit stops and meeting PAG. Perceived presence of transit stops was positively related to meeting PAG among the high education group (OR=1.27; 95% CI: 1.04-1.56) but inversely related in the low education group (OR=0.71, 95% CI: 0.53-0.94).
Conclusions: For women, safety from crime was the most important perceived environmental factor for meeting PAG while for men it was the presence of transit stops. In the high education group, the presence of transit stops was important for meeting PAG. Among those with lower education, the presence transit stops may be a barrier to meeting PAG. Disparities in global PA levels may be partly explained by interactions between neighborhood environmental and socio-demographic factors.

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SUNBURN AND SUN PROTECTIVE BEHAVIOR IN RELATIVELY ACTIVE AND INACTIVE TEENS

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Physical activity (PA) has been strongly related to melanoma in adults, ostensibly via increased sun exposure. Surveillance data also documents similarly strong positive associations between PA and sunburn, the best clinically relevant proximal intervention target for melanoma. However, we lack national data regarding these associations in teens. These data are vital since children typically have more outdoor time, are more physically active, and have greater sensitivity to ultraviolet radiation than adults. Using data from the National Cancer Institute's Family Life, Activity, Sun, Health, and Eating (FLASHE) national survey, our purpose was to compare incidence of sunburn and sun-safe behaviors among relatively physically active and inactive teens (N = 1661) aged 12 -18. More girls (47%) than boys (39%)reported sunburn in the last year (X^2 (1) = 8.03, p = .003). In logistic regressions stratified by gender and controlling for age and race, total PA was associated with slightly increased odds of sunburn (at least one in last 12 months) for girls (*OR* = 1.003, *p* = .009), but not for boys. However, out-of-school PA was associated with increased odds of sunburn (*OR* = 1.005, *p* = .005) for both boys and girls. In multiple regressions controlling for age, race, and gender, PA was positively associated with sunscreen and hat use (*b's* = .003 & .004, *ps* < .0001, respectively), but not use of other clothing or sun-safe practices. Unfortunately, frequent sunscreen use ("often" or "always on warm sunny days") was uncommon (34%) and positively associated with sunburn (*OR* = 1.14, *p* = .012), whereas clothing (except hat) use was unrelated to sunburn. These data are consistent with prior reports of high sunburn rate among teens, but extend knowledge by indicating that sunburn incidence may be heightened, albeit minimally, by PA participation, especially out-of-school PA. The association of PA with both sunburn and some sun-safe behaviors suggests several possibilities, including, reverse causation between sunburn and sun protection or the influence of a third unmeasured variable; less than optimal use of sunscreen or pairing of sunscreen with sun-protective clothing among physically active teens (given likely higher sun exposure accompanying PA); or possible strategic intent for sunscreen use gone awry among the physically active (i.e., to tan, but not burn). We discuss these prospects and implications for future research that may explore the extent to which motives for PA (e.g., appearance) impact sun-safe behavior, and intervention research opportunity with youth sports and recreation organizations who may leverage their infrastructure and rule making authority to infuse sun-safe policies and practices.

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TRACKING PATTERNS OF FATIGUE AND THE SYMPTOM BURDEN IN ACUTE LEUKEMIA - PACE-AL RANDOMIZED CONTROLLED TRIAL

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Background: Exercise and counseling interventions, widely used as rehabilitation strategies in cancer patients to remedy disease and treatment-related sequel is novel in patients with acute leukemia due to the life threatening nature of the disease and its intensive treatment. In a two-center, randomized controlled trial (PACE-AL; clinicaltrials.gov identifier:01404520), we assessed whether a multimodal intervention could modulate treatment-related symptoms and physical and functional debilitation of patients with acute leukemia during outpatient consolidation chemotherapy.

Objective: To evaluate the effect of a multimodal intervention on the type, severity and pattern of commonly experienced treatment-related symptoms in patients with acute leukemia during consolidation chemotherapy.

Material and methods: Patients were randomized to usual care or a 12-week, 3 day/week supervised multimodal program: stationary cycle, resistance training, dynamic exercises, relaxation training, nutritional support and a goal-setting counseling intervention. 70 patients (mean 53.1 years) were randomly assigned to the intervention (n=32) or control group (n=34), and 62 completed study requirements (88.6%). All patients scored their symptoms weekly using the MD Anderson Symptom Inventory and Brief Fatigue Inventory during the 12 week study period.

Results and conclusion: Fatigue and symptom patterns were identified throughout the 12-week study period. The intervention group reported experiencing greater fatigue during the study period, however there was no difference in symptom interference in daily life. At end-of study, most symptoms were lessened in both groups, though there was a clear trend towards reduced fatigue intensity experienced in the intervention group. Understanding the patterns of fatigue and the symptom burden during consolidation chemotherapy treatment for patients with acute leukemia can assist in the development of important strategies in symptom management. The role of exercise and counseling integrated in the clinical setting has the potential of optimizing the management of acute leukemia and may facilitate resumption of everyday activities.

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THE RELATIONSHIP BETWEEN CHRONOTYPE AND PHYSICAL QOL IN COLLEGE STUDENTS: THE MEDIATING EFFECT OF FATIGUE AND ACADEMIC BURNOUT

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Objective: Evening chronotype has been previously reported to be associated with decreased overall health of college students. According to the social jetlag theory, social time demands evening type students to accordingly adjust their daily rhythm, which potentially results in poor health outcomes. Given that regular schedule in college appears to be more workable for morning type students, evening type students might be more vulnerable to fatigue and burnout due to the inconsistency between their daily life and personal chronotype. The present study examined whether fatigue and academic burnout mediate the relationship between chronotype and physical quality of life (QOL).

Methods: The participants (*N*=500, mean age=21.3, 56.2% male) completed Composite Scale for Mornings, Chalder Fatigue Scale, Maslach Burnout Inventory-Student Survey, and World Health Organization Quality of Life Instrument-Short Version. PROCESS macro for SPSS (Hayes, 2013) was used to examine the mediating effects

Results: Chronotype, fatigue, and academic burnout accounted for 38.6% of variance in the physical QOL. The direct effect of chronotype on physical QOL was not significant (*b*=.007, *p*=.574). By contrast, the indirect effects of chronotype on physical QOL through fatigue (*b*=.014, [95% bias-corrected bootstrap CI .005, .026]) and academic burnout (*b*=.007, [.002, .014]) were significant. Furthermore, the dual mediating effect of fatigue and academic burnout between chronotype and physical QOL was also significant (*b*=.001, [.000, .003]).

Discussion: Our results suggest that the chronotype (evening type) negatively affects physical QOL through its impact on fatigue and academic burnout. Evening type students may benefit from interventions aiming at reducing fatigue and academic burnout in order to improve their physical QOL.

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A QUALITATIVE STUDY OF PREPAREDNESS FOR END-OF-LIFE CARE AMONG FAMILY CAREGIVERS CONFRONTING ADVANCED CANCER

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End-of-life care presents families with myriad challenges; however, it remains unclear what family caregivers need to feel prepared to manage this phase of illness. Perceptions of preparedness may have considerable implications for caregiver burden and quality-of-life, as well as for the cancer patient's course of treatment and healthcare utilization. This study sought a deeper understanding of preparedness for end-of-life care, from the caregiver's perspective.

Family members caring for cancer patients with end-stage disease participated in individual open-ended interviews. (Independent interviews were conducted with patients as well and are reported separately.) Sixty-four percent of caregivers were spouses and 72.7% were white. A variety of malignancies were represented. Transcribed audiotapes were coded by 3 raters using thematic analysis, and data were organized using NVivo 11 software; recruitment continued through data saturation.

Findings were classified into 6 major themes that caregivers regarded as salient aspects of preparedness: (1) emotional well-being (e.g., managing caregiver stress, grief, resentment, etc.); (2) spiritual well-being (e.g., religious strain or reassurance); (3) financial well-being (e.g., coping with healthcare costs and estate planning); (4) relationships with healthcare providers (e.g., questions about prognosis, symptom management, and resources); (5) relationships with family/friends (e.g., obtaining support, managing conflict); and (6) end-of-life decisions (e.g., choices about intensity of care, utilization of hospice or palliative care, funeral plans).

Findings illuminate dimensions of "preparedness" that are important to family caregivers. Readiness to accommodate these particular demands was viewed as a central challenge of end-of-life care. Delineation of these core concerns provides a critical step toward construct definition, and helps pave the way toward creation of useful measures and relevant screening and intervention services.

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AN IDIOGRAPHIC MEASURE OF MEANINGFUL ACTIVITY PARTICIPATION IS LONGITUDINALLY ASSOCIATED WITH GREATER WELL-BEING

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Background: Engagement in personally meaningful activities is associated with greater well-being. However, most studies use cross-sectional or recall methods, and the researchers pre-determine which activities are "meaningful." Yet, individuals differ in the extent to which they rate activities as meaningful; thus, personalized assessment of meaningfulness of activity may enhance measurement precision. This study examined an idiographic measure of meaningful activity participation in relation to well-being.

Methods: Participants (*N*=160; *M* age=43.3 years; 77% female) were recruited into a 4-week longitudinal study. At baseline, they rated the meaningfulness of 48 common daily activities. During the next 4 weeks (4 weekdays and 4 weekend days), participants received emailed surveys on 8 random days asking them to recall their activities for the last 24-hours. Participants also completed surveys at baseline and follow-up of life satisfaction, vitality, meaning, purpose, and depressive symptoms. Meaningful activity participation scores were calculated and entered into multilevel models and regression analyses to predict well-being at 4-weeks.

Results: Greater engagement in meaningful activities was positively related to thoughts of meaning, b=.28, $p < .0001$, and positive affect, b=.19, p=.005, on that same day. After controlling for relevant covariates, the average engagement in meaningful activities over eight days was positively associated with subjective vitality, b=.30, p=.0004, life satisfaction, b=.22, p=.0078, and purpose in life, b=.29, p=.0007, at 4-week follow-up. Engaging in personally meaningful activities was not significantly associated with global ratings of meaning in life, b=.15, p=.087.

Discussion: Results suggest that an idiographic measure of meaningful activity participation may be useful for furthering understanding of relationships between daily engagement in meaningful activity and greater well-being. Relationships between meaningful activity participation and well-being were stronger than in previous studies using nomographic ratings of meaningfulness. Future research should examine interventions targeting participation in activity that is personally meaningful as a way to enhance well-being.

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DEVELOPMENT OF A BILINGUAL PEDIATRIC CRANIOFACIAL QUALITY OF LIFE OUTCOMES MEASURE

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Craniofacial conditions (CFCs) can have a severe impact on health-related quality of life (HRQoL) for children. Yet, little is known about how diverse CFCs can differentially impact HRQoL, and there is limited research on HRQoL in less prevalent CFCs. Presently, there are no suitable instruments that measure HRQoL of patients with diverse CFCs from the perspective of children and parents. Current measures either have not been validated for use with the population of interest or focus on one specific CFC, precluding cross-group comparisons. Additionally, many HRQoL measures are self-report in format, a challenge for pediatric use as some children are too young to express themselves. Finally, most existing measures were developed for use in one culture and language, thus limiting their utility. The present study describes the development of a comprehensive, bicultural patient- and parent-reported CFC HRQoL outcomes measure. A literature review and expert opinion were used to develop in-depth interview questions. Interviews were conducted with 139 subjects: 89 parents of patients ages 0–18+ and 50 patients ages 7–18+. English and Spanish speakers were represented. CFCs included were cleft lip/palate, craniosynostosis, craniofacial microsomia, microtia, and dermatological conditions. Qualitative analysis of interviews revealed six domains that represent the conceptual framework of CFC-associated HRQoL. Themes that emerged within each domain were operationalized into items in English and Spanish that represent HRQoL issues for both patient and parent versions. Six bilingual, bicultural subscales were developed based on the following domains: (1) Social Impact; (2) Psychological Function; (3) Physical Function; (4) Family Impact; (5) Appearance; and (6) Finding Meaning. The new scales will now undergo reliability and validity testing at multiple sites in the United States and Mexico.

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EXPLORING INDIVIDUAL DISEASE BURDEN IN PATIENTS WITH ALOPECIA, ATOPIC DERMATITIS AND PSORIASIS

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Exploring Individual Disease Burden in Patients with Alopecia, Atopic Dermatitis and Psoriasis

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The concept of *individual disease burden* measures individual disability by encompassing psychological, physical, social and economic factors. The factors that contribute specifically to the individual burden of skin disease remain unclear. The present investigation examined a model in which emotional distress, body image change, social discomfort, perceived discrimination, social support stress, unpredictable disease course, and financial stress were expected to load onto individual skin disease burden (ISDB) as a latent construct. The relationships between threat appraisals, illness perceptions, and self-efficacy with ISDB were subsequently examined. A sample of 207 adults with alopecia, atopic dermatitis and/or psoriasis participated in this study (n=175 participated online; n=31 participated at a local dermatology office). The results supported emotional distress, social discomfort, and social support stress broken into two distinct factors—partner and parental-based support stress as components of ISDB. Body image change, perceived discrimination, unpredictable disease course, and financial stress were not included in the latent construct. In the final model, general self-efficacy was found to covary inversely with ISDB (r=-.471, pp2/df = 2.071, CFI=.91, RMSEA=.07, SRMR=.06). This study offers preliminary evidence for emotional distress, social discomfort, partner support stress, and parental support stress as important sources of individual skin disease burden. Higher levels of general self-efficacy beliefs may decrease the experience of individual skin disease burden. These findings serve to alert healthcare providers to the possible components of individual skin burden that may affect treatment planning, expectations, and barriers in patients with skin disease. Clinical implications also extend to mental health treatment approaches that promote self-efficacy, as well as

psychological flexibility and acceptance, which may serve to reduce the individual burden of skin disease.

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PERCEIVED EPILEPSY STIGMA MEDIATES RELATIONSHIPS BETWEEN PERSONALITY AND SOCIAL WELL-BEING IN A DIVERSE EPILEPSY POPULATION

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Perceived epilepsy stigma and reduced social well-being are prevalent sources of distress in people with epilepsy. Yet, research on patient-level correlates of these difficulties is lacking, especially among underserved groups. Racially/ethnically diverse adults with intractable seizures (*N*=60, 62% female; 79% Black, 20% Hispanic/Latino, 8% White) were recruited and completed validated measures of personality (NEO Five Factor Inventory, NEO-FFI-3), perceived epilepsy stigma (Epilepsy Stigma Scale), and quality of life (Quality of Life Inventory in Epilepsy, QOLIE-89). Controlling for covariates, ordinary least-squares regression and path analysis evaluated the direct and indirect effects of NEO-FFI-3 neuroticism and extraversion scores on epilepsy-related social well-being (i.e., combination of QOLIE-89 Social Functioning and Social Isolation subscales, α=.87), mediated through perceived epilepsy stigma. In separate models, higher levels of neuroticism (N) and lower levels of extraversion (E) were significantly and independently associated with greater perceived stigma (N path a=.71, p=.005; E path a=-1.10, $p < .005$); stigma, in turn, was significantly and independently associated with poorer social well-being (N path b=.23, $p < .001$; E path b=-.23, $p < .001$). Bias-corrected bootstrap confidence intervals showed that neuroticism and extraversion were indirectly associated with social well-being through their respective associations with perceived stigma (N path ab=-.16, 95%*CI's* [-.347,-.044]; E path ab=.25, 95%*CI's* [.076,.493]). These relations are consistent with a conceptual model wherein elevated neuroticism and reduced extraversion may predispose patients with epilepsy towards feeling stigmatized, which in turn leads to reduced social well-being. Future research should examine these associations longitudinally. Intervention studies may benefit from promoting cognitive re-appraisal strategies to reduce perceived stigma.

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PREDICTORS OF SUBJECTIVE HAPPINESS IN OLDER ADULTS

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Predictors of Subjective Happiness in Older Adults

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Introduction:

Research has shown that positive psychology interventions can enhance subjective wellbeing and reduce depression, however, efficacy on older adult populations has not been widely examined. Specifically, subjective wellbeing, life satisfaction, optimism, and positive emotions have been shown to improve health and longevity. The present study sought to develop and evaluate an intervention with the goals of enhancing happiness levels and overall mental wellbeing in the older adult population.

Methods:

The Art of Happiness is an 8-week intervention that was conducted at 3 senior centers in the state of Delaware. Each 90 minute class examined a different topic including; (1) defining happiness, (2) stress management, (3) reflecting on happiness, (4) compassion and human connection, (5) forgiveness, (6) transforming suffering, (7) mindfulness, and (8) humor. Pre and post questionnaires assessed participant subjective happiness, stress, gratitude, life satisfaction, depression, mindfulness, arousal states, and general demographic and health information.

Results:

The 32 participants who completed the course were mostly married (43.8%), female (87.5%) and Caucasian (90.6%), with an age range of 53-84 years of age (mean age= 70 years). Results revealed that the intervention significantly increased participant’s subjective happiness ($p < .0001$), with life satisfaction as the strongest predictor of happiness ($r=.84$, $p < .0001$). Subjective happiness scores were also significantly correlated with gratitude ($r=.69$, $p <$

.0001), stress (r=-.50, p < .003), depression (r=-.46, p < .005), mindfulness (r=.34, p < .045), and the arousal state of energy (r=.47, p < .006).

Conclusion:

These results suggest that older adults' subjective happiness can be influenced or predicted by variables such as life satisfaction, gratitude, stress levels, depression, mindfulness, and energy levels. Programs like "The Art of Happiness," which emphasize these topics may have the potential to buffer the older adult population against poor mental health by improving subjective happiness and overall mental well-being. This may lead to the development of incorporating these types of programs into senior centers as part of their healthy lifestyle curriculum.

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QUALITY OF LIFE IN CHRONIC HEMODIALYSIS PATIENTS: RESULTS FROM THE PATIENT CENTERED MEDICAL HOME FOR KIDNEY DISEASE STUDY

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Background:

In the U.S., more than 400,000 individuals with end-stage renal disease require chronic hemodialysis (HD). Chronic HD patients experience a high burden of morbidity, mortality, healthcare use, and poor quality of life (QOL). Under current care models, chronic HD patients receive fragmented care from multiple providers. The Patient-Centered Medical Home (PCMH) is a team approach to provide coordinated care across the healthcare continuum. While the PCMH model demonstrated early benefits for complex chronic diseases such as diabetes, this study is among the first applied to chronic HD patients.

Methods:

Using a non-randomized quasi-experimental intervention trial design, we implemented a PCMH model for kidney disease patients (PCMH-KD), which extended the existing HD care team (comprising a nephrologist, nurse, social worker, and dietitian) by adding a general internist, pharmacist, nurse coordinator, and health promoter. The PCMH-KD was implemented over 18 months at two sites in Chicago: a non-profit, university-affiliated dialysis facility and an independent for-profit dialysis facility operated by a national corporation. The RE-AIM (Reach, Effectiveness, Adoption, Implementation, Maintenance) framework was our organizing model for process evaluation. Patients were recruited and consented on a rolling basis at each site beginning in January 2015; the intervention ended in August 2016. Sample size estimates were based on self-reported QOL using the Kidney Disease QOL (KDQOL). Additional patient and caregiver reported outcomes, clinical measures, healthcare use, and

staff perceptions were assessed every six months. We examined QOL as measured by the KDQOL and used a mixed model to adjust for covariates.

Results:

Of 248 eligible patients, 175 (71%) patients ultimately consented, completed baseline assessments and continued in the intervention. Components of the KDQOL related to mental health (MCS) and kidney disease effects (KDE) were significantly improved in the intervention group compared to usual care group over 18 months (MCS 48.9 to 51.7 (5.7%) respectively; p=0.02; KDE 72.5 to 76.2 (5.1%), respectively; p=0.04). Covariates accounted for included sociodemographics, dialysis vintage, site, self-reported diabetes, prior access to a primary care provider, and time varying covariates for biochemical parameters for dialysis adequacy and overall health. Other QOL components increased early in the observation period or varied throughout. Improvements in depression, knowledge about kidney disease, and satisfaction with primary care were also noted in the intervention group.

Conclusions:

Compared to the usual dialysis care team model, chronic HD patients in the PCMH-KD model experienced improved QOL in mental health and kidney disease effects domains. Additional factors that may affect QOL and other outcomes of the PCMH-KD warrant further exploration.

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C253 6:00 PM-7:00 PM

ROLES OF ADULT ATTACHMENT AND CAREGIVING STRESS IN DEPRESSION IN HISPANIC VS. NON-HISPANIC CANCER CAREGIVERS

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Cancer diagnosis is life-changing also for the family caregivers. Resulting caregiving stress can be manifested in depression outcomes. Lesser known is the extent to which self-reported stress and adult attachment relate to caregivers' depression around the time of the patients' diagnosis and treatment, and whether ethnicity moderates the associations. This study aimed to extend current knowledge by investigating them.

Caregivers of recently diagnosed colorectal cancer patients (Stage I to IV) participated in the study (N=102; 73% female; 49 years old; 55% Hispanic; 3 months post diagnosis). Self-reported Hispanic vs non-Hispanic ethnicity, caregiving stress (stress overload subscale of the Pearlin Stress Scale), depression (CES-D), as well as adult attachment orientations (MAQ: secure, avoidant, anxious-ambivalent worry, and anxious-ambivalent merger) were measured. Age and gender were covariates.

Results showed caregivers (40%) reported clinical levels of depression. Hierarchal regression analysis revealed that female caregivers, greater caregiving stress, lower attachment security, and higher attachment anxiety-merger related to greater depressive symptoms (βs>.40, $ps\beta=.54$, $p\beta=.13$, ns).

Findings provide evidence that gender, ethnicity, relationship quality, and perceived caregiving stress played a significant role in family caregivers' depression symptoms. These results suggest that sociocultural factors and relationship quality to the patient may play an influential role on the caregiver's depression during the period of initial caregiving stress with diagnosis and treatment. Findings warrant further investigation for specific factors – at an individual, dyadic, and cultural level – in close relationships relating to promoting adaptive outcomes of lower depression with caregiving stress.

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THE PROTECTIVE ROLE OF SOCIAL SUPPORT IN CHRONIC LYMPHOCYTIC LEUKEMIA: A CONDITIONAL PROCESS ANALYSIS

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Background: Chronic lymphocytic leukemia (CLL) accounts for one-third of all leukemia diagnoses in the United States. Early stage patients are typically monitored without treatment until disease progression, a process known as active surveillance (AS). During this time, patients may experience fatigue, weight loss, enlarged lymph nodes, and night sweats. These physical symptoms have been linked to decreased quality of life among AS patients, which is impaired relative to the general population (Shanafelt et al., 2007). We sought to examine whether CLL symptoms impact quality of life via an increase in depressive symptoms. Further, as social support has been linked to psychological and physical outcomes in patients with CLL (Morrison et al., 2016), we wanted to examine whether social support may moderate the pathway from CLL symptoms to depressive symptoms.

Methods: A cross-sectional design was used. AS CLL patients (N=67; 55% male, mean age=60.4 years) completed questionnaires assessing CLL symptoms, quality of life (SF-36 MCS), depressive symptoms (CESD), and social support (ISEL total score). Mediation, moderation, and moderated mediation were conducted using conditional process analysis (Hayes, 2014). Analyses controlled for gender.

Results: Quality of life scores were variable across the sample (range=9.43-62.14 [possible 0-100]). The direct effect of depressive symptoms on quality of life was significant (*b* = -.654, 95% CI = [-.935, -.373]), such that a one-unit increase in depressive symptoms was associated with a .654 unit decrease in quality of life. The effect of CLL symptoms on depressive symptoms was significant only at low and moderate levels of social support. CLL symptoms did not influence depressive symptoms and quality of life among patients with high levels of social support, reflecting a protective effect.

Conclusions: CLL patients with high levels of social support experience lower levels of depressive symptoms in response to CLL symptoms. This protective effect is associated with enhanced quality of life for CLL patients with high levels of support. Psychosocial

interventions with CLL patients focused on improving quality of life should take into consideration patients' level of social support.

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TRAUMA HISTORY, RELIGIOUS SOCIAL SUPPORT & RESILIENCE: CORRELATES OF ROLE LIMITATIONS IN OLDER GAY MEN AND LESBIANS

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Trauma History, Religious Social Support & Resilience: Correlates of Role Limitations due to Emotional Distress in Older Gay Men and Lesbians

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Older gay men and lesbians (LG) with a history of trauma may experience role limitations due to emotional distress, especially if the trauma is a violent crime (Min, Tracy & Park, 2014; Herek, Gillis & Cogan, 1999). Resilience is the result of personal growth in spite of trauma history (Lyons, 2015). Historically, churches have condemned sexual minorities (Halkitis et al., 2009). However, some churches welcome LGBT individuals and older LGs may benefit from the social support of these establishments (Halkitis et al., 2009). Through a minority stress (Meyer, 2003) lens, we hypothesize crime related trauma history is positively associated with role limitations due to emotional distress. Religious social support and resilience are negatively associated with role limitations due to emotional distress.

After IRB approval, we recruited 50 gay men and 50 lesbians in DFW, (M_{age} = 58.99, *SD*= 6.48). Participants were 68% European American, 17% African American and 15% other ethnicity. A hierarchical regression analysis (*F*[9,90]=12.38, p < .001) indicated, in addition to crime related trauma (β=.16, p < .05) and resilience (β=.40, p < .001), being single (β=.40, p < .001) was also a significant predictor, accounting for approximately 51% of the variance in role limitations due to emotional distress (adjusted R^2=.51, p < 001).

In our sample, single LGs were more likely to experience role limitations due to mental distress possibly from lack of emotional support from a romantic partner (Lyons, 2016). Older LGs that scored higher on crime related trauma reported higher role limitations due to mental distress this may suggest a lasting emotional impact from the crime related trauma (Herek, Gillis & Cogan, 1999). Also, resilience was negatively associated with role limitations due to emotional distress possibly due to the strengthening of effective coping strategies (Morrow, 2001). Interventions should include techniques to strengthen resilience and provide emotional support, while addressing the unique issues of single older LGs.

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ASIAN ETHNIC GROUPS' PERCEPTIONS AND UTILIZATION OF HEALTHCARE IN THE U.S.: A COMMUNITY-BASED PHENOMENOLOGICAL APPROACH

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Asian populations in the U.S. are underserved and understudied in health disparities research. Specifically, little is known about the diverse perceptions of the American healthcare system and the various statuses of mental and physical health within and among Asian ethnic groups. Thus, with a community-based sample, this study was aimed to investigate the particular experiences three Asian ethnic groups (Chinese, Filipino, and Korean) have with utilizing the American healthcare system and the respective groups' general health maintenance approaches. The sample included six focus groups (N_{total} = 33; male = 11; mean age = 47 years). Using the phenomenological approach, transcripts were analyzed to identify emergent themes. Findings show different and similar perceptions of the American healthcare system and general healthcare within and across the three ethnic communities. All groups utilized both American healthcare and indigenous methods to a degree to treat and maintain health. Some shared themes include an agreement of major barriers to accessing American healthcare (e.g., understanding insurance, difficulties navigating the healthcare systems), satisfaction and reliance on American healthcare for acute and chronic conditions, and using indigenous methods to treat and maintain health. Some themes unique to different ethnic communities include self-advocacy and being proactive for Korean and Filipino groups, the importance of patient-doctor communication for Chinese groups, and the emphasis of social support to treat and maintain health for the Filipino groups exclusively. Findings help illuminate the perceptions of the barriers and supports that may help inform policies and outreach programs to promote access and utilization of American healthcare for the understudied Asian populations. Considering the community-based approach, results are useful to better understand the unique needs from these different ethnic groups, and to further the development of measurement tools for health disparities research.

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COPING STRATEGIES AMONG OLDER LATINO CAREGIVERS

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The number of Americans living with Alzheimer's disease (AD) is growing fast. An estimated 5.4 million Americans of all ages have AD in 2016. Latinos are the fastest-growing population in the United States and are about 1.5 more times more likely to develop AD than Whites. Caregivers of people with AD report high levels of stress and burden, impacting their health. The purpose of this study was to analyze the coping strategies used by Latino caregivers. Participants were 16 Latino caregivers, aged 50 years and older, who had been caring for a relative with AD or related disorder (6 were caring for mother, 4 caring for husband), at least 4 hours per day, for at least 6 months. The majority of caregivers were female (12). Interviews were conducted in English and Spanish about the caregiver role, family, and social support, and coping strategies. For purpose of this study coping strategies answers were analyzed. Interviews were transcribed, translated, coded, and directed content analysis was conducted. The results depicted that Latino caregivers reported use of nine different coping strategies: (1) Rationalize: efforts to explain or justify care recipients' misbehaviors to plausible reasons, as the disease manifesting itself; (2) Avoid: refraining from noticing or recognizing stressful situations; (3) Repress: attempts of keeping away from burden-suppressing desires, feelings, actions, tears; (4) Social interactions: attempts to interact with individuals or groups about their situation; (5) Self-care: intentional actions to take care of one's own physical, mental and emotional health;(6) Spirituality: focus on faith (God, church) and the things to try to make a connection with spirituality (prayer, sacraments); (7) Leisure activities: actions in free time, far from work and duties, to relieve burdens, such as reading, watching TV and movies, listening to music, and dancing; (8) Medications: taking any form of medication to cope with stress/burden; (9) Physical activity, any body movement that works one's muscles and requires more energy than resting to cope with stress, such as walking, running and dancing. Also was reported the use of any coping strategy, showing no efforts to solve stressful situations.It is concluded that Latinos caregivers seek a broad range of strategies to cope with stress and burden. Future studies should focus on strategies to highlight sustainable coping strategies in their routine as caregivers.

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DEVELOPMENT OF A CULTURALLY MODIFIED BEHAVIORAL WEIGHT LOSS MANUAL FOR OBESE AND OVERWEIGHT LATINA WOMEN WITH EATING DISORDERS.

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Obesity remains one of the greatest public health threats in the 21st century, increasing the risk for many chronic diseases, including Type 2 diabetes and CVD (CDC, 2014). Economic costs associated with treatments for obesity are also significantly high, with total medical costs reaching $147 billion/year in 2008 for inpatient and outpatient treatments and prescription drugs. Despite an increase in prevention and intervention efforts to address obesity in the past decade, the rates are still disproportionate among women and racial/ethnic minority groups. In particular, Latina women who are obese/overweight with eating disorders are less likely to seek and receive healthcare services and have a higher risk of type 2 diabetes and CVD. Therefore, there is still a need to explore sociocultural factors that influence Latina women's engagement in evidence-based treatment for obesity, as previous research demonstrates that culturally adapted interventions are four times more effective than general interventions.

The aim of this study was to identify culturally appropriate modifications of an evidenced-based behavioral weight loss program, *The LEARN Program for Weight Management,10th Edition* (LEARN; Brownell, 2004), using focus groups and qualitative analysis. Through constant comparative analysis, participants (n = 20, M_{AGE} = 30, SD = 9.87, M_{BMI} = 34.40, SD = 6.64, $M_{\text{binge eating episodes}}$= 4, SD = 4.92) identified surface and deep level changes needed for the LEARN manual. Surface level changes included: redundancy of manual, positive remarks and critiques of manual content, need for culturally relevant examples, and structure of food logs. Deep level changes included a consideration of diversity factors, Latino health beliefs and expectations, environmental facilitators and barriers, cultural meanings of food and health behaviors, and unique individual factors (e.g., family dynamics, past experiences with health monitoring and chronic illness management, and responsibilities as a caregiver).

With cultural modifications, participants reported that the LEARN manual could be an effective and feasible method to address obesity and eating disorders. Suggestions to improve adherence to such programs are offered. In order to address health disparities and reduce the prevalence rates of obesity among Latina women, it is crucial that treatments emphasize a

healthy lifestyle change approach while considering key cultural factors to improve reach and effectiveness.

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LATINA ADOLESCENTS' GENERATIONAL STATUS, FAMILISMO, SOCIO-EMOTIONAL COMPETENCE, AND NEIGHBORHOOD QUALITY IN RISK BEHAVIORS

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Objective: We tested a longitudinal model among Latina (female) adolescents examining resilience related to sexual risk behaviors and substance use associated with *familismo* in the context of neighborhood quality, as mediated bysocial-emotional competence (SEC), and how these associations vary with acculturation.

Method: Using data from 896 Latina adolescent participants from the *Healthy Passages* study, a multi-group structural equation model was analyzed across 1st (19%), 2nd (55%), and 3rd generation (26%) Latinas. Latent constructs representing neighborhood quality and *familismo* values were measured at 5th grade (*M* age = 10.6), SEC at 7th grade (*M* age = 13.1), and sexual risk behaviors and substance use at 10th grade (*M* age = 16.1).

Results: A partially invariant multi-group structural equation model across the three generational status groups showed that, among 2nd generation Latina adolescents only, *familismo* mediated the link between neighborhood quality and substance use. Moreover, SEC mediated the resilience provided by *familismo* against substance use. Thus, both *familismo* and SEC were negatively associated with substance use among 2nd generation Latina adolescents. These associations were not found among 1st or 3rd generation Latinas, nor for sexual risk behaviors.

Conclusions: Findings illuminate the role of social-cultural factors that may support resilience against certain health risk behaviors. Specifically, among 2nd generation Latinas, *familismo* and SEC appear to confer resilience against substance use. These findings may guide strategies in reducing substance use among Latina youth.

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MINORITY BREASTFEEDING DURATION: RESULTS OF THE BREASTFEEDING OPINIONS, OUTCOMES, BEHAVIORS, & SERVICES STUDY

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Background: The American Academy of Pediatrics recommends breastfeeding infants for at least 12 months post-partum. However, many factors impact a woman’s intent and ability to breastfeed for the recommended timeframe, such as obesity, delivery method, the delivery term, age, and race. The current study focused on breastfeeding duration among minority women.

Objective: This study sought to further explore breastfeeding duration among a diverse sample of minority women who had their first child between 1985 and 2016. We hypothesized that the race of women, the delivery method, and obese status during pregnancy would predict breastfeeding duration of the first child after adjusting for age and delivery term.

Methods: The sample included 313 minority women who self-identified as African American, American Indian/Alaska Native (AI/AN), Asian, Indian, Latina, Middle Eastern, Pacific Islander, multi-racial, and other. Their ages ranged from 20-59 years-old. Snowball sampling was used to recruit these participants who completed an online survey of demographic and breastfeeding behaviors: The Breastfeeding Opinions, Outcomes, Behaviors, and Services (BOOBS study).

Results: Forty-four percent of the participants reported that they did not meet the breastfeeding recommendation of at least 12 months. Age of the mother was found to predict breastfeeding duration ($\beta = .15$, SE = .07 $p = .01$) with women aged 35+ breastfeeding longer (13 months) than younger women (11 months) on average. Obesity status and delivery method did not predict breastfeeding duration. However, being AI/AN did predict breastfeeding duration ($\beta = -.23$, SE = 1.78, $p < .05$). AI/AN women tended to have the shortest breastfeeding duration (on average 9 months and 53% reported breastfeeding less than 12 months). No other race was found to influence a woman’s breastfeeding duration.

Conclusions: It appears that belonging to certain racial groups, particularly American Indian/Alaskan Native may impact how long women breastfeed – even when controlling for age and delivery term. There may be cultural and other factors (such as socioeconomic status)

that influence an AI/AN woman's breastfeeding duration. Given the extensive benefits of breastfeeding for both mothers and infants, culturally sensitive interventions may be needed to enhance the outcomes of certain age and race-ethnic groups.

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RACIAL/ETHNIC DIFFERENCES IN WEIGHT LOSS STRATEGIES AMONG U.S. ADULTS

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Background: Dieting, exercising, and seeking professional help have been associated with intentional weight loss among adults.

Purpose: We examined the use of diet (e.g. ate less, ate less fat, switched to low calorie foods), exercise, diet and exercise, and professional help (e.g. weight loss program, prescribed diet pills) for weight loss among non-Hispanic Whites, Mexican-Americans, and non-Hispanic Blacks trying to lose weight.

Methods: We used cross-sectional data from 7,424 male and female participants in the 2007-2010 National Health and Nutrition Examination Survey (NHANES) aged 20-65 years. Logistic regression models were used to estimate associations of race/ethnicity with strategies to lose weight.

Results: Lower proportions of Mexican-Americans (34%) and non-Hispanic Blacks (35%) than non-Hispanic Whites (39%) reported trying to lose weight. Among those who tried to lose weight, non-Hispanic Blacks (OR: 0.78, 95% CI: 0.66-0.92) were less likely than non-Hispanic Whites to use diet for weight loss. Mexican-Americans (OR: 0.66, 95% CI: 0.47-0.94) and non-Hispanic Blacks (OR: 0.73, 95% CI: 0.56-0.95) were also less likely than non-Hispanic Whites to use professional help for weight loss.

Conclusion: Targeted efforts are needed to address racial/ethnic disparities in weight loss attempts and use of recommended strategies.

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THE EFFECTS OF EXPRESSIVE WRITING ON HEALTHCARE UTILIZATION, PHYSICAL SYMPTOMS, AND PSYCHOLOGICAL DISTRESS IN ASIAN INDIANS

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An accumulating body of evidence has shown that expression of emotions associated with stressful experiences by writing or talking about them results in better physical health and psychological well being. Traditionally, Asian Indians encourage the suppression of emotional conflicts and discourage the full expression of emotions. Additionally, Asian Indians are often reluctant to talk about their personal problems to others, as they fear it will bring shame to the family. Therefore, written emotional disclosure may provide a more culturally sensitive way for Asian Indians to express emotions about stressful events and traumas without being stigmatized, as it assures privacy and anonymity.

This randomized, controlled study examined the effects of a written emotional expression intervention on healthcare utilization, physical symptoms, and psychological distress in Asian Indians who reported stress related to intergenerational family conflict. Seventy participants were recruited from Asian Indian community centers, professional and student organizations, and community temples in Southern California. Thirty-eight women and thirty-two men were randomly assigned to either write about their deepest thoughts and feelings related to their intergenerational family conflict (n = 35) or to a time-management control group (n = 35). Participants wrote on three separate days over one week and assessments were completed at baseline, one-week post-writing (post), and six-weeks after writing (follow-up).

A significant group by time interaction (p = .002) was revealed on the depression subscale of the Brief Symptom Inventory (BSI). On this measure of psychological distress, participants in the expressive writing group showed improvement over time while participants in the control group remained the same from baseline to post-writing and follow-up. A significant effect of time (p < .0005) where both groups showed improvement from baseline to post-writing and follow-up was revealed on three global indices of psychological distress on the BSI, the anxiety subscale of the BSI, and on the Impact of Events Scale (IES). There were no significant findings revealed on outcome measures of physical symptoms, healthcare utilization, or on exploratory variables of acculturation and ambivalence over emotional expression.

The results from this study imply that a brief expressive writing intervention may help improve symptoms of depression in Asian Indians. This was one of the first studies to

systematically investigate the effects of expressive writing in a homogenous sample comprised of Asian Indians. While differences observed between groups were suggestive, they were not conclusive and require further examination. Future research recommendations include the use of more stringent inclusion criteria, objective measures, long-term follow-up assessments, and essay content analyses.

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EVALUATION OF PATIENT OUTCOMES FOLLOWING ATTENDANCE AT A SIX-WEEK BIOPSYCHOSOCIAL MULTIDISCIPLINARY SEXUAL WELLNESS PROGRAM

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BACKGROUND: The purpose of the present study is to prospectively assess sexual functioning and relationship satisfaction among patients who attend a multidisciplinary program for the diagnosis and treatment of sexual dysfunction. There is some research to suggest that women benefit more than men from sexual therapy programs and therefore, additional analyses were conducted to examine for gender differences in response to treatment. **METHODS:** Subjects include 21 men and 23 women who attended the sexual treatment program. Patients were 18 years of age and older, in a committed relationship, and attended the program with their partner. The program takes a biopsychosocial approach to the assessment and treatment of sexual dysfunction and includes a multidisciplinary team of gynecology, urology, psychology, psychiatry, physical therapy and nutrition specialists. Couples meet for 6 consecutive weeks with a therapist dyad and receive a psycho-social-sexual assessment, physical examination (i.e., sexological exam) and weekly cognitive behavioral sex therapy and psychoeducational lectures. Patients completed the following validated self-report measures pre- and post-treatment (pre-tx, post-tx): Patient Health Questionnaire-9 (PHQ-9; pre-tx only), PROMIS Sexual Function Profile v1.0, Dyadic Adjustment Scale (DAS), and the International Index of Erectile Function (IIEF). **RESULTS:** Paired-samples *t* test were conducted to evaluate pre-tx to post-tx sexual function/satisfaction, relationship adjustment, and erectile function. The results indicated that sexual function/satisfaction ($t(34) = -3.259$, $p < .01$) and relationship adjustment ($t(38) = -2.641$, $p < .05$) significantly improved pre-tx to post-tx. However, when analyzed by gender, females showed greater improvement in scores on the PROMIS (Females: $t(18)= -2.650$, $p < .05$; Males: $t(15) = -1.905$, $p = .076$) and the DAS (Females: $t(19) = -2.925$, $p < .01$; Males: $t(18) = -1.111$, $p = .281$). There was no significant change reported for erectile functioning pre-tx to post-tx. **CONCLUSION:** The study found statistically significant improvement pre-tx to post-tx on select aspects of sexual well-being for attendees of the program, particularly for women participants. The findings provide preliminary support for the efficacy of this multidisciplinary program and also highlight the need to further our understanding of gender differences. Future research should evaluate the causes of the gender differences in treatment response with the ultimate goal of improving sexual treatment and outcomes for men and women.

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A TECHNOLOGY ASSISTED BEHAVIORAL INTERVENTION FOR EXTENDING SLEEP DURATION AMONG SHORT SLEEPERS

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It is estimated that 29% of adults sleep < 6 hours and sleep duration may be a modifiable risk factor for the development of chronic illnesses, including hypertension and diabetes. Studies demonstrate health benefits of extending sleep duration among short sleepers but to date there are no theory based behavioral interventions. The rapidly expanding popularity of wearable sleep tracking devices provides an opportunity to engage users in their own sleep behavior change. We developed at tested the “Sleep Bunny” sleep extension intervention including a smartphone application, wearable sleep tracker and brief telephone coaching. The goals of this program were to increase sleep duration by one hour and increase bedtime and wake time regularity. We conducted user testing and collected feedback from 10 participants and evaluated adherence and sleep duration outcomes of two participants who completed the four-week intervention. Results suggested that users enjoyed the use of the wearable sleep tracker and found the application visually pleasing. Sleep duration improved by 1.5 hours per night from week 1 to week 4 in adults with short sleep duration who engaged in the intervention (n=2). The brief telephone coaching was viewed as helpful and feasible. Improvements in notifications and reminders may improve the experience of the intervention.

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BEDTIME E-DEVICE USE AND SLEEP QUALITY AMONG YOUNG ADULTS: USING THE THEORY OF PLANNED BEHAVIOR

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Background: Understanding the factors affecting bedtime e-device use is important to improve the sleep quality of young adults in the US. *Objectives*: Our study examined: (1) the association of attitudes, subjective norms, and perceived behavioral control with bedtime e-device use and intentions to reduce e-device use; and (2) the efficacy of a brief theory-driven intervention to increase the intentions to reduce e-device use. *Methods*: We used the Theory of Planned Behavior (TPB) to conduct a cross-sectional online survey among young adults aged 18-30 years (*N*=212). We designed two scales to measure attitudes and perceived behavioral control and used a single item to measure subjective norms for bedtime e-device use. After feasibility testing (*N*=53), we randomly administered the intervention (*N*=159) to affect participants' attitudes, subjective norms, and perceived behavioral control and analyzed the participants' intentions to reduce bedtime e-device use before and after the intervention. We used Spearman's correlation for bivariate and logistic regression for multivariate analyses. *Results*: The scales for attitudes and perceived behavioral control had good internal consistency (Cronbach's α >0.65). Participants' mean age was 24.9 (*SD*=3.0), and majority were females (77.3%), White (91%), had > high school degree (98.6%), and annual household income > $24,300 (90.5%). The majority (73.3%) reported frequent (>10 days) bedtime e-device use in the past two weeks and more than half (59.1%) spent >30 min on e-device daily. We found relatively high levels of behavioral control (3.82±0.72) and subjective norms (3.75±0.94) for bedtime e-device use. Higher positive attitude and lower perceived behavioral control were significantly associated with higher e-device use and higher intentions to reduce e-device use. Participants receiving the intervention were more likely to increase in their intentions to reduce bedtime e-device use (AOR=2.23, 95%CI= [1.09-4.57]). *Conclusion*: Our brief educational intervention was efficacious in increasing the intentions to reduce bedtime e-device use among young adults. Future studies are recommended to use the TPB based interventions to reduce bedtime e-device use among young adults.

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COLLEGE SLEEP HABITS: SLEEP QUALITY & DISTRESS DURING THE FIRST SEMESTER

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Poor sleep quality is highly prevalent and has been linked with poor health outcomes in all age groups. It is known that college students have poor sleep habits; however, less is known about changes in sleep quality across the first semester for freshmen students. The purpose of this study was to examine changes in self-reported sleep quality, as well as biopsychosocial correlates of disturbed sleep during the first semester of college in a sample of female, freshmen students. We hypothesized that mood and stress symptoms, social support, specific health indicators, and hostility would co-vary with poor sleep quality at multiple time points. Freshmen students, enrolled at large, Midwestern university (N=76, 77% Caucasian), were assessed during the first month (T1), at midterm (T2), and during the last two weeks of the Fall semester (T3). In this sample, average Pittsburgh Sleep Quality Index (PSQI) scores at T1 (*M*=8.47, *SD*=3.11), T2 (*M*=8.92, *SD*=3.25), and T3 (*M*=9.62, *SD*=3.44) exceeded a cut off score of PSQI≥5 at all time points. Moreover, results demonstrate a linear increase in sleep disturbances across the semester (*F*(1,48)=4.25, *p*r=.41), perceived stress (Perceived Stress Scale; *r*=.38), and hostility (Cook-Medley Hostility Scale; *r*=-.74) co-varied with poor sleep quality. At T2, perceived stress (*r*=.39), stressful life events (Student Life Event Scale; *r*=.29), somatic and physical symptoms (Cohen Hoberman Inventory of Physical Symptoms; *r*=.51), and social support (Interpersonal Support Evaluation List; *r*=-.52) significantly co-varied with PSQI scores. Finally, at T3, perceived stress (*r*=.49), stressful life events (*r*=.28), somatic and physical symptoms (*r*=.53), and social support (*r*=-.53) were significantly associated with PSQI scores. Evidence for a prospective, longitudinal relationships was also found, such that poor sleep quality at T2 predicted physical and somatic symptoms at T3, controlling for T2 physical symptoms (β=1.28, $p < .05$). The results of this study demonstrate that sleep becomes more disrupted across the first semester of college and it co-varies with multiple indices of psychological distress. Further research is needed to determine the predictive relationships between these risk factors and sleep quality for female, freshmen college students.

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EFFECTS OF SCHOOL START TIME ON STUDENTS' SLEEP: A META-ANALYSIS

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Introduction

Research finds that few adolescents adhere to recommended sleep guidelines. Lack of sleep is a predictor of a number of serious physical and mental health consequences. This meta-analysis examines the effects of school start time (SST) on sleep duration of students by aggregating the results of 5 longitudinal studies, and separately, 14 cross-sectional studies.

Methods

Database searches and manual searches for citations in recently published reviews of the literature were used to identify 19 records for inclusion. Data for the following moderator variables were extracted and coded: publication status of article, delay of SST in minutes, students' grade in school, and months between Time 1 and Time 2.

Analyses were conducted using Version 2 of Comprehensive Meta-Analysis (CMA) software. Once all study effect sizes were calculated, CMA produced an aggregate effect size using weights and the random effects model. A positive effect size represents longer sleep durations for the later SST group.

Results

Longitudinal studies

The effect sizes (d) for sleep duration ranged from 0.24 to 1.07, with an aggregate effect size of $d = 0.38$, 95% CI 0.20 – 0.57, $p < 0.001$. Significant heterogeneity was found among the effect sizes, $Q(4) = 9.99$, $p < 0.05$, $I^2 = 59.97$.

Meta-regression was used to analyze moderator variables. Longer delay predicted longer sleep duration, $Q(1) = 7.56$, $p < 0.01$. The length of time between T1 and T2 was not found to be significant, $Q(1) = 0.61$, $p = 0.435$.

Cross-sectional Studies

The effect sizes (*d*) for sleep duration ranged from 0.05 to 0.96, with an aggregate effect size of $d = 0.41$, 95% CI 0.25 – 0.57, $p < 0.001$. Significant heterogeneity was found among the effect sizes, $Q(13) = 323.83$, $p < 0.01$, $I^2 = 95.99$.

Grade in school and publication status moderators were analyzed using analog-to-ANOVA. Longer delay predicted shorter sleep duration, $Q(1) = 63.36$, $p < 0.01$. Neither grade in school, $Q(2) = 2.04$, $p = 0.90$, nor publication status was significant, $Q(1) = 1.72$, $p = 0.19$.

Discussion

Results indicate that later starting school times are associated with longer sleep durations. Further investigation is needed to understand the discrepancy in directionality between cross-sectional and longitudinal studies for the delay length moderator. Although more longitudinal primary research is needed and there was unexplained heterogeneity in the cross-sectional studies, overall, this systematic analysis of SST studies suggests that delaying SST is beneficial for students' sleep, and thus their general well-being.

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ETHNIC/RACIAL DIFFERENCES IN SLEEP DURATION, SLEEP QUALITY AND HEALTH

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Ethnic/racial health inequalities are well-established (Williams et al., 2007), and research has more recently suggested the role of sleep in mental and physical health outcomes (e.g., Altman et al., 2012). Using a subsample from the American Time Use Survey dataset, a large, nationally representative sample (*n*=36,942 participants, M_{age}=47.63, 15-85 years old, 55.7% female), the current study investigates sleep and health disparities based on ethnicity/race and the relationships between sleep indicators and health outcomes. The majority of participants were White (65.8%), followed by Black (14.6%), Hispanic (14.2%), and Asian (3.7%) participants. Other/Mixed Ethnicity/Race (1.7%) were removed for ease of interpretation.

Addressing the first goal, significant ethnic/racial differences in sleep duration (i.e., the longest period of sleep over 24 hours) were found. White individuals reported the lowest sleep duration in minutes (*M*=523.60) in comparison to Hispanic (*M*=552.35), Black (*M*=544.53), and Asian (*M*=536.27) individuals. A larger proportion of White individuals reported obtaining the recommended amount of sleep of 7-9 hours (43%) in comparison to Asian (37.5%), Hispanic (34.2%), and Black participants (32.5%). There were also significant differences in sleep quality ("How well-rested did you feel yesterday?” on a scale from 1-4) by ethnic/racial group, such that Black (*M*=3.19) and Hispanic (*M*=3.19) individuals reported feeling more well-rested than White (*M*=3.12) individuals. In terms of general health ("Would you say your health in general is excellent, very good, good, fair, or poor?"), Asian (*M*=3.63) and White (*M*=3.57) individuals reported significantly better health than Black (*M*=3.27) and Hispanic (*M*=3.28) individuals. Almost half of Black participants reported high blood pressure in the past five years (43%) in comparison to other groups. Addressing the second goal, significant associations were found between general health and sleep quality (*r*=.24) and sleep duration (*r*=-.10). Sleep quality and sleep duration were only slightly related (*r*=.07), although the strength of this association differed by ethnic/racial group.

Our findings are consistent with prior research suggesting that sleep quality may be more predictive of overall health in comparison to sleep quantity (Pilcher et al., 1997). This study also highlights ethnic/racial differences in sleep and health indicators, emphasizing the need for future work to consider these mechanisms.

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INSOMNIA, IMMUNITY AND INFECTIONS IN CANCER PATIENTS TREATED WITH CHEMOTHERAPY

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Background: Research has shown that insomnia symptoms, which are very common in cancer patients, especially in those with breast (42-69%) or gynecological cancer (50-68%), influence the immune system. However, the impact on health resulting from such immune changes has rarely been studied, especially during chemotherapy, when the immune system is already compromised. The aim of this study was to evaluate the relationships between insomnia, immunity and the occurrence of infections in women treated with chemotherapy for breast or gynecological cancer. It was hypothesised that patients with insomnia (INS) would present more immune alterations during and after chemotherapy, in addition to reporting more infections, as compared to good sleepers (GS).

Methods: 52 patients were assessed before chemotherapy (T1), on four occasions during the first two cycles of chemotherapy (i.e., immunosuppression and recovery weeks; T2-T5), at the end of the treatment (T6), and at 3- (T7) and 6-month (T8) follow-ups. Sleep was assessed using the Insomnia Severity Index, a daily sleep diary and a clinical interview, which also assessed the presence of infections. Finally, blood samples were collected at each time point (T1-T8) to measure several immune parameters (e.g., neutrophils, lymphocytes).

Results: Linear mixed-model ANCOVAs revealed significant group-by-time interactions on infection (ps≤.04) and immune variables (e.g., neutrophils, T-cells; ps≤.04). Moreover, INS reported more infectious symptoms than GS at T2 (p=.004).

Conclusions: These results partially confirm our hypotheses and indicate that the risk of infections and immune variables evolve differently in INS as compared to GS during and after chemotherapy.

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RESTLESS SLEEP IS ASSOCIATED WITH WEIGHT GAIN: A WITHIN-SUBJECT ANALYSIS

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Background: The rising popularity of digital health trackers presents the opportunity to understand the relationship between personal behaviors and health outcomes outside of the lab or clinic. In this study, we use longitudinal weight data and minute-level sleep data from over 6,000 users of digital health trackers across the United States to examine the relationship between sleep patterns and a clinical outcome: weight gain.

Methods: We analyzed minute-level sleep and weight data collected from fitness trackers for 11,552 users of a proprietary platform that incentivizes healthier lifestyles (Achievemint.com) in the period 4/1/2015–4/1/2016. We considered users with at least 5 weight measurements spanning two or more months. Users with 5 or more nights of sleep recorded in at least two calendar months spanned by their weight measurements were included. We modeled monthly percent weight change for each user using fixed-effects panel regression analysis, performing separate regressions for each gender. We included average nightly sleep start time, sleep duration, number of naps during the day, time in bed until sleeping, number of restless episodes, as well as the standard deviation of their time asleep during the month as explanatory variables. We further included variables to control for seasonality and variation in sleep/weight measurement device and frequency.

Results: 1,087 male and 5,207 female users met the inclusion criteria. The strongest effect in the regression was an association between restless episodes and weight gain. Each additional restless episode per night was associated with a 0.058 percentage point monthly increase in weight for females (95% CI [0.046, 0.072]; $p < .001$) and a 0.052 percentage point increase for males (95% CI [0.024, 0.081]; $p < .001$). On average, users had 7.8 ± 3.2 restless episodes per night.

Conclusions: There is a significant association between frequency of restless episodes and weight gain in the population studied. By individually identifying those with sleep difficulties, our results suggest it is feasible to offer personalized care that focuses on preventative risk factors. Identifying poor sleep is the first step towards offering tailored sleep therapies such as insomnia CBT, sleep hygiene, psychological, and medical care. Our results also represent a

scalable and accessible means of generating clinically actionable health data given that many across the world increasingly own and use trackers and wearables.

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SINGLE ITEM MEASURES FOR THE DETECTION OF SLEEP PROBLEMS IN UNITED STATES MILITARY VETERANS

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Chronic sleep problems may contribute to higher rates of healthcare utilization, incident mental health disorders, and increased risk of suicide. Although sleep problems are reported by as many as two-thirds of U.S. military Veterans who served in Iraq and Afghanistan, sleep problems remain overlooked in clinical settings. To date, there are no brief sleep screeners or clinical guidelines addressing how to best screen for sleep problems in Veterans Health Administration (VHA) primary care settings. Using data from the Study of Post-Deployment Mental Health, a volunteer-research registry housed at the Mid-Atlantic VA's Mental Illness Research, Education, and Clinical Center, the objective of this research was to examine the utility of single sleep items embedded in existing psychological assessments. Three such items are embedded into the Symptom Checklist-90 and include distress related to trouble falling asleep, awakening in the early morning and sleep that is restless or disturbed. Participants were U.S military Veterans who served since September 11, 2001, had one or more deployments, and did not meet past-month criteria for a DSM-defined Axis I psychiatric disorder (N = 1,118). Participants completed a battery of questionnaires assessing demographics, physical and mental health, and sleep. The performance of the three items noted above was evaluated in relation to two reference outcomes: poor sleep (Pittsburgh Sleep Quality Index total score > 5) and DSM-defined probable insomnia disorder. Using an response score of one ("a little bit" distressing), each of the three items demonstrated moderate sensitivity values and acceptable rates of each false positives (FP) and false negatives (FN) in predicting poor sleep (sensitivity: 0.70 to 0.78; FP: 0.23 to 0.30; FN: 0.26 to 0.42) and probable insomnia (sensitivity: 0.81 to 0.89; FP: 0.42 to 0.48; FN: 0.11 to 0.32). Although additional research is needed to test the performance of these items across diverse Veteran groups, our initial findings suggest that existing items may serve as a first step in screening for sleep problems.

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THE EFFECT OF SCHOOL START TIMES ON SLEEP AND ACADEMIC PERFORMANCE AMONG ELEMENTARY AND MIDDLE PUBLIC SCHOOL STUDENTS IN THE US

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Most K-12 students in the US are not getting enough sleep. Early school start times appear to contribute to this problem, resulting in unwanted outcomes in health, psychosocial development and learning. Only 20% of US schools start after 8:30 a.m. as recommended by the American Academy of Pediatrics.

The purpose of this study was to determine whether US school start times were associated with academic performance. We hypothesized that later school start times would be associated with improved academic performance. Only elementary and middle schools students were included due to insufficient reporting of high school outcomes.

Participants included 4th and 8th grade public school students from 49 States for the 2011-12 academic year. Student data and school start times were obtained from the National Center for Educational Statistics (NCES). A total of 50,310 elementary schools, 13,990 middle schools and 33, 269,172 students were included. The National Assessment for Educational Progress (NAEP) was used to assess academic proficiency for Grades 4 and 8 in mathematics, reading, and science.

Pearson correlations were computed to determine associations between school start times by state and academic proficiency. Simple linear regression was used to predict academic proficiency based on school start times.

For Grade 4, school start times were significantly correlated with NAEP scores for math proficiency, $r^2 = .48$, p2 = .40, p2 = .50, p The data supported our hypothesis regarding school start times and academic achievement for Grade 4 students but not for those in Grade 8. Elementary school students may be at particular risk for poorer academic achievement due to sleep loss from early school start times. There is a need for studies that include sleep assessment and allow for the evaluation of causal relationships between school start times and academic achievement.

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THE RELATIONSHIP BETWEEN SLEEP HEALTH AND WEIGHT LOSS HISTORY

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Obesity is a significant public health concern for U.S. adults, with approximately 27% considered to be obese and an additional 35% considered to be overweight. Obesity is a leading risk factor for a broad range of mental and physical health problems. Accordingly, weight loss attempts are common, though these attempts typically yield limited long-term success. Sleep is a crucial factor to consider in the context of weight loss attempts because poor sleep may undermine positive changes to diet and exercise, reducing the likelihood of successful weight loss. The present study aimed to evaluate the relationship between sleep health and a history of weight loss attempts. Participants included 153 adults enrolled in a commercial weight loss program who completed an online survey. On average, participants had a history of 3.15 weight loss attempts (SD=4.98). The number of weight loss attempts was negatively correlated with sleep health (r = -.26, p = .001), suggesting that better sleep health was associated with fewer weight loss attempts. These findings support the hypothesis that poor sleep may undermine weight loss attempts, resulting in lower success rates and increased number of weight loss attempts over time. Moving forward, longitudinal research would allow for improved understanding of the mechanisms underlying this relationship, and additional consideration should be given to individual characteristics that may moderate these effects (e.g., age, stress). A broader understanding of this relationship could inform interventions to improve the chances of weight loss success, thus potentially reducing the prevalence of obesity in today’s society.

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TREATING SLEEP COMPLAINTS: A STEPPED CARE APPROACH

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The VA Palo Alto Healthcare System utilizes a stepped care approach for insomnia in its Primary Care-Mental Health Integration (PCMHI) program, in order to increase access and provide care that matches patient need. The model relies on treating patients under the least restrictive methods and utilizing self-correction through outcome monitoring. The following is a program evaluation that describes the PCMHI stepped protocol for insomnia, patient utilization rates, and clinical outcome data, gathered over 12 months in two community based outpatient clinics in the healthcare system. This stepped care protocol includes sleep assessments, interdisciplinary collaboration, psychoeducation, web-based self-management tools, shared medical appointments (SMAs), and Cognitive Behavioral Therapy for Insomnia (CBTI). The steps provide interventions that are matched to the patient's current need, ability, and motivation. Self-report measures, including the Insomnia Severity Index (ISI) and sleep diaries, were gathered throughout treatment to aid in planning.

During the 12 months, a total of 118 consults were received for sleep concerns; after initial psychoeducation and consultation, 69% of patients were referred to a higher level of care in the Sleep SMA (N=82). Twelve of these patients (14.6%) attended SMAs more than once, as these are designed to be an open access tool for self-mangement. After completion of at least one SMA, 7 patients were referred to CBTI as the next step of care. Analysis conducted for patients who completed the CBTI protocol (N=6) indicated statistically significant improvements in sleep efficiency ($t(5)=-2.94$, $p< .05$), improvements in total sleep time ($t(5)=-3.3$, $p < .05$), and improvements in sleep latency ($t(5)=2.76$, $p < .05$). There was no significant change in time awake after sleep onset nor ISI scores. When 2 patients who elected to terminate CBTI due to pre-existing conditions (PTSD and sleep apnea) were removed from the data, a statistically significant decrease in ISI scores ($t(3)=3.37$, $p < .05$) was also found. Average length of CBTI treatment was 9.33 sessions.

The program evaluation highlights that a stepped care approach is useful in PCMHI for treatment of insomnia, allowing treating providers to customize care based on acuity of need. Outcome analysis demonstrates that patients experience overall improvement in sleep functioning at various levels. Future suggestions for improvement of the model will be discussed.

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ENVIRONMENTAL FACTORS, HEALTH BEHAVIORS, AND OBESITY: FINDINGS FROM THE HISPANIC COMMUNITY HEALTH STUDY/STUDY OF LATINO YOUTH

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Background and Objective: Evidence suggests that environmental factors are related to physical activity, dietary intake, and overweight status in youth; however, clear relationships have not been established in Latino youth. We examined associations of barriers to healthy lifestyle behaviors in the school, home, and neighborhood environments with physical activity, diet, and body mass index (BMI) in Hispanic youth.

Method: HCHS/SOL Youth enrolled 1,466 Hispanic/Latino youth (728 boys and 738 girls, 8-16 years) and their parents from four cities (Bronx, Chicago, Miami, and San Diego). Parents provided demographic information. Standardized scales for assessment of environmental barriers were completed by youth and parents, and composite scores calculated to reflect barriers to healthy lifestyle behaviors in the school (e.g., fast food availability), home (e.g., unhealthy foods), and neighborhood (e.g., crime,) environments; 24-hour dietary recalls were quantified and scored with the Healthy Eating Index 2010 (HEI); 7-day accelerometry measured moderate-vigorous physical activity (MVPA); and height and weight was measured to obtain BMI %iles of youth. Hierarchical regression analyses were utilized to determine relationships of environmental barriers to MVPA, HEI, and BMI. Analyses used sample and survey-weighting procedures; demographic variables (age, sex, parental income and education) were entered in the first step of each model.

Results: More after-school environmental barriers were associated with less healthy eating ($p < .001$) and less MVPA ($p < .005$). More barriers in the home environment with regard to availability of workout equipment ($p < .01$), healthy foods in the home ($p < .001$), and food practices associated with TV-watching ($p < .001$) were associated with less healthy eating; food practices associated with TV-watching were also related to less MVPA ($p < .05$). More neighborhood barriers related to eating away from home were associated with less healthy

eating ($p < .001$) and higher BMI ($p < .01$).

Conclusion: Several youth and parent-reported barriers in the after-school, home, and neighborhood environments are associated with less healthy eating, decreased physical activity, and higher BMI in Hispanic youth. Interventions to improve health behaviors and weight in this population should include and address these environmental factors.

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ADAPTATION OF THE CULTURAL FORMULATION INVENTORY TO ASSESS PSYCHOSOCIOCULTURAL FACTORS ASSOCIATED WITH PRENATAL STRESS

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Exposure to psychosocial, cultural, or environmental stress during pregnancy has known adverse impacts on development. Prenatal stress can include general stressors as well as stressors specific to pregnancy, such as worry about fetal health complications. In order to optimize prenatal preventive health efforts, it is important to understand the multifaceted contextual factors affecting the pregnancy experience. We sought to understand psychosociocultural factors that affect optimal prenatal health, with a specific focus on stress. We adapted the DSM-5 Cultural Formulation Interview (CFI; American Psychiatric Association, 2013) to assess psychosociocultural barriers and facilitators associated with prevention of prenatal stress. Our sample included 14 pregnant women (mean age = 30.6; mean gestational age at CFI = 33.2 weeks) who were part of an ongoing study on prenatal stress. A directed thematic analysis was used (n = 14) to contextualize participant responses through an ecological systems model (Bronfenbrenner, 1977). Multiple themes emerged amongst participant responses. Locus of control appeared to influence participants' experience of stressors during pregnancy; that is, participants who expressed more perceived control around external stressors indicated less distress. Incongruences between and within multiple systemic factors (e.g., family cultural values versus participant individual values; perceived support from family versus perceived support from healthcare provider) emerged as barriers to optimal prevention of prenatal stress. Conversely, when systemic factors were more congruent, it appeared that optimal prenatal health was better facilitated. These findings suggest that psychosociocultural factors play an important role in the pregnancy experience, and specifically in how pregnant women are affected by or buffered from external stressors. The current results add to the body of research suggesting the importance of adequately assessing for and addressing psychosociocultural factors during routine prenatal care. Additionally, our results suggest that adapting the CFI to fit a specific issue or clinical population can offer useful clinical and research utility by adding a richer understanding of the sociocultural context.

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CURRENT AND IDEAL SKIN TONE: ASSOCIATIONS WITH TANNING BEHAVIOR AMONG SEXUAL MINORITY MEN

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Background: Skin cancer is the most common form of cancer. Sociocultural models of body image implicate appearance norms in the formation of skin tone ideals and attitudes toward tanning. Discrepancies between current and ideal skin tone, hypothesized to relate to body dissatisfaction and internalization of the tanned ideal, predict tanning behavior. However, little is known about skin cancer risk behaviors in sexual minority (e.g., gay and bisexual) men. This is a notable gap, given that sexual minority men report high prevalence of skin cancer diagnoses. Therefore, it was hypothesized that current skin tone will significantly moderate the relationship between darker ideals and tanning behaviors among sexual minority men.
Method: Data were collected online from 238 sexual minority men residing in San Diego County, California, who had a mean age of 24 (*SD* = 5.43). Independent variables were ideal and current skin tone ratings on a perceptual scale of 1 (lightest) to 12 (darkest) and the dependent binary variables were indoor tanning and outdoor tanning (i.e., none vs. 1 or more times over the past three months).
Results: Two separate logistic regression models were used to test main and interaction effects on indoor and outdoor tanning, and subsequent simple slope analyses indicated effects at the mean, and ± 1 standard deviation (SD) moderator values (current skin tone). Darker ideals significantly predicted increased indoor tanning (B = 1.02, Odds ratio (OR) = 2.79, z = 2.73, *p* = .006); however, this effect was qualified by a significant interaction *(*B = -0.12, OR = 0.89, z = -2.01, *p* = .045). The effect of darker ideals was strongest among individuals with lighter current skin tone *(*B = 0.79, OR = 2.21, z = 2.85, *p* = .004). Darker ideals also significantly predicted increased outdoor tanning (B = 1.34, OR = 3.81, z = 6.07, *p* < .001); however, this effect was also qualified by a significant interaction (B = -0.13, OR = 0.87, z = -4.01, *p* < .001). The effect of darker ideals was strongest among individuals with lighter current skin tone (B = 1.06, OR = 2.89, z = 6.36, *p* < .001).
Conclusion: The results indicate that sexual minority men whose skin tone does not match their ideal, whether or not they are currently light or dark skin-toned, are at greater risk for engaging in skin cancer risk behaviors. Future skin cancer prevention programs aimed at

sexual minority men may wish to consider techniques that modify internalization of skin tone ideals.

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ENROLLMENT STRATEGIES OF THE HEALING AND EMPOWERING AND ALASKAN LIVES TOWARD HEALTHY HEARTS (HEALTHH) STUDY

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High rates of smoking, inactivity, hypertension and hypercholesterolemia in Alaska Native (AN) people contribute to increased risk for cardiovascular disease and death. The HEALTHH study is a telemedicine-delivered, multibehaviorally targeted, two-group RCT in the Norton Sound Region of Alaska, with 16 villages and populations from 107 to 3,695 (average=596). The study interventions target smoking and physical activity vs. medication compliance and a heart-healthy AN diet. Eligibility include; AN adult, living in the Norton Sound region, smoking 5+ cigarettes/day, with high blood pressure or high cholesterol, English speaking, BMI < 50, not pregnant, and not in a tobacco cessation program. Study staff travel to the villages with stays ranging from 1 to 8+ days. In this rural and geographically remote area, we summarize our recruitment efforts and identify best practices for enrolment.

Since June 2015 the team has made 46 trips to the villages screening 419 individuals. Of the 245 ineligible individuals, 38% had normal blood pressure or cholesterol. Most screenings occurred on Days 2 (n=98, 25%), 3 (n=102, 26%), and 4 (n=80, 21%), with Day 1 (n=31, 8%) focused on community outreach, and coordinating with the clinic. To date, 104 participants enrolled into the study (53% women, 47% men; mean age =51, SD=14, R: 21 to 81). Enrollment has been greatest on Days 3 (n=21, 20%) and 4 (n=35, 34%), with waning return Days 5-8+ (15% to 2%). Village size is significantly correlated with enrollment (r=0.76, p

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C279 6:00 PM-7:00 PM

EXPERIENCES OF DISCRIMINATION IN HISPANIC AMERICANS AS A FUNCTION OF ACCULTURATION AND ENVIRONMENTAL CRIME

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Discrimination is widely experienced by people from different communities and has been linked with negative health outcomes. However, environmental characteristics that provide the context for experiences of discrimination(EOD) are poorly understood. Crime has been identified as a potentially important environmental factor that can create an atmosphere of distrust and diminish social engagement, but crime has received little attention as a community-leveldeterminant of people's EOD, including in Hispanic Americans. This study examined the relationship of violentand non-violent community crime to EOD in 372 Hispanic American men and women, considering acculturation levels of the participants.

The Experiences of Discrimination (EOD) scale, using the 9-item frequency scoring (Kreiger, Smith, Naishadham, Hartman, & Barbeau, 2005), and Brief Acculturation Scale for Hispanics (BASH) were administered to determine the frequency of discrimination experienced and level of acculturation of the participants. Census data from 2013(the year preceding the administration of the EOD and BASH) were used to determine rates of violent (aggravated assault) and nonviolent crime (residential burglary) in participants' communities. ANOVAs or t-tests were conducted to determine if there were EOD differences across gender, income, education, and country of origin groups; none of the tests yielded significant results (p's were all > .05). Multi-level modeling was used to examine the relationships among BASH scores, crime variables, and EOD scores, controlling for age. Violent and non-violent crime were not significant predictors of EOD scores (aggravated assault: b = .05, p = .73; residential burglary: b= -.07, p = .53). BASH scores were positively associated with EOD scores (b = .24, p = .04). There was no significant interaction of BASH and crime scores in predicting EOD scores (aggravated assault: b = .40, p = .17; residential burglary: b < -.01, p > .99). In sum, results did not support crime as an environmental characteristic related to personal EOD, but documented that more highlyacculturated members of the Hispanic American community reported more frequent EOD. Determining whether there are other

environmental characteristics common to more highly acculturated Hispanic Americans that contribute to their EOD should be the focus of future research.

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C280 6:00 PM-7:00 PM

LATENT CLASSES OF PARENTING STRESS, FAMILY MEALS AND CHILD BODY MASS INDEX IN A NATIONALLY-REPRESENTATIVE SAMPLE OF MOTHERS

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Purpose: Parenting stress, combined with other stressors, has been linked to poorer child diet, sedentary behavior, and obesity risk. Yet previous findings are inconsistent and limited by small sample sizes. This study explored latent subgroups of mothers characterized by stress (parenting stress, maternal mental health issues, poverty, single parenting) and links to family meals and child obesity status.

Methods: Nationally-representative cross-sectional data came from mothers of children aged 10 – 17 years (National Survey of Children's Health, 2011). Stress measures included items from the Parental Stress Index & Parental Attitudes about Childrearing ($\alpha = .67$); maternal mental health; BMI ≥ 95th percentile; family meals per week; % federal poverty level; and single parent status. Latent Class Analysis identified subgroups of mothers. Multinomial logistic and linear regressions tested associations with family meals and child obesity risk, controlling for child minority status and age.

Results: The analytical sample was mothers (n = 31,239, 69% of sample) of children 13.65 yrs. on average (SD = 2.32), 52% male, and 70% white. Four latent classes emerged, distinguished by poverty level; maternal stress levels were similar across classes. Class 1 (C1), the second largest class, (30.8%) had the highest poverty. Class 2 (20.3%) had moderately higher income; Class 3 (9.6%) had moderately lower. The largest class, Class 4 (C4) (39.2%), had the lowest poverty. Compared to C1, the mid-higher and higher income classes had family meals fewer days per week (C2 $\beta = -23$, SE = .08, $p < .01$; C4 $\beta = -.39$, SE = .07, p =

Conclusions: Four subgroups of mothers of US children were identified; the main distinguishing stressor was poverty. High and mid-high poverty subgroups had more frequent family meals but higher risk of obesity. Although the literature indicates that family meals can be protective against child obesity, these nationally representative data suggest this may not

occur in higher poverty families. Perhaps other risk factors, such as lack of access to healthy food outlets or safe spaces for physical activity, outweigh the potential benefit of frequent family meals in higher poverty families. Further research is needed to understand components of frequent family meals, such as nutrient content or feeding practices, and differences across demographic groups.

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C281 6:00 PM-7:00 PM

MINDFULNESS AND POSITIVE AFFECTIVITY: DISPOSITIONAL PROTECTIVE FACTORS OF SELF-RATED HEALTH IN UNDERGRADUATE STUDENTS

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Introduction: This study examined the contribution of mindfulness and positive affect on self-rated health among young adults. Dispositional mindfulness and positive affect have been found to moderate the impact of stress on psychological symptoms but relatively few studies have examined their contribution to self-rate health. In addition, few have examined the contribution of these factors to self-rated health accounting for psychological distress and poor sleep quality.

Participants: Undergraduate students (N=201) from diverse backgrounds (63.7% White); 72.6% female; age range 18-46 years (M=19.2; *SD*=3.55).

Procedure: Self-administered electronic survey. Demographics, self-rated health, positive and negative affectivity (PANAS-Watson et al., 1988), dispositional mindfulness (FFMQ-Baer et al., 2006), perceived stress (PSS-Cohen, Karmack, & Mermelstein, 1983), depressive and anxiety symptoms (HSCL-Derogatis et al., 1974), and sleep quality (PSQI – Buysse et al., 1989). All scales indicated excellent internal reliability in the sample ($\alpha = 0.83 - 0.93$).

Results: Less than good health was reported by 10% of the sample. Regression analyses indicated that with the inclusion of covariates (age, gender, education, race, sleep quality, and symptoms of depression and anxiety) at step 1, depressive symptoms (β=.28, $p < .01$, CI = .136 - .705) significantly predicted poorer self-rated health. With the addition of dispositional and state psychological factors at step 2, only mindfulness (β= -.22, $p < .05$, CI = -.043 - -.004) and positive affectivity (β= -.19, $p < .05$, CI = -.018 - -.001) significantly predicted poorer self-rated health. Interestingly, depressive symptoms were no longer a significant predictor of self-rated health in step 2. This model explained 26% of the variance in self-rated health.

Conclusion: Findings provide additional evidence that dispositional mindfulness and positive affect contribute to self-rated health, even in the context of current symptoms of psychological distress and poor sleep quality. Evidence supports that training can inculcate changes in dispositional factors such as mindfulness. Thus, identifying protective factors that are amenable to change may guide the development of programs to increase mindfulness and promote positive affect, which may influence health in this population.

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C282 6:00 PM-7:00 PM

PARENT AND TEACHER SELF-PERCEPTION AS A ROLE MODEL FOR HEALTH AND DIET AND EXERCISE BEHAVIOR

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Nurses and physicians are expected to be role models of health for adults and children. However, for children, parents and teachers are often more significant role models for health. The ways in which parents and teachers view themselves as health-promoting role models, specifically related to healthy eating (HE) and physical activity (PA), is an important yet understudied area of research. Parents and teachers' self-perceptions as health-promoting role models can significantly influence their effectiveness when teaching about or advocating for health. The purpose of this study is to examine the relationship between self-perceptions as a role model and HE and PA behaviors among parents, school teachers and school administrators. Parent participants (n=205) were 38.1 (±7.1) years old, mostly mothers (n=174; 84.9%) and of White (n=93; 46.5%), Black (n=85; 42.5%) or Other (n=22; 11.0%) racial/ethnic background. Teachers/Admins (n=175) were 43.2 (±9.5) years old, mostly female (n=145; 82.9%) and of White (n=121; 69.5%), Black (n=42; 24.1%) or Other (n=11; 6.3%) racial/ethnic background. Data were collected using the Self as Role Model for Health Promotion (SARMHEP) scale, which has been designed for use with nurses. It was reduced and adapted for this study to examine parent/teacher/admin perceptions. Spearman-Brown prophecy predictions of reliability (if the subscales were expanded to the full scale) was .974 and .924 parent and teacher/admin scales, respectively. Convergent validity was established with correlations ($r = .6$, $p < .01$) with the question: "I am a strong role model for health". Scores were summed and ranged from 5-30 for parents and 5-66 for teachers/admins, with higher scores indicating more intrinsic motivation to engage in personal health practices. PA was measured using the Godin Leisure-Time Exercise Questionnaire, and HE was assessed using the following question: "How would you rate the overall nutritional content of your diet" (1: *unsure* to 5: *excellent*). Results show that for parents, perceptions of self as a role model for health is positively associated with PA ($r = .43$, $p < .001$) and HE ($r = .56$, $p < .001$). For teachers, perceptions of self as a role model for health is positively associated with PA ($r = .28$, $p < .001$), HE ($r = .34$, $p < .001$), and the number of years as a certified teacher ($r = .16$, $p < .05$). Role model perceptions did not differ by age, race/ethnicity or sex for parents or teachers. Findings from this study suggest that an awareness as a role model for health is associated with positive healthy eating and physical activity behaviors. This study is significant because little is known about the health role-modeling beliefs of parents,

teachers/administrators and behavior change, which is important to consider when planning whole-school health interventions that involve parents and the larger community.

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SOCIAL INTEGRATION AND EMOTIONAL REGULATION

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Objective: Researchers hypothesize greater social support leads to “stress buffering,” protecting socially integrated adults from the physiological effects of stress. Our primary aim was to evaluate if adults with greater social integration would show less activity in ROI’s associated with emotional reactivity (Amygdala) and greater activity in areas associated emotional regulation (ACC) when asked to regulate negative emotions.

Methods: 31 participants, aged 40-68, completed the social network index (SNI). During the MRI task, participants were shown a series of photographs. There were three conditions: a neutral photo that participants viewed naturally (“look neutral”), a negative photo that participants viewed naturally (“look negative”) and a negative photo, shown after participants were instructed to regulate (or decrease) their negative reaction (“decrease negative”).

Results: Social Integration scores were not predictive of activity in the ACC or Amygdala. In an exploratory, whole brain analysis, social network size was predictive of BOLD activation in the right superior parietal lobe. Participants with a larger social network had a smaller difference in activity between the “look neutral” condition and the “decrease negative” condition, as compared to adults with a smaller social network.

Discussion: A small difference in BOLD activation in the right superior parietal lobe when the look “decease negative” condition is compared to the “look neutral” condition is indicative of less reactivity when presented with disturbing images. As the right superior parietal lobe is associated with visual working memory, it is possible that adults with higher levels of social integration have less need for vigilance to threats in their environments. This is consistent with the social support/ buffering hypothesis, indicating a social protection against the physiological effects of stress that would accompany constant vigilance. This suggests that those who are more socially integrated have less of a neural reaction to emotionally provocative stimuli, and therefore may provide potential neurobiological explanations for why some adults show better age-related trajectories that affect health than others.

References

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SPOUSAL RETIREMENT COMMUNICATION AND DECISION-MAKING ON RELATIONSHIP QUALITY AND SELF-REPORTED HEALTH IN OLDER ADULTS

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BACKGROUND: Research has shown a consistent association between marriage and both physiological and psychological health outcomes. However, it also shows that it isn't marriage per se that is beneficial; relationship quality (RQ) matters. One indicator of satisfying relationship quality is the utilization of verbal and nonverbal communication. Poor communication may result in poorer RQ and thus worse health outcomes. For older couples, retirement can bring significant changes to their relationship. Thus, retirement affects both the retiree and their spouse, yet, decisions regarding retirement may be made unilaterally by the retiring spouse without partner input. Such couples may report lower RQ while those who communicate effectively and make joint decisions regarding retirement issues may report better RQ which can lead to better health outcomes.

METHODS: We conducted one-on-one interviews with 240 retired and semi-retired individuals and administered surveys on RQ using the Marital Adjustment Test (MAT) and self-reported health measures.

RESULTS: Participants were aged 53-90, with 58% male, mostly white (91.8%), educated (88.0%), married (79.4%), and of higher income (70.0% >$50,000/year). Most married participants (96%) indicated they discussed retirement decisions with their spouse and most (89.6%) reported being either happy or very happy in their marriage. Couple communication was associated with participants' perceived positivity of their relationship ($p < .001$). When asked about the secret to happiness in retirement many participants discussed strong communication and relationship with their spouse: "You have to have a good relationship with your spouse." Individuals who reported better communication with their spouse also reported significantly higher overall health (p=.04), lower incidences of cardiovascular issues (97.5%) and diabetic issues (90%). Of particular interest, distressed MAT scores showed a trend toward reported high blood pressure issues (p=.07).

CONCLUSIONS: Retirement can be a stressful time in older adults' lives. RQ could suffer;

however, in our sample of older adults, communication about retirement decisions was associated with greater marital positivity and better self-reported health. In a population of healthy older adults, RQ still plays a significant role in health.

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WEIGHT-RELATED BELIEFS AND BEHAVIORS IN APPALACHIA

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Background: Extensive research has identified health disparities among residents of Appalachia, a unique 13-state geographic region of the U.S. In particular, Appalachians exhibit elevated rates of obesity and related behaviors such as physical inactivity. However, the psychological processes underlying those differences are less apparent.

Objective: The current study aims to clarify how health beliefs differ among Appalachians relative to non-Appalachians in light of related disparities in health behaviors and conditions.

Methods: The present analyses explored health beliefs in a sample of American adults (n=14,451) who responded to the Health Information National Trends Survey between 2011 and 2014, 8% of whom (n=1,015) resided within Appalachia. Specifically, respondents indicated how much they thought both health behaviors and genetics determined whether a person would develop obesity. They also reported on their typical patterns of physical activity, sedentary behavior, and fruit and vegetable consumption, as well as their height, weight, and general health, among other variables. Weighted regression analyses were used to test whether Appalachians differed from non-Appalachians on measures of calculated BMI, healthy lifestyles, confidence in their ability to take care of their health, and perceptions of risk factors for obesity.

Results: The average BMI was higher among Appalachians than non-Appalachians (β=0.98, p=.03). Additionally, Appalachians were less likely to report that health behaviors like diet and exercise are related to obesity (β=-0.38, p=.03), though they were not more or less likely than non-Appalachians to attribute obesity to genetics (β=-0.11, p=.42), nor were they more or less confident in their ability to take care of their health (β=0.09, p=.53). Appalachians reported engaging in strength training less frequently than non-Appalachians (β=-0.35, p=.01), although

there were no differences in physical activity per week (β=5.36, p=.88) or consumption of fruits and vegetables (β =-0.01, p=.97) in the current sample.

Conclusions: The results of this study suggest that Appalachians may undervalue behavioral determinants of health, potentially complicating efforts to reduce obesity and encourage healthy activities throughout the region.

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WILL WORK FOR FOOD: HOURS WORKED AMONG COLLEGE STUDENTS IS LINKED TO POORER HEALTH BEHAVIORS AND OUTCOMES

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Objective: The transition to college is marked by shifts in health behaviors and outcomes, including poor nutrition, physical activity (PA), and weight gain. How working for pay contributes to these shifts has not been studied. As a result, this study sought to examine how working for pay is related to health behaviors and outcomes among college freshmen.

Methods: During fall of 2015, diverse freshman students (n=1403; 65% female; 50% white) participating in the SPARC (**S**ocial impact of **P**hysical **A**ctivity and nut**R**ition in **C**ollege) study completed web-based surveys; anthropometrics were measured by trained research assistants at the same time. Mixed multivariate logistic regression models were used to examine the relationship between hours worked (0 hrs, 0.5 to 19.5 hours, ≥20 hrs per week) and eating behaviors, physical activity, sleep, stress, food insecurity, and measured weight status, adjusting for sociodemographics, and clustering of students within residence halls.

Results: Most students (73%) did not work for pay; the mean hours worked among working students was 18.±8. As compared to students working 0.5 to 19.5 hrs, students not working at all had a significantly higher odds of ≥3 hrs of screen time (OR=1.3; 95% CI: 1.01, 1.9) and reporting getting enough sleep (OR=1.6; 95% CI: 1.2, 2.2). As compared to students working 0.5 to 19.5 hrs, students working more than 20 hrs reported lower odds of fast food intake (OR=0.6; 95% CI: 0.4, 0.9), and higher odds of food insecurity (OR=1.7; 95% CI: 1.1, 2.6) and perceived stress (OR=1.5; 95% CI: 1.1, 2.1). Hours worked was not associated with breakfast, fruit or vegetable intake, PA, or weight status.

Conclusions: Despite being full time students, many students may need to work more than 20 hours per week, which was related to higher stress and food insecurity. Not working was related to more sedentary behavior and higher quality of sleep. Interventions are needed to support students working more than half time and to support less sedentary behavior among non-working students. Future research should address the long-term health and academic effects of working for pay among students.

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EFFECTS OF DANCE MOVEMENT THERAPY ON SUBJECTIVE STRESS AND CORTISOL SLOPE AMONG BREAST CANCER PATIENTS UNDERGOING RADIOTHERAPY

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Background: Breast cancer patients are at risk for psychosocial distress, which may lead to neuroendocrine dysfunction. Dance Movement Therapy (DMT) is a movement-based psychosocial intervention that incorporates exercise, artistic, and recreational components. This study aimed to examine the effectiveness of DMT on perceived stress and diurnal cortisol slope.

Methods: This clinical trial randomized 121 Chinese breast cancer patients undergoing radiotherapy treatment into the DMT (n = 63) or control group (n = 58). The intervention comprised six 1.5-hour group sessions held twice a week over the course of radiotherapy. The participants completed self-report measures on perceived stress, health and sleep characteristics at baseline. Salivary cortisol samples were collected at five time points and perceived stress at the end of the intervention. Moderated mediation analysis was used to evaluate the DMT effect on the diurnal cortisol slope.

Results: Overall, DMT showed a marginal beneficial effect on diurnal cortisol slope (B = –0.66, 95% CI = –1.36 to 0.06, β = –0.17). Baseline perceived stress significantly and negatively moderated the effect of DMT on diurnal cortisol slope (B = –0.21, 95% CI = –0.36 to –0.05, β = –0.35). At one SD above the pss1 mean, the cortisol slope of the DMT group (M = -6.93) was significantly steeper than the control group (M = -5.35) with 95% CI for the difference of -1.58 = -2.59 to -0.61. The indirect effect of DMT on cortisol slope via Time 2 perceived stress was not statistically significant.

Discussions: The DMT program had a modest overall effect on diurnal cortisol slope in breast cancer patients but appeared to be effective in modulating the neuroendocrine response of those who were distressed. The present findings suggest that perceived stress may play a moderator but not mediator role in the DMT effect on diurnal cortisol slope.

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C288 6:00 PM-7:00 PM

NEUROTICISM, AND OPENNESS TO EXPERIENCE PREDICTIVE OF CARDIOVASCULAR REACTIVITY TO A STRESS TASK.

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Numerous studies have demonstrated that various personality factors are related to health outcomes (e.g., Hampson & Friedman, 2008; Turiano et al., 2011). However, the mechanisms through which personality affects health are not clear. Our study sought to explore one possible mechanism by which personality traits may affect health: via increased or decreased reactivity to a stress task. The Midlife Developmental Inventory (MIDI), which assesses extraversion, agreeableness, neuroticism, conscientiousness, agency, and openness to experience, was given to 77 undergraduate students. Cardiovascular reactivity was measured for all participants during performance of a mental arithmetic task during which participants were verbally harassed by the experimenter.

To examine which personality traits were related to reactivity to stress, hierarchical regressions were performed for each cardiovascular parameter (systolic, diastolic, and mean arterial blood pressure, heart rate). Resting cardiovascular parameters were entered in the first step, and all personality traits were entered in the second step. Results revealed that neuroticism was positively related to both iastolic blood pressure (DBP; $\beta = .270$, $p = .015$) and mean arterial pressure (MAP; $\beta = .222$, $p = .031$). Openness to experience was inversely related to MAP ($\beta = -.478$, $p = .017$).

These results show that various personality factors are indeed related to cardiovascular reactivity to stress. These findings indicate that stress reactivity is one likely mechanism by which personality traits affect health. Additionally, this finding highlights the importance of including personality factors as potential covariates when conducting cardiovascular reactivity research.

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C289 6:00 PM-7:00 PM

SOCIAL MEDIA AS A SHIELD: FACEBOOK MAY BUFFER ACUTE STRESS

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Background: Facebook is commonly used as a tool in behavioral health interventions. However, a conflicting body of research suggests that Facebook use may both enhance and undermine psychosocial constructs related to well-being. Despite these associations, to date there has been hardly any objective measurement of the potential impact of Facebook use on health in the context of stress. This pilot study aimed to examine the impact of Facebook use on stress reactivity. Methods: 48 Facebook users (10 males, mean age 19.8±2.3) were randomly assigned to either the experimental group (Facebook use) or the control group (quietly sitting with digital reading materials) during 18 minutes before experiencing the Trier Social Stress Test (TSST). All participants completed measures of mood and subjective well-being. Objective physiological markers (blood pressure, heart rate, and salivary cortisol) were collected at baseline and several times during recovery. Results: Groups did not differ on any measure at baseline. During the TSST, the experimental group showed a decrease in heart rate, whereas the control group showed a steep increase (pConclusion: This exploratory study showed that participants who used Facebook before experiencing acute social stress showed a more blunted response to the TSST with regard to heart rate and salivary cortisol compared to the control group. Results suggest that Facebook use may act as a buffer against acute stress. Findings hold value for informing the use of social media in behavioral medicine.

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THE EFFICACY OF INTERNET-BASED INTERVENTIONS FOR STRESS MANAGEMENT: A META-ANALYSIS

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Exposure to chronic stress can be deleterious to psychological, somatic, and behavioral health, and even lead to premature death. In recent years, the Internet has become a platform for many health-related activities, including becoming a medium for the delivery of psychological interventions. Such interventions can be delivered on computers, tablets, or mobile phones, and have been found to be effective in addressing a variety of health-related problems. Additionally, interventions delivered via the Internet offer the potential to overcome barriers associated with pursuing in-person psychological care. Many stress management techniques, such as exercising or meditating, can be time consuming. Given that the lack of time often is a source of stress, additional solutions, including Internet-based ones, that offer greater time effectiveness, flexibility and readiness of use are needed. Although much of the research examining Internet- based interventions has been conducted with clinical populations, recently, more studies have been devoted to the development and testing of Internet-based programs for the general public, such as interventions for stress management. This review quantitatively synthesizes 18 randomized clinical trials (RCTs) examining the efficacy of interventions for stress management delivered via the Internet. The aggregate effect size was medium ($d = .69$, $p < .0001$) indicating that, on average, individuals assigned to the intervention showed significantly lower stress levels than controls post-intervention. Moderator analyses showed that the type of population (employees produced the strongest effect size relative to students or adults in the general population), the intervention technique (mixed approach techniques were superior to single intervention techniques), the treatment length and the number of intervention sessions (the greater the length and the more interventions sessions, the greater the treatment effectiveness) impacted the strength of the effect. Overall, Internet-based interventions emerge as a promising tool for targeting stress, particularly those that are multifaceted, involve a higher dose of intervention, and perhaps are targeted toward groups experiencing specific types of stressors.

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MERITORIOUS AWARD WINNER

TRAUMA, PSYCHOLOGICAL DISTRESS, AND CARDIOMETABOLIC HEALTH AMONG UNDOCUMENTED LATINOS: RESULTS FROM PROJECT VOCES

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Exposure to traumatic events has been associated with increased risk for multiple health conditions such as cardiovascular disease and type 2 diabetes, and with all-cause mortality. It remains unclear if it is the exposure to trauma and/or the experience of subsequent psychological distress (e.g., post-traumatic stress disorder [PTSD], depression) that deleteriously affects physical health. US Latinos experience a high rate of cardiometabolic conditions (e.g., type 2 diabetes, hypertension) and are disproportionally affected by poor outcomes. Undocumented Latinos may be at increased risk for trauma exposure due to unique stressors (e.g., migration). This cross-sectional quantitative study evaluated the association between previous trauma exposure, current psychological distress, and self-reported cardiometabolic conditions, among a sample of undocumented Latinos (n=254) living in southern California and recruited through respondent driven sampling (69.3% female; 63% 18-40 years old; 97.6% Mexican; mean years living in US=16.4±8; 64.9% completed ≤ middle school). Structured clinical interviews were conducted to assess for exposure to potentially traumatic events relevant to immigrants and refugees (Harvard Trauma Questionnaire, adapted), current PTSD and Major Depressive Disorder (MINI International Neuropsychiatric Interview), and self-reported cardiometabolic conditions (type 2 diabetes, hypertension, hyperlipidemia, and heart disease). Approximately 27% of participants reported at least one cardiometabolic health condition. 49% had experienced confinement/robbery, 48.6% material deprivation, 44.7% a loved one injured due to violence, 45.1% a bodily injury due to violence, 39.9% war conditions, 22% had experienced a deportation, and 13.4% witnessed violence towards others. In a logistic regression model adjusting for demographic covariates (age, sex, income, years in the US), having experienced any traumatic event significantly increased the odds of reporting at least one cardiometabolic condition (OR=3.42

[1.20, 9.75]). In a final model that also accounted for PTSD and depression, trauma exposure remained significantly associated with increased likelihood of cardiometabolic conditions (OR=3.08 [1.06, 8.95]), while current PTSD and/or depression was not (OR=1.79 [0.82, 3.90]). Results suggest that trauma exposure may be associated with poor cardiometabolic health among Latinos, above and beyond the effects of psychological distress, which has important clinical implications.

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CHANGE TALK, BEHAVIORAL WILLINGNESS, AND COLLEGE ALCOHOL USE: A MEDIATION ANALYSIS

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Introduction: Change talk (CT), or self-motivational statements promoting health behavior, predicts subsequent behavior change and is theorized to be an important mechanism of change underlying psychotherapies, particularly motivational interviewing. However, the mechanisms by which in-session language influences health behavior change is understudied. The current study examined whether the relationship between CT and alcohol use is mediated by behavioral willingness (BW), a proximal variable in the decision-making process. **Method:** Participants (*N* = 76) were first-year college students assessed at the beginning of the academic year (*M* = 10.7, *SD* = 7.8 days in college). Participants completed the Collegiate Simulated Intoxication Digital Elicitation (C-SIDE), during which participants view five simulated drinking scenarios. After each scene, participants reported their BW to accept each offer of alcohol or food/nonalcoholic beverages (control offers) on a 5-point scale. Participants' verbal behavior was recorded using a free-response open elicitation at predetermined points throughout the C-SIDE and then transcribed and coded for occurrences of CT and its counterpart, sustain talk (ST). Percent change talk (PCT) was computed as CT/(CT + ST). Participant alcohol use was assessed at baseline and 8-month follow-up. Regression analyses were conducted using the PROCESS macro in SPSS24. **Results:** Controlling for baseline alcohol use, the total effect of PCT on alcohol use eight months later was significant, *B* = -0.99, *SE* = 0.37, 95% CI (-1.73, -0.26). This effect was mediated by alcohol BW, such that the direct effect of PCT on alcohol use was nonsignificant, *B* = 0.37, *SE* = 0.51, 95% CI (-0.64, 1.38) while the indirect effect through BW was significant, *B* = -1.37, *SE* = 0.36, 95% CI (-2.17, -0.74). **Discussion:** The effect of PCT on subsequent alcohol use was significantly mediated by BW. Greater PCT was associated with less alcohol use eight months later. This relationship is explained by BW such that greater PCT led to lower BW which in turn resulted in lower alcohol use. These results suggest the influence of client language on health behavior may work through changes in more proximal factors of the alcohol use decision-making process. This research may help researchers and clinicians begin to understand how client language in non-therapeutic settings leads to desirable health behavior change in patients' lives.

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EXAMINATION OF THE HEPATITIS C VIRUS CARE CONTINUUM AMONG INDIVIDUALS WITH AN OPIOID USE DISORDER IN SUBSTANCE USE TREATMENT

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Background: For individuals with an opioid use disorder (OUD), risk of Hepatitis C Virus (HCV) transmission and acquisition is elevated, particularly through drug use behaviors including injection drug use (IDU) or sharing needles and other injection paraphernalia. The CDC, U.S. Preventive Services Task Force, and Institute of Medicine recommend routine HCV testing for high-risk individuals, which includes those with a history of IDU. HCV antibody testing addresses the first step in the HCV treatment care cascade. Uptake and completion of HCV treatment among individuals with chronic HCV is the optimal endpoint of the care cascade; however, there is some evidence to suggest that there may be gaps in the HCV care continuum. Thus, the aim of the current study was to characterize the HCV treatment cascade including: HCV testing, acute HCV diagnosis, chronic HCV diagnosis, and receipt of HCV treatment among individuals with an OUD engaged in outpatient methadone or buprenorphine assisted substance use treatment.

Methods:Individuals receiving methadone or buprenorphine outpatient treatment (*N* = 202, 67.8% female, *M* age = 35.0, *SD* = 8.4) completed a brief, anonymous paper-and-pencil survey assessing history of HCV testing, diagnosis, and treatment.

Results: 65.1% reported either no prior HCV testing or not being tested for HCV during the past year. 42.7% of those with a lifetime HCV testing history indicated they had been told they had HCV (n=67/157), with 21% (n=14/67) of those individuals reporting that they had been told they had chronic HCV, and 71.4% (n=10/14) of those with chronic HCV having received HCV treatment.

Discussion: Results underscore gaps in the HCV care continuum among individuals with OUD engaged in outpatient substance use treatment. Interventions to increase uptake of HCV testing, linkage to HCV medical care, and uptake and adherence to HCV treatment are urgently needed, particularly among individuals with an OUD.

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IMPLEMENTING AN SBIRT CURRICULUM ENHANCEMENT PROGRAM FOR SUBSTANCE USE DISORDERS AT AN HBCU TEACHING HOSPITAL

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Background: Low-SES and racial/ethnic minority populations in the United States have a lower probability of receiving needed substance-related services and are disproportionately affected by health and social consequences of substance use disorders (SUD). Integrating Screening, Brief Intervention and Referral to Treatment (SBIRT) training and best practices for SUD has shown positive outcomes in primary care settings, particularly for low-SES populations. This paper will introduce the research design and preliminary results of a SAMHSA-funded SBIRT training program for medical students, residents and faculty at Meharry Medical College.

Methods: We have developed a graded level SBIRT training program across Family, Occupational and Preventive Medicine disciplines and primary care clinics on MMC campus. Pre and post data on SBIRT knowledge, attitudes, practices and training satisfaction are being collected and analyzed to determine the impact of SBIRT training on improving clinician skills and patient care outcomes.

Results: To date, 84 medical students and 26 residents have received a 2-hour didactic SBIRT training and 24 additional residents (four who also received the 2-hour didactic) are currently receiving more intensive 8-hour trainings. Results for 2-hour training show improved SBIRT knowledge scores, 5.39 to 6.16 ($p=0.002$). Overall, training satisfaction, attitudes towards working with patients who use drugs and alcohol, importance and confidence in using SBIRT for substance use were high. Regarding clinical behaviors, participants reported using alcohol and drug counseling interventions less than “Half-the-Time” (2.88). Preliminary results for residents receiving the more intensive 8-hour training also show significantly improved knowledge scores from 4.82 to 5.50 ($p=0.019$) and reported use of alcohol and drug counseling interventions more than “Half-the-Time" (3.41) in the clinic. The four participants who have received continuous SBIRT training have reported the highest increase in use of SBIRT practices in the clinic from “Sometimes” to “Usually” (2.17 to 4.19, $p=0.033$).

Discussion: This pilot presents a patient-centered and culturally-relevant model to integrate SBIRT training and services for clinicians in primary care settings, particularly those serving at-risk and underserved communities. Our results indicate some improvements in SBIRT knowledge and practices, and overall high training satisfaction and attitudes. Future research will analyze the effectiveness of more intensive trainings on SBIRT clinician practices and patient care outcomes, comparing outcomes based on sex and discipline, and training "champions" to sustain SBIRT practices across MMC clinics.

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REDUCING DEPRESSIVE SYMPTOMS AMONG MOTHERS IN TREATMENT FOR OPIOID USE DISORDER THROUGH MINDFULNESS BASED PARENTING

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Introduction: Many women with substance use disorders also have co-occurring mood disorders, including depression which is associated with poor parenting outcomes and impaired maternal functioning and bonding. Finding effective approaches to decreasing depression among mothers with substance use disorders could mitigate its negative effects on infants and children. Mindfulness has been shown to positively affect a variety of psychological issues, including preventing relapse for depression, in the general population. However, no studies have examined the effectiveness of mindfulness among mothers with substance use disorder. Here we assessed whether a Mindfulness Based Parenting (MBP) intervention was successful in decreasing self-reported depressive symptoms in a population of parenting women receiving medication assisted treatment for opioid use disorder.

Methods:Data from 30 women with children less than three years of age who attended a two-hour MBP session weekly for twelve consecutive weeks were collected. The Becks Depression Inventory was administered prior to and following the MBP intervention period. Changes in the total depression score from pre- to post-MBP were investigated using mixed-effects linear regression models implemented via maximum likelihood accounting for correlations arising from the repeated-measures. Analyses were also performed to investigate differences by baseline total depression score.

Results: Among all participants, total depression scores decreased significantly from baseline to post-intervention (mean difference=-3.57, SD 6.24, p=0.04). Additionally, those with the highest baseline depression scores experienced the greatest change (mean difference=-8.3, SD 9.9, p=0.008).

Conclusions:Mindfulness Based Parenting is an innovate program with potential important application to mothers engaged in treatment for substance use disorder. Participants of an MBP intervention reported fewer depressive symptoms post-intervention compared to baseline suggesting that MBP could be used as a mental health-improving strategy for this population. Such improvements in maternal mental well-being could have significant and lasting impacts on infant and child health and development, and future MBP interventional studies are warranted.

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TREATMENT MOTIVATION AMONG CAREGIVERS AND ADOLESCENTS WITH SUBSTANCE USE DISORDERS

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Substance use disorders (SUDs) in adolescence have negative long-term health effects, which can be mitigated through successful treatment. Caregivers play a central role in adolescent treatment involvement; however, studies have not examined treatment motivation and pressures to enter treatment in caregiver/adolescent dyads. Research suggests that internally motivated treatment (in contrast to coerced treatment) tends to lead to better outcomes. We used Self-Determination Theory (SDT) to examine intersecting motivational narratives among caregivers and adolescents in SUD treatment. Relationships between motivation, interpretation of caregiver pressures, adolescent autonomy, and relatedness were also explored. Adolescents in SUD treatment and their caregivers (N_{Dyads}=15) were interviewed about treatment experiences. Interviews were coded for treatment motivation, including *extrinsic* (e.g., motivated by punishment), *introjected* (e.g., motivated by guilt), and *identified/integrated motivation* (e.g., seeing a behavior as integral to the self). *Internalization* of treatment motivation, *autonomy support/competence* (e.g., caregiver support for adolescent decisions), and *relatedness* (e.g., acceptance and support) were also coded. Four dyadic categories were identified: agreement that treatment was motivated by the adolescent (*intrinsic*); agreement that treatment was motivated by the caregiver (*extrinsic*); agreement that treatment was motivated by both, or a shift towards adolescent control (*mixed/transitional*); and disagreement (adolescents and caregivers each claimed they motivated treatment; *conflicting*). Autonomy support and relatedness were most prominent in intrinsic dyads, and least prominent in extrinsic dyads. The mixed/transitional group was also high in autonomy support and relatedness. The extrinsic group characterized caregiver rules as an unwelcome mechanism for behavioral control; caregivers in the other groups saw rules as a way to build adolescent competence and repair relationships, and adolescents saw rules as indicating care rather than control. Adolescents with intrinsic motivations were the most engaged in treatment. Results suggest the importance of intrinsically motivated treatment, and highlight autonomy support and relatedness as mechanisms that might facilitate treatment engagement.

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USING A FAMILY SYSTEMS FRAMEWORK TO ASSESS THE IMPACT OF FAMILIAL OPIOID MISUSE ON THE OVERALL WELL-BEING OF YOUNG ADULTS

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Objective: Misuse of opioids has grown in epidemic proportions over the last decade in the US, particularly in the Appalachian region. Considering that misuse of opioids may significantly affect the family environment, we sought to understand overall well-being of young adults in the context of familial opioid misuse and misuse of other substances using a family systems framework (family organization, health-related beliefs, and communication within the family).
Methods: We conducted a cross-sectional, mixed-methods survey of young adults (18-30 years old) (n=194). Consistent with a family systems framework, we developed a scale assessing health-related beliefs about familial opioid misuse (Cronbach's alpha=0.72). The associations between the overall well-being of young adults and family's cohesiveness, level of coping, frequency of communication with immediate family members and knowledge about opioid misuse in Appalachia were assessed using multivariable linear regression. Quantitative data was augmented by narrative analysis of responses of familial substance abuse-related experiences by young adults (n=60).
Results: Our sample was mostly women (77%) with a mean age of 24.9 years, living in the Appalachian region (82%), who communicated with immediate family members at least weekly (84%). Nearly one fifth (17.5%) reported having familial opioid misuse, all of whom reported that opioid misuse affected familial communication, and 43.3% reported having no familial substance misuse. More than half of the study sample had heard "a lot" about opioid misuse in Appalachia (53%) and thought that their family could cope with opioid misuse (66%). Both adjusted (F (10,194) =3.7, p=.001) and unadjusted analyses showed that health-related beliefs about familial opioid misuse (β=0.31, p=0.01), familial coping (β=0.18, p=0.04), and misuse of any substance by family members (β=1.14, p=0.01) were significantly associated with overall well-being. Qualitative data also indicated the family environment was more disrupted by familial alcohol misuse rather than opioid misuse. Family members misusing opioids seem to be more isolated and disconnected from their family than those with familial alcohol misuse.
Conclusion: While familial opioid misuse did not seem to impact overall well-being, familial misuse of other substances, especially alcohol, seemed to be more disruptive for the overall well-being of young adults in our largely Appalachian sample.

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A DESCRIPTIVE ANALYSIS OF UNEMPLOYED, JOB-SEEKING SMOKERS IN CALIFORNIA

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Background: Our recent research found that job-seeking smokers were half as likely as nonsmokers to be re-employed after one year. Among those who re-gained employment, smokers earned, on average, $5 less per hour than nonsmokers. These findings led to a randomized controlled trial to test a tobacco intervention in unemployment service settings. A vulnerable, impoverished group, we characterize the study sample at baseline.

Method: Participants were job-seeking smokers from the San Francisco Bay Area, working under 10 hours/week, unemployed for less than 2 years, currently smoking 1 or more cigarettes/day with an expired CO sample of at least 7 ppm and having smoked 100 or more cigarettes in one's lifetime. Intention to quit smoking was not required as the intervention was tailored to readiness to quit. Of 419 job-seeking daily smokers screened, 217 met eligibility (52%) and N=206 have enrolled into the trial (5% declined).

Results: The sample is 64% male, 28% female, and 8% transgender, with a mean age of 44 years (SD=11), identifying as 42% Black, 27% non-Hispanic White, 11% Hispanic, and 20% other. Time out of work averaged 6 months (SD=6); 19% are unhoused. Most have a high school diploma or GED (84%); 22% have a college degree; 19% have a criminal history reportable on a job application. Half (51%) interviewed for jobs they did not get in the past 12 months; the most common reported barriers to finding work were advanced age and criminal history. Tobacco use averaged 12 cigarettes/day (SD=6.2) with 44% reporting past-year use of cigars/cigarillos, 29% e-cigarettes, and 25% blunts. Most (75%) reported a 24-hr quit attempt in their lifetime and 49% in the past year. The most common quitting methods were cold turkey (57%), followed by gradual reduction of use (37%) and nicotine replacement therapy (24%). At study enrollment, 34% intended to quit in the next 30 days, 36% in the next 6 months, and 30% not in the near future.

Conclusion: With a focus on unemployed smokers, study of novel tobacco treatment outreach strategies may be especially beneficial given the group's general low intention to quit, poly-

tobacco use, and reliance on cold turkey quitting methods. Additional cessation support and pharmacotherapy may augment quit efforts and, in turn, aid re-employment.

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A NOVEL MOBILE APP FOR YOUNG ADULT SMOKING CESSATION: A PILOT STUDY

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Young adult (YA) smokers are challenging to reach and less likely to engage with evidence-based cessation interventions than older adults. Mobile interventions leveraging the “stickiness” of social media may be an innovative approach to engage YA smokers. This pilot study evaluated signals of engagement with such a novel smoking cessation app.

The *This is Quitting* app was developed based on formative research with YA current and former smokers, including monitoring social media to determine how YA smokers talk about quitting; key informant interviews/focus groups; feedback on sketch concepts; beta tests; and usability testing. Main components of the app are: social media content about quitting smoking curated from multiple platforms (i.e., Tumblr, Twitter) into an aggregated feed; interactive tools (“training packs”) that list challenges to prepare users to stay smoke free in various situations; and information on evidence-based resources such as NRT and quitlines. App users were recruited via organic social media, paid online ads, and referral from YA organizations (e.g., universities). Engagement with the app was tracked via automated tracking tools and examined with descriptive statistics.

Between 12/28/15-1/17/16, 810 users installed the app. During the first 60-days after installing the app, 355 (43.8%) users opened the app more than once (M=3.3, SD=2.7 among return users). Median number of social media posts viewed was 20 (IQR=10-30). About half of the users viewed at least one training pack (360, 44.4%) and more than a quarter of the users completed at least one challenge (220, 27.2%). Fewer users accessed static content: 109 (13.5%) read about NRT and 24 (3.0%) viewed quitline information.

This pilot study demonstrated significant demand for a smoking cessation app with over 800 installations in 20 days. Engagement metrics were promising with nearly half of the users opening the app more than once (previous research showed about 1/3 repeat users for mobile health apps). Static content was accessed at lower rates than the social media-based content of the app. Future research should explore increasing adoption/engagement with mobile apps and whether this modality may promote abstinence.

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DEVELOPMENT OF A SMARTPHONE-BASED MINDFULNESS INTERVENTION WITH CONTINGENCY MANAGEMENT FOR OUTPATIENT DEPRESSED SMOKERS

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Smoking rates among individuals with psychiatric disorders are disproportionately higher than in the general population and in turn this group bears a large proportion of the tobacco morbidity and mortality burden. However, less than 20% of outpatient mental health treatment facilities offer smoking cessation treatments. Development and evaluation of smoking cessation interventions that could be integrated into psychiatric treatment settings is needed. In the current pilot study, we developed a smartphone-based mindfulness smoking cessation intervention with contingency management (MSI-CM) and delivered it to 8 adult daily smokers who were receiving outpatient psychiatric treatment for depression in Bronx, NY. Of the 8 participants, 100% were female and racial/ethnic minorities (50% Hispanic), 87.5% had a high school diploma/GED or less, 100% reported household incomes of less than $24,999, and 75% were on disability. Half of participants reported that they have only one or no prior serious quit attempts. Over a 38-day period (10 days before and 4 weeks after a target quit date), participants were prompted to practice mindfulness by listening to audio recordings (approx. 5 mins each) and to complete ecological momentary assessments using a smartphone 5 times per day, and to submit carbon monoxide (CO) videos twice a day for 2 weeks after a target quit date. Overall, participants practiced mindfulness an average of 3.4 times/day (≥ 3 minutes), 68% of requested CO videos were submitted, and 58% of those submitted earned cash incentives (CO ≤ 6 ppm). Participants completed 72.3% of prompted ecological momentary assessments, with 97% of reports completed within 30 minutes of the scheduled time. At each follow-up, 1 participant (12.5%) reported biochemically verified 7-day

point prevalence abstinence. All participants reported reductions in the number of cigarettes smoked per day from baseline (*M=12.5*) to 2-week, 4-week, and 3-month post-quit follow-ups (*M=2.0, 2.0, 7.2*; 84%, 84%, and 46% reduction, respectively). Participants reported that the program was helpful overall (*M=4.85*, on 5-pt scale with 1= not at all and 5= very much), daily mindfulness practice was enjoyable and helpful for both managing mood and quitting smoking (*M=4.5-4.63*), and submitting videos of CO levels aided in the cessation effort (*M=4.75*). These findings indicate high levels of acceptability and satisfaction with MSI-CM. We are currently in the preliminary randomized controlled trial phase.

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DISCOVERING DIMENSIONS OF DEPENDENCY AMONG YOUNG ADULT ELECTRONIC NICOTINE DELIVERY SYSTEMS USERS

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Electronic Nicotine Delivery Systems (ENDS) use is becoming increasingly common among young adults, necessitating an understanding of the salient dimensions of nicotine dependence that may underscore this novel public health phenomenon. The purpose of this study was to evaluate dimensions of dependency within the young adult ENDS user population. Data come from the second phase of an ongoing three phase study which aims to investigate ENDS use patterns and motives of continued use among young adults (ages 18-24). Participants in this sample (N = 304), were predominantly male (61.5%) and Caucasian (69.1%). Each participant self-identified as a regular ENDS user and self-reported using within a week of data collection. Participants were recruited using Amazon Mechanical Turk, an online micro-task marketplace, and were asked to self-report their demographics, smoking patterns, as well as complete a modified 14-item Wisconsin Inventory for Smoking Dependency Motives (WISDM) adapted to query ENDS dependence motives. We used confirmatory factor analysis to model six WISDM sub-scales as indicators of dependence, including automaticity, loss of control, tolerance, craving, cognitive enhancement, and affective enhancement. Subscale scores were indexed as the mean of the items composing the scales. Both a one- and two-factor solution for dependence were compared, where refinements to model specification were made as appropriate upon inspection of factor loadings, residuals, and modification indices. The two-factor model best fit the data. Automaticity, loss of control, craving, and tolerance loaded on the first factor and represent physiological ‘drive.’ Drive can be conceptualized as the desire to satisfy the urge to use ENDS. Affective and cognitive enhancement loaded onto the second factor and represent ‘positive reinforcement.’ These data demonstrate that there may be two distinct clusters of factors driving dependence among ENDS users.

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EFFECTS OF ANHEDONIA ON HOOKAH USE AMONG YOUNG ADULTS

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Introduction: Use of hookah among young adults has increased over recent years, yet little is known about how depressive constructs, such as anhedonia, are related to hookah use. Anhedonia predicts poorer outcomes with various aspects of cigarette smoking, particularly cessation, and may similarly affect other tobacco use. The purpose of the present study was to examine the association between anhedonia and hookah use over time among young adults.

Methods: Participants (n = 392, 52% male) aged 18-24 were recruited for a longitudinal study examining cigarette and alternative nicotine and tobacco product use. Eligibility criteria included non-daily cigarette smoking for ≥ 6 months and no lifetime history of daily cigarette smoking for ≥ one month. Anhedonia was measured at baseline and participants reported hookah use at baseline, 3, 6, and 9 months. All measures were completed online or via mobile app.

Results: Anhedonia was prospectively associated with frequency of hookah use such that more anhedonic individuals reported more frequent use of hookah tobacco. Hookah use was reported by 14-32% of participants across the 4 assessments, and frequency of use significantly decreased over time.

Conclusion: Initial findings suggest that anhedonia predicts increased use of hookah among young adult non-daily smokers. More research is needed to identify mechanisms that link anhedonia and hookah use, as well as longer-term outcomes such as dependence and cessation.

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GREATER SUSCEPTIBILITY TO NICOTINE PATCH TOXICITY AMONG ASIAN AMERICANS COMPARED TO CAUCASIANS

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Smoking rates for Asian Americans is about half that shown by White Americans with those Asian American who do smoke also more likely to be light and intermittent cigarette smokers compared to Whites. A plausible explanation for the reduced consumption of cigarettes among Asians may be differences in nicotine metabolism. Benowitz et al. (2002) have shown Chinese-Americans to demonstrate substantially lower CYP2A6 liver enzyme activity than Whites or Latinos; and it is this slower nicotine metabolism that may place Asians at greater risk for nicotine toxicity. Few studies have compared nicotine toxicity sensitivity between Asians and Caucasians in response to fixed doses of nicotine under controlled conditions. In this study 21mg and 5mg nicotine patches (Nicoderm) were administered to smokers and non-smokers respectively, as well as a placebo patch, across two laboratory sessions. Participants were monitored for physical symptoms associated with nicotine toxicity and sessions were terminated as soon as participants reported becoming sick. The sample included 48 smokers and 23 non-smokers who were Asian American, and 95 smokers and 47 non-smokers who were Caucasian. Results revealed that among smokers, only 6% of Caucasian in contrast to 31% of Asian American smokers became sick from the nicotine patch (Fisher's Exact Test, *p*=.003). Among non-smokers, only 2% of Caucasians reported sickness compared to 22% of Asian Americans (Fisher's Exact Test, *p*=.013). The similarity of nicotine side-effects patterns observed in both smokers and non-smokers suggest that the findings cannot be attributed simply to increased tolerance in smokers. The greater susceptibility of Asian Americans to nicotine toxicity is consistent with models of reduced nicotine metabolism in this ethnic group and affords an explanation for the historically lower cigarette smoking prevalence rates observed in Asian Americans. An important implication of these findings relate to the relatively recent explosive popularity of electronic nicotine delivery systems (ENDS). Specifically, the greater titration control of nicotine exposure levels made possible by ENDS may pose disproportionately higher risks of these devices acting as "gateways" towards developing nicotine dependence among Asian Americans.

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C304 6:00 PM-7:00 PM

LIMITATIONS OF RISK PERCEPTION AND IMPLICATIONS FOR DUAL PROCESS THEORIES OF BEHAVIOUR.

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The limited capacity of people to make accurate quantitative estimates of risk has been known for some time. However, the extent of such limitations and their implications for making sensible behaviour choices is less well understood. CEOS theory predicts that affective factors will swamp more rational ones unless rational reasoning is supported. This raises the question of how can we strengthen capacity to make sensible choices in the context of affective forces pointing in the other direction. The aim of this study was to both quantify and use qualitative interviews to better understand the ways in which smokers understand the risks of various tobacco and nicotine products and the implications of such beliefs for making rational choices about their smoking.

Methods. Qualitative interviews and focus groups with smokers or recent quitter and a survey of two overlapping samples of smokers and young adults (under 35) resulting in approximately equal groups of young smokers, young non-smokers and older smokers (total n=1056). The quantitative survey asked for semi-quantitative estimates of risk of 4 aspects .

Results: Only 1.4% of the sample correctly identified the effects of combustion as the primary cause of harm and did not nominate multiple aspects as contributing to more than half of the harms (ie arithmetically impossible). Nearly all judgements are qualitative, so a new variable was created with thos correct plus those indicating smoke was thehighest source of harm combined giveing 4.5% of the sample. There was a a generalised negative reaction to all aspects of tobacco, and no differentiation, in particular of the lower harms of the nicotine in isolation (only 10.8% rated nicotine in the lowest category of harm . The interviews found that most smokers interviewed could talk about the harms in relatively accurate ways, but were unable to use this information in making judgements of risk. There were no clear age effects and minimal effects of smoking status, with small effects suggesting non-smokers were better informed.

Conclusions. Risk assesments are qualitatie, not empirical, so emotinal responses to risk need to be taken into account before attempting to change beliefs about extent.This confusion in

understanding may be inhibiting moves to less harmful forms of nicotine. If people are to make more rational choices about risk, communication about risk needs to focus on a separation between acceptable and unacceptable risks and educate people to have a better understand of the core determinants of health risk from various types of agent. CEOS theory provides a framework for improving communication and enhancing executive capacities to overcome the identified affective influences and allow more evidence-based judgements to influence decisions..

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C305 6:00 PM-7:00 PM

PARENTAL DEPRESSION IS ASSOCIATED WITH LOWER LIKELIHOOD OF SMOKING CESSATION AND POOR CHILD ASTHMA OUTCOMES: PROSPECTIVE STUDY

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Parents of children with asthma have higher rates of depression than parents of healthy children. Given that those who are depressed are more likely to smoke and have difficulty quitting, and that secondhand smoke (SHS) triggers asthma exacerbations, we examined the effect of parental depression on smoking cessation and child asthma outcomes.

This study is a secondary analysis from a cessation trial involving Motivational Interviewing (MI) and SHS biofeedback to motivate cessation. Parents did not have to be motivated to quit to enroll. Parents (n=341, 79.8% female) of a child (Mean age=5.15±4.5 years) who had an asthma exacerbation requiring urgent care received 2 home-based asthma education visits (plus MI and SHS biomarker feedback to motivate cessation). Parents were then randomized to receive 6 counselling calls (MI plus repeated SHS feedback) or 6 control calls (brief check on asthma status) for 4 months. Depression status was defined as a score of ≥22 (Haringsma et al, 2004) on the Center for Epidemiologic Study-Depression scale. Smoking outcomes were biochemically verified 7-and 30-day point-prevalence abstinence (ppa). Child asthma outcomes were past month asthma functional limitation scores, health care utilization (≥1 urgent care or hospitalization event vs none) and asthma symptom days. Data were obtained at baseline, 2-4-and-6-months and analyzed with longitudinal generalized estimating equations models adjusting for covariates.

Depressed parents were less likely to achieve 7-day ppa (OR=.38, 95% CI=.23, .64) and 30-day ppa (OR=.27, 95%CI=.15, .47) than parents who were not depressed. Effects were consistent overtime (no group by time interaction). Parental depression predicted greater odds of health care utilization for the child's asthma exacerbation (OR=1.85, 95%CI=1.00, 3.44), and greater asthma functional limitation (B=.13, SE=.06, p=.03), even after controlling for smoking status and SHSe during the study. Depression also predicted a greater number of asthma symptom days (B=.87, SE=.44, p=.05), but became non-significant after controlling for parent smoking status (30-day ppa). Results suggest that parent depression plays a greater role that smoking in some asthma outcomes, but abstinence reduces child asthma symptom days beyond the

effect of depression.

Findings suggest that, among parents who smoke, depression as well as their smoking, should be a target for treatment aimed at improving pediatric asthma outcome.

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C306 6:00 PM-7:00 PM

PATTERNS AND REASONS FOR ELECTRONIC CIGARETTE USE IN PRIMARY CARE PATIENTS

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Introduction: E-cigarette use is rising in both the general population and in clinical populations, including hospitalized patients and cancer patients. Little is known about e-cigarette use among patients in other clinical settings, particularly in primary care where physicians report discussing e-cigarette use with patients. We aimed to identify how and why smokers in primary care use e-cigarettes.

Methods: We used cross-sectional data from current cigarette smokers (within the past 7 days) enrolled in a randomized controlled trial of a tablet intervention to deliver the 5As for smoking cessation in primary care clinics in San Francisco, CA (N=718). We recruited patients from 3 sites: a primary care clinic at a University hospital, and a primary care clinic and HIV care clinic at a University-affiliated public safety-net hospital. We asked patients about sociodemographics, cigarette smoking, and ever and current use of e-cigarettes during the post-intervention assessment. We also asked reasons they have used or would use e-cigarettes. ICD-9 codes for comorbidities were extracted from electronic medical records.

Results: 57% (n=408) of patients reported ever using an e-cigarette and 21% (n=154) reported past 30 day use. Ever e-cigarette users were more likely to be younger, white, more educated, daily smokers, have smoked for more years, and more nicotine dependent than never users. Ever e-cigarette users had higher prevalence of mental illness than never users. The most and second most common reasons for e-cigarette use among current and former e-cigarette users were to cut down on and quit cigarette smoking, respectively. These were also the most common reasons never e-cigarette users reported for why they would use e-cigarettes. The mean number of days of e-cigarette use in the past 30 was 7, increasing with duration of e-cigarette use. Most current e-cigarette users did not know the nicotine content of their e-cigarettes.

Conclusion: Over half of smokers in primary care use e-cigarettes, with 1 in 5 reporting current use. E-cigarette use is intermittent in this population, with most reporting non-daily

use. Most patients report using e-cigarettes to cut down or quit cigarettes. Screening of patients for e-cigarette use may help identify those interested in changing their smoking habits and provides an opportunity for providing evidence-based smoking cessation treatment and counseling.

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C307 6:00 PM-7:00 PM

SECONDHAND SMOKE INTERVENTION IN LAKOTA FAMILY HOUSEHOLDS

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Secondhand Smoke Exposure Intervention in Lakota Family Households

Background: Nonsmokers from the Lakota tribes in South Dakota disproportionately share the burden of secondhand smoke exposure (SHS), especially in their homes. With smoking prevalence as high as 50%,the consequences of SHS include high prevalence of childhood asthma and sudden infant deaths. The expanded use of commercial tobacco products for ceremonial and cultural practices creates intervention challenges not typically seen in non-American Indian communities. Eliminating SHS in a culturally appropriate manner is fundamental to decreasing morbidity and mortality among the Lakota tribes. A novel approach to encourage the adoption of home smoking restrictions is to provide parents with objective, biomarker feedback documenting child exposure to tobacco toxins. This pilot project is the first to use biomarker feedback with American Indian adult smokers.

Methods: From 2013-2015 we recruited American Indian smokers with potty-trained children ages 2 to 8 residing in their homes into a two-arm randomized clinial trial (N=110). We randomized eligible participants to the intervention arm (n=56), consisting of biomarker feedback and counseling on their child’s exposure to NNAL and cotinine. The control group (n=54) received a brochure on SHS. An in-home survey was administered at baseline and week 12. Child urine cotinine and air nicotine were collected at both time points. Primary outcome was badge-verified (air nicotine) complete home smoking restrictions at 3-months post-randomization.

Results: All enrolled participants were American Indian, 81% female, average age 37 (SD=12) years, 62% at least high school graduates, 65% unemployed, and 81% had an annual combined family income less than $25,000. The mean number of smokers/household was 2.4

(SD=1.3) and average cigarettes smoked/day was 8.8 (SD=6.7). Median child cotinine level was 7 ng/mL (interquartile range: 3-22). At week 12, a t-test comparison indicated that the intervention and control groups had a similar reduction in air nicotine (change score in intervention = -1.02, 95% CI -1.80, -0.24; change score in control = -0.99, 95% CI -1.81, -0.17), with no changes in child urine cotinine. However, at week 12, more participants assigned to biomarker feedback than the control group self-reported implementing complete home smoking restrictions (41% vs. 20%, p=0.05).

Conclusion: Providing parents or guardians with feedback documenting their child's exposure to SHS increased the implementation of home smoking bans. Clinical, public health, policy and research implications will be discussed.

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C308 6:00 PM-7:00 PM

SMOKING-RELATED HEALTH BELIEFS AND SMOKING CESSATION IN THE NATIONAL LUNG SCREENING TRIAL

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Lung cancer is the leading cause of cancer death in the United States and 90% of lung cancers are caused by cigarette smoking. Understanding the association between smoking-related health beliefs and smoking cessation in the screening environment is important for prevention and effective treatment. We conducted a sub-study of the National Lung Screening Trial (NLST; 2002-2006) to understand how smoking-related health beliefs may be related to smoking cessation.

Participants (N=2,761) at the time of recruitment were 55-74 years of age, current smokers with a history of 30 pack-years or more, had no history of lung cancer, and had not been treated for any cancer within the past 5 years. All trial enrollees at 8 of the 23 NLST study sites were invited to complete a questionnaire to assess beliefs: absolute risk perception, comparative risk perception, worry, perceived severity, self-efficacy to quit, perceived benefits of quitting, and perceived barriers to quitting. The outcome was cessation between the first and last assessment. Logistic regression analyses examined associations with beliefs, demographics, and all two-way interactions among beliefs, gender, and age. We applied backward elimination of terms with p-values $\geq \alpha=0.5$.

Over 37% (N=1028) of baseline smokers quit smoking at last assessment. In simple logistic regressions, the likelihood of quitting was higher among participants reporting higher perceived severity (OR=1.16, p=0.05), greater self-efficacy for quitting (OR=1.32, pp=0.05), fewer perceived barriers (B=-0.22, *p*=.01), and were older at baseline (B=0.03, *p*=0.00) were more likely to quit. Worry interacted with comparative risk perception (B=-0.19, *p*=0.04), and perceived benefits (B=0.19, *p*=0.05). Higher worry attenuated the relationship between comparative risk perception and quitting, but perceived benefits predicted increased odds of quitting at the highest level of worry.

These results suggest that, among heavy smokers undergoing lung screening, smoking-related health beliefs are associated with smoking cessation, and worry is an important moderator of these associations. Smoking cessation has an impact on lung cancer survival and smoking-related health beliefs must be considered an integral component of delivering cessation in screening settings.

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C309 6:00 PM-7:00 PM

SOCIAL CONTEXTS, ETHNICITY, AND ADOLESCENT SMOKING BEHAVIOR

Julia B. Yi, B.A. [1], Alina M. Ostrander, B.A.[1], Jennifer Hernandez[1], Bryan C. Mac, B.A.[2], Larry D. Jamner, Ph.D.[1]

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Cigarette smoking in adolescence may be motivated by the desire to fit in and avoid negative evaluation from peers. Adolescents may also feel pressure to smoke if others around them are smoking. Social stimulus control over smoking has been shown to vary as a function of culture, with Korean-Americans reporting greater social determinants of cigarette use. The use of Ecological Momentary Assessment (EMA) methods to evaluate the antecedents, concomitants, and consequences of tobacco use holds great promise for the study of the cultural variations in smoking behavior. The aim of this study was to determine the impact of social environments/contexts on smoking urge and likelihood to smoke in real-time among Asian American, Latino, and White adolescents. Eighty-five female and 70 male adolescents (20% Asian American, 11% Latino, 51% White) completed two 4-day daily diary-monitoring sessions approximately 6 months apart, each year from ninth grade until twelfth grade, totaling eight monitoring periods. In each monitoring session, participants were signaled every 30 ±10 minutes to complete an e-diary entry. The diary contained 24 items tapping information about current activities, social interactions, moods, urge to smoke, and cigarette consumption on both school days and weekends. Participants' e-diary data revealed evidence of social contexts exerting differing patterns of stimulus control over smoking behavior between ethnic groups. Compared to being alone, cigarette smoking was significantly less likely while with family (OR=.20; $p < .01$) or boy/girlfriend (OR=.37; $p < .01$) among White, but not Asian-American adolescents. In contrast, Asian-American adolescents were significantly more likely to smoke across a range of social contexts including friends (OR=2.29; $p < .001$), boy/girlfriend (OR=1.97; $p < .01$), teacher/class (OR=2.45; $p < .001$) and other adults (OR=1.98; $p < .01$) compared to times they were alone. Among Whites, the only social context associated with a greater likelihood of cigarette smoking was found to be while with friends (OR=1.69; $p < .01$). Social contexts were observed to exert intermediate influences on the smoking urges and behaviors of Latino youth. The results of this study point to significant ethnic differences in the influence of social contexts/stimulus control on tobacco-use.

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C310 6:00 PM-7:00 PM

TRAJECTORIES OF RETURN TO SMOKING DURING THE POSTPARTUM YEAR AMONG WOMEN WHO QUIT SMOKING DURING PREGNANCY

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Although it is well known that most women who quit smoking during pregnancy will return to smoking during the postpartum year, the time course of relapse after delivery is poorly understood. Identifying whether there are trajectories of relapse and understanding their time course may improve efforts to target treatments. Accordingly, we sought to document patterns of smoking resumption among women who quit smoking during pregnancy and to examine predictors of different relapse trajectories.

Women (*N* = 300) who recently had quit smoking participated in postpartum-specific smoking relapse prevention interventions. Participants were interviewed about smoking and provided expired air carbon monoxide samples at the end of pregnancy and 12-, 24- and 52-weeks postpartum. Overall, 39% of the sample maintained biochemically verified smoking abstinence through 52-weeks postpartum. To examine the time course of relapse, data on number of cigarettes smoked following delivery were abstracted from time line follow back interviews. Daily data on number of cigarettes were then dichotomized as any or no smoking. Trajectory analyses (PROC TRAJ) revealed four unique relapse trajectories: “sustained abstinence” (50% of the sample), “quick relapse” (21%), “slow relapse” (13%), and “inconsistent smoking” (16%). Multinomial logistic regression models identified factors related to trajectory membership. Predictors considered included demographic variables, smoking history and psychiatric disorders. Not surprisingly, the number of cigarettes smoked prior to quitting, previous quit attempt, and years of smoking predicted trajectory membership. Women with more prior quit attempts were more likely to relapse quickly than to sustain abstinence OR = 1.1, CI = [1, 1.2]), and women who had started smoking at a younger age were more likely to be inconsistent smokers than to sustain abstinence OR = 1.1, CI = [1, 1.1]).

There are four distinct courses of smoking resumption during the postpartum year. Although most women in an intervention sustained tobacco abstinence, approximately one-fifth of

women enrolled in a postpartum relapse prevention intervention resumed smoking quickly. Women who relapse quickly can be identified by their smoking history prior to pregnancy. Thus, efforts to target interventions for these women may need to be initiated prior to delivery and can be improved by readily indentifiable smoking history variables.

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C311 6:00 PM-7:00 PM

YOUNG ADULT MOTIVES FOR ELECTRONIC NICOTINE DELIVERY SYSTEM USE

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This study examined motives associated with ENDS use and cessation outcomes among a sample of young adults (N=304; mean age: 22.4; 38.2% female; 62.8% white). We hypothesized that motives associated with use and cessation outcomes among cigarette smokers would predict such outcomes among young adult ENDS users. We also hypothesized that previously observed gender differences (e.g., men are more motivated to smoke to increase positive affect than are women) would be replicated. Participants who self-identified as regular ENDS uses and self-reported using within a week of data collection were asked to complete a survey on the Amazon MTurk platform. Measures included an adapted version of the 14-item Wisconsin Inventory for Smoking Dependency Motives (WISDM), Smoking Consequences Questionnaire, and self-reported demographics and smoking patterns. Mean number of days smoked in the past 30 days was 21.64 with 40.5% of participants reporting daily use. 37.5% of participants reported at least one prior quit attempt with an average length of 26.55 days. Average length of non-use excluding quit attempts was 15.55 days. More men than women attempted quitting. T-tests revealed gender differences across smoking motives and outcome expectancies. Backward stepwise regression analysis was conducted, subtracting non-influential motives or outcome expectancies to achieve final models for each use and cessation outcome. Regression analyses predicting smoking use outcomes found consistent main effects of loss of control and tolerance. Paradoxically, less loss of control predicted higher levels of ENDS use. Greater tolerance predicted more use across all use outcomes. For cessation outcomes, only loss of control predicted quit attempts. Less loss of control increased odds of attempting to quit. Lower levels of craving and higher levels of affective enhancement increased length of quit attempts. Only tolerance predicted non-use days: lower levels of tolerance predicted more non-use days. No gender interactions were found in any regression analyses. Results suggest an escalation is most associated with tolerance among young adult ENDS users. One possible explanation for the negative effect of loss of control on ENDS use is that more frequent use prevents withdrawal symptoms and a sense of losing control, whereas intermittent use allows gaps in which these symptoms might appear. While a number of gender differences were expressed, none of them affect use or non-use outcomes.

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C312 6:00 PM-7:00 PM

YOUNG ADULT'S PARTICIPATION AND BELIEFS ABOUT THE IMPORTANCE OF GENETIC MARKERS ON SMOKING BEHAVIOR

Kathleen Diviak, PhD[1], Adriana Perez, BS[1], Emily Anderson, PhD[2], Robin Mermelstein, PhD[1]

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This poster will examine the consent process and participation in a genetic study of tobacco dependence as well as participant beliefs about the important and influence of genetic markers on smoking behavior. Participants were part of the Social and Emotional Contexts of Adolescent Smoking Patterns longitudinal study (cohort N = 1,263). The cohort was recruited when they were approximately 14-15 years old and is quite diverse in terms of race and ethnicity with 56% Non-Hispanic White, 17% non-Hispanic African American, 13% Hispanic White, and 14% all other categories. During the 5- and 6-year follow-up assessments when participants were between 19 and 23 years old, they were recruited to participate in a genetic sub-study. Of the 1,112 participants approached, 1,019 provided a saliva sample for genotyping for a participation rate of 91.6%. Participation did not vary by gender, race/ethnicity, or current smoking status. Participants who declined to participate in the genetics sub-study were slightly older (M=21.9, SD=0.95) than participants who provided a sample (M=21.3, SD=0.79); t(963)=-2.79, p=0.005. Everyone who asked to participate completed a semi-structured interview about their understanding of the genetic project, reasons for participation, and their beliefs about genetic influences on smoking behavior. Reasons for participation were primarily to help the overall project (25.5%), the $20 cash incentive (23.0%), and interest/curiosity about the overall results (16.6%). Most participants could correctly and clearly describe the purpose of the genetic study (68.5%), but some (17.6%) were not able to correctly describe the purpose of the study after the informed consent process was completed. Female participants rated the influence of genetics on smoking behavior higher than male participants, but there were no differences between the other demographic or smoking status variables. Current smokers reported that they would smoke less if they were to find out that they had a genetic risk for tobacco dependence compared to no risk; t(536)=-13.92, p=0.000. In addition, current smokers also reported that they would be more interested in quitting if they were to learn that they had a genetic risk factor compared to no risk; t(534)=--9.86, p=0.000. The implications for participation in genetic studies and understanding young adult beliefs about genetic testing for complex behavior like cigarette smoking will be discussed.

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Saturday

April 1, 2017

8:30 AM-9:45 AM

Symposium 70 8:30 AM-9:45 AM

SEDENTARY BEHAVIOR IN THE WORKPLACE: UNDERSTANDING AND INTERVENING

Mark A. Pereira, PhD[1], Meynard Toledo, B.S., M.S.[2], Sarah Mullane, Ph.D.[2], Charlotte Brakenridge, BPsySc[3], Nirjhar Dutta, M.S., D.O.[1]

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The health benefits of moderate-vigorous physical activity are well-established across the lifespan. However, guidelines also state the need to “minimize the amount of time spent being sedentary.” Adults spend an average of 7.5h/day sedentary, yet recent studies suggest reallocating just 30 min/day from sedentary to light activity may significantly improve health risk factors. In recent years a paradigm shift has emerged in the area of physical activity and health stemming from: 1) emergence of new technologies to accurately assess sedentary time and very light intensity physical activity, 2) accumulation of scientific evidence supporting sedentary time (adverse) and light activity (protective) having important impacts on chronic disease risk independent of moderate and vigorous activity, and 3) emergence of new, innovative ways to modify posture and behavior through capitalizing on various layers of the socioecological framework. This symposium focuses on the worksite of adult populations in the U.S. and Australia. The worksite is a logical intervention target for sedentary behavior, as adult workers spend 70-80% of their time at work sitting. We will present observational and experimental studies aimed at understanding the correlates of sedentary time in the workforce, and evaluating approaches to intervening on sedentary time using novel experimental strategies. Unique aspects of this collection of scientific endeavors towards understanding and intervening on sedentary behavior include 1) modern technologies in objective assessment of sedentary time, posture (sitting v. standing), and light activity, 2) ecological momentary assessments in 271 adults with 673 EMA data points, 3) parsing correlates of sedentary behavior into environmental and individual-level factors in 279 adults, 4) efficacy of wearable tracking devices in a worksite intervention of 153 adults in a cluster-randomized trial, and 5) examination of long-term sustained changes in follow-up to a within-person cross-over randomized trial of sit-stand workstations. These collective research studies significantly add to the accumulating body of rigorous studies to date on the efficacy of workplace interventions to increase light activity, reduce sitting, and improve health. Findings will inform the potential health benefits of sit-stand workstations and other approaches that are becoming increasingly popular, but for which rigorous science is needed. The findings also stand to be generalizable to much of the sedentary workforce, and will help lead towards more informed health practitioner and employer preventive plans and decisions.

Symposium 70A

ECOLOGICAL MOMENTARY CORRELATES OF WORKPLACE SEDENTARY BEHAVIOR

Mr. Meynard Toledo, B.S., M.S.

PURPOSE: To examine the bi-directional relationship between momentary perceptions and affective states and objectively-measured workplace SB. **METHODS:** Participants were recruited from 13 worksites in the greater Minneapolis and Phoenix regions. Participants completed an ecological momentary assessment (EMA) survey (delivered via smartphone or e-mail) on three random days during work hours on a 7-day assessment period. Participants also wore an activPAL3c accelerometer. The EMA survey assessed momentary perceptions and affective states (i.e., feeling hungry, tired, relaxed, and happy). SB outcomes were sitting time, sit-stand transitions, long sitting bouts (sitting bouts that are >30 mins), and light physical activity (LPA) (standing or stepping< 3.0 metabolic equivalents), one hour preceding and proceeding each EMA response. Multilevel models were used to examine bi-directional associations of between- and within-person SB and physical feeling and affective states. All models were adjusted for age, gender, BMI, and job type. **RESULTS:** A total of 673 EMA responses were collected from 271 participants (73% female; age = 42.7 ± 11.3 yrs; BMI= 28.5 ± 6.8 kg/m^2). At the between-person level, more happiness was associated with less time in long sitting bouts during the next hour *(b*[SE]= -3.3 [1.58], ρ=0.04). No other between-person relationships were significant. At the within-subject level, participants reported more hunger following periods of higher than usual LPA (*b*[SE]= 0.06[0.02], b[SE]= -0.03[0.02], b[SE]= -0.03[0.02], b[SE]= 0.04 [0.02], ρ=0.02). **CONCLUSION:** Sedentary behavior was bi-directionally associated with subsequent physical feeling states; conversely, feelings of happiness were associated with subsequent SB. Within-person relationships may have been attenuated due to a limited number of observations per person. Nevertheless, these results can inform future studies aimed at reducing workplace sedentary behavior through contextually-aware interventions.

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Symposium 70B

ENVIRONMENTAL AND INDIVIDUAL LEVEL CORRELATES OF SEDENTARY BEHAVIOR IN THE WORKPLACE

Dr. Sarah Mullane, Ph.D.

PURPOSE: To identify environmental and individual level correlates of objectively measured sedentary behavior in the workplace. **METHODS:** Participants were recruited from thirteen worksites in the greater Minneapolis and Phoenix regions. Participants wore an activPAL3c accelerometer continuously for seven consecutive days. Work time was identified and extracted using daily logs. Workplace sedentary behavior outcomes were sit time, stand time, light-intensity physical activity (LPA, stepping < 3.0 metabolic equivalents), number of sit-stand transitions per hour, and time in long bouts of sitting (≥30 min). Outcomes were standardized to an 8h work day. An electronic survey was completed to assess environmental factors (i.e., desk-based vs. centralized amenities, private vs. public office, floor level) and individual factors (i.e., perceptions of work engagement [UWES], work satisfaction and performance). Mixed model analyses (worksite-level clustering) were performed to examine relationships between sedentary behavior and environmental and individual factors. All models were adjusted for work sector (academic, state, industry), job type, age, gender and BMI. **RESULTS:** Participants (N = 297; 70% female; age: 42.3 ± 11.3 yrs) wore the activPAL3c for 90.2 ± 15.5% of the workday. Presence of a centralized recycling area was associated with less sitting time (b[SE] = -54.2[17.2], *P* = 0.002), less prolonged sitting (b[SE] = -64.4[21.5], *P* = 0.034) and more standing time (b[SE] = 48.7[16.6], *P* = 0.004), sit-stand transitions (b[SE] = 2.0[0.9], *P* = 0.02) and LPA (b[SE] = 2.2[0.9], *P* = 0.01). Conversely, perceived job performance was associated with more sitting time (b[SE] = 11.7[5.8], *P* = 0.047) and less standing time (b[SE] = -13.5[5.6], *P* = 0.02). Private office use was marginally associated with more prolonged sitting (b[SE] = 31.0[17.4], *P* = 0.08). **CONCLUSIONS:** Environmental factors such as centralized amenities and office type may influence workplace sedentary behavior. Surprisingly, high perceived job performance may be a barrier to workplace sedentary behavior reduction strategies. These findings may inform future longitudinal examinations and interventions targeting reductions in workplace sedentary behavior.

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Symposium 70C

EVALUATION OF A PILOT 12-MONTH ORGANISATIONAL INTERVENTION TO REDUCE SITTING TIME WITH OR WITHOUT AN ACTIVITY TRACKER.

Ms. Charlotte Brakenridge, BPsySc

Introduction: Effective, worksite-driven strategies are needed for sustainable ways to reduce sitting time. This study evaluated the efficacy of reducing sitting time of minimally intensive organisational-support strategies alone or combined with a novel activity tracker. Methods: A pilot 12-month cluster-randomised trial was conducted in 153 Australian office workers (18 teams) in 2014-2015. Nine teams received an organisational-support intervention (e.g., emails, manager support; n=87), and nine teams (n=66) also received a waist-worn LUMOback activity tracker. Data were collected (baseline, 3 months, 12 months) by activPAL3 monitors (work and overall sitting), other objective assessments (anthropometrics, activity tracker), and questionnaire. Data were analysed by linear mixed models (n=102-112). Results: After 12 months, both groups significantly ($p<0.05$) reduced sitting time at work and overall (by 32.1±12.8 to 40.5±10.4 min/day [mean±SE]) with no significant difference between interventions, adjusting for confounders. Baseline sitting, back problems, higher job performance and manager support significantly predicted greater sitting reductions at work. Work satisfaction and uptake of other activity apps or trackers significantly predicted greater overall sitting reductions. Longer LUMOback usage tended towards reductions in work and overall sitting ($p<0.10$). Conclusions: The findings demonstrate that organisational-support strategies may effectively reduce office workers' sitting time over 12 months. Management support and addressing performance issues, for example, may facilitate sitting reductions. The LUMOback may require longer usage to be effective; uptake of other apps and trackers were associated with improvements and merit investigation.

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Symposium 70D

ONE YEAR FOLLOW-UP OF A RANDOMIZED TRIAL ON THE EFFICACY OF SIT-STAND WORKSTATIONS TO DECREASE SEDENTARY TIME AT WORK

Dr. Nirjhar Dutta, M.S., D.O.

Background: We previously reported on a four week within-person randomized cross-over trial using a sit-stand desk (SSD) intervention that resulted in decreased sedentary time at work by 3.2 hour per week. Purpose: The purpose of this study was to measure the long term effect of the SSD intervention on sitting time and activity level 14 months after the original trial was completed. Methods: A pre-post design was used where the control period from the original study was regarded as "pre" and the measurements made in the follow-up study were "post" . The intervention SSDs were left with the participants at the end of the original study in April 2012. The follow-up study was conducted in the same participants over a two week period in June 2013. The primary outcome for the study was objectively measured physical activity with the Gruve accelerometer. Results: 15 out of the 23 eligible participants took part in the follow-up study. Self-reported sitting time (OSPAQ survey) during work-hours was decreased by 22% (95% CI: 15% to 29%; p<0.001), replaced almost entirely by standing. Activity measured by accelerometer during work-hours was significantly higher at follow-up compared to baseline (+24748 AU/hr; 95% CI: 7150 to 42347; p<0.05). There was also a trend towards lower sedentary time during work-hours at follow-up compared to baseline (p=0.17). As suggested in the original trial, perceived hunger assessed by ecological momentary assessment was lower at follow-up compared to baseline. Conclusion: These findings suggest that sit-stand workstations use may be sustained over the long-term and they may be an effective tool not only decreasing sitting but also for increasing light physical activity at work.

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Symposium 71 8:30 AM-9:45 AM

ETHICAL CONSIDERATIONS FOR USING ONLINE STRATEGIES FOR RECRUITING AND INFORMING PARTICIPANTS IN GENOMIC SEQUENCING STUDIES

Christine Rini, PhD[1], Jennifer Hay, PhD[2], Megan Lewis, PhD[3], Gail E. Henderson, PhD[4], Kimberly Kaphingst, ScD[5]

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Genomic sequencing is rapidly becoming the technology of choice in many clinical fields for screening and diagnostic testing. Using genomic sequencing for these purposes creates ethical considerations for researchers due to potential disparities in uptake of this technology across groups characterized by age, education, race/ethnicity, family composition or family history. In this symposium we will explore the ethical and social issues raised by genomic sequencing studies that use online strategies to recruit, educate or inform participants about genomic risk. First, we will describe a randomized controlled trial examining uptake and outcomes (screening, sun protection) of skin cancer genetic testing, which involved an on-line *MC1R* test offer. Racial/ethnic disparities in test interest, as well as potential explanations for these disparities in test interest, will be explored. Second, we will present ongoing work describing a randomized trial in which genomic sequencing is offered to two family cohorts: those with a newborn or those with a young child that has a previously diagnosed disorder. All families can opt to learn about medically actionable childhood conditions and then they are randomized to learn about other categories of information that vary by age of onset and medical actionability. Early recruitment data suggest differences in interest between the two cohorts of parents, and that family conflict may play a role in whether to participate. Third, we will describe clinic-based recruitment of adults for genomic screening that targets rare, medically actionable conditions. Education and consent materials are provided online. Those who join take a survey about decision making and understanding. Preliminary recruitment data reveal differential uptake by age, gender, and race/ethnicity. Individuals often make the decision to join before reading the online consent materials, and two-thirds did not open additional items on the consent summary page. The only predictor of knowledge of the study objectives was income. Our discussant, an expert in the communication of genomic information, will discuss common themes across presentations and health communication best practices for increasing diversity and access for genomic sequencing studies that use online strategies. This

Symposium will highlight important issues that need to be considered as the field moves toward the recruitment of large population-based studies.

Symposium 71A

ONLINE SKIN CANCER GENETIC TESTING IN DIVERSE PRIMARY CARE

Jennifer Hay, PhD

Translational research in genomics has disproportionately engaged highly-educated and Caucasian populations, but must broaden reach to fully realize the public health potential. Rates of melanoma are on the rise. Germline variants in the *MC1R* gene are common in the general population and confer moderate melanoma risk in those with varied skin types. In a randomized controlled trial examining uptake and outcomes (screening, sun protection) of *MC1R* testing in Albuquerque primary care clinics, 1,339 patients (English or Spanish speakers) have been approached; 25% have agreed to participate. Participants (N=325; 45% Hispanic, 49% non-Hispanic White, 74% female, mean age=56) were randomized 1:6 to a usual care condition (NCI skin cancer brochure for diverse skin types) or an online *MC1R* test offer. Of the 285 patients randomized to the test offer to date, 42% (n=119) elected to learn about *MC1R* testing by logging onto the study website; most (91%) that log on request testing (via saliva test kit). Those who log onto the website were more likely to be non-Hispanic, have lower cancer fatalism, report lower family influence on health information seeking, and report fewer misconceptions about skin cancer (*p*sps>.05). In a logistic regression including all significant predictors of logging on and participant education level and income, only ethnicity was significant (*p*MC1R testing). Level of comprehension of *MC1R* risk feedback (average *versus* higher risk) and three-month sun protection and screening outcomes (target N=885) will ultimately be examined, as well.

We acknowledge the funding support of NIH R01 CA181241 to Jennifer Hay and Marianne Berwick (MPIs)

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Symposium 71B

PARENTAL DECISION MAKING ABOUT GENOMIC SEQUENCING FOR THEIR CHILDREN: ETHICAL AND PRACTICAL CONSIDERATIONS

Megan Lewis, PhD

Genomic sequencing is becoming the screening technology of choice in many clinical fields. Using genomic sequencing for screening creates ethical considerations for researchers. These issues are compounded when parents make screening decisions for their child or newborn. Negotiating whether to have a child's genome sequenced and what types of information to learn can increase conflict between parents during decision making. The NC NEXUS study is offering genomic sequencing to two cohorts of parents: those with seemingly healthy newborns or with children previously diagnosed with a disorder. Online decision aids (DA) are being used at different points in the study along with clinical consultation to support decision making. We will report on enrollment data between the two cohorts and describe differences between those who enroll and accept sequencing and those who decline on demographic variables, reported barriers and psychosocial factors. To date, the response rate is high in both cohorts (74% in the healthy newborn cohort; 50% in the previously diagnosed cohort). Of parents who complete the DA, most choose to have sequencing for their child (56% in the healthy newborn cohort; 83% in the previously diagnosed cohort) suggesting potential differences in interest between the cohorts. Early reports on barriers to participation between spouses include the need for both to consent. Dual consent is a regulatory requirement for participation. In some cases, one parent wants to participate, but the other does not. In two families, so far, custody battles have made participation impossible. Several families discontinued participation because one parent completed part of the study procedures, but the other did not, indicating passive withdrawal from the study. Another barrier to participation is that all questionnaires and DAs are online. So far, 10 families report lack of Internet access or not having a device that can display both the DA and questionnaires as challenges for participation. We will discuss ethical issues raised by differences in participation and lessons learned about how to recruit parents into studies focused on genomic sequencing for their children.

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Symposium 71C

REPORT FROM GENESCREEN: ONLINE RECRUITMENT FOR PREVENTIVE GENOMIC SCREENING AMONG HEALTHY ADULTS

Dr. Gail E. Henderson, PhD

Programs that screen adults for rare, medically actionable conditions will likely use web-based education and consent. Yet, there is little evidence for the effectiveness of e-consent to convey study information. In *GeneScreen*, we investigate issues raised by such screening, focusing on 11 medically actionable conditions. We piloted recruitment at a hospital-based primary care practice (*n*=436) and a research biobank (*n*=650), attempting to recruit equal numbers by gender, race/ethnicity, and age. Individuals were mailed a brochure and letter directing them to the *GeneScreen* website. It provided a summary of 14 study features relevant for informed consent, which could be expanded to display more information. *GeneScreen* "joiners"were surveyed about decision making and understanding, and a subset were interviewed in more detail. Here we describe recruitment results, joiners' decision making processes and characteristics, and factors related to understanding the study. 1,086 individuals were approached, 275 (25.3%) joined. Among those approached, women and whites were more likely to join; age was related to joining, but in opposite ways at the two sites. 68% of joiners were female, 79% non-Hispanic white, 9.6% Hispanic; and average age was 59 (range 24-95). Joiners had generally high literacy and SES, typical of early adopters of new technology. Median Income was $75,000-99,999; two-thirds had at least a college degree. 87.9% reported being very or extremely confident with medical information. Genetic self-efficacy was high: mean on scale of 1-6 was 5.01. Compliance with doctors' advice was high: mean on scale of 1-5 was 4.74. The only significant difference between white and African American joiners was age: 58.16 vs 47.27 (t=2.43, p= .018). Data on website behavior revealed that of 14 consent summary items, the mean number opened was 1.67. Two-thirds did not open any item; 20% opened 1-3 items. On a 6-item scale measuring understanding study objectives, mean score was 4.51 (sd=1.19). In multivariate analysis, study knowledge was not associated with expanding more consent summary items; nor was it related to study site, education, health literacy, race (white vs. AA), or self-efficacy. Higher study knowledge was only statistically significantly associated with higher income. Most found the decision to join extremely or very easy. Telephone interviews (n=50) found that over two-thirds made the decision to join after reading the printed recruitment materials, before going online. We discuss implications of these findings in the context of e-consent for genomic screening.

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Symposium 72 8:30 AM-9:45 AM

NEW FINDINGS ON UNDERSTANDING AND TREATING BINGE EATING IN OBESITY

Niloofar Afari, PhD[1], Kathryn Godfrey, MS[2], Gina Evans-Hudnall, PhD[3], Jessica Gundy Cuneo, Ph.D. [4], Shira Maguen, PhD[5]

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Two-thirds of Americans are overweight or obese and the prevalence is even higher among veterans. Binge eating disorder is characterized by persistent and frequent episodes of consuming large quantities of food in addition to other symptoms. Regardless of meeting diagnostic criteria, binge eating is a behavioral problem that can interfere with attempts to lose weight and contributes to obesity. Additionally, binge eating alone or in the context of obesity is linked to substantial morbidity and undesirable physical and mental health consequences. Therefore, it is important to better understand the physiological and behavioral markers of binge eating as well as to develop and test interventions that address the underlying mechanisms that may maintain binge eating in obesity and the associated health-related functioning. The goal of this symposium is to highlight several new findings that may shed light on the processes involved in the maintenance of binge eating and its amelioration. The first presentation will describe findings from a novel study of the stress and binge eating link in obesity by examining associations between lab-based heart rate variability (HRV) and binge eating behaviors. Presenter 2 will explore the relationships between binge eating and patient activation and social support in a sample of participants recruited from the VA's MOVE! Program. Presenter 3 will discuss findings from mediation analyses to examine the links between psychological flexibility, binge eating, and quality of life in obese or overweight veterans receiving psychological treatment for binge eating. Finally, the discussant will critically discuss the presented findings, implications for clinical care, and potential future research directions.

Symposium 72A

BINGE EATING AND HEART RATE VARIABILITY: IDENTIFYING PHYSIOLOGICAL MARKERS OF RETROSPECTIVE AND NATURALISTIC EATING BEHAVIOR

Kathryn Godfrey, MS

Advancing prevention and treatment of obesity requires developing interdisciplinary paradigms spanning physiological, psychological, and behavioral bases and designs that explain eating behaviors within real world settings. This study examined the stress and binge eating link by modeling associations between lab-based heart rate variability (HRV) and binge eating behaviors measured through retrospective diagnostic interview and ecological momentary assessment (EMA). A community-recruited sample of 32 male and female participants with obesity completed a lab visit to measure HRV and assess binge eating in the past month. HRV was measured through a lab protocol containing baseline and stressed conditions. A subsample (n=16) of participants completed a 7 day at-home EMA protocol to assess binge eating using a smartphone. Multiple linear regressions modeled the relationships between HRV variables at baseline and when stressed with the frequency of retrospective binge eating and during the at-home EMA protocol. At baseline, participants with higher SDNN reported fewer retrospective episodes of overeating ($p = 0.03$). Similarly, participants with higher sympathetic activation measured by LFn at baseline had more retrospective episodes of loss of control over eating ($p = 0.04$). During the at-home protocol, overeating, loss of control over eating, consumption of non-nutritious, high calorie foods and breaking dietary rules were non-statistically significantly associated with time and frequency-domain HRV variables and heart rate with small to medium effect sizes (semi-partial $r^2 = 0.10$ to 0.35), which can be detected in larger samples. Lower autonomic flexibility at baseline is related to binge eating severity in individuals with obesity. Further elucidating the link between HRV and eating behaviors and examining the clinical potential of integrating physiological, psychological, and behavioral assessment will inform the theoretical models for weight management and the development of individualized, real-time intervention.

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Symposium 72B

EXAMINING RELATIONSHIPS BETWEEN PATIENT ACTIVATION, SOCIAL SUPPORT, & MENTAL ILLNESS AMONG VETERANS WITH BINGE EATING IN MOVE!

Dr. Gina Evans-Hudnall, PhD

Nearly 78% of Veterans are estimated to be overweight or obese and those poor patient activation (taking an inactive role in managing health conditions) and limited social support have difficulties with weight loss. Binge eating (BE) is associated with obesity in Veterans. Veterans with BE often have co-occurring depression, anxiety and PTSD, which creates barriers to weight loss. The VA developed an evidenced based weight management program (MOVE!) that targets change in obesity related health behaviors but does not target patient activation or social support. The HELP program is a pilot study of a mental health treatment effectiveness trial designed to be adjunctive to MOVE!. Participants were recruited during the first MOVE! session. At baseline, participants completed the MOVE 11 and validated measures of patient activation, depression, anxiety and PTSD symptom severity, and social support for healthy eating. The MOVE 11 is an assessment of medical, psychological, and behavioral contributors to obesity. BE was assessed by a positive response to a single item on the MOVE 11.Correlational analysis was used to assess the relationships between patient activation, social support, and mental health variables with BE at baseline. Fifty-four participants met the criteria for BE. BE was significantly associated with low baseline scores for patient activation (p=.031) and social support for healthy eating (p=.030). BE was also significantly associated with high scores for anxiety symptom severity (p=.039). Thus, BE among Veterans is associated with heightened symptoms and anxiety, suboptimal personal activation for effectively managing health conditions and perceived deficits in support for making healthy dietary practices. Future investigation of the direct and mediating relationship between BE, psychological symptoms, patient activation and social support is needed.

Symposium 72C

CHANGES IN PSYCHOLOGICAL FLEXIBILITY, BINGE EATING, AND QUALITY OF LIFE IN VETERANS: EXAMINING MEDIATED TREATMENT EFFECTS

Dr. Jessica Gundy Cuneo, Ph.D.

Weight-related avoidance and inflexibility play a central role in problematic health behaviors, such as binge eating. Binge eating in obese individuals is also associated with a greater degree of morbidity and impairment in quality of life (QOL) than in obesity alone. Psychological treatments targeting psychological flexibility (PF) improve openness and awareness of thoughts and feelings related to weight and may improve binge eating behavior and, in turn, increase QOL. The current study explored the binge eating mediation pathway linking weight-related PF and QOL in obese/overweight veterans receiving psychological treatment for binge eating. 90 veterans with an average BMI of 38.9 kg/m^2 (*SD* = 7.6) who reported binge eating after completing a standard 8-week weight management program (MOVE!) were randomized to either Acceptance and Commitment Therapy (ACT) or active control. Measured included the Binge Eating Scale, Acceptance and Action Questionnaire for Weight-Related Difficulties, and Obesity Related Well-Being questionnaire. As both groups demonstrated comparable changes in PF during treatment, groups were combined for mediation analyses. Change scores on the measures were used from baseline to 6-month post treatment follow-up (*n* = 82). Higher levels of PF were positively related to improvements in binge eating (*b* = .2150, *SE* = .055, *p* = .0002), and improved binge eating was positively related to increased QOL (*b* = .8468, *SE* = .305, *p* = .007). A statistically significant indirect effect of increased PF via decreased binge eating was found on improvements in QOL (*b* = .182, *SE* = .083, 95% *CI* = .052,

.090). Thus, the relationship between increased weight-related PF and increased QOL could be a function of improved binge eating for Veterans receiving psychological treatment after completing a weight management program. Future studies can further examine the efficacy of weight-related psychological treatments that focus on increasing PF.

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Symposium 73 8:30 AM-9:45 AM

A STRENGTH-BASED APPROACH TO UNDERSTANDING HEALTH DISPARITIES: EXAMINING RISK AND RESILIENCE IN MOTHERS LIVING WITH SYNDEMICS

Idia B. Thurston, PhD[1], Kathryn Howell, PhD[1], Rebecca C. Kamody, M.S.[2], Courtney Peasant, PhD[3]

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Physical and emotional adversities in mothers have rippling effects across the family system. Consistent with syndemic theory, violence, HIV, and substance use are adversities that frequently co-occur among racial/ethnic minorities and the urban poor. This health disparity may unfairly create an excess burden of poor health and functioning among vulnerable populations. To date, there is a gap in our understanding of how syndemics affects the functioning of mothers and their children, as well as a dearth of information on factors that protect these women from poor health outcomes. Thus, this symposium utilizes a strength-based framework to examine risk and resilience in mothers living with syndemics. Such an approach recognizes healthy adaptation in the midst of adversity, which is critically needed to improve maternal and child health equity. We will begin this symposium with an overview of syndemic theory and provide context for the examination of both risk and resilience factors among mothers. The first presentation will assess how mothers' historical and current experiences of partner violence impact communication with their children about violence, HIV, and substance use. The second presentation will evaluate how resilience serves as a protective factor against depressive symptoms in mothers living with HIV. The third presentation will explore the relationship between poverty and gender-based violence as perpetrated by a partner among high-risk South African mothers using substances. The fourth presentation will examine the protective role of support from family and friends on the relationship between syndemics and posttraumatic stress among high-risk U.S. mothers. This panel will highlight the impact of cumulative adversity among mothers exposed to violence, HIV, and substance use. It will also underscore the many strengths these women utilize in the midst of experiencing syndemics. Consistent with the 2017 SBM conference theme to expand horizons in behavioral health, this innovative symposium will advance knowledge about the social context of syndemics, offer novel ways to decrease maternal and child health disparities, and inform future strength-based treatments.

Symposium 73A

THE MEDIATING ROLE OF RESILIENCE ON THE RELATIONSHIP BETWEEN SYNDEMICS AND DEPRESSIVE SYMPTOMS AMONG MOTHERS LIVING WITH HIV

Dr. Idia B. Thurston, PhD

Background: According to syndemic theory, people living with HIV experience other adversities, including substance use and violence, with risk elevated among the urban poor. The consequences of syndemics are pronounced in mothers, given their central role as caretakers in the family. While women experiencing syndemics endure poor mental health, many show resilience (ability to bounce back from adversity). We examined the mediating role of resilience on the relation between syndemics and depression in mothers living with HIV.

Method: Participants were 55 mothers living with HIV, aged 25-62 (*M*=41.2, *SD*=9.0; 81% Black). 85% of mothers had a yearly income of ≤ $20,000. Women were recruited via HIV/AIDS service organizations in the U.S. MidSouth and reported time since HIV diagnosis. Syndemics were assessed via report of illicit drug use and physical/sexual violence with an intimate partner (both in the past 6 months). Women completed measures of depression, resilience, and life stress. Women living with HIV (1 syndemic) were compared to those with HIV plus substance use and/or partner violence (2 or 3 syndemics).

Results: Mediation analyses were conducted using SPSS PROCESS to generate 5000 bootstrap samples with 95% CI. Controlling for lifetime stressors and time since HIV diagnosis, the mediation model was significant, R^2=.23, *F*(4, 50)=3.78, *p*=.009. Being in the syndemic group had a direct effect on depression, *B*=6.19, *SE*=2.89, *p*B=-.039, *SE*=0.15, *p*=.01. When resilience was included, the direct effect of syndemic group membership on depression was no longer significant, *B*=3.50, *SE*=2.91, *p*=0.24, indicating full mediation. Thus, resilience had an indirect effect on the association between syndemic group membership and depression, *B*=2.70, *SE*=1.64, 95% *CI*=0.43, 6.91.

Conclusions: Findings suggest that while mothers who experience syndemics are at greater risk for psychopathology, they are protected by the ability to bounce back following adversity, even after accounting for other stressors. Interventions aimed at improving the wellbeing of mothers living with HIV should move beyond assessing risk and instead consider positive factors that protect women from poor health outcomes.

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Symposium 73B

SOCIAL SUPPORT AS A MEDIATOR OF THE RELATIONSHIP BETWEEN SYNDEMICS AND POSTTRAUMATIC STRESS

Dr. Kathryn Howell, PhD

Background: Syndemics (co-occurrence of multiple adversities including intimate partner violence (IPV), HIV, and substance abuse) in mothers has a rippling effect across the family system. An understanding of factors that might protect against the negative impact of syndemics, such as social support is lacking. This study explored the mediating role of social support from friends and family on the relation between syndemics and posttraumatic stress.

Method: Participants were 178 mothers who experienced physical or emotional adversities (i.e., living with HIV, experiencing IPV, or using substances). Mothers were aged 22-62 (*M*=35.2*, SD*=8.4; 71% Black) who were recruited from community organizations in the U.S. MidSouth. Syndemics were examined based on report of being HIV positive, illicit drug use, and physical/sexual IPV (both in the past 6 months). Mothers completed measures of posttraumatic stress, social support, and life stress. Women with one syndemic were compared to those with two or three.

Results: Mediation analyses were conducted in SPSS PROCESS to examine the indirect effects of social support (family vs friends) on syndemics and posttraumatic stress. Controlling for other stressors, the family support model was significant, R^2=.04, *F*(2, 175)=3.27, *p*=.04. Syndemic group membership had a direct effect on posttraumatic stress, *B*=.41, *SE*=.16, *p*=.01 and family support, *B*=-2.70, *SE*=1.09, *p*=.01. When family support was added as a mediator, the effect of syndemics on posttraumatic stress was weakened, *B*=.35, *SE*=.16, *p*=.03, indicating partial mediation. Family support had an indirect effect on the association between syndemic group membership and posttraumatic stress, *B*=-.02, *SE*=.01, 95% *CI*=-0.436, -.0001. The model examining social support from friends was not significant.

Discussion: Results show the protective role of social support on mitigating the negative impact of syndemics on traumatic stress. The finding that social support from family has a stronger protective role highlights the importance of examining social support from multiple sources. Researchers and clinicians working with mothers should examine the unique role family support plays, as this could be a target for resilience-focused interventions.

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Symposium 73C

THE RELATIONSHIP BETWEEN INTIMATE PARTNER VIOLENCE AND MOTHER-CHILD COMMUNICATION ABOUT SYNDEMICS.

Ms. Rebecca C. Kamody, M.S.

Background. Syndemic theory suggests a clustering of substance abuse, violence, and HIV/AIDS (i.e., SAVA) among racial/ethnic minorities and the urban poor. Parent-child communication about syndemics may protect against the intergenerational risks related to substance use, violence, and HIV/AIDS. Among children, open communication may enhance their resilience (i.e., ability to bounce back) to combat adversities in their high risk environment. As such, we aimed to identify variables that may influence mothers' willingness to communicate with their children about SAVA.

Method. Participants were 174 mothers (70% Black, M_{age} = 34.7) of children ages 6-14 (51% female, M_{age} = 10.3), recruited from community centers. Mothers completed measures of parent-child communication about SAVA, history of violence perpetration, and the Revised Conflict Tactics Scale. Path analysis was used to evaluate a hypothesized model, in which mothers' current IPV was related to willingness to communicate about SAVA, as mediated by violence perpetration.

Results. An excellent model fit was found (Comparative Fit Index = .99; Root Mean Square Error of Approximation = .02; Standardized Root Mean Square Residual = .02). IPV had a direct path to violence perpetration (est.=.29, $p < .01$), which had a direct path to willingness to communicate about SAVA (est. = -.60, $p < .01$). Further, Maternal IPV had both a direct (est. = -.41, $p < .01$) and indirect (est. = -.17, $p < .01$) path to communication about SAVA via the mediator of violence perpetration. Child's age was a moderator of the relationship between violence perpetration and communication about SAVA (est.=.56, p

Discussion. Findings highlight the negative consequences of bidirectional violence, such that mothers who are both victims and perpetrators of violence are less willing to communicate with their children about SAVA. Given that parent-child communication is a protective factor for positive health and well-being, this lack of communication may place children on a problematic health trajectory. Accordingly, researchers should develop parenting interventions that target the family system and promote open communication, which may enhance resilience in children.

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Symposium 73D

CONTROL IS KEY: POVERTY, VIOLENCE, AND ALCOHOL ABUSE AMONG HIGH-RISK SOUTH AFRICAN MOTHERS.

Dr. Courtney Peasant, PhD

Background: Interconnected epidemics such as poverty, gender-based violence (GBV), and substance abuse contribute to the disproportionately high rates of HIV among South African women, particularly among mothers who must provide for their children. Th e current study takes a resilience approach to explore how sexual control, a factor that is associated with lower HIV risk, may moderate the relation between poverty, GBV – specifically, intimate partner violence (IPV), and alcohol abuse among most-at-risk mothers in Pretoria, South Africa.

Method: Data for this study are derived from a subset of participants of a larger trial examining the efficacy of a women-focused HIV prevention interventions. Participants were 416 Black/African mothers who were 15 years or older and reported use of at least two substances on ≥ 13 of the past 90 days, had unprotected vaginal sex with a male partner in the last six months, and had a boyfriend. Women completed computer-assisted interviews that assessed the frequency of going to bed hungry in the past year (proxy for poverty); physical, emotional, or sexual IPV by their boyfriend in the past 90 days; problems with alcohol use in the past year; and sexual control (i.e., ability to refuse unwanted sex from their boyfriend).

Results: Analyses indicated that sexual control moderated the associations between poverty and physical IPV including being attacked with a weapon (CI = -.11, -.02), and being struck or beaten (CI = -.09, -.009). Tests of simple slopes revealed that there was a positive association between poverty and being attacked or struck/beaten among women with sexual control scores of 14.42 and 14.20 (Range = 6-30) or less, respectively. However, the associations between poverty and IPV were not significant for mothers with higher levels of sexual control.

Discussion: These findings indicate that empowering mothers to have sexual control with their partners and educating couples about the importance of respecting sexual control may lessen the impact of poverty on gender-based violence. Given that sexual control is amenable to change, this construct could be a key target for future strength-based interventions.

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Symposium 74 8:30 AM-9:45 AM

SYSTEMATIC REVIEWS IN CANCER: LEARNING FROM COCHRANE METHODS AND NEW FINDINGS

Joanna Buscemi, Ph.D.[1], Sherri Sheinfeld Gorin, PhD, FSBM[2], Dorothy McLeod, N/A[3], Heather L. McGinty, PhD[4], Kristen Wells, Ph.D., MPH[5], Paul B. Jacobsen, PhD[6]

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There are more than 15 million citations in MEDLINE, with 10,000 to 20,000 new citations added each week, many in cancer, and more than researchers, clinicians, and policy makers can regularly review, parse, and apply to practice and policy. According to the Cochrane Collaboration, a 20-year old organization that publishes the *Cochrane Database of Systematic Reviews*, internationally-recognized as the highest standard in evidence-based healthcare resources, systematic reviews attempt to identify, appraise, and synthesize all of the empirical evidence that meet pre-specified eligibility criteria to reduce bias and answer a given research question. Using Cochrane criteria produces reliable findings that can be used to inform decision-making. Our symposium will focus on lessons learned from systematic reviews and meta-analyses across the cancer continuum, using Cochrane Collaboration and non-Cochrane approaches. Dr. McGinty will examine the processes and findings from two recent systematic reviews of multiple cognitive outcomes following cancer treatment in two distinct populations, men with androgen deprivation therapy (ADT) and individuals receiving hematopoietic cell transplant (HCT). Ms. McLeod will describe a recent systematic review exploring the effects of acculturation on weight among Latino children in the US. Drs. Kumar and Wells, novice and experienced Cochrane reviewers, will discuss their experiences conducting Cochrane systematic reviews in the fields of medicine and behavioral medicine across the cancer continuum. They will highlight the differences between Cochrane and other systematic reviews, as well as the supports and barriers to conducting them. The symposium aims to increase the implementation of systematic reviews and meta-analyses, particularly using Cochrane Collaboration processes.

Symposium 74A

A SYSTEMATIC REVIEW OF ACCULTURATION AND WEIGHT AMONG LATINO CHILDREN

Dorothy McLeod, MA

We propose to describe a recent systematic review, which examined the effects of acculturation on weight among Latino children in the US. Using this review as a case example, we also propose to highlight methods and lessons learned over the course of the process.

In the systematic review “Becoming American, Becoming Obese?” findings across studies on the relations between acculturation and obesity in Latino children were explored. Previous research has found that there is a positive relationship between US acculturation and obesity, a known risk factor for cancer development, among Latino adults (Oza-Frank & Cunningham, 2010); however, less is known about how the process of acculturation may affect children’s weight. The identification of potential factors associated with obesity in children and adults is critical to inform future interventions that may reduce obesity and obesity-related cancers. Using search terms referring to “children,” “acculturation,” and “obesity” to search PsychInfo, ERIC, Cochrane, PubMed, and CINAHL, the authors located 381 records. The first two authors independently assessed 59 of these articles in their full-text form, and 29 of these were included in the qualitative synthesis. The authors concluded that there was heterogeneity across studies of acculturation and weight, likely stemming from the variability in the measurement and definition of acculturation across the studies. However, overall, relations between US acculturation and weight were more likely to be positive among adolescents and toddlers, whereas they were more likely to be negative among school-aged children.

Throughout conducting the systematic review, the authors recognized three important lessons: (1) carefully consider the definition and measurement of your variables of interest, (2) keep detailed records of every step of the process, and (3) examine findings through as many lenses as possible in order to determine best next steps for the field. In addition to these three lessons for preparing a review, the authors also recognized a lesson for authors of empirical (non-review) manuscripts: define your methods and findings with enough detail that they may be incorporated into a review. We propose to present these lessons, contextualized by real-world examples from our own review, in order to inform and empower early career researchers with the tools to conduct their own reviews.

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Symposium 74B

CONDUCTING SYSTEMATIC REVIEWS AND META-ANALYSES OF MULTIDIMENSIONAL OUTCOMES WITH MULTIPLE COMPARISON GROUPS

Dr. Heather L. McGinty, PhD

Two recent systematic reviews of cognitive outcomes following cancer treatment in two distinct populations are described and used to illustrate special considerations for conducting complex systematic reviews and meta-analyses.

The first systematic review and meta-analysis examined cognitive outcomes for men treated with androgen deprivation therapy (ADT) across 7 cognitive domains and 3 types of control comparisons (cancer patient controls, non-cancer controls, and pre-ADT baselines). A total 157 abstracts were reviewed for inclusion by independent pairs of raters, with 14 studies with unique samples (n = 417 ADT patients) included in the meta-analysis. Separate meta-analyses were conducted for each identified cognitive domain. For the random effects model, ADT patients performed significantly worse than controls on visuomotor tasks (g = -0.67, p = .008).

The second systematic review and meta-analysis evaluated cognitive functioning before and after hematopoietic cell transplant (HCT) across 8 cognitive domains. 732 abstracts were pulled and a total of 17 studies were included in a systematic review; of those, 11 studies had sufficient data for meta-analysis (n = 404 HCT patients). Again, separate meta-analyses were conducted for each domain and several possible study characteristics were evaluated including moderators and meta-regression. No significant cognitive changes were observed across studies (ps > .05).

Specific recommendations are offered for 1) defining multidimensional outcomes a priori, 2) developing and honing literature search strategies, 3) designing and conducting detailed data abstraction procedures, and 4) conducting analyses for complex outcomes. Guidance for graduate students interested in conducting meta-analyses is also discussed.

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Symposium 74C

LESSONS LEARNED IN CONDUCTING COCHRANE SYSTEMATIC REVIEWS

Dr. Kristen Wells, Ph.D., MPH

The goal of a systematic review is to identify, evaluate, synthesize, and summarize the findings from all relevant studies on a specific question related to a specific question domain (e.g., treatment). Systematic reviews provide decision makers with the best possible evidence to make informed decisions. As a global independent network of researchers, professionals, patients, carers, and people interested in health, Cochrane has a mission to promote evidence-informed health decision-making by producing high-quality, relevant, accessible systematic reviews and other synthesized research evidence. Historically, most Cochrane systematic reviews have been conducted in the field of medicine, with relatively few behavioral medicine systematic reviews having been completed. As more behavioral medicine researchers become interested in conducting Cochrane systematic reviews, it is clear that these researchers will need to become familiar with the steps required to complete a review. We will share our experiences with conducting Cochrane systematic reviews in the fields of medicine and behavioral medicine by incorporating the perspectives of both a novice Cochrane review author and an experienced Cochrane author and reviewer. First, we will summarize major differences between Cochrane and non-Cochrane systematic reviews. Then, we will provide an overview of the supports and barriers to conducting a Cochrane review, with a focus on the following topics: understanding and following Cochrane procedures, adhering to Cochrane timelines, funding for the conduct of systematic reviews, determining a specific research question, assembling a team with content and methodological expertise, developing a systematic review protocol, collaborating with a librarian, training of data abstractors, and evaluating publication venues. We will conclude with lessons learned from our experiences conducting Cochrane systematic reviews on a wide range of behavioral medicine and medical topics.

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Symposium 75 8:30 AM-9:45 AM

EXPANDING BEHAVIORAL MEDICINE'S IMPACT ON THE PREVENTION AND TREATMENT OF SUBSTANCE USE IN THE CONTEXT OF INFECTIOUS DISEASE

Amy Starosta, PhD[1], Andrea L. Hobkirk, PhD[2], Sarah M. Wilson, Ph.D.[3], Sara N. Edmond, PhD[4], Courtney Peasant, PhD[5]

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For those living with chronic infectious diseases in the United States, substance use contributes to deteriorating health and poor treatment adherence. Substance use-related health disparities exist despite significant advances in HIV and Hepatitis C pharmacological treatment and prevention. More than ever before, infectious disease clinical practice and research can be informed by behavioral medicine with regard to reducing health risk behavior and increasing health promotion.

This symposium, conducted by behavioral health investigators from research institutions across the country, focuses on the intersection of non-intravenous substance use and infectious disease and will elaborate on empirical research and clinical models from a variety of perspectives. Sessions will discuss the prevention and treatment of substance use and infectious disease risk reduction in the context of clinical care, address health behaviors in complex social contexts that include stigma and addiction, and highlight the translational potential of the research findings.

Each session will review a non-intravenous substance of abuse that impacts infectious disease transmission and/or clinical care. The use of alcohol and crack cocaine continue to drive HIV transmission risk in the US through risky sex behaviors. For those living with infectious diseases like HIV, smoking now accounts for more morbidity and mortality than HIV itself. In addition, prescription opioid abuse is a rapidly growing epidemic that affects medical populations at disproportionately high rates.

The symposium will begin with a discussion of research findings from two studies assessing neurobehavioral and individual factors that contribute to sex risk behavior among cocaine users in the community and college-aged women who use alcohol. The implications for incorporating these substance use factors into prevention interventions in primary care settings will be discussed. The second half of the symposium will focus on substance use among those with infectious diseases. This will include findings from the first nationally representative study to examine the prevalence of smoking among veterans living with HIV and problematic opiate use among OIF/OEF veterans. A discussion of the implications for behavioral health treatment within multidisciplinary teams in the VA system will follow.

Our discussant will synthesize the findings by reviewing the over-arching impact of substance use on sexual risk and infectious disease care. This review will highlight the importance of interventions that address the social context of substance users. Given the expanding role of behavioral medicine in the prevention and treatment of substance use and infectious disease, we believe this symposium will be of interest to the attendees at the Society of Behavioral Medicine 38th Annual Meeting and Scientific Sessions.

Symposium 75A

ALCOHOL AND CONDOMS: IT’S COMPLICATED.

Dr. Amy Starosta, PhD

Although it has frequently been assumed that alcohol use negatively impacts condom use, the research on this topic has been mixed. Some studies find no difference between condom use following drinking, while others find a negative association between number of drinks and condom use. While actual alcohol consumption is an important factor to consider, there may also be attitudes and expectancies associated with drinking that may be important mechanisms in the mixed association between drinking and risky sexual behavior. The current study examines the relationship between condom attitudes and intentions with drinking behaviors.

Participants (318 single college women M_{age}=18.84 years, *SD*=1.78) completed demographic, sexual, and condom attitudes, condom and drinking intentions questionnaires as well as a Timeline Followback Interview to assess their drinking and condom use for the previous three months.

Drinking more times per week and more drinks during each drinking event were both associated with more sexual partners (frequency of drinking r=.278, p<.0001; number of drinks r=.281; p<.0001), and poorer attitudes toward condoms (frequency of drinking r= -.208, p<.0001; number of drinks r= -.150; p<.0001). Drinking behavior, as measured by frequencies of events, number of drinks, or binge drinking over the previous 90 days, was not associated with condom use over the previous 90 days or during the most recent sex act. Intentions to use condoms were negatively associated with the frequency of drinking (r=-.115, p=.041), but not with number of drinks or binge drinking over the previous 90 days. Condom attitudes were positively associated with actual condom use over the previous 90 days (r=.376, p<.0001) and during the last act sex act (F=10.11, p<.0001).

Overall, drinking behavior was not related condom use. However, increased drinking was associated with poorer attitudes toward condoms, lower intentions to use condoms, and more sexual partners. These findings further highlight the complex relationship between alcohol use and risky sexual behavior. The implications of these findings on behavioral interventions to reduce risky sexual behavior will be discussed.

Symposium 75B

NEUROBEHAVIORAL CHARACTERISTICS AND HIV SEX RISK BEHAVIOR: A COMPARISON OF COCAINE USERS WITH AND WITHOUT HIV TO NON-DRUG USERS

Dr. Andrea L. Hobkirk, PhD

Background: Infectious disease is the second leading cause of death among high risk substance users in primary care settings. While there are well-known neurobehavioral characteristics that differentiate substance users from non-drug users (e.g., impairments in neurocognitive function, altered decision-making, trait impulsivity), few behavioral HIV risk reduction interventions are designed with these in mind.

Method: The current study sought to identify neurobehavioral characteristics that differ between HIV+ cocaine users (n=19), HIV- cocaine users (n=22), and a control sample of HIV- non-drug users (n=21), and how these neurobehavioral factors relate to sex risk behavior. Participants completed a clinical interview, computerized survey and decision-making tasks, and a neuropsychological battery.

Results: Cocaine users had significantly higher rates of sex risk behavior than non-drug users. Specifically, HIV- cocaine users had the highest scores on the Risk Assessment Battery (RAB) followed by HIV+ cocaine users and HIV- non-drug users (*F*[2,59]=7.12, *p*=.002). Neurobehavioral function was also altered among cocaine users compared to non-drug users. The HIV+ cocaine users had the highest number of errors on the Wisconsin Card Sorting Task (WCST) (*F*[2,59]=4.13, *p*=.021) and the worst deficits in attention (*F*[2,59]=3.62, *p*=.033), while the HIV- cocaine users had the highest trait impulsivity (*F*[2,59]=13.31, *p*=.001).

Controlling for group status, several neurobehavioral characteristics were associated with sex risk. Higher deficits in memory and motor function were associated with unprotected intercourse (*r*=.280, *p*= .029 and *r*=.473, *p*= .001) and total number of sex partners in the past year (r=.296, p=.020 and r=.457, p=.001). Having multiple partners in the past 3 months was associated with higher deficits in verbal fluency (F[1,59]=7.079, p=.010). Less impairment in executive function was associated with higher RAB scores (*r*=-.295, *p*=.021) and sex with a prostitute (*F*[1,59]=5.268, *p*=.025). Finally, higher sensation seeking was associated with higher RAB scores (*r*=.298, *p*=.020), unprotected intercourse (*F*[1,59]=11.710, *p*=.001), and sex while high or drunk in the past year (F[1,59]=5.020, p=.029).

Using multiple regression, the effect of group status on RAB scores was moderated by sensation seeking (*B*=-0.11, *p*=.038) and the effect on total number of sex partners in the past year was moderated by deficits in attention (*B*=-0.81, *p*=.025). Sex risk increased with higher sensation seeking and worse deficits in attention for the HIV+ cocaine users, but not for the other groups.

Implications: The findings highlight the important role of neurobehavioral function in the risk for contracting and transmitting infectious diseases like HIV among cocaine users. The implication of these findings for behavioral interventions in primary care settings will be discussed.

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Symposium 75C

VETERANS LIVING WITH HIV: A PARTICULARLY HIGH-RISK GROUP FOR CIGARETTE SMOKING

Dr. Sarah M. Wilson, Ph.D.

The Department of Veterans Affairs (VA) is the largest provider of medical care to persons living with human immunodeficiency virus (HIV) in the United States. Although HIV status and veteran status are known risk factors for smoking, there is no population-level evidence of smoking prevalence among veterans with HIV. Data from the National Survey on Drug Use and Health (NSDUH) were examined to characterize smoking as a function of veteran and HIV status. Results indicated that 51% of veterans living with HIV were daily smokers, as compared to 25% of veterans without HIV and 31% of non-veterans living with HIV. Additionally, veterans living with HIV were more likely than HIV-negative veterans to endorse past-month smoking. This study provides preliminary evidence that veterans living with HIV may be a particularly high-risk group for daily tobacco smoking, with consequent poor health. Findings are discussed in the context of multiple ecological levels of health risk and behavior change for this at-risk population, including public policy, institutional policies, interpersonal models, and intrapersonal behavior change.

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Symposium 75D

CHRONIC PAIN MANAGEMENT IN THE CONTEXT OF OPIOID USE AND INFECTIOUS DISEASES

Sara N. Edmond, PhD

In the context of the national opioid crisis, both prescribed and unprescribed opioid use is fueling opioid misuse and adverse events including overdose and death. Chronic pain, the most common indication for opioid therapy, is common among patients with infectious diseases such as Hepatitis C (HCV), and data suggest patients with chronic pain frequently use alcohol and illicit substances to manage pain. Among veterans of recent conflicts with HCV (n=2942), 51% endorse moderate to severe pain. Given high rates of chronic pain, unhealthy alcohol use (46%), and tobacco use (58%) in this at-risk population, innovative models of care are needed for veterans with HCV. The Opioid Reassessment Clinic (ORC) is a multidisciplinary care team staffed by an internist, addiction psychiatrist, APRN, and health psychologist to work with patients with problems with safety, efficacy, or misuse of opioids. Within the ORC, patients receive care from a multidisciplinary team with attention to safer pain management including non-opioid pain medications and non-pharmacological pain management approaches. Although the ORC is not explicitly designed for patients with infectious diseases, ORC patients are often medically complex. Of 87 consecutively referred patients over a two-year period, 33% had a diagnosis of HCV and 1% had HIV. At time of referral, average morphine equivalent daily dose (MEDD) was 121.4; average pain score was 6.8/10. Over half (57%) had an aberrant urine toxicology screen prior to their ORC referral. The majority had a history of substance use disorder (84%); 54% had opioid use disorder at initial assessment. Two-thirds met criteria for alcohol use disorder and 47% met criteria for cocaine use disorder, yet only 36% were seen for addiction treatment in the prior year. Mental health co-morbidities were common with diagnosis rates of 56% for depression, 39% for PTSD, 24% for an anxiety disorder, and 19% for bipolar disorder. Integrated clinics such as the ORC may be useful in managing complex patients such as those with HCV and co-morbid pain, substance use, and mental health concerns.

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Symposium 76 8:30 AM-9:45 AM

EXERCISE AS A NON-PHARMACOLOGICAL APPROACH TO THE MANAGEMENT OF CHRONIC PAIN

E. Amy Janke, PhD[1], Erin Dannecker, PhD, ATC[2], Francis Keefe, PhD.[3], Linda C. Li, PT, PhD[4]

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Exercise is Medicine® (EIM) is a global initiative started by the American Medical Association and the American College of Sports Medicine (ACSM) to make physical activity (PA) a first-line behavioral medicine strategy to prevent and treat many forms of disease and disability. Approximately 1/3 of all Americans experience persistent pain, and such pain is associated with significant distress, disability, and economic cost. An estimated 41% of adults with chronic, non-cancer pain report their pain symptoms are not controlled. Furthermore, the growing opioid addiction crisis demands exploration and support of non-pharmacological approaches to pain management. The aims of this jointly sponsored symposium by ACSM and the Society of Behavioral Medicine are to discuss exercise as a non-pharmacological approach to aid in the management of chronic pain. Specifically, this symposium will review: 1) the relationship between chronic pain and physical activity, and specifically the role of exercise in the treatment of chronic pain; 2) clinic-based brief intervention approaches delivered alongside allied health professionals to increase activity in individuals with pain; and 3) community-based approaches to safely increase exercise in individuals with pain. The first panelist will review current prevalence and trends in pain and physical activity, shared risk factors for chronic pain and insufficient physical activity, and provide an overview of the relationship between pain and exercise within the larger context of EIM. The second panelist will discuss brief intervention approaches with physical therapists and other health professionals to increase exercise in individuals with osteoarthritis and discuss some of the challenges faced when implementing these approaches. The third panelist will discuss community based approaches for remotely counseling individuals with arthritis to increase daily activity and exercise, linking these approaches to the EIM model of engaging patients in community resources. Finally, the discussant will comment on the presented approaches for increasing physical activity in individuals with pain and discuss current opportunities and challenges implementing exercise as a non-pharmacological approach to pain management.

Symposium 76A

THE RELATIONSHIP BETWEEN EXERCISE AND PAIN

Erin Dannecker, PhD, ATC

Improving the management of chronic pain and increasing physical activity are both current public health priorities. The purpose of this presentation is to review the prevalence of chronic pain and physical activity, shared risk factors for chronic pain and insufficient physical activity, and the complex relationship between pain and exercise. Based on best estimates, chronic pain conditions are highly prevalent and represent an increasing burden on the U.S. healthcare system as the population ages. Current pharmacologic practices to address these conditions have proven inadequate while inadvertently contributing to an epidemic of opioid abuse and deaths from overdose. In comparison, exercise can be an effective pain-management approach, which is why recent guidelines from the Centers for Disease Control and Prevention prioritize non-pharmacological treatments before initiating opioid therapy in some patients. Actually, many clinical practice guidelines for various painful diagnoses have recommended exercise. Systematic reviews support these guidelines, but the relationship between exercise and pain is complex. For example, the exercise parameters and/or the condition of the exerciser can affect the magnitude and direction of change in pain. Also, the mechanisms of exercise’s effects on pain vary depending upon the exercise parameters. Moreover, pain is a barrier to exercise behavior and, in the U.S., physical activity levels are inadequate. Inadequate physical activity is a leading cause of death worldwide. These issues and the shared risk factors for chronic pain and inadequate physical activity must be considered by efforts to use exercise as an intervention for chronic pain.

Symposium 76B

PAIN COPING SKILLS TRAINING & PHYSICAL EXERCISE TRAINING FOR PATIENTS WITH OSTEOARTHRITIC PAIN: OPPORTUNITIES AND CHALLENGES

Dr. Francis Keefe, PhD.

Many patients with osteoarthritis (OA) pain report that difficulties coping with pain are important factor limiting their ability to follow recommendations about remaining active and engaging in physical exercise. This presentation highlights a program of research that has examined the separate and combined effects of physical exercise training and training in pain coping skills. Three randomized studies (collaborator: Kim Bennell, U. of Melbourne) are presented. In the first 201 OA knee pain patients were randomized to physical exercise alone, pain coping skills training (PCST), or a combined physical exercise training/PCST protocol. Though no significant between-group differences in pain were found, the combined physical exercise training/PCST condition had greater improvements in function compared to each intervention alone. One limitation is that the PCST protocol involved ongoing training and supervision of physical therapists. Two more recent studies tested an internet-based interactive PCST program that did not require therapist training/supervision. In a study of 148 individuals with OA knee pain we found that a protocol that combined an online interactive PCST program with a physiotherapist home exercise program delivered via videoconferencing was effective in reducing walking pain and improving physical function. A third study of 144 OA hip pain patients found the online PCST program produced immediate improvements in pain coping and physical function but did not confer any additional benefits to a subsequent exercise program, though it did produce sustained long-term improvements in pain coping. The presentation concludes with a discussion of lessons learned and challenges and opportunities in this emerging research area.

Symposium 76C

CAN PHYSICAL ACTIVITY MONITORING TOOLS SUPPORT PEOPLE WITH CHRONIC PAIN TO BE PHYSICALLY ACTIVE?

Dr. Linda C. Li, PT, PhD

The evidence supporting a physically active lifestyle among people with chronic diseases is compelling. Many patients, however, do not meet the minimum recommended amount of physical activity, and evidence suggests individuals with persistent pain may be particularly vulnerable to inactivity. For example, in people with arthritis, pain and fatigue are the major barriers. It is known that people with arthritis were less active during their leisure time compared to the general population. A recent study also found 42% of rheumatoid arthritis patients accumulated 0 minute of bouted moderate/vigorous physical activity, performed in bouts of 10 minutes or more, in a week. Commercially available self-monitoring tools, such as pedometers and accelerometers, are popular to support an active lifestyle. The purpose of this presentation is to examine opportunities and challenges of using self-monitoring tools to promote a physically active lifestyle in patients with chronic pain. Using arthritis as an example, the feasibility of a remote counselling intervention by a physical therapist with the use of a popular wearable device will be presented. Findings of a subsequent ongoing randomized controlled trial in patients with knee osteoarthritis will be discussed. The presentation will end with findings from a qualitative study in three Canadian provinces on the views and experiences of patients and health professionals on the use of physical activity monitoring technologies in arthritis care. A key finding was the discrepancy in how the two groups perceived the ability of monitoring tools to motivate users, the sustainability of these tools, and how they were changing patient-health professional interactions. Potential opportunities in the use of self-monitoring tools to support the Exercise is Medicine (EIM) initiative in the community will be discussed.

Symposium 77 8:30 AM-9:45 AM

PREVALENCE AND PREDICTORS OF DEPRESSION AND STRESS IN DIVERSE SAMPLES OF PREGNANT WOMEN

Karen L. Weis, PhD, RNC-OB, FAAN[1], Patricia Kinser, PhD, WHNP-BC, RN, FNAP[2], Jeni Matthews, MS[3], Jenn Leiferman, PhD[4]

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Prenatal maternal stress and depression are associated with pregnancy complications, negative birth outcomes, poor maternal-infant attachment and infant neurodevelopmental disorders. Research is just beginning to uncover the etiology of fetal programming to adult cardiovascular, metabolic and neuroendocrine disorders. Prenatal maternal stress and depression increase the likelihood of tobacco and substance use, poor dietary habits and late or inadequate prenatal care. All of these risk factors are modifiable but the development of well-designed effective interventions requires a clear understanding of population characteristics and the influence on the outcome variables.

This symposium will address predictors and correlates of prenatal maternal stress and depression in three diverse populations. The first presentation will focus on demographic predictors of prenatal maternal anxiety, depression, self-esteem and resilience within a military sample. The second presentation will concentrate on pre-conception and early prenatal predictors of depression within an urban sample of black and white women. The final presenter will compare various stressors and coping mechanisms reported in a sample of pregnant women with low to severe stress levels (Perceived Stress Scale) - . Lastly, the Chair will comment on how these identified predictors and correlates of prenatal depression/stress differ across populations and how these findings may inform future intervention approaches.

Symposium 77A

PREDICTORS OF INCREASED PRENATAL MATERNAL ANXIETY, SELF-ESTEEM AND RESILIENCE IN A SAMPLE OF MILITARY WOMEN

Dr. Karen L. Weis, PhD, RNC-OB, FAAN

Background: A relationship exists between prenatal maternal anxiety and depression to pregnancy complications, poor birth outcomes and infant/childhood cognitive delays. Traditionally, high-risk groups of young, unmarried, undereducated primigravidas have been the focus of prenatal assessment and interventions. Less understood is anxiety and depression in differing samples. **Purpose/Methods:** Two hundred and forty-six military women were consented and randomized to either a prenatal support program or regular prenatal care starting in the first trimester. All participants completed the PSEQ, EPDS, RSE and BRIEF in each trimester. Women in the intervention attended 8, 1-hr mentored sessions aimed at decreasing prenatal pregnancy-specific anxiety and depression. The efficacy of the intervention across pregnancy was examined for prenatal anxiety, self-esteem, depression and resilience using linear mixed models with autoregressive correlation. Demographic covariates were: age, employment, parity, marital status, education, deployment history, military branch, race, and active duty status. **Results:** Compared to multigravidas, primigravidas had lower anxiety for accepting pregnancy and concerns related to partner relationships, but a five-fold increase in anxiety related to preparation for labor and higher fears of helplessness in labor. Marital status afforded a five-fold decrease in anxiety for accepting pregnancy, a two-fold decrease in fears of well-being but non-married women had resilience scores two times higher. Those having a high school degree had two times greater anxiety for accepting pregnancy than those with some or a college degree, unrelated to age. College graduates had greater fears related to well-being. Age was only predictive of increased anxiety for relationship with mother. Deployment significantly effected maternal identification and self-esteem was two-times greater for women of color. **Conclusion:** This military sample experienced lower overall anxiety and depression scores compared to previous studies in military and civilian samples. The results reflect a different picture than generally anticipated in that women with higher education and parity had increased anxiety for certain dimensions and age was not a significant factor. The military environment promotes opportunities to gain increased self-esteem and resilience regardless of sex or race, and the study bears this out. The impact of the father's absence on a women's identification as a mother is extremely important, particularly within a military population. The findings provide relevant information indicating the unique differences that exist for women regarding pregnancy anxiety and the need for appropriate assessments and interventions for the particular population.

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Symposium 77B

DEPRESSIVE SYMPTOM PREVALENCE AND PREDICTORS IN THE FIRST HALF OF PREGNANCY

Dr. Patricia Kinser, PhD, WHNP-BC, RN, FNAP

Background/ Purpose/Methods: Despite recent guidance about screening for depression by the US Preventive Services Task Force, depressive symptoms continue to be under-identified and under-treated in pregnant women. The purpose of this IRB-approved study is to examine the predictors of depression in white and black women in early second trimester of pregnancy as part of a larger study designed to explore how environmental and social exposures contribute to inter-individual differences in the timing of birth. A sample of 230 black and white women receiving prenatal care in obstetric clinics in Richmond, VA were recruited for the study from 2013 to 2016.

Results: Univariate logistic regression indicated that multiple variables were associated with CIDI-SF depression, such as demographic (race, relationship status, employment status and education), preconception health (having visited a healthcare worker for depression/ anxiety in the past 12 months, lifetime history of depression), coping strategies, the prenatal social environment, and other symptoms (perceived stress, pregnancy-related anxiety). These variables were then entered into a multivariable logistic regression model with a backwards elimination procedure to arrive at two parsimonious models: the first included a single covariate of a lifetime history of a depression episode (AUC=0.87; 95% CI 0.82-0.90; sensitivity 97%; specificity 76%) and the second eliminated lifetime history and included race, employment status, having visited a healthcare worker for depression/anxiety in the past 12 months, and the Prenatal Social Environment Inventory scale (AUC=0.74; 95% CI 0.64-0.82; sensitivity 49%; specificity 88%).

Conclusions: This study contributes to the body of knowledge predictors of depressive symptoms with onset during in preconception and early pregnancy. Future research is warranted to explore differences in clinical presentation and underlying biological patterns because, in clinical settings, the use of predictive variables in combination with identifiable biomarkers related to depressive symptoms may allow for earlier diagnosis and/or differentiate appropriate treatment modalities.

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Symposium 77C

DIFFERENCES IN STRESSORS AND COPING STRATEGIES OF PREGNANT WOMEN WITH LOW-MODERATE AND HIGH-SEVERE PERCEIVED STRESS SCORES

Jeni Matthews, MS

Background: Up to 78% of women experience elevated levels of stress during pregnancy. Elevated levels of stress have been linked to negative birth outcomes such as preterm birth (
Methods: We conducted a national survey in women ≥8 weeks pregnant, ≥18 years old, and residing in the US (N=971). Descriptive statistics, frequencies, and percentages were calculated. The Perceived Stress Scale (PSS) was used to determine levels of stress. Data was split into quartiles to determine PSS cut points within the 25th, 50th, and 75th percentiles.

Results: Fifty-one percent of women scored within the low-moderate range (0-15) and 49% scored within the high-severe range (≥16). Women with low-moderate levels of stress reported financial burden (N=190, 38%), work (N=164, 33%), and time (N=152, 30%) as the top three stressors. Women with high-severe levels of stress reported financial burden (N=271, 58%), work (N=187, 40%), and pregnancy (N=170, 36%) as the top three stressors. Women with low-moderate levels of stress reported reading (N=232, 46%), exercising (N=179, 36%), and eating (N=127, 25%) as the most frequently used coping strategies. Women with high-severe levels of stress reported reading (N=145, 31%), eating (N=135, 29%), and nothing (N=126, 27%) as the most frequently used coping strategies.

Conclusion: Our data suggest that pregnant women with high-severe levels of stress frequently do nothing to manage their stress and women in both groups eat as a response to stress. This is important, as researchers may want to consider focusing on limiting these types of negative coping strategies when designing interventions to decrease stress during pregnancy. Future studies may want to consider providing specific resources for healthy coping strategies in women with high-severe stress (e.g., exercise, meditation).

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Symposium 78 8:30 AM-9:45 AM

OPTIMIZATION OF ONLINE SUBSTANCE USE INTERVENTIONS TARGETING COLLEGE STUDENTS

Kari C. Kugler, PhD, MPH[1], Emily Grekin, PhD[2], Kari C. Kugler, PhD, MPH[1], David Wyrick, PhD[3], Gary G. Bennett, PhD[4]

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The multiphase optimization strategy (MOST) is an engineering-inspired framework for building more efficacious, effective, cost-effective, and scalable behavioral interventions. This phased approach (preparation, optimization, and evaluation phases) often uses factorial experimentation to identify which components to include in an optimized intervention. Online interventions are useful platforms for taking advantage the efficiency of a factorial experiment. The talks in this symposium showcase three studies at different stages of MOST, each interested in optimizing an online intervention targeting substance use among college students.

The first talk presents the results from a pilot study examining elements of a brief computer-delivered intervention targeting heavy alcohol use. This talk highlights the importance of pilot testing intervention components prior to experimentation during the optimization phase. The second talk presents the results from the first (of two) screening experiments during the optimization phase. This talk demonstrates how the conceptual model of alcohol use and sexual risk behaviors was used to identify the intervention components for the factorial experiment. The third talk presents the results evaluating the effectiveness of an optimized substance use intervention during the evaluation phase. This study shows how repeated experimentation during the optimization phase engineered a potent intervention.

Collectively, these talks demonstrate how the phases of MOST are currently being used to optimize online behavioral interventions among college students. Following the principles and phases of MOST increases the likelihood that a behavioral intervention will achieve its desired outcome. The discussant for this symposium has extensive expertise in technology-delivered behavioral interventions and will review the benefits of using MOST to improve the public health impact of behavioral interventions.

Symposium 78A

OPTIMIZING E-INTERVENTIONS FOR ALCOHOL USE

Dr. Emily Grekin, PhD

The flexibility and modularity of computer-delivered brief interventions (CDBIs) makes them an ideal platform for (a) isolating the active ingredients that are associated with positive outcomes; and thereby (b) continually optimizing CDBIs to achieve cumulative increases in efficacy. The current study seeks to systematically manipulate four CDBI elements – presence versus absence of (1) empathy/positive regard, (2) voice, (3) animated narrator, and (4) use of techniques adapted from Motivational Interviewing (MI) – to determine which combination of elements is most associated with reductions in drinking. The current project will recruit 352 university students meeting NIAAA criteria for heavy drinking and randomly assign them to 1 of 16 different conditions representing all combinations of the four intervention elements noted above (2 X 2 X 2 X 2). Outcomes include state motivation immediately following baseline participation and alcohol use at 1- and 3-months post-baseline. As a critical first step, we pilot tested content for three specific cells (high empathy only, high positive regard only, and education-only control) to evaluate discriminability. Pilot participants viewed the content for these cells in counterbalanced order and ranked them for preferability, understanding, and supportiveness. A total of 63.6% of participants preferred the high empathy content, compared to 18.2% for both the high positive regard and education-only CDBIs ($z = 3.01$, $p < .01$). Participants also found the high empathy CDBI to be the most supportive ($z = 3.01$, $p < .01$), understanding ($z = 3.47$, $p < .01$), and affirming ($z = 2.56$, $p = .01$). Interestingly, participant ratings for the control and positive regard conditions did not differ. These results suggest that either more work is needed on the positive regard content, or that expressions of positive regard have no impact on participant preferences or perceptions. These results also support the Nass et al. Media Equation Theory, which suggests that interactions with even minimally lifelike technology leads to social responses that are indistinguishable from those with human beings.

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Symposium 78B

OPTIMIZATION OF AN ONLINE STI PREVENTIVE INTERVENTION TARGETING COLLEGE STUDENTS

Dr. Kari C. Kugler, PhD, MPH

Drinking alcohol is often implicated in the sexual behaviors that increase college students STI risk. Most existing interventions target alcohol and sex separately, rather than focus on the alcohol-sex intersection. The current study will present results from an ongoing factorial experiment of itMatters, an online intervention focused at the alcohol-sex intersection (completion fall 2016). The experiment is designed to identify which intervention components (i.e., descriptive norms, injunctive norms, expectancies, perceived benefits of protective behavioral strategies, and self-efficacy to use strategies) are effective at changing the corresponding primary outcomes. All first-year students from four universities were recruited and randomized to one of 32 experimental conditions that included a combination of the aforementioned components. The 3439 students who completed the baseline survey were mostly female (61%), White (52%), heterosexual (94%), and lived on campus (74%). Baseline results provide behavioral context for the intervention. Most students reported past alcohol use (63%) and sex (oral, anal, and/or vaginal; 58%). Among those who had had sex, 9% reported using alcohol (33% reported being drunk) and 38% did not use a condom at their most recent vaginal sex. Among the 35% of students who reported a hookup, 20% used alcohol (42% which reported being drunk) and 31% did not use a condom for vaginal sex. There were no statistically significant baseline differences in outcomes based on randomization levels. The results from this experiment will be used to guide decisions about which intervention components to revise and reexamine in a subsequent factorial experiment. Complete results from the first screening experiment, the rationale for conducting two screening experiments to optimize the STI preventive intervention, and overall study design and goals will be discussed.

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Symposium 78C

ENGINEERING AN EFFECTIVE SUBSTANCE USE PREVENTION PROGRAM FOR COLLEGE STUDENT-ATHLETES

David Wyrick, PhD

College student-athletes are at increased risk of substance use compared to non-athletes. We developed *myPlaybook*, an online substance use intervention tailored to college student-athletes using the Multiphase Optimization Strategy (MOST), to optimize its impact. As part of optimization phase, we tested whether a set of intervention components (i.e., lessons) met specific optimization criteria in a series of three component screening experiments. The results from 3 factorial experiments (ranging from 8 to 16 conditions) identified the optimized *myPlaybook* intervention, which was then evaluated using a randomized control trial to test effectiveness. The optimized intervention package consisted of 4 components: (1) knowledge lesson, (2) normative perceptions lesson, (3) expectations lesson, and (4) harm prevention lesson. Schools (n=73) were randomly assigned to receive the packaged intervention or just the introductory lesson. First-year and transfer student athletes (n=5,860) completed a baseline survey, a 30-day follow-up survey, and a 4-month follow-up survey. There was a significant and sustained effect on descriptive and injuctive norms for drug use, and positive expectancies for alcohol use; however, there was no significant effect on harm prevention behaviors or intentions. In terms of drug use behavior, there was a significant effect on frequency of alcohol use and marijuana frequency at 30-day follow-up, but no effect for binge drinking, heavy drinking, or tobacco use frequency. Finally, there was a significant effect on non-alcohol and other drug related consequences (e.g., missing class) for in-season (but not off-season) student-athletes at 30 day follow-up. These results suggest that the optimized *myPlaybook* intervention was successful in changing short-term behaviors. Detail about the process of using MOST and next steps will be discussed.

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Symposium 79 8:30 AM-9:45 AM

INTIMATE PARTNER VIOLENCE AND TRAUMA-INFORMED CARE: PRIORITY ISSUES FOR BEHAVIORAL MEDICINE

Emily F. Rothman, ScD[1], Sheela Raja, PhD[2], Ivy Ho, PhD[3], Rose Constantino, PhD, JD, RN, FAAN, FACFE, Fulbright Scholar[4]

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Increasingly behavioral medicine experts are recognizing the importance of addressing patients' history of trauma and violence victimization in order to optimize all kinds of health-promoting interventions and to improve individuals' overall well-being. However, precisely how individual physicians and other healthcare providers, or healthcare organizations, should tackle the complicated problem of "addressing trauma" is still emerging. "Trauma-informed care" is now a somewhat commonly-used phrase (or buzzword), but not everyone understands what is meant by "trauma-informed care" in the same way. Further, we lack a broad and deep body of evidence about the most effective ways to approach certain victims of trauma, such as survivors of intimate partner violence. In this session we bring together three nationally-recognized experts in addressing trauma in the healthcare setting in order to accomplish three aims. First, we will provide attendees with a neurophysiological explanation for why and how trauma can influence somatic health in the short- and long-term. Second, we will provide attendees with evidence that intimate partner violence, specifically, is associated with physical health outcomes in Southest Asian American women, and finally we will present data that explores the ways in which caring for survivors of interpersonal violence can cause compassion fatigue in medical care providers and discuss how compassion fatigue can be prevented or treated. Understanding and addressing experiences of interpersonal violence and traumatic experiences so that patients have positive healthcare and health-promoting experiences is a critically important priority for behavioral medicine, and this session will provide an ideal forum for anyone with an interest in these topics to engage with other thought-leaders and experts in the field.

Symposium 79A

TRAUMA INFORMED CARE FOR INTERPERSONAL VIOLENCE SURVIVORS: UNDERSTANDING NEUROPHYSIOLOGY AND BEHAVIORAL COPING

Sheela Raja, PhD

The World Health Organization defines interpersonal violence (IPV) as physical, sexual, and emotional abuse, as well as controlling behaviors that take place in an intimate relationship. A sizable portion of the US population have experienced IPV, and many children witness IPV on a daily basis. This session will provide an overview of the health effects of IPV, with a particular emphasis on the neurophysiological changes resulting from chronic IPV exposure. Children who witness IPV on a regular basis may be particularly vulnerable to toxic stress, which results in long-term neurophysiological disruption. The Hypothalamic-Pituitary-Adrenal (HPA) axis may become chronically over-activated in some individuals. We will focus on how these physiological changes may encourage maladaptive coping methods later in life, including overeating, smoking, drinking, and high risk sexual behavior. In addition, trauma history is likely to influence healthcare utilization patterns, including underutilization of preventive care and more emergency and sick visits, resulting in a higher disease burden. The session will explore how trauma-informed approaches can help survivors break intergenerational patterns of violence. These approaches include psychological interventions that alleviate neurophysiological disruption and community-based supports that can decrease the prevalence of IPV.

Symposium 79B

INTIMATE PARTNER VIOLENCE AND PHYSICAL HEALTH OUTCOMES AMONG SOUTHEAST ASIAN AMERICAN WOMEN

Dr. Ivy Ho, PhD

Although intimate partner violence (IPV) is prevalent among Southeast Asian (SEA) American women, little is known about the associations between the experience of IPV and negative health outcomes in this population. Resnick, Acierno and Kilpatrick (1997) proposed a model explaining the development of health problems following violent assault, which includes three direct outcomes (acute physical injury, increased stress, and increased risk of mental health problems) that in turn precipitate a second layer of mediating factors (chronic physical injury, impaired immune system functioning, increased health risk behavior, and ineffective health care utilization). The present paper assesses the applicability of Resnick et al.'s model to SEA American women who have experienced IPV by reviewing cultural, historical, and social factors in this population. Our review indicates that the applicability of Resnick et al's (1997) model to SEA American women is mixed. Some components of the model – such as factors that pertain to physical injury, both acute and chronic – fit well with this population. Other components – such as factors pertaining to increased stress, increased risk for mental health problems, and increased health risk behavior – require a more nuanced and complex perspective. This presentation will conclude with a discussion on the research and clinical implications of with regard to IPV among SEA American women.

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Symposium 79C

EXPLORING TRAUMA-INFORMED CARE AND COMPASSION FATIGUE IN HEALTHCARE PROVIDERS

Dr. Rose Constantino, PhD, JD, RN, FAAN, FACFE, Fulbright Scholar

Purpose: The purpose of this presentation is to inform the attendees of the signs, symptoms, and consequences of Compassion Fatigue (CF), the various ways it is displayed and the healing effects of trauma-informed care. The signs and symptoms of CF are not readily seen by the untrained eye especially by the sufferer; it is an insidious and gradual lessening of compassion over time to the observant, trauma-informed, and compassionate co-worker, supervisor or partner.

Literature Review: We present applicable evidence based literature, examine protective factors and trauma-informed care in both the healthcare provider and the CF sufferer. For example, Berg and others (2016) studied CF in a trauma team and found that team members were not as managing work stresses as well as they perceived themselves to be. Raja and others (2016) developed a program on educating healthcare providers on trauma-informed care: the trauma-informed medicine eCases (TIMe) where every part of the institution (from staff, administrators, supervisors, to healthcare providers) understand the consequences of traumatic events, sensitively interact trauma supervisors, avoid re-traumatization, and engage in trauma screening and prevention.

Case Study: An extreme case of tension and preoccupation with the suffering of those being helped to the degree that it traumatizes the helper. Gentry suggests that we enter into the healthcare giving field already with CF. CF differs from burnout as burnout is exhaustion from the chronic tedium of the job (Tabor 2011). The healthcare provider in the case study will perform her duties and provide compassionate care to the patient devoid of CF. We will have an interactive session with the audience what if the healthcare provider in this case was suffering from CF.

Implications: Whether we like it or not, believe or not, realize it or not, healthcare providers are in the ministry of compassionate and trauma-informed care because we "help" and "care" for the sick and traumatized; dedicated to caring for the displaced, traumatized and relief of human suffering. Trauma-informed care prods us to suffer with the others, to enter the dark places where it hurts and be able to leave those dark, bloody and chaotic places after we put them in some order.

Conclusions: No one is immune to job-related trauma and stress. We need to care for each other. We are indeed our brothers'/sisters' keeper. Being a trauma-informed healthcare professional is not expensive nor does it remove anything from us in fact it adds something to the vast knowledge, information and evidence-based practice we already possess.

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Symposium 80 8:30 AM-9:45 AM

PERSONALITY PREDICTS HEALTH COGNITIONS, EXPERIENCES, AND BEHAVIORS: FINDINGS FROM DIVERSE PERSPECTIVES

Jennifer Howell, PhD[1], Jennifer M. Taber, PhD[2], Jenna R. Cummings, M.A.[3], Kate Sweeny, PhD[4], Jennifer Howell, PhD[1]

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The field of behavioral medicine has long recognized the influence of demographic characteristics on health cognitions and behaviors. Recently, emerging technologies have made individually-tailored health communications and interventions possible. However, many of these endeavors have focused exclusively on demographic differences and ignored the role of personality. In this symposium, we attempt to extend knowledge about how individual differences can affect health cognitions and behaviors to include the domain of personality. In four talks, we offer evidence that personality can affect health cognitions, experiences, and behaviors across a diverse set of domains. First, Taber will discuss research suggesting that personality predicts perceptions of risk in a sample of adults undergoing genomic sequencing. Taber will highlight how personality factors like optimism, spontaneous self-affirmation, and big-five personality traits predict the discrepancy between people's understanding of their absolute risk and their feelings about their risk. Next, Sweeny will discuss how personality affects physical health and psychological well-being as people wait for uncertain news. Specifically, she examines the health of law school graduates during four months as they waited to learn whether they passed the bar exam. Sweeny's results demonstrate that personality traits associated with handling stressors (e.g., spontaneous self-affirmation, trait mindfulness) are associated with better health trajectories during the waiting period. Third, Cummings will discuss the role of personality and demographics in determining the social aspects of drinking and eating. Specifically, her data suggest that bonding over food and drink is moderated by both gender and the trait emotional eating. Finally, Howell will discuss evidence that personality traits predict the likelihood that people will avoid health information. Data from several studies suggests that traits that indicate dispositional openness to information (e.g., curiosity, openness to experience) and emotional coping resources (e.g., low neuroticism, high spontaneous self-affirmation, and high optimism) predict less avoidance of health information and feedback. Together, these four talks provide evidence of the nuanced and important role of personality in health cognitions, experiences, and behavior.

Symposium 80A

THINKING ONE WAY ABOUT RISK BUT FEELING ANOTHER: PERSONALITY CORRELATES OF HAVING MISMATCHED RISK PERCEPTIONS

Dr. Jennifer M. Taber, PhD

People think about personal disease risk in diverse and nuanced ways, and conceptualizations of risk may depend on personality factors, including individual differences in psychological resources (i.e., characteristics that help individuals to bolster against emotional, social, or physical threats). Characteristics of people with discrepancies between what they “think” and “feel” about their risk are relatively unexplored. We examined the prevalence and correlates (personality/sociodemographic) of mismatches between deliberative (i.e., cognitions) and experiential (i.e., intuitions) risk perceptions among adults enrolled in an NIH genome sequencing trial (*n*=536). Participants completed a survey of their risk perceptions before learning sequencing results, reporting the extent to which they believed their results would confer personal risk for a common disease (deliberative) and the extent to which they felt their genes put them at risk for a common disease (experiential). Participants were categorized into four groups based on responses to these questions. Excepting those who selected the midpoint of “unsure” for both risk items (9.3%) and were removed from analyses, responses of “unsure” were categorized as estimates of low risk. Nearly one-quarter (24.3%) perceived high deliberative but low experiential risk. Fewer (14.7%) reported low deliberative but high experiential risk. Slightly over half did *not* have risk mismatches: 28.2% perceived high deliberative and experiential risk and 23.5% perceived low deliberative and experiential risk. Compared to all other participants, those in the group whose experiential beliefs were greater than their deliberative beliefs reported lower optimism (*F*(1,475)=11.80, *p*=.001), greater worry (*F*(1,478)=16.54, *p*F(1,450)=5.37, *p*=.021), somewhat lower extraversion (*F*(1,450)=3.58, *p*=.059), and greater education (*F*(1,468)=8.06, *p*=.005). Those whose deliberative risk beliefs were higher than their experiential risk beliefs were older (*F*(1,482)=9.52, *p*=.002). There were no differences in education, gender, race, resilience, spontaneous self-affirmation, conscientiousness, openness to experience, or agreeableness across groups. These data suggest that people with lower levels of trait-level psychological resources but higher education might “feel” that they are at risk for disease but acknowledge low risk or be unsure of their actual objective risk. This is consequential, as deliberative measures (most commonly used in health behavior research) may not adequately capture how such individuals engage with risk. Future research may examine whether these individuals distribute resources (e.g., protective actions) to threats that “feel” risky rather than targeting resources to threats that are perceived as objectively risky.

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Symposium 80B

TRAIT AND DEMOGRAPHIC PREDICTORS OF BONDING OVER ALCOHOL AND UNHEALTHY FOOD CONSUMPTION

Ms. Jenna R. Cummings, M.A.

Excessive consumption of alcohol and unhealthy food is a modifiable risk factor for multiple chronic illnesses. However, positive social experiences that coincide with eating and drinking, such as improved social connection, may reinforce consumption of alcohol and unhealthy food. This may be especially pertinent for individuals with certain traits and demographic profiles. The objective of the current study was to experimentally examine how individual differences in sex, emotional eating, and endorsement of alcohol expectancies may moderate social experiences that reinforce eating and drinking. Participants (N = 200) completed demographic and personality questionnaires online. Then, participants were randomly assigned to consume milkshakes, placebo beer, or water (control) with a stranger in a laboratory space similar to real-world settings where people eat and drink with others. Research assistants coded how often participants talked, smiled, and laughed. Participants self-reported how close they felt with, and chose how close to sit to, the stranger. Results indicated several effects moderated by individual differences: (1) Men, but not women, laughed ($p = .032$) and smiled more ($p = .082$), and reported feeling closer with the stranger if they consumed placebo beer but not milkshakes or water ($p < .001$). (2) Individuals scoring higher in trait emotional eating laughed ($p = .007$), smiled ($p = .007$), and talked more ($p = .063$), and reported feeling closer with the stranger ($p = .062$), if they consumed milkshakes but not placebo beer or water. (3) Individuals with stronger expectancies that alcohol reduces tension or promotes social assertiveness reported feeling closer with the stranger if they consumed placebo beer but not milkshakes or water ($p = .037$ and $p = .032$, respectively). Challenging positive social experiences that coincide with eating and drinking may prevent excess consumption of alcohol and unhealthy food, particularly if targeted at individuals with certain traits and demographic profiles: men, individuals that emotionally eat, and individuals with strong alcohol expectancies.

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Symposium 80C

PERSONALITY AS A HEALTH BUFFER DURING STRESSFUL WAITING PERIODS

Kate Sweeny, PhD

Research suggests that waiting for uncertain news can be both emotionally and physically taxing. As the news approaches, people typically experience increasing levels of anxiety, rumination, sleep disruption, and poor health. In the present study we examined whether a variety of personality traits moderate these trends in psychological and physical well-being. Specifically, we examined whether dispositional optimism, trait mindfulness, tolerance of uncertainty, and the tendency to spontaneously self-affirm (i.e., to think about one's values and strengths) might moderate these trends in well-being. To do so we investigated the subjective health, sleep disruption, well-being, and personality profiles of a sample of law school graduates awaiting their bar exam results. The results showed that those high in spontaneous self-affirmation, trait mindfulness, dispositional optimism, and tolerance of uncertainty generally reported better physical and psychological well-being during the waiting period. Moreover, participants high in these traits also showed different longitudinal trajectories in anxiety, rumination, subjective health, and sleep disruption. Specifically, participants high in these traits tended to show less deterioration in their well-being as the news approached and "flatter" trajectories generally, suggesting that the waiting period was not as unhealthy for them. Taken together, these results suggest that at least personality is associated with greater well-being during a stressful waiting period and that personality may buffer people from the escalations in anxiety, rumination, sleep disruption, and poor health associated with forthcoming news.

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Symposium 80D

THE PERSONALITY PROFILE OF HEALTH INFORMATION AVOIDERS

Jennifer Howell, PhD

Although knowing health information can be critical for disease prevention, people sometimes intentionally avoid learning information about their health. Indeed, research suggests that up to 39% of Americans would avoid learning their cancer risk (Emanuel et al., 2015). In this talk, we examine who avoids information about their health. That is, using evidence from four distinct studies, we examine what personality traits predict information avoidance. Broadly, these studies reveal two categories of dispositional predictors of avoidance: orientation toward information and coping resources. First, we offer evidence that people who are dispositionally open to information display less health information avoidance. Using evidence from a longitudinal study and a nationally representative sample, we demonstrate that personality traits associated with an open orientation toward the world (e.g., dispositional curiosity, openness to experience) predict less information avoidance. Next, we discuss two studies that demonstrate that personality traits associated with better internal coping resources (e.g., optimism, self-esteem, emotional stability) are associated with less health information avoidance. Throughout the talk, we will also highlight personality predictors that do not predict health information avoidance (e.g., extraversion, agreeableness, and intolerance of uncertainty). Discussion centers around identifying people whose personality profiles indicate they are particularly prone to health information avoidance, and on possible tailored interventions to reduce problematic health information avoidance.

Symposium 81 8:30 AM-9:45 AM

NON-PHARMACOLOGICAL APPROACHES TO MANAGEMENT OF CHRONIC MUSCULOSKELETAL PAIN AMONG VETERANS

Robert D. Kerns, PhD[1], Eve E. Reider, Ph.D.[2], Erin E. Krebs, MD, MPH[3], Rollin Mac. Gallagher, MD, MPH[4], Ranjana Banerjea, PhD[5]

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Chronic pain and prescription opioid abuse and harms have been recognized by the Department of Health and Human Services (HHS) and the Centers for Disease Control and Prevention (CDC) as public health crises. Both HHS and CDC have encouraged greater access to evidence-based non-pharmacological approaches to chronic pain management as alternatives to long term opioid therapy, The Department of Veterans Affairs (VA) in collaboration with the Department of Defense (DOD) and the National Institutes of Health (NIH) have established a partnership that includes funding research to develop and test as well as adapt efficacious interventions for military and veteran populations who have problems with pain and comorbid conditions. Objectives are to promote equitable and timely access to these approaches that have existing evidence to support their effectiveness and to promote research to address gaps in scientific knowledge. Dr. Robert Kerns, health services investigator and advocate for improved pain care for veterans, will introduce the symposium and provide a brief background as context for three presentations and discussion. Dr. Eve Reider, a Health Scientist Administrator at the National Center for Complementary and Integrative Health, National Institutes of Health (NIH), will describe a joint 2014 NIH-VA funding initiative and provide a brief overview of early findings from 13 funded projects addressing this topic. Dr. Erin Krebs, a VA health services investigator will review the recommendations from a VA sponsored State-Of-The-Art Conference on this topic held in November 2016. Recommendations related to four categories of non-pharmacological approaches will be presented: Behavioral/psychological/ mind-body, exercise/movement, manual therapies, and model of care. Dr. Rollin Gallagher, VA National Director for Pain Management, will describe ongoing practice and policy initiatives designed to promote evidence-based, integrated, multimodal and interdisciplinary chronic pain management for military service members and veterans. VA's Opioid Safety Initiative, Joint Pain Education Project, and Acupuncture Training Across Clinical Settings initiatives will be highlighted. Dr. Ranjana Banerjea, Scientific Program Manager for VA's Health Services Research and

Development Service, will discuss the implications of these initiatives and describe opportunities for continued research in this area.

Symposium 81A

A JOINT NIH-VA COLLABORATION ON NON-PHARMACOLOGICAL APPROACHES TO PAIN MANAGEMENT N U.S. MILITARY AND VETERAN POPULATIONS

Dr. Eve E. Reider, Ph.D.

Since 2001, more than 2.5 million U.S. troops have been deployed for Operation New Dawn, Operations Enduring Freedom (OEF) in Afghanistan, and Iraqi Freedom (OIF) in Iraq. Many service members returning from these operations experienced pain and related comorbidities (e.g., mental health, substance abuse, sleep, etc.). Studies report approximately 45-50% of soldiers and veterans experience pain on a regular basis and there is significant overlap between chronic pain and co-morbid conditions. In addition, there is an incomplete evidence base for effective pain management. Opioid medications are often prescribed for the treatment of chronic pain, but chronic use is associated with the potential for misuse, abuse, and dependence and sometimes fails to adequately control pain. As a result, there is a need for non-pharmacological approaches, which may complement pharmacological strategies, for pain management and to reduce the needs and hazards of excessive reliance on opioids.

The National Institutes of Health (NIH), Department of Defense (DoD), and Veterans Administration (VA) have been working individually and collaboratively to develop and improve pain management approaches for military personnel, veterans and their families by adopting changes in clinical protocols and implementing research initiatives. In 2014 a joint NIH-VA funding initiative took place that included the National Center for Complementary and Integrative Health (NCCIH), the National Institute on Drug Abuse (NIDA) and the VA Health Services Research and Development (HSR&D) Division. Thirteen research projects totaling approximately $21.7 million over five years were funded to enhance non-pharmacological approaches to managing pain and co-morbid conditions in U.S. military personnel, veterans and their Families. Projects funded included pilot/feasibility, efficacy/effectiveness, and health care services studies. This presentation will provide an overview of the studies funded from this initiative as well some early findings that are available from this initiative.

Symposium 81B

VA STATE OF THE ART (SOTA) CONFERENCE ON NON-PHARMACOLOGICAL APPROACHES TO CHRONIC MUSCULOSKELETAL PAIN MANAGEMENT

Dr. Erin E. Krebs, MD, MPH

Chronic pain is an important public health problem that has long been a major cause of disability in the US. In recent years, an emerging epidemic of opioid-related harms—triggered by decades of increased opioid analgesic prescribing—has added substantially to the public health burden of chronic pain. To address these dual challenges, a transformation in the approach to chronic pain care is needed. The National Pain Strategy envisions this transformed approach as involving integrated, multimodal care that meets patients' biopsychosocial needs. Achieving this new standard of pain care will require greater access to evidence-based non-pharmacological therapies.

At an October 2015 White House summit on the opioid epidemic, the Department of Veterans Affairs (VA) committed to lead a research initiative evaluating non-opioid alternative approaches to pain management. Toward this end, the VA Health Services Research and Development service is organizing a State of the Art (SOTA) conference focused on non-pharmacological approaches to chronic musculoskeletal pain management, including complementary, conventional, and integrative therapies. The SOTA conference will be held in November 2016 and will generate both consensus recommendations and peer-reviewed publications. The three main goals are as follow: 1) to synthesize existing evidence and evidence gaps related to non-pharmacological approaches, including psychological/behavioral therapies, exercise/movement therapies, manual therapies, and models for delivery of multi-modal pain care; 2) to identify promising non-pharmacological approaches that may be ready for wider dissemination and implementation in VA and non-VA settings; and 3) to identify a research agenda that can lead to increasing use of evidence-based non-pharmacological approaches for the benefit of chronic musculoskeletal pain management. This presentation will include a discussion of SOTA processes and products, including recommendations for implementation and research priorities related to non-pharmacological pain care approaches.

Symposium 81C

IMPLEMENTING NON-PHARMACOLOGIC PAIN CARE IN THE STEPPED CARE MODEL IN THE DEPARTMENTS OF VETERAN AFFAIRS AND DEFENSE

Dr. Rollin Mac. Gallagher, MD, MPH

The large number of older Veterans (>50%) with disabling chonic pain conditions and pain-related co-morbidities and the even higher rates in Veterans from recent wars (>60%), has prompted the Department of Veteran Affairs, working closely with the Department of Defense, to engage in an almost decade-long multi-pronged population-based program to implement a multi-modal Stepped Care Model of pain management across our health systems. The urgency of this transformational effort is heightened by data demonstrating the dangers of over-reliance on opioid analgesics for pain care, and has encouraged the development of team-based, multi-modal care with a specific focus on engaging the Veteran in a developing self-management as a foundation of effective Stepped Care. This presentation will outline five core domains in our strategic approach to implementing system-wide access to evidence-based stepped integrative, physical, and psychological therapies for pain and measuring the quality of that care. First, system-wide training programs for clinical teams and specific professionals on those teams, including cased-based virtual SCAN ECHO training, the Mini-residency, the Joint Pain Education Project(JPEP) for training primary care teams and providers, the Tiered Acupuncture Training Across Clinical Settings (ATACS) program, the Pain Psychology Training program, and the Nurse Resource Program. Second, comprehensive patient/family education programs to empower Veterans in learning pain self-management, including pain schools and education websites with interactive learning programs and videos . Third communication tools and resources to support the pain management strategy in both training and clinical care, including those that directly address the need for safe opioid prescribing such as the academic detailing approach(measure, monitor, feedback, train) in the Opioid Safety Initiative to changing practice, the use of electronic medical tools such as OTRR and STORM to support safe prescribing, and the use of process improvement tools such as the Patient Aligned Clinical Team (PACT) Pain Roadmap. Fourth, strengthened communication amongst pain leadership in VHA's Central Office (VHACO), Veterans Integrated Service Networks (VISN), and Veterans Affairs Medical Centers (VAMC) to assure dissemination of strong practices and implementation of strategies to standardize and measure care quality. Fifth, implementation of standardize pain care between the Department of Defense (DoD) and VHA health systems and facilitation of effective transitions of care from DoD to VHA. The presenter will discuss challenges in implementation and in measuring outcomes to foster change.

Symposium 82 8:30 AM-9:45 AM

THE ROLE OF FATHERS IN SUPPORTING CHILD HEALTH BEHAVIORS

Deirdre Dlugonski, PhD[1], Kirsten Davison, PhD[2], Elena Jansen, PhD[3], Emily L. Mailey, PhD[4]

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This symposium addresses the role of fathers in supporting physical activity, healthy eating, and obesity prevention among children. It is well-established that parents play an important role in the uptake of health behaviors among children. Yet, the majority of research studies focus primarily on the behaviors and beliefs of mothers, rather than fathers, for understanding and promoting child health behaviors. Thus, the overall goals of this symposium are to: quantify the inclusion of fathers compared to mothers in childhood obesity prevention interventions; provide evidence for the shared behavioral patterns of fathers and young children; and describe opportunities and challenges related to engaging fathers in health behavior research. The first presenter will describe results of a systematic literature review and quantitative content analysis of the representation of fathers in family based interventions targeting childhood obesity prevention. The second presenter will describe the physical activity patterns of father-young child dyads. The final presenter will share data from multiple studies on factors associated with recruitment and engagement of fathers within childhood nutrition research. After this symposium, attendees will have a better understanding of the role of fathers in the promotion of child health behaviors.

Symposium 82A

PHYSICAL ACTIVITY PATTERNS AMONG FATHER-YOUNG CHILD DYADS

Dr. Deirdre Dlugonski, PhD

Approximately 50% of preschool aged children are not meeting physical activity guidelines. Parents can serve as role models for child health behaviors, but evidence for the relationship between parent and child physical activity is mixed. Role modeling is most effective when the parent and child engage in the behavior together (shared physical activity). As such, shared physical activity might be more strongly associated with child physical activity than parental physical activity. No previous studies have examined shared physical activity among parent-young child dyads using an objective measure of physical activity and most studies have focused on mothers rather than fathers.

The aims of this study were to: describe patterns of shared physical activity among father-child dyads and examine the associations among shared physical activity, father physical activity, and child physical activity. Participants (*N* = 52; 26 father-child dyads) in this cross-sectional study made two visits to a research lab. Visit 1 included a demographic survey, height and weight measurement, and instructions for wearing a Bluetooth enabled accelerometer. Fathers and children were asked to wear the accelerometer on their right hip during waking hours for 8 days. The accelerometers produced individual physical activity data and a proximity file with a minute-by-minute analysis of whether or not the parent and child were in proximity. Individual data files were overlaid with proximity data and processed to yield shared physical activity. During visit 2, fathers returned the accelerometers.

Fathers and children engaged in an average of 40.5 ± 24.3 and 56.7 ± 21.2 minutes of daily moderate to vigorous physical activity (MVPA), respectively. Father-child dyads spent 107.1 ± 51.8 minutes in daily shared time. Shared minutes were primarily spent in shared sedentary activities (36%) and shared light activities (25%). Less than 1% of shared minutes were spent in shared MVPA. The relationships between child physical activity with shared and father physical activity were not statistically significant. The magnitude of the relationship between shared physical activity and child MVPA ($r = .28$, $p = .19$) was stronger than the relationship between father MVPA and child MVPA ($r = -.16$, $p = .47$). This suggests that child physical activity might be more strongly associated with father-child shared physical activity participation rather than a father's physical activity level.

These data provide an initial description of shared patterns of physical activity between father-young child dyads using a novel application of accelerometers that will inform future efforts to understand and promote physical activity within family contexts..

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Symposium 82B

THE FORGOTTEN PARENT: FATHERS MAKE UP ONLY 6% OF PARENT PARTICIPANTS IN FAMILY-BASED CHILDHOOD OBESITY INTERVENTIONS SINCE 2008

Kirsten Davison, PhD

It has been suggested that child health research disproportionately focuses on mothers which may hinder the design of family-based interventions. In this study, we used rigorous, systematic methods to quantify the inclusion of fathers, relative to mothers, in family-based childhood obesity interventions published since 2008. We conducted a systematic review and quantitative content analysis of the literature using methods consistent with PRISMA (Preferred Reporting Items for Systems Reviews and Meta-Analyses) guidelines. Eligible articles included original studies reporting the results of family-based interventions for childhood obesity control and prevention published in English between January 1st, 2008 and July 31st, 2015. “Family-based” was defined as active and repeated involvement by parents or legal caregivers. Articles were excluded where parent/caregiver involvement was passive (eg. educational brochure sent home to parents) and only children were included as research participants. Two trained coders used a standardized coding scheme to record parent (e.g., number of fathers and mothers, parent race/ethnicity) and intervention (eg. setting, intervention length, attrition rate, child age) characteristics for all eligible interventions. Differences in parent and intervention characteristics for studies that did and did not include fathers were tested using chi-square analysis. Seventy nine eligible interventions were identified. Twenty nine (37%) interventions included only mothers, 27 (34%) included mothers and fathers, and 1 included only fathers (1%); parent gender was not reported for 22 (28%) interventions. Of the interventions that included fathers (N=28), the majority (N=14, 52%) included 10 or fewer fathers. The estimated number of participating fathers across all interventions was 880; the comparable figure for mothers was 12,980. There is no evidence that interventions that included fathers varied systematically in intervention design or participant demographics (beyond gender) compared to interventions that did not include fathers. In summary, only 6% of all parent participants in family-based childhood obesity interventions published since 2008 were fathers. This study is a call to action for increased inclusion of fathers in childhood obesity interventions.

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Symposium 82C

ENGAGING FATHERS IN CHILD NUTRITION RESEARCH

Dr. Elena Jansen, PhD

Parents’ feeding practices influence development of children’s eating behaviour and growth trajectory. The nature and impact of feeding practices may differ between mothers and fathers. Studies examining the role of fathers in child feeding are relatively scarce, however, and recruitment to and engagement of fathers in child feeding research is a challenge.

This presentation draws on evidence from three Australian early childhood nutrition research projects related to identifying factors associated with recruitment and engagement of fathers. First, 436 fathers of 2-5 year old children were recruited via a university email list and two community-based family research cohorts. Fathers reported their confidence and knowledge of healthy eating, willingness to participate in healthy eating programs, with focus on type and mode of delivery. Second, 28 fathers of 0-12 year old children participated in focus groups conducted at their workplace and, amongst other themes, discussed their view on using their workplace as point of contact for nutrition interventions. Third, 195 mother-father pairs of 2-5 year old children were recruited in a socioeconomically disadvantaged community. A variety of engagement methods and choice of incentives were examined to determine uptake and identify the most successful strategies for engagement and recruitment of hard-to-reach families and pairs in particular.

Analyses examined five key issues in engagement of fathers in nutrition research: 1) fathers' interest in research and intervention participation, 2) fathers' preferences for recruitment strategies, 3) feasibility and acceptability for recruitment at the workplace, 4) role of incentives, and 5) recruitment of mother-father pairs.

Our results indicate that recruitment and engagement of fathers in child nutrition research may require modification to methodologies applied in “mother only” samples. Experience from these three research projects will inform father-focused recruitment strategies and intervention delivery which will help delineate and foster the father-specific impact on child health.

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Symposium 83 8:30 AM-9:45 AM

YOUTH IN FOSTER CARE: UNDERSTANDING AND INTERVENING UPON EARLY LIFE ADVERSITY

Rebeccah L. Sokol, B.S. [1], Kym Ahrens, MD/MPH[2], Jennifer Blakeslee, PhD, MSW[3], Susan Spieker, PhD[4], William D. Tynan, Jr., PhD, ABPP[5]

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In the United States, over a half-million youth are in foster care. A myriad of circumstances cause youth to enter state care, but these situations broadly entail exposure to maltreatment and family instability. Such early life exposures are risk factors for negative outcomes across multiple domains, including poor mental and physical health. Experiences of abuse, neglect, or household disruption increase the risks of future alcoholism, drug abuse, depression, sexually transmitted diseases, severe obesity, and other negative health consequences by as much as twelve-fold—yet youth in foster care remain underserved by health promotion programs.

This symposium provides an overview of the relationships between adverse experiences and subsequent health for youth in or transitioning out of foster care, and it also details specific intervention strategies that have exhibited success in improving health in this population. The format of the symposium follows the early life course, starting with infancy and concluding with young adults transitioning out of care. Dr. Susan Spieker begins with describing an intervention program (and its associated randomized controlled trials) that teaches caregivers how to be responsive to the unique needs of toddlers with child welfare involvement in order to alleviate the burden that early maltreatment has on physical and mental health problems. This transitions to Dr. Jennifer Blakeslee's presentation, where she details various intervention models that are aimed at improving psychosocial and socio-emotional development for youth both in and transitioning out of foster care. The symposium concludes with Dr. Kym Ahrens providing an evaluation of the health risks that youth in foster care face, with an emphasis on reproductive health. Dr. Ahrens closes with discussing specific strategies that could be employed by practitioners and policymakers to disrupt these risks.

Symposium 83A

UNDERSTANDING AND REDUCING PHYSICAL AND REPRODUCTIVE HEALTH RISKS AMONG TRANSITION AGE YOUTH IN FOSTER CARE

Kym Ahrens, MD/MPH

Foster youth are an understudied population with high rates of chronic/untreated health conditions both upon entrance into and while in foster care. Consequently, in 2009 the Institute of Medicine highlighted them as a priority population for federally funded research.

There are many reasons to expect that former foster youth may be vulnerable to similarly increased rates of chronic health problems once they transition to adulthood. They are frequently exposed to poverty as well as many other adverse childhood experiences including abuse, neglect, domestic violence, parental substance use, and many undergo frequent placement and school changes while in foster care. Several theories exist regarding the effects of chronic and early exposures to adversity, all of which suggest that the more stressors to which one is exposed, the higher the likelihood of a chronic physical or mental health condition later in life. However, few studies have focused on understanding health risks in young adulthood for this group. One exception to this is reproductive health. We know that, compared with youth in the general population, youth who have been in foster care have 2-4 times the risk of teen pregnancy as well as 2-14 times the risk of several sexually transmitted infections (STIs).

In my presentation, I will review findings from several studies in which my collaborators and I and other investigators have evaluated physical and reproductive health risks during the transition to adulthood for youth who emancipate from foster care. I will also review research my collaborators and I have conducted to better understand the cumulative effects of historical and current risk and protective factors influencing these outcomes. My presentation will include data on a variety of health conditions, with an emphasis on reproductive health outcomes. Finally, I will discuss potential strategies relevant to practitioners and policymakers, which could be used to disrupt negative health trajectories and mitigate health risks for youth in foster care.

Symposium 83B

DEVELOPING INTERVENTION MODELS TO BETTER ADDRESS FOSTER YOUTH WELL-BEING NEEDS

Jennifer Blakeslee, PhD, MSW

Research shows that many young people who age out of the child welfare system experience poor outcomes during the transition from foster care, and multiple studies identify a large subgroup characterized by limited service engagement and/or minimal social support who experience higher rates of mental health challenges, delinquency, and substance abuse. Accordingly, there is growing interest in developing services that better address aspects of foster youth well-being in a system where policy and funding are geared towards child protection. In general, existing approaches do not adequately attend to socio-emotional development for youth in care which likely contributes to poor outcomes in early adulthood.

I will discuss intervention models that demonstrate effectiveness in improving foster youth wellbeing by focusing on psychosocial skills and socio-emotional development. One approach uses weekly curriculum-based coaching to increase youth self-determination, and this model has been adapted and tested with foster youth in high school, foster youth experiencing a disability (physical, emotional/behavioral, or intellectual), and undergraduate foster youth experiencing mental health challenges. This model improves transition readiness, increases college enrollment and retention, and reduces criminal justice involvement in young adulthood, all of which are broadly associated with better-functioning subgroups of foster youth.

Additionally, I am currently developing an intervention model to enhance foster youth support networks. This model uses practice strategies identified as acceptable and feasible by youth and service providers to increase service engagement and mobilize informal networks and natural supports. This approach is grounded in systematic support network assessment methods that are linked to practice strategies intended to counter the impact of ongoing social network disruption related to child welfare system involvement. I will discuss how these two intervention approaches—relationship-based curriculum delivery and strategic network enhancement—may be combined to improve youth psychosocial and socio-emotional development in preparation for the transition from foster care.

Symposium 83C

PROMOTING FIRST RELATIONSHIPS®: INTERVENING WITH CAREGIVERS OF INFANTS AND TODDLERS IN FOSTER CARE OR AT RISK OF REMOVAL

Susan Spieker, PhD

Infants and toddlers are a growing population in child welfare and foster care. The obvious vulnerability of infants and toddlers, and the fact that critical aspects of brain development occur in the contexts of attachment relationships in the first 3 years of life, necessitate a preventative approach that supports caregiving relationships. This is the primary aim of the *Promoting First Relationships® (PFR)* program. PFR is a manualized, relationship-based, strengths-based, 10-week home visiting program with video feedback techniques.

PFR helps caregivers be sensitive and responsive to the unique needs and challenges of caring for toddlers and young children with child welfare involvement. Infants in foster care must develop a new attachment relationship with each placement. Children grieve when attachment relationships are disrupted, even when they receive excellent care in their new home. Infants younger than 12 months tend to seek comfort and closeness from new attachment figures within a week of placement, but toddlers do not readily seek out new attachment figures, and may be inconsolable or push them away. The process of attachment formation in toddlers and older children is complicated by these difficult child behaviors, which may be further exacerbated if there are serial placements resulting in multiple caregiver changes. These events can compound the effects of early maltreatment and lead to physical and mental health problems. However, caregiver sensitivity and understanding of the meaning of the child's behavior is associated with child attachment security, even for older toddlers and preschoolers with a child welfare history.

This presentation has two parts. The first part includes descriptions of the active elements of PFR, methods that have been effective for training and ensuring fidelity by community service providers, and current adaptations of PFR for primary care providers during the first 3 years of life. The second part presents an overview of results from two randomized control trials of *PFR* involving about 450 toddlers in child welfare and their caregivers. The studies address the need for parenting services that are suitable for community delivery systems, have a training mechanism accessible to service providers, are brief enough to keep families engaged, and are effective.

Symposium 84 8:30 AM-9:45 AM

PASSIVE SENSING OF EATING BEHAVIORS: CURRENT STATE OF THE ART AND IMPLICATIONS FOR BEHAVIORAL MEDICINE RESEARCH

Nabil Alshurafa, PhD[1], Angela Fidler Pfammatter, PhD[2], Edward Sazonov, PhD[3], Bonnie Spring, PhD[1]

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Eating behaviors contribute to a variety of health outcomes such as cardiovascular disease, diabetes, obesity, and cancer. To date, the vast majority of behavioral medicine research has relied on measurements of eating that are inherently flawed. Daily self-monitoring is often burdensome, incomplete, and inaccurate. 24 hour recalls, considered the gold standard in dietary intake assessment, is burdensome, often limited in accuracy, and only captures a snapshot in time of what was consumed. Further, using today’s technology, behavioral scientists are increasingly able to intervene on individuals just-in-time, when the person most needs or would most benefit from support. However, with both popular methods of dietary intake, the measures are retrospective and not assessed while eating is occurring, limiting the potential of using just in time interventions. Other behaviors such as physical activity have benefitted from passive sensing technologies to overcome this barrier. Passive sensing, detection, and prediction of eating has the potential to decrease biased reports of eating, gather real time information about eating, and predict problematic eating behaviors. In this symposium, we seek to review the state of the science of passive sensing of eating in the first presentation. We will then move on to discuss the “guts” of how detection and prediction of eating works along with privacy, stigma, and user-comfort of wearable sensors. In our third presentation, we will illustrate a package of real time sensing and the potential for intervention. Finally, we will review the implications of moving this aspect of science forward as it pertains to prevention and treatment of problematic eating.

Symposium 84A

FROM LAB TO FIELD: EATING DETECTION MACHINE LEARNING MODELS, PRIVACY, STIGMA AND USER-COMFORT OF WEARABLES

Prof. Nabil Alshurafa, PhD

Wearable sensors combined with computer science machine learning methods have given rise to passive sensing, making it feasible to validly infer in real time physical features of psychological states, such as stress, and appetitive behaviors, such as overeating. The advantage of these real time passive sensing capabilities is their ability to use machine learning models to measure objectively (minimizing self-report bias), precisely (with high sensitivity and specificity), passively (without burden or disruption), and dynamically (detecting rapidly changing states). However, to succeed in passively sensing, people must be willing to wear them, and sensing algorithms must be able to sense eating in the real world. Despite the continuous growth in the wearable market, adherence continues to be impacted by concerns of user privacy, social stigma associated with wearing eating-detection based sensors, and user-comfort. Understanding these concerns will help the wearable community and researchers ultimately improve our ability to design wearables that mitigate these effects, increasing adherence to passive sensing and ultimately paving the way towards personalized behavioral medicine. This talk will present the process of building machine learning models to detect eating both in-lab and in the field. A study will also be presented aimed at understanding the factors that influence adherence to wearing sensors used to detect eating-habits including a wrist-worn, neck-worn sensor and a camera to validate ground truth in different environments and situations.

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Symposium 84B

LEVERAGING PASSIVE SENSING FOR JUST IN TIME ADAPTIVE INTERVENTIONS ON EATING

Dr. Angela Fidler Pfammatter, PhD

Current technologies are moving closer to realizing passive sensing of eating. Leveraging these technologies will be a new frontier for behavioral medicine and could be used to deploy just in time adaptive interventions (JITAIs). However, computer and behavioral scientists must work in tandem to actualize the potential. Specifically, types of eating and temporality must be specified when sensing, particularly in real time, as part of an intervention decision rule. An ongoing trial, Sense2Stop, will be presented as a case study in developing a JITAI using passive sensing to intervene on smoking behaviors given sensing of stress. Elements of the project such as the sensing capabilities, algorithm development, and decision rules for intervention will be presented. Lessons learned will be highlighted and a proposal for moving forward and generalizing to other sensing technologies elucidated. Paramount to this work, a strategy for working alongside computer scientists will be discussed. Primary questions around eating sensing including discovery of context and factors that contribute to typical and problematic eating behaviors must be explored prior to intervention development. Once these factors and contexts are identified, they may be used within decision rules to deploy JITAIs. Finally, examples of microrandomized trials to optimize JITAIs in eating behaviors will be presented.

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Symposium 84C

WEARABLE SENSORS FOR DETECTION AND CHARACTERIZATION OF FOOD INTAKE

Dr. Edward Sazonov, PhD

Food intake provides energy and nutrients to sustain human life. Studying the ingestive behavior of individuals is of particular interest for understanding and treatment of medical conditions strongly associated with food intake, such as obesity and eating disorders. Traditionally, ingestive behavior in humans has been assessed through self-monitoring of food intake. However, this approach is time-consuming and suffers from the observation and misreporting effects. Wearable sensors present a compelling alternative to overcome the limitations of self-reporting methods. These sensors can potentially provide more objective measurements of food intake by monitoring behavioral and physiological phenomena related to one or more stages of the food consumption process: hand-to-mouth gestures, bites, chewing or swallowing. Specialized signal processing and pattern recognition methodologies applied to the sensor signals are used to automatically detect and characterize each intake episode. Timing, duration of the meals, the mass and volume, caloric and nutritional content of ingested food, and the rate of ingestion could potentially be estimated from sensor data. Furthermore, the sensor-derived measurements of ingestive behavior may inform tailored, real-time interventions aimed at modification of food intake. This talk presents an overview of the wearable sensors and accompanying methodologies that have been proposed for monitoring and modifying ingestive behavior in humans.

Saturday

April 1, 2017

10:00 AM-11:00 AM

10:00 AM-11:00 AM

HEALTH LITERACY AND DISEASE SELF-MANAGEMENT IN OLDER COPD PATIENTS: WHEN SOCIAL SUPPORT IS NOT SUFFICIENT

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Background

Although the importance of social support to health outcomes is well established, its role as a moderator of the effect of health literacy (HL) on medication adherence in patients with chronic disease has yet to be explored. An investigation of this pathway would further understanding of the mechanisms through which social support modifies health behaviors among patients with chronic illness. We predicted that the negative effect of inadequate HL on self-management in a population with Chronic Obstructive Pulmonary Disease (COPD) would be mitigated by caregiver support. Moreover, we expected that caregivers with adequate HL would have greater impact on patient medication adherence than those whose caregiver had inadequate HL.

Methods

We enrolled 400 community-dwelling individuals who were ≥55 years of age, had a diagnosis of moderate to severe COPD made by a health care provider, and spoke English or Spanish over a 2-year period. We excluded patients with asthma or other chronic respiratory illness, dementia, or other neurological and psychological conditions. Participant HL was assessed through the Short Test of Health Literacy in Adults (S-TOFHLA), and caregiver presence was based on patient self-report. STOFHLA scores (scale 0-36) were dichotomized as adequate (≥23) or inadequate/marginal (< 23). Adherence to COPD medications was measured with the Medication Adherence Reporting Scale (MARS) and categorized as low (< 4.5) vs. adequate (≥4.5). We used logistic regression to test the relationship between HL and adherence; the model included an interaction term between HL and caregiver presence to test for moderation. We also examined a subset of patients with caregivers (N=97 dyads).

Results

Our sample included 342 patients, 47% of whom reported having an informal or formal caregiver. Of the patients, 61% had inadequate HL, and 17% of caregivers had inadequate HL. Patients with inadequate HL had significantly higher odds of poor medication adherence (OR=2.48, CI: 1.47-4.19). Contrary to our hypothesis, the presence of an informal caregiver did not attenuate the negative impact of low HL (p>.05). Among patients with caregivers, inadequate HL was again associated with higher odds of poor medication adherence (OR:3.5, 95%CI: 1.4-8.8). This relationship remained significant with the inclusion of caregiver HL, however the interaction term of caregiver HL did not significantly contribute to medication adherence.

Conclusions

Low HL among patients with moderate with severe COPD is associated with lower medication adherence. However, social support from caregivers does not appear to attenuate the negative impact of low HL on patient’s self-management, regardless of the caregivers’ HL level. These findings suggest that interventions to improve adherence to COPD medications are specially needed for low literacy patients, even those with adequate caregiver support.

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10:00 AM-11:00 AM

DOES SELF-WEIGHING AFFECT MOOD? FOR WHOM?

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Abstract

Frequent self-weighing may prevent weight gain in young adults, but concerning psychological correlates of self-weighing have been documented. Self-weighing may impact mood, which may mediate relationships with adverse psychological outcomes (e.g. self-esteem, depressive symptoms). Individuals more likely to be concerned with shape and weight (e.g. females; those who are overweight or obese; those having experienced an eating disorder (ED)) may be at heightened risk for self-weighing impacting their mood. This study assesses whether the frequency of self-weighing is related to mood and if this relationship differs by gender and lifetime presence/absence of an ED.

Methods

Young adult (ages 25-36) respondents to Project EAT-IV (n = 1830) reported self-weighing frequency and whether viewing their weight affects their mood. Mean weekly self-weighing frequencies and proportions of participants reporting an effect on mood were compared across gender, overweight status, and presence/absence of lifetime ED diagnosis. The association of self-weighing frequency with likelihood of effect on mood was assessed using linear regression adjusting for gender, report of eating disorder, BMI, age, race, education and income, and including interactions of weighing frequency with gender and ED.

Results

Respondents reporting ED reported higher self-weighing frequency (3.1 times/week) than respondents who had recovered from an ED (2.0 times/week) or never had an ED (1.5 times/week, $p = 0.03$). Female and overweight respondents and respondents who reported ED were more likely to report that self-weighing affected their mood compared to male, non-overweight participants, and those who never had an ED (all $p < 0.001$). Frequency of self-weighing was associated with higher likelihood of reporting that self-weighing affects mood ($p < 0.0001$).

Conclusions

These data suggest that female participants, those who are overweight, and those with history of an ED may be more emotionally impacted by self-weighing. The probability of self-weighing affecting mood significantly increased with each additional self-weighing occurrence per week. Given the rates of overweight and obesity in young adults, and the promise of self-weighing to facilitate weight control, but potential effects on mental health, it is imperative to consider individual characteristics and exercise caution when recommending self-weighing as a weight control strategy.

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D001 10:00 AM-11:00 AM

EXAMINING FAITH AS A MEDIATOR OF MOTIVATION FOR DIET AND PHYSICAL ACTIVITY AMONG AFRICAN AMERICAN WOMEN

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African American (AA) women have the highest prevalence of overweight and obesity in the U.S. and suffer disproportionately from chronic diseases. These conditions are primarily preventable through behavioral lifestyle changes, however interventions with AA women have been less effective than in other populations. Due to the importance of faith among AA women, a popular way to address obesity has been through faith-adapted or faith-based interventions. However, little is known about *how* these adaptations influence outcomes. In this study, possible mediating effects of motivation on the relationship between religiosity (measured by spiritual health locus of control (SHLOC)) and weight loss behaviors were examined.

Baseline data from AA female participants in the NIH-funded Better Me Within program (N= 158) were collected through surveys from January 2014 to March 2015. Mean age was 48.9 years (SD 11.7) and participants were overweight or obese with mean body mass index (BMI) of 38.2 (SD 9.7), and waist circumference of 43.0 inches (SD 5.9). Two linear regression models were run to examine motivation for diet and motivation for physical activity. Since motivation for diet and physical activity were closely correlated ($r = 0.67$, $p < 0.0001$) both variables were included in each model and stratified to examine participants with high motivation versus low motivation. In the diet model, among women with low motivation for physical activity, active SHLOC (e.g., belief that God is a partner in health empowering a person to take care of him/herself) was the primary predictor of motivation for diet ($p < .05$); while in women with high motivation for physical activity, self-efficacy predicted motivation for diet ($p < 0.001$). In the physical activity model, among women with both high and low motivation for diet, self-efficacy for exercise, not SHLOC, was the primary predictor of motivation for physical activity ($p = 0.01$).

By incorporating scripture and other faith elements that support an active SHLOC, faith may serve as a change agent to increase motivation to eat healthy. Faith-based programs may need to focus faith elements on the connections between faith, health and food in addition to self-efficacy to enhance motivation for diet. Research focused on defining and measuring specific constructs within faith-based programs is needed to understand their impact on obesity-related outcomes.

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D002 10:00 AM-11:00 AM

EXERCISE INTENTIONS MODERATE THE EFFECTS OF IMPLEMENTATION INTENTION INTERVENTIONS FOR PHYSICAL ACTIVITY

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Background: Implementation intentions (IIs) are plans made in the form of “if-then” contingencies and have been shown to be effective in promoting physical activity (Gollwitzer & Sheeran, 2006). However, IIs are not equally effective for all people. Recent research indicates that exercise intentions and plan quality may moderate II effectiveness. The present study examined whether pairing II interventions with a novel online plan quality training module promotes greater physical activity than a traditional II intervention or control activity, and whether the intervention effects are moderated by baseline exercise intentions. Method: 166 undergraduates (69.5% female, 69.3% non-Hispanic white, mean age = 19.9) completed baseline questionnaires and were randomly assigned to complete a traditional II intervention, a training-enhanced II intervention, or an information-only control activity at the end of the lab session. Participants self-reported physical activity one- and two- weeks later. Results: Controlling for baseline physical activity, intentions, and time, a bootstrapped generalized estimating equation revealed no main effect of either intervention on subsequent physical activity compared to the control condition (p’s > .10). However, there was a significant interaction between exercise intentions and conditions (II: b = .34, p = .006; II+T: b = .42, p = .001), such that both II interventions led to significantly greater physical activity than the control condition among participants with high intentions, but led to significantly less physical activity than the control condition among participants with low intentions. There were no significant differences in the simple slopes of intentions and physical activity between the two intervention conditions. Conclusions: Both II interventions were effective for individuals with high exercise intentions, but backfired for those with low intentions. Additionally, the enhanced II intervention had no effect beyond the traditional II intervention on self-reported physical activity. Potential explanatory factors, such as changes in plan quality, and memory for plans will be discussed. While implementation intentions offer great promise as time-and cost-effective interventions for physical activity, providers should account for existing exercise intention levels of II intervention recipients.

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D003 10:00 AM-11:00 AM

FACTORS ASSOCIATED WITH DIETARY DECISION MAKING IN PATIENTS WITH TYPE 2 DIABETES AND CHRONIC KIDNEY DISEASE IN A BEHAVIORAL TRIAL

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Purpose

Patients with type 2 diabetes (T2D) often are encouraged to make dietary changes. Yet, little is known about the extent to which they make autonomous dietary decisions or associated factors. In this report, we 1) describe participants' involvement in dietary decisions regarding food purchase and preparation, and 2) examine associations of dietary decision making autonomy with sociodemographics and self-efficacy.

Methods

Participants were asked to describe their involvement in: 1) choosing or buying food brought to their homes, and 2) making their meals and snacks. Scores for each question ranged from 0% (none) to 100% (all of the time), and were averaged to yield an autonomy score. The Weight Efficacy Lifestyle survey was used to assess self-efficacy to lose weight. Linear regression modeling was used to examine each factor separately and only those significant in univariate models were entered in the multivariate model to examine joint effect.

Results

The sample (N=76) was mostly white (80.3%), male (60.5%), currently or living as married (56.6%) with a mean age of 66.1 (SD=8.0) and BMI of 32.5 (SD=4.2) kg/m^2. Participants reported a mean autonomy score of 77.2% (SD=27.8%). In the univariate models, there were no differences due to age, race, education, income, number of comorbidities, employment status, and self-efficacy, except gender, marital status and BMI. When entering these 3 factors into a multivariate model, only marital status ($p < .001$) and BMI ($p=.048$) remained significant. More specifically, decision-making autonomy decreased by 1.4% for each unit decrease in BMI and those who were or living as married scored 22.1% lower than those who were not.

Conclusions

Participants who had a lower BMI, and were or living as married, had less dietary decision-making autonomy. Engaging those with low dietary decision-making autonomy may be important for lifestyle interventions involving dietary behavior change, but requires further study.

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D004 10:00 AM-11:00 AM

HOW ASSESSMENT MODALITIES AFFECT THE ENDORSEMENT RATE OF SKIN SELF-EXAMINATION FOR EARLY SIGNS OF MELANOMA

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Background: E*arly detection* and melanoma removal are the *most effective methods to decrease melanoma-related mortality and* the majority of melanomas are self-detected. Regular skin self-examination (SSE) for early signs of subsequent melanomas is recommended worldwide by clinical guidelines as essential part of melanoma follow-up care. A systematic review in preparation (Coroiu et al., also submitted for presentation at SBM meeting) identified 14 randomized controlled trials testing psycho-educational interventions to improve SSE practice in individuals at increased risk for melanoma. It was found that the operationalization of SSE varies widely across studies. As a follow up, the current study examines how different assessment modalities may result in different endorsement rates of SSE behaviors among melanoma survivors. Further, our study examines how predictors of SSE behavior may change depending on the operationalization of SSE.

Methods: Our longitudinal study enrolled 242 melanoma survivors (M_{age} 59 years, 49% female). SSE was assessed with a 1-item measure commonly used in melanoma research and by inquiring about the frequency of SSE for 5 body areas (head, front upper and lower body, back upper and lower body). SSE behavior data were collected at baseline and at 3 and 12 months after a dermatological education about SSE. Analyses included descriptive statistics for the different SSE assessment modalities and linear regressions using medical and socio-demographic data, as well as psychosocial variables (assessed at 3 months post intervention) to predict SSE (assessed at 12 months post intervention)

Results: When we asked “How often did you carefully and purposefully examine your own skin for suspicious changes?”, 3% of melanoma survivors indicated that they had not self-examined their skin over the past 3 months whereas 97 % reported checking their skin at least once. When we inquired about the frequency of SSE for each of the 5 body parts: monthly whole-body SSE was endorsed by 46% and 80% reported at least 1 whole-body SSE over the past 3 months.

In regression analyses, psychosocial variables such as tumor fear, social support seeking, physician support, SSE attitude and SSE self-efficacy explained between 12% and 31% of the SSE outcome – depending on which operationalization of SSE practice was used; while melanoma stage and time since diagnosis explained between 1% and 6% of the variance.

Conclusions: Our study illustrates that findings differ depending on the way SSE behavioral practice is operationalized. This stresses the need for the development and validation of a measure that could be used across studies in order to allow for the synthesis of findings of different research teams. We hope the current study will stimulate a lively discussion about the most promising ways to operationalize SSE and to test the psychometric properties of this measure.

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D005 10:00 AM-11:00 AM

SIMULATION AND COMPARISON OF SUN PROTECTION INTERVENTIONS UTILIZING THE THEORY OF PLANNED BEHAVIOR: AN AGENT-BASED APPROACH

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One of the most common forms of cancer is melanoma. Cancer treatment costs directly attributable to melanoma are about $3.3 billion per year in the U.S. Sun protection behaviors such as sunscreen use and minimizing sun exposure are advertised as ways to prevent skin cancers. Yet despite the costs and dangers of sun exposure, protective sun behaviors such as sun screen use remains low. Influencing people to adopt these behaviors remains a challenging public health issue. According to the Theory of Planned Behavior, intentions and behaviors are shaped by attitudes, subjective norms, and perceived behavioral control. These psychological factors could therefore be key targets of health communications aimed at promoting sun protection behaviors. This study tests an agent-based model that compares sun protection interventions aimed at young adults. This model is based on previous interventions which have targeted all three facets of the Theory of Planned Behavior as well as recent evidence that norms are the strongest predictors of intentions to engage in sun protective behavior.

Using simulations of this agent-based model, we observed the transmission and spread of a behavioral intervention within a social network that included users who have not previously adopted the intervention. We used effect sizes from a recent meta-analysis on sun protection interventions on reported subjective norms for our model's initial conditions. For our network size, we designed the model to have 375 nodes (users), which is the average number of Facebook friends for a college undergraduate. By identifying the diffusion of norms and intentions to engage in sun protection behaviors within the simulated social network, we identified the factors which best influence change or maintain behavioral adherence on a larger scale and thus represent key targets for interventions.

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D006 10:00 AM-11:00 AM

SINGLE AND MULTIPLE HEALTH BEHAVIOR CHANGE INTERVENTIONS IN CANCER SURVIVORS: A SYSTEMATIC REVIEW

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Single and Multiple Health Behavior Change Interventions in Cancer Survivors: A Systematic Review

Health behavior change has become an important addition to cancer survivorship care. Favorable changes in physical activity, diet, and weight management behaviors promote long-term health and improve quality of life while simultaneously reducing the risk of additional health and treatment-related problems in cancer survivors. Although there is a large and growing literature on health behavior change interventions in cancer survivors, it is currently not known if these interventions differ in effectiveness when addressing more than one behavior or what factors may influence such changes when more than one behavior is targeted. This review examined the effects of single health behavior change interventions (SHBC) and multiple health behavior change (MHBC) interventions in cancer survivors that targeted physical activity (PA), diet quality (DQ), and weight management (WM). The specific aims of this review are to 1) assess and compare the effectiveness of SHBC and MHBC behavior change interventions; and 2) identify and compare the sample and intervention characteristics that may impact observed effects. A systematic search strategy yielded 31 randomized controlled trials that met inclusion criteria with nine identified as SHBC and 22 identified as MHBC. Generally, MHBC interventions in comparison to SHBC appear to be more effective in promoting behavior change in the physical activity and diet quality trials, while no discernable differences were seen in weight management trials. Due to the substantial variability observed in sample and intervention characteristics within the MHBC and SHBC domains, few notable comparisons between the domains emerged. Overall, randomized controlled trials of health behavior change interventions in cancer survivors have shown interventions to be effective in facilitating behavior change in comparison to control groups. , Additionally, MHBC interventions appear to be superior to SBHC interventions when targeting physical activity and dietary quality behaviors. This difference in effectiveness was not observed when examining weight management behaviors. Given the amount of variability seen across these studies, a great deal of work is still needed to clarify what aspects of these

interventions are most effective in facilitating and maintaining health behavior change in cancer survivors.

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D007 10:00 AM-11:00 AM

STAGES OF CHANGE AND FRUIT AND VEGETABLE CONSUMPTION IN MINORITY POPULATIONS

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Data from 2007-2010 show 75.5% of adults were below recommendations for fruit and 87.3% were below for vegetables. Diet-related disparities exist among minority populations with Black and Hispanic populations often consuming less fruits and vegetables compared to Caucasian populations in the United States. Due to the disparities in health behaviors and outcomes between populations, nutrition education programs such as those offered through Cooperative Extension Services often target the most vulnerable communities. We investigated the stage of change along with other factors that influence fruit and vegetable consumption in these diverse populations.

Methods:

A total of 126 adults (≥18 years-old) from two communities in Delaware were enrolled in a seven-month community-based participatory research study through the University's Cooperative Extension Agency, which formed the basis of the educational programs that were part of the challenge. Participants who agreed to participate in the research study completed a comprehensive baseline questionnaire that assessed demographics, health-related status, fruit and vegetable staging, fruit and vegetable self-efficacy, and self-reported intake of fruits and vegetables. Bivariate correlations were conducted to determine what demographic and health variables were associated with fruit and vegetable intake and were included as covariates in subsequent analyses. A block linear regression examined the relationship between fruit and vegetable staging, fruit and vegetable self-efficacy and fruit and vegetable intake.

Results:

Of the 126 participants, 64 identified as Hispanic and 62 as African American, corresponding to the community of residence. The mean age for was 46.7 ± 15.3 years and 77.9% of participants were female. Most participants reported being in the contemplation (39.2%) or preparation stage (48.5%).Fruit and vegetable staging was significantly associated with fruit and vegetable consumption (F (7,69) = 7.49). The total variance explained by the model was 37.1%, $p < 0.001$.

Conclusion:

These findings suggest stages of change is strongly related to fruit and vegetable consumption in these diverse minority populations. Utilizing this information may be advantageous when developing programs focused on increasing the behavior of fruit and vegetable intake of ethnic minorities by developing programs to move participants along the stages of change continuum toward action.

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D008 10:00 AM-11:00 AM

THE EFFECT OF A PEER MODELING WORKPLACE PHYSICAL ACTIVITY INTERVENTION FOR WOMEN

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Purpose

People compare themselves to others for self-evaluation, practical information, and motivation for health behavior change. Peers models have been used effectively in health behavior interventions to recruit, educate, and motivate but not specifically to provide vicarious experience for healthy physical activity (PA). The purpose of this study was to evaluate the effect of a 12-week peer-modeling intervention on self-efficacy, motivation, and social comparison for PA.

Theoretical Framework

Social cognitive theory and social comparison theory support the intervention. Peer-models in this study provided vicarious experience and were a focus of comparison for an active lifestyle.

Methods

Inactive women 19 to 65 years old were recruited from a Midwestern health system. Participants were randomized to either the attention control group (ACG) (n = 24) or the intervention group (IG) (n = 26). Both groups met every other week for six sessions for a lunch and learn presentation. The ACG received general health information. The IG received specific information on PA and observed a different active peer each session who presented their personal story for being active. Both groups completed pre- and post-intervention measures of: self-efficacy and motivation for PA, social comparison orientation (abilities and opinions), and motives for making social comparisons (distancing, similarity, enhancement, modeling, future self). Hierarchical linear modeling was used for data analysis.

Results

Forty-three women (ACG n = 22; IG n = 21) completed both pre and post testing. There were no significant group X time interaction effects. There were trends favoring the IG in a majority of social comparison measures. The IG increased comparison on abilities (pre/post M = 15.1 to 15.5), opinions (pre/post M = 18.3 to 19.1), modeling (pre/post M = 8.6 to 9.9), and future self (pre/post M = 18.5 to 20.2) The ACG decreased comparison on abilities (pre/post M = 15.6 to 15.0), opinions (pre/post M = 20.0 to 18.8), modeling (pre/post M = 8.46 to 8.41), and future self (pre/post M = 18.7 to 18.4).

Conclusions

Active peer-models may be a viable source of vicarious experience to increase PA through social comparison processes. A fully powered study is needed to evaluate intervention effects on self-efficacy and motivation for PA.

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D009 10:00 AM-11:00 AM

THE EFFECT OF COGNITIVE-BEHAVIORAL WEIGHT LOSS INTERVENTIONS ON PSYCHOLOGICAL OUTCOMES: A META-ANALYSIS

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Objectives: To examine the effects of cognitive behavioral therapy weight loss (CBTWL) interventions on psychological outcomes (eating behaviors [cognitive restraint, emotional/binge eating], and depressive/anxiety symptoms) and on weight reduction in adults with overweight or obesity.

Methods: Selection criteria: 1) randomised controlled clinical trials of CBTWL intervention versus a comparison intervention, 2) study that included weight loss and psychological outcomes, 3) patients who were overweight/obese.

Results: Twelve studies (6805 participants) were included. The average weight loss difference between each arms was -1.70 kg (95%CI, -2.52 to -0.86, p

Conclusions: Beyond weight reduction, literature provides evidence suggesting that CBTWL is an efficacious therapy for increasing cognitive restraint and reducing emotional eating. However, CBTWL does not seem to be superior to other interventions for decreasing depressive symptoms. Future studies should focus on psychological outcomes to better understand the mechanistic role of these factors.

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D010 10:00 AM-11:00 AM

THE EFFECT OF IN-SESSION CHANGE LANGUAGE ON ALCOHOL OUTCOMES AMONG EMERGENCY DEPARTMENT PATIENTS.

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Motivational Interviewing (MI) is a clinical approach that focuses on enhancing a patient's readiness to change by exploring ambivalence while evoking and strengthening the patient's own verbalized reasons and motivations for change. The technical component of MI is based on an implicit causal chain hypothesis, in which increased patient in-session verbalized arguments for change (i.e. change talk) and decreased language in favor of maintaining the status quo (i.e. sustain talk) predict behavior change. Researchers have found that frequency of patient in-session change and sustain talk independently predict drinking outcomes. Efforts to enhance the efficacy of brief interventions in reducing risky drinking among patients has led to the adoption of the theoretical approach of MI. The present study tests this causal chain hypothesis by investigating the relationship between in-session client language and drinking reported at 3-month follow-up.

Emergency department patients were screened for heavy drinking and were randomly assigned to one of three treatment conditions: brief advice, brief motivational intervention, and BMI+Booster. Participants (n = 162, M_{age} = 36.6, SD = 12.4) were 75% male and 45% non-Hispanic White. Interview audio recordings were coded using the Motivational Interviewing Skill Code 2.5 and analyzed using the CASAA Application for Coding Treatment Interactions software to assess clinician and client in-session behaviors. Patient maximum number of drinks per week was regressed on sustain talk and change talk, covarying for baseline drinking. Patient sustain talk was significantly related to maximum drinks per week at the 3-month follow-up, accounting for approximately 3.1% of the variance in the outcome (b = 4.24, SE = 1.79, t = 2.38, p = .019). Change talk was not significantly related to drinks reported at 3-months, however the relationship was in the expected direction.

Our results provide support for the causal chain mechanism proposed by MI theory, given the significant effect of patient in-session sustain talk on drinking outcomes at 3-months. More specifically, our findings suggest higher levels of sustain talk (i.e. patient language against change, in favor of maintaining the status quo) is related to higher maximum number of drinks per week at 3-month follow-up, highlighting the influence sustain talk can have on predicting behavior change. Future studies should pay particular attention to how to properly address in-session sustain talk and could investigate how to enhance the effectiveness of change talk on future behavior change.

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D011 10:00 AM-11:00 AM

TRANSLATING AN INTENSIVE BEHAVIORAL INTERVENTION FOR DELIVERY BY CHWS

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We previously demonstrated the efficacy of Multisystemic Therapy (MST), an intensive, home-basedpsychotherapy, to improve diabetes management and metabolic control and reduce diabetes-related hospital admissions among urban, minority youth with poorly controlled type 1 diabetes (T1D). The goal of this study was to test an adapted version of MST – Fit Families (FF) – for delivery by community health workers (CHWs).FF was developed and pilot tested in collaboration with a federally qualified health center in Detroit that provides primary health care and support services to underserved minority families. Forty-eight youth with poorly controlled T1D (HbA1c≤9 %) and their primary caregivers were randomized to either FF plus treatment as usual (TAU) (N=24) or TAU alone (N=24). Adolescents were 14.2 years old (*SD*=2.4), 37% male, and 78% African American. Mean HbA1c was 11.5% (*SD*=1.9%) at study entry. Caregivers were 88% biological mothers, 47% were single parents, and the median income was $20-29K (*IQR*= $10-19K, $50-59K). Families randomized to FF received 6 months (*M*=12.3, *SD*=9.5) of home-based cognitive-behavioral treatment delivered by a CHW, and included disease education and skills training, but also parenting skills, family communication skills, and skills for communicating effectively with medical care providers and school personnel regarding diabetes care. Treatment began with a functional assessment to assess areas of strengths and needs and an individualized treatment plan was developed to address the specific barriers to illness management for each family. Data were collected at baseline and six-month follow-up (treatment completion). FF adolescents demonstrated improvements in HbA1c (-0.78%) and frequency of blood glucose monitoring (+0.27 tests/day). TAU adolescents had worsening HbA1c (+0.13) and decreased frequency of blood glucose monitoring (-0.45) [$t_{\mathrm{HbA1c}}(41)=1.48$, $p=.073$ and $t_{\mathrm{BGM}}(42)=-1.80$, $p=.040$]. In per protocol analysis, treatment completers demonstrated an even greater improvement in their HbA1c (-1.12%) versus TAU (+0.15) [$t(37)=2.02$, $p=.026$]. BGM results were similar ($M_{\mathrm{FF}}=+0.24$ versus $M_{\mathrm{TAU}}=-0.54$, $t(38)=-1.81$, $p=.039$. These outcomes are comparable to those observed in our previous trials where MST was delivered by masters-level mental health professionals. Results suggest that an evidence-based intervention to improve illness management in youth with poorly controlled diabetes can be delivered by CHWs. Delivery by paraprofessionals could increase real-world utility of the intervention.

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D012 10:00 AM-11:00 AM

USE OF STATE SPACE GRIDS TO CHARACTERIZE DYADIC INTERACTIONS IN SMOKING CESSATION COUNSELLING SESSIONS: A FEASIBILITY STUDY

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Background: The content of behavior change counselling sessions is typically characterized in terms of the presence (or absence) behavior change techniques (BCTs) used by practitioners. However, understanding how BCTs operate in practice requires a method for characterizing the reciprocal, dynamic and real-time nature of interactions between practitioners and clients. State-space grids (SSGs) are an observational, dynamic systems methodology used to map the trajectory of dyadic interactions in real time. By mapping the flow of events in terms of practitioner and client actions, SSGs seem potentially well suited to characterize behavior change counselling sessions. Smoking cessation counselling sessions can be reliably and usefully characterized in terms of practitioner-delivered and client-received BCTs and so this domain provides a useful starting point for assessing the feasibility of using the SSG methodology. **Aim:** To examine the feasibility of using the SSG methodology for characterizing practitioners' delivery of and clients' response to BCTs in smoking cessation behavioral counselling sessions. **Methods:** Six smoking cessation counselling sessions were video recorded, transcribed and divided into single speech acts by either the practitioner or the client (n = 3404 speech acts). All speech acts were coded for both content and duration using published frameworks for specifying practitioner-delivered and client-received BCTs in stop cessation interactions. This coding scheme was used independently by two researchers and inter-rater reliability was assessed. Indices of practitioner-client interaction dynamics were derived: 1) reciprocity (i.e. attractor states, content congruence, conditional pairing) and 2) temporal patterning (i.e. variability, inter-grid distance, lagged phase plots, sessional macro-patterning). The ability of the indices to differentiate between sessions involving different practitioners and clients was assessed. **Results:** Inter-rater reliability was moderate to high with 72% initial agreement which was resolved through discussion. Indices of reciprocity and temporal patterning were able to differentiate between sessions involving different practitioners and clients. **Discussion:** State space grids provide a useful method for characterizing the dynamics of practitioner-delivered and client-received BCTs in smoking cessation counselling sessions.

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D013 10:00 AM-11:00 AM

USING BETWEEN-SESSION TELEPHONE CALLS TO OVERCOME BARRIERS TO PHYSICAL ACTIVITY IN A GROUP-BASED INTERVENTION

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Introduction: The efficacy of interventions to increase physical activity (PA) may vary as a function of participants' barriers to PA. Prior research has been limited and considered primarily demographic moderators of intervention efficacy. The aim of this presentation is to determine whether individual barriers (demographic, physical health, psychological health, neighborhood factors, perceived barriers to PA, social support for PA) moderate treatment effects on increases in PA. **Methods**: Three treatment conditions tested the relative efficacy of a group-based PA intervention alone or supplemented by either personal or automated phone calls made between group meetings. From 2010 to 2012, 284 African American women (ages 40-65) living in the Chicago, IL, area were randomized to one of the three treatment conditions. Data collection occurred at baseline as well as 24 and 48 weeks after baseline. Moderation of intervention effects by barriers to PA were tested across four outcome measures (self-reported moderate-vigorous PA, self-reported walking, accelerometer steps, and aerobic fitness) using multilevel mixed-effects analyses. **Results**:Significant condition by barrier interaction effects for the accelerometer steps outcome were found for economic hardships, F(2, 171)=3.37, *p*=.037; depressive symptoms, F(2, 173)=4.96, *p*=.008; neighborhood crime rate, F(2, 172)=2.46, *p*=.088; and perceived barriers to PA, F(2, 171)=2.65, *p*=.073. For aerobic fitness, intervention effects were moderated by economic hardships, F(2, 218)=4.00, *p*=.020; and perceived pain, F(2, 217)=3.50, *p*=.032. Increases in the outcome variables were greater for the conditions in which group sessions were supplemented with personal and/or automated calls. **Conclusion**: Among participants with greater barriers to PA, supplementing the intervention group meetings with between-session personal and/or automated phone calls may be an effective way to strengthen intervention effects. Future research should examine the use of between-session phone calls as treatment supplements for non-responders in the context of adaptive interventions.

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D014 10:00 AM-11:00 AM

USING MACHINE LEARNING TO REFINE BEHAVIOR CHANGE THEORY: THE CASE OF PARTICIPANT ENGAGEMENT IN MHEALTH INTERVENTION

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Current technology allows for logging of specific actions within an app to track engagement, thus an opportunity to use strategies like machine learning emerges. Leveraging this depth of information enables refinement of our behavioral theories and constructs as it relates to mHealth interventions. Participant engagement is one construct that is assumed to lead to change in behavior during mHealth interventions. Engagement refers to a myriad of concepts within behavioral medicine research and generally refers to any action done to achieve the best health outcome from available services. Though many researchers propose engagement as an outcome or mediator, there is not a standardized operational definition for engagement when evaluating interventions. Despite mHealth apps requiring various types of engagement, little to no work has been done to conceptualize these types or their differential contribution to outcomes. At worst, trials do not report how often or to what extent an app is used when evaluating the effect on health outcomes. At best, few report how many days a participant opens the app, wears a device, or logs into an mHealth system. Machine learning was used in an ongoing mHealth multiple behavior change trial in college students over 6 months to identify actions that comprehensively define engagement such that specific actions or profiles may be linked to better health outcomes. Aligned with intended use of mHealth apps, engagement was divided into two primary categories: reviewing feedback and self-monitoring. We applied a head-tail classification to classify sub-types of engagement. Five sub-types of feedback engagement emerged: glances (< 7 seconds), check (7 – 17 seconds), brief review (17-38 seconds), detailed review (38-68 seconds), and deep review (> 68 seconds). For self-monitoring, three subtypes emerged: brief interact (3 - 29 sec), detailed interact (29-51 sec), and deep interact (> 52 seconds). This new operationalization enables identification of profiles that can be used to label participants and to predict outcomes. Future work will determine what type or combination of types of engagement predict important mechanisms and clinical outcomes in health behavior change research.

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D015 10:00 AM-11:00 AM

USING PSYCHOPHYSIOLOGICAL METHODS TO UNDERSTAND THE EFFECTS OF DIFFERENT POSITIVE FACIAL EXPRESSION MANIPULATIONS

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Differences in positive facial expressions have long been implicated in psychological disorders, physiological activity, and even health outcomes. Despite this, little work has objectively validated experimental methods of positive expression manipulation. The current study tested the differences between three methods of inducing smiles: a newly developed commercial device (“the Smile Stick”), chopsticks held in the mouth (used in past studies), and natural smiling. Participants (N = 32, data collection underway) performed three different tasks while electromyography (EMG) recorded orbicularis oculi (eye) and zygomaticus major (cheek) muscle activation in the face while participants demonstrated their assigned conditions. An analysis of variance revealed that natural smiling was associated with higher zygomaticus major muscle activation compared to the other conditions, F(1.302, 36.46)=10.629, p=.001. Paired contrasts of smile stick versus natural or chopsticks versus natural also revealed significantly higher zygomaticus activity in the natural condition (F(1,28)=10.960, p=.003 and F(1.28)=12.356, p=.002, respectively). There was no significant difference in orbicularis oculi muscle activation between groups, F(2,56)=1.689, p=.194. Participants self-reported feeling less tired after naturally smiling or holding chopsticks as compared to the smile stick, F(1.587,44.441)=7.206, p=.004. Of note, while all conditions activated both muscle groups above baseline, cheek muscles were 52.8% more activated from natural smiles. When using the Smile Stick, there was a 1,478.2% increase in the zygomaticus major (cheek) muscle activity and a 277.2% increase in the orbicularis oculi (eye) muscle activity compared to baseline. Thus, while future studies can continue to use oral device methodologies with confidence, for the largest zygomaticus major effects in future health and psychology research, new methods should be developed where natural smiles could be encouraged covertly via other non oral device methods.

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D016 10:00 AM-11:00 AM

VACCINE HESITANCY AMONG MILLENNIALS: CONCERNS, BELIEFS AND ATTITUDES

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Background: Vaccines have proven to be the most effective mechanism available to prevent disease; yet an increase in vaccine hesitancy has led to a subsequent increase in vaccine refusal. It is suggested that the largest population of vaccine-hesitant individuals are young adults ranging from 18-29 years of age.

Objective: To assess vaccine hesitancy in the millennial generation using the WHO Vaccine Hesitancy conceptual items (Larsen et al., 2015) and understand if uncertainties exist related to vaccines among millennials.

Method: Participants (N=180) from two northeastern universities answered the WHO Vaccine Hesitancy items and additional questions related to uncertainty about vaccines. Questions assessed contextual, individual and group influences, and vaccine specific issues related to vaccine hesitancy along a Likert scale (1=Strongly Disagree to 5=Strongly Agree). Frequencies were assessed using SPSS 21.0.

Results: Most participants were female (n=114; 63.3%), White/Caucasian (n=123; 68.3%) and business majors (n=104; 57.8%). Respondents agreed on mandatory vaccines (M=3.34; SD=.85) and agreed vaccines are a socially accepted norm (M= 3.71; SD=.62), but expressed uncertainty and a desire to know more about vaccines (M=3.46; SD=.77). They believed vaccines are safe (M=3.47; SD=.72), yet reported concern with getting new vaccines (M=2.93; SD=.47) and the motives of the pharmaceutical industry in designing vaccines (M=2.61; SD=1.05). For vaccine related information, participants trusted healthcare providers (M=4.10; SD=.85) and parents (M=3.83; SD=.94), and less trust from the government (M=3.00; SD=1.01), friends (M=2.92; SD=1.03), news media (M=2.71; SD=1.02) and social media (M=2.20; SD=1.01).

Conclusion: Findings suggest young adults believe vaccines should be mandatory and are safe, but have concerns with vaccine processes. Healthcare providers and parents are the best sources of information for decision-making among this age group. Interventions to decrease vaccine refusal may want to encourage more communication between healthcare providers, parents and young adults about vaccines and their processes. Future research can begin to examine uncertainties related to specific vaccines and the vaccine process.

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D017 10:00 AM-11:00 AM

VALIDATING STAGES OF CHANGE FOR OBESOGENIC BEHAVIORS ACROSS ADOLESCENT MINORITIES

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Background: Filipino adolescents are underrepresented in obesity research although Filipinos are the second largest Asian American and Pacific Islander subpopulation in the US. Given that increasing obesity rates, and inadequate physical activity (PA) and fruit and vegetables (FV) consumption are characteristic of US adolescents with minority adolescents being more likely to experience obesity-related chronic illnesses into adulthood, an understanding of how well the theories of behavior change apply to Filipino adolescents is critical to addressing obesogenic behaviors in this group. This study aimed to validate the Transtheoretical Model of behavior change (TTM) for PA and FV among a majority Filipino adolescent population. The convergent validity hypothesis was that adolescents grouped in the precontemplation, contemplation and preparation stages would report less PA and FV compared to those in action and maintenance stages.

Methods: Adolescents in grades 9-11 (N=164, 82% female, 70% Filipino) who were part of the Health Action and Research Training project completed measures of PA (minutes/week) and FV (times/day) in the past seven days, and PA and FV stages of change. To assess the validity of the PA and FV stages of change with the respective behaviors, one-way ANOVAs and Tukey HSD post-hoc tests were computed.

Results: There was a significant effect for fruits (action [M=1.53, SD=1.26] > contemplation [M=.74, SD=.76], preparation [M=.79, SD=.90]) and vegetables (maintenance [M=1.39, SD=1.24], action [M=1.30, SD=1.13] > contemplation [M=.45, SD=.31]) intake across the FV stages of change. There was a significant effect of strenuous PA (contemplation [M=25.8, SD=30.4], preparation [M=45.2, SD=52.4] < action [M=141.7, SD=111.4] < maintenance [M=214.8, SD=114.4]) and moderate PA (contemplation [M=63.2, SD=74.9] < action [M=134, SD=112.3], maintenance [M=139.6, SD=98.3]) across the PA stages of change.

Discussion: This study provides validity evidence for the TTM stages of change for FV and PA among minority (predominantly Filipino) adolescents. This validation, in turn, extends the generalizability of the stages of change construct across health behaviors, replicating other adolescent studies and in other age groups.

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D018 10:00 AM-11:00 AM

WELLNESS SELF-COACHING AS A BOOSTER INTERVENTION FOR THE STANFORD SMALL GROUP SELF-MANAGEMENT PROGRAMS

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The enormous burden of multiple chronic diseases is clear in older adults, especially among low-income and underserved minority populations. We evaluated the Stanford Small Group Self-Management Programs (SSGSMP) plus wellness coaching as a booster intervention. We conducted a pragmatic randomized controlled trial (RCT) with complete block design using two intervention arms: 1) SSGSMP and 2) SSGSMP plus a wellness self-coaching program initiated as a booster after SSGSMP completion. In addition to completion of a SSGSMP course, inclusion criteria for the 125 participants were: 1) 55 or greater years old, 2) resident of one of the five South Bronx New York City Housing Authority communities, 3) self-report of two or more chronic diseases, 4) cognitively competent, 5) ambulatory (independently or walker/canes), and 6) English- or Spanish-speaking. Participants (n=125) were enrolled from. Certified wellness coaches led three groups (two in Spanish) for 24 one-hour weekly wellness self-coaching phone sessions. Physical activity was the primary outcome, measured by the Community Health Activities Model Program for Seniors. Secondary outcomes included the following PROMIS v1.0 measures health domains: depression, fatigue, pain, physical function, and sleep disturbance. Participant surveys were completed at baseline, 3-months, and 6-months time points. We evaluated the outcomes of 121 participants in the RCT using appropriate general linear models to test directly the joint effects of SSGSMP and the wellness self-coaching as a booster. Data collectors and analyzers were blinded to group allocation, and intent-to-treat analyses were conducted. Participants in the wellness coaching intervention did not differ significantly from control participants on an improvement in physical activity but did differ on self-reported physical functioning (1.3 units higher, p=0.03 on the Physical Function SF 20a). Wellness coaching post-SSGSMP was a booster to physical function, a plausible upstream outcome for physical activity.

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D019 10:00 AM-11:00 AM

WHO BENEFITS FROM A DIETARY ONLINE INTERVENTION? EVIDENCE FROM ITALY, SPAIN, AND GREECE

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Objective: The traditional Mediterranean diet includes high consumption of fruits, vegetables, olive oil, legumes, cereals, nuts, moderate to high intake of fish and dairy products, and low consumption of meat products. Intervention effects to improve adoption of this diet may vary in terms of individuals' motivational or volitional prerequisites. In the context of a three-country research collaboration, intervention effects on these psychological constructs for increasing adoption of the Mediterranean diet were examined.

Design: An intervention was conducted to improve Mediterranean diet consumption with a two-month follow-up. Linear multiple level models examined which psychological constructs (outcome expectancies, planning, action control, stage of change) were associated with changes in diet scores. Setting: Web-based intervention in Italy, Spain, and Greece. Subjects: N=454 adults; age range=18 to 65 years; M_{age}=42.2, SD_{age}=10.4; n=112 at follow-up. Results: Analyses yielded an overall increase in the Mediterranean diet scores. Moreover, there were interactions between time and all four psychological constructs on these changes. Participants with lower levels of baseline outcome expectancies, planning, action control, and stage of change were found to show steeper slopes, thus greater behavioral adoption, than those who started out with higher levels.

Conclusion: The intervention produced overall improvements in Mediterranean diet consumption, with outcome expectancies, planning, action control, and stage of change operating as moderators, indicating that those with lower motivational or volitional prerequisites gained more from the online intervention. Individual differences in participants' readiness for change need to be taken into account to gauge who would benefit most from the given treatment.

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D020 10:00 AM-11:00 AM

“A TOOL, NOT A CRUTCH': PATIENTS WITH BREAST CANCERS’ PERCEPTIONS OF THE IBM WATSON FOR ONCOLOGY CLINICAL DECISION SUPPORT SYSTEM

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Background: IBM Watson for Oncology (WFO) is a cognitive, cloud-based clinical decision support system designed to inform oncologists’ choices about personalized, evidence-based treatments and clinical trials for their patients. Although substantial technical and clinical expertise has been devoted to the development of WFO, patients’ perspectives of this emerging technology have yet to be examined. Clarifying and addressing patients’ preferences about WFO could increase patient satisfaction and contribute to greater physician adoption of this technology.

Methods: To understand patients’ perspectives about the acceptability of WFO, we are conducting nine focus groups with patients who received therapies at our institution. Here, we report preliminary findings from the first three focus groups conducted with patients with breast cancers who received either neoadjuvant/adjuvant chemotherapy (*n*=6; in-person group), chemotherapy for metastatic disease (*n*=3; in-person group), or chemotherapy through a clinical trial (*n*=4; virtual group). Focus groups were audio-recorded, transcribed, and analyzed through inductive thematic text analysis to identify common thematic findings.

Results: Across all groups, participants felt comfortable with the prospect of their oncologists using WFO, as long as it was used as a supplementary tool to inform their treatment decision-making. Participants strongly believed that their oncologists were the best providers of personalized care, and questioned whether a computer could replicate this highly valued facet of patient care. Participants raised concerns about potential physician over-reliance on the decision support tool, which could undermine their trust in the physician. Participants perceived the ability to expand the body of up-to-date medical knowledge available to physicians at the point of care as a primary advantage of WFO; however, concerns about data quality and accuracy were common. Participants also expressed information needs regarding issues such as cost and confidentiality that, if unaddressed, would undermine their acceptance of this decision support tool.

Conclusion: Participants generally reacted favorably to WFO, but with serious caveats regarding the quality of content and clinical implementation of this technology. Results suggest a need for transparency to ensure that patients are comfortable with their physicians integrating this tool into the treatment decision-making process.

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D021 10:00 AM-11:00 AM

CORRELATES OF TANNING DEPENDENCE AMONGST SEXUAL MINORITY MALES

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Background: Sexual minority males are an at-risk population for developing skin cancer. Disparities in skin cancer diagnoses among sexual minority males are likely the result of increased skin cancer risk behaviors. Indoor and outdoor tanning have been linked to increased likelihood of developing skin cancer, and sexual minority males tan at rates comparable to or greater than heterosexual females. One construct that may underlie frequent tanning is tanning dependence: compulsive tanning behaviors associated with tolerance, withdrawal, and craving of UV exposure. To date, preliminary research has shown tanning dependence to be associated with increased skin cancer risk behaviors; however, no known studies have examined tanning dependence among sexual minority males. Thus, the current study aimed to explore the correlates of tanning dependence among a sample of young, sexual minority males.

Methods: This study employed Facebook to recruit 238 sexual minority males ages 15 to 35 years (M = 24.56, SD = 5.44) living in San Diego County. Participants completed an online self-report questionnaire, which included items assessing skin cancer risk behaviors (e.g., indoor and outdoor tanning behavior, use of sunscreen). Tanning dependence was measured via the Behavioral Addiction Indoor Tanning Screener (BAITS).

Results: Elevated tanning dependence was significantly and positively associated with intention to indoor tan within the next three months*,* (r = .31, p < .001), frequency of indoor tanning over the past three months (r = .44, p < .001), and frequency of outdoor tanning over the past three months (r = .20, p = .002). Elevated tanning dependence was also significantly and negatively associated with frequency of sunscreen use (r = -.15, p = .026).

Conclusion: The current study is the first known to explore tanning dependence among sexual minority males—a population at risk for developing skin cancer. Elevated tanning dependence was associated with several established skin cancer risk behaviors, suggesting that tanning dependence may play a role in skin cancer disparities seen among sexual minority males. Thus, future skin cancer prevention efforts aimed at this population may benefit from exploring strategies to reduce tanning dependence in order to prevent the development of skin cancer.

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D022 10:00 AM-11:00 AM

DISGUST AS A PREDICTOR OF COLONOSCOPY SCREENING INTENTIONS

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BACKGROUND: Colorectal cancer (CRC) is responsible for nearly 50,000 deaths each year and though screening is an effective way to reduce deaths, screen compliance is only 50-60% (American Cancer Society, 2016). An underlying factor in failure to screen or to comply with screening preparation procedures may be disgust elicitation. Disgust causes the urge to withdraw from potential contaminants. Fecal matter and violations of the bodily envelope are two known elicitors of disgust (Curtis & Biran, 2001). Both are central features of colonoscopy screening, making it plausible that disgust reactions result in failure to screen. However, this has not been well tested and the affective mechanisms through which disgust impacts screening are not known. METHODS: We conducted an online survey of US adults (N = 298) using Amazon mTurk. We examined affective associations with colonoscopy, including disgust associations, current feelings of disgust, dispositional disgust sensitivity, and three components of intentions to be screened (intent to screen, intent to complete preparation regimen, and intent to discuss screening with provider). RESULTS: Both overall negative affective associations and specific associations with disgust significantly predicted intent to screen, intent to complete preparation regimen, and intent to discuss screening with provider ($\beta = -.15$, $p < .001$, $\beta = -.10$, $p < .05$, and $\beta = -.12$, $p < .01$, respectively). By contrast, neither current disgust nor disgust sensitivity were significant predictors, nor did either moderate the relation of affective associations to screening. DISCUSSION: Affective associations of disgust (that is, associated feelings of disgust with the colonoscopy screening procedure) was a significant predictor of intentions to be screened—the more disgust associated with screening, the lower the screening intentions. This effect of disgust on screening seems to be through the behavioral affective associations pathway (Kiviniemi, Voss-Humke, and Seifert, 2007)—neither experienced disgust when thinking about screening nor dispositional sensitivity to disgust were related to screening intentions. Interventions to encourage screening colonoscopy should address the impact of disgust on noncompliance.

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D023 10:00 AM-11:00 AM

INDOOR TANNING PREDICTS SOME SKIN CANCER COGNITIONS AMONG FEMALE COLLEGE STUDENTS

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Introduction

Skin cancer, a behaviorally influenced disease, which increasingly and adversely affects college age individuals, is the most common cancer in the United States. One of the most potent risk factors for developing skin cancer is the use of indoor tanning. This study aimed to understand if self-reported indoor tanning predicts cognitions about skin cancer, specifically, risk perceptions, attitudes, and behavioral intentions.

Method

Participants were 158 female students attending a Northeastern US university who indicated that they were or were not indoor tanners.

In addition to demographic questions, measures were administered to assess previous tanning behavior, attitudes about skin cancer, behavioral intentions, and risk perceptions.

Results

Ages ranged from 18 to 47, with a mean of 20.88 (*SD* 4.107). Sixty percent were White, 22.8% Asian, and 4.4% Black. Forty-one percent self-reported tanning indoors at least once.

Three two-stage hierarchical multiple regressions were conducted with behavioral Intentions, risk perceptions, and attitudes as dependent variables. Age, ethnicity, and skin type were entered at stage one of each regression to control for these demographic factors. Tanner status was entered at stage two.

For behavioral Intentions, the demographic variables contributed significantly to the regression model, $F\ (4,150) = 4.85$, $p < .001$, and accounted for 11.5% of the variance. Introducing the indoor tanning variable explained an additional 12.7% of the variance and this change in R^2 was significant, $F\ (1,149) = 24.97$, $p < .001$.

For risk perceptions, the demographic variables contributed significantly to the regression model, F (4,152) = 7.25, $p < .001$ and accounted for 16.0% of the variance. Introducing the indoor tanning variable explained an additional 3.0% of variation and this change in R^2 was significant, F (1,151) = 5.56, $p < .03$.

Multiple regression results were not significant for the Attitudes variable.

Discussion

These results demonstrate that indoor tanning may contribute to various cognitions about skin cancer, which may negatively impact future health behavior. Indoor tanners were more likely to view themselves as at-risk for skin cancer, but were less likely to intend to participate in skin protective behaviors. In order to facilitate behavior change, future studies and interventions should consider these differences to create tailored messages for those who have used indoor tanning.

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D024 10:00 AM-11:00 AM

LIMITED EFFECTS OF USING MASS MEDIA TO COMMUNICATE GENOMIC RISK INFORMATION TO DEMOGRAPHICALLY DIVERSE ADULT SMOKERS

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Background: Past research suggests that using the mass media to communicate information about the genetic basis for nicotine addiction may discourage smoking cessation. Yet, most prior research has involved primarily white, highly educated samples.

Objective: To examine how alerting demographically diverse adult smokers about the discovery of a genetic variant that confers a high risk of severe nicotine dependence and lung cancer affects key smoking-related health cognitions and quitting behavior.

Methods: Adult smokers (n=343) were recruited from community locations (e.g., laundromats, bingo halls). Participants read either a real news article describing a pharmacy's decision to stop selling tobacco products or a real article describing the discovery of a gene for nicotine addiction and lung cancer. Next, they completed measures of the following outcomes: message acceptance, quit intentions, lung cancer-related cognitive and affective perceived risk, worry, and perceived severity, and quitting self-efficacy and response efficacy. Quit behaviors were assessed at 90-day follow-up (n=212). Data were analyzed using ANCOVAs and logistic regressions, as appropriate. Race, sex, health literacy, numeracy, perceived genetic knowledge, and nicotine dependence were covariates. The covariates were explored as potential moderators.

Results: 51.0% of participants were racial minorities, 51.0% had no college experience, 63.3% were women, and 42.0% were 50+ years old. The genetic article elicited more personal reflection than the control article ($p=.03$, $\text{Mean}_{\text{diff}}=0.26$), but there were no other main effects on the remaining Time 1 outcomes (ps>.05). However, race moderated the effect of article type on self-efficacy ($p=.03$) and quit intentions ($p=.002$). White smokers reported lower self-efficacy ($p=.002$, $\text{Mean}_{\text{diff}}=0.53$) and intentions ($p=.01$, $\text{Mean}_{\text{diff}}=0.61$) in the genetic condition but not in the control condition (ps>.05). This effect was not present among minority smokers. Type of article did not affect quit behaviors at follow up (ps>.05).

Conclusion: Reading about the discovery of a genetic basis for nicotine addiction may produce unfavorable changes in some health cognitions in white smokers, but not in minorities.

Furthermore, there are no effects on actual quitting behavior. Mass media-based genomic communication likely neither helps nor hinders smoking cessation campaigns.

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D025 10:00 AM-11:00 AM

MOBILE DISSEMINATION OF AN EFFICACIOUS DYSPHAGIA PREVENTION PROGRAM FOR HEAD AND NECK CANCER PATIENTS DURING RADIATION

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Introduction: While cancer of the throat is highly curable, 39% of survivors experience serious permanent swallowing problems. To prevent dysphagia, targeted swallowing exercises performed during radiation have been shown to be effective in preventing radiation-induced fibrosis of the swallowing musculature. Thirty-nine pharyngeal/ laryngeal cancer patients at a community clinic in North Texas have been enrolled thus far on a mobile application pilot study reinforcing adherence to swallowing exercises. The mobile app is based on a successful 10-session, in-person intervention program called PREPARE, which resulted in significantly increased adherence to swallowing exercises in nonrecurrent pharyngeal/ laryngeal cancer patients during radiation compared to randomized controls. **Methods:** All pilot participants were provided with a pilot version of the mobile app, which includes video of exercises, recipes, patient stories, didactic information and hyperlinks to over-the-counter products for radiation-induced mucositis, dry mouth, skin burn and opioid-related constipation. Practical skills to promote communication with caregivers and physicians during this stressful time are also included. In-person speech pathology services are provided pre-radiation and 3 months post-radiation. Participants were asked for feedback regarding the mobile system content and delivery platforms both during radiation and 1 month post-intervention. **Results**: Feedback from participants has been somewhat difficult to obtain remotely, but post-radiation survey results indicate that patients are satisfied with the breadth and reading level of the program content and valued the videos and patient stories most highly. Average time spent per week was 40 minutes, with more time being spent in the first few weeks of radiation and decreasing in the latter weeks as side effects worsened. Most participants preferred to view the mobile app on their desktop computers rather than their phones (average age of the sample was 57 years). While participants endorsed the importance of having caregiver components in the mobile app, very few caregivers used the program. The mobile application was delivered via secured email link but the full-scale study will be delivered via a secure interactive website. **Conclusion:** This program has the potential to significantly decrease the likelihood of long-term dysphagia in head and neck cancer survivors being treated in rural, community-based clinics.

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D026 10:00 AM-11:00 AM

RELATIONSHIPS BETWEEN SALIVARY DIURNAL CORTISOL AND CANCER SURVIVORSHIP OUTCOMES: A SYSTEMATIC REVIEW

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Background
Relationships between altered salivary diurnal cortisol (SDC) rhythms and clinical outcomes are unclear, possibly due to variances in cortisol sampling. This systematic review examined studies that assessed for SDC using a minimum of 2 collection times in 24 hours, including awakening, in order to examine relationships between SDC and outcomes within cancer patient populations.

Methods
Electronic database searching was conducted for the past 10 years using keywords: salivary cortisol, cancer, and SDC assessment with combinations of subcategories for studies of adults diagnosed with cancer in which salivary cortisol was an outcome measure. Main exclusion criteria included endocrine-related disorders, exogenous glucocorticoids, and studies that did not assess for SDC.

Results
The initial search yielded 13,913 articles, reduced to 165 after screening for inclusion and exclusion criteria. An additional 135 studies did not meet SDC sampling criteria of interest, resulting in a final sample of 30 articles. The majority of studies reported outcomes among breast cancer survivors (n=20). Cortisol sampling across studies ranged from 1 to 4 days, with a majority reporting 4 to 5 collection times per day (n=21) for 2 days (n=12). Few studies (23%) reported objective monitoring of collection times (e.g., electronic bottle caps). Most common SDC parameters reported were diurnal slope (n=19) and cortisol awakening response (CAR) (n=12). Flattened cortisol slopes reported by 8 studies were associated with poorer psychosocial outcomes and poorer cancer prognosis; however, 5 studies reported no change in cortisol slope associated with yoga, sleep, stress, or psychosocial outcomes. CAR findings were mixed, with higher CAR amplitude associated with tumor progression in 2 studies, while a sharper dynamic rise in CAR was associated with less fatigue. A blunted CAR was associated with poorer sleep, fatigue, and depression.

Discussion

Despite our inclusion criteria focusing on recommended SDC sampling, directional relationships between cancer outcomes and SDC across studies remain varied. Cortisol variability within and between persons may account for differences across study findings. Further, 2 to 3 days of SDC assessment may not consistently portray or detect measureable changes in SDC. Further study is needed to inform rigor of SDC sampling with respect to number of collection times per day and number of consecutive days. Finally, electronic device monitoring of collection times would increase rigor and reproducibility of SDC sampling in cancer research.

Learning Objectives

After attending this talk, participants should be able to:

1. Understand how the rigor of salivary diurnal cortisol sampling may affect the conclusions regarding clinical outcomes.
2. Know the common SDC reporting parameters and potential relationships between these parameters and survivorship outcomes.

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D027 10:00 AM-11:00 AM

SELF-COMPASSION, INSECURE ATTACHMENT, AND RELATIONSHIP FORMATION DIFFICULTIES IN WOMEN POST-BREAST CANCER

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Introduction: Many un-partnered women experience difficulty forming romantic relationships after breast cancer, characterized by low interpersonal competence and dating anxiety. An individual's insecure attachment style has been linked with these difficulties. Emerging evidence suggests that self-compassion, a kind manner of treating oneself during suffering, may underlie the relationship between attachment style and difficulties in forming romantic relationships.

Aim: This study investigated whether self-compassion underlies the association between insecure attachment style and relationship formation difficulties in women post-breast cancer.

Methods: Women (N=156) diagnosed with breast cancer, who were either currently un-partnered and desired a romantic relationship or had commenced a relationship post-diagnosis, completed an online survey. Measures included attachment style (ECR-M36), interpersonal competence (Interpersonal Competence Questionnaire), dating-related anxiety (Dating Anxiety Scale), and self-compassion (Self-compassion Scale).

Results: Bootstrap mediation analyses revealed higher attachment anxiety and attachment avoidance indirectly predicted lower interpersonal competence through lower self-compassion. Higher attachment anxiety and attachment avoidance were also found to indirectly predict greater dating anxiety through lower self-compassion.

Conclusions: Women with insecure attachment styles are at risk of experiencing difficulties in forming new romantic relationships post-breast cancer. As attachment style can be somewhat difficult to change, self-compassion may be a more appropriate target for interventions to help facilitate romantic relationship formation in insecurely-attached breast cancer survivors.

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D028 10:00 AM-11:00 AM

SLEEP DURATION AND QUALITY OF LIFE IN KIDNEY CANCER SURVIVORS: INTERACTIONS WITH SEDENTARY BEHAVIOR

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Background: Sleep duration and sedentary behavior (SED) have been individually linked to lower quality of life (QoL). As cancer survivors are more likely to report higher SED than healthy individuals, they are at higher risk for lower QoL, negative mental health effects and lower physical functioning, independent from the benefits of physical activity (PA). Furthermore, cancer survivors have been shown to have shorter sleep duration that may contribute to depression, fatigue and lower QoL. An understanding of how sleep duration affects the relationship between SED and QoL in KCS is needed.

Purpose: To examine the associations between sleep duration and QoL in KCS, and the interactive associations between SED and sleep duration on QoL for a work day (WD) and a non-work day (NWD).

Methods: All 1985 KCS diagnosed between 1996 and 2010 were identified through a Canadian Provincial Registry and mailed a survey including the Godin Leisure Time Exercise Questionnaire, the modified domain-specific sitting time questionnaire (including sleep duration), and several Functional Assessment of Cancer Therapy scales. Self-reported demographic and medical variables were collected.

Results: Completed surveys were received from 481 KCS with Mage = 64.0±10.4 years, 64% male, and 84% having localized kidney cancer**.** In the main hierarchical analysis, the interaction effect of sleep duration by SED was significantly associated with physical well-being (PWB) (p=.04), functional well-being (FWB) (p=.01), emotional well-being (EWB) (p=.05), general QoL (p=.009) and fatigue, (p=.05) on a WD only. Follow-up simple slope analyses demonstrated that among KCS with higher levels of sleep, higher levels of SED significantly predicted lower levels of PWB (B=-.002; p=.09), lower levels of FWB (B=-.003; p=.08), and higher levels of fatigue (B=-.009; p=.06). However, among KCS with lower levels of sleep, higher levels of SED significantly predicted higher levels of general QoL (B=.006; p=.04) and higher levels of EWB (B=.003; p=.00). There were no associations between SED and sleep duration on QoL for a NWD.

Conclusions: Sleep duration appears to play a role in moderating the relationship between SED and QoL on a WD only. Higher levels of sleep duration coupled with higher levels of SED may be detrimental to some aspects to the functional aspects of QoL (i.e. PWB, FWB, fatigue), However, lower levels of sleep duration appear to positively influence general QoL and EWB in the presence of higher SED. Having optimal levels of sleep and SED are likely to result in better symptom management.

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D029 10:00 AM-11:00 AM

SOCIAL CONSTRAINT, SOCIAL SUPPORT, AND PERCEIVED BURDEN AMONG CHINESE CANCER SURVIVORS: A MEDIATION MODEL

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Although cancer has now become the leading cause of death among urban and rural residents (Wang, Wei, Liu, Li, & Wang, 2012), very limited research has focused on Chinese cancer survivors. The current study aimed to increase our understanding of this population by examining a mediation model to determine what factors predict perceived burden, which in turn contributes to fatigue and physical symptoms. Chwalisz's (1996) Perceived Stress Model of Burden describes that coping and social support are both associated with perceived burden, which can influence metal and health outcomes. Based on this model, the current study hypothesized that social constraint or difficulty cancer survivors experience in talking with others about cancer-related issues, would predict increased perceived burden, in turn, influencing cancer survivors' health outcomes. It was also hypothesized that social support would be associated with decreased perceived burden, which would in turn predict health outcomes (i.e., fatigue and physical symptoms). Data were collected from 136 Chinese cancer survivors from cancer associations in the United States. The hypothesized model was tested using path analysis in Mplus Version 6.1 program (Muthén & Muthén, 2010). The results supported the hypotheses that social constraint and social support were associated with perceived burden, which in turn predicted increased fatigue and greater number of physical symptoms. Thus, perceived burden was the mediator or the mechanism through which social constraint and social support were associated with health outcomes among Chinese cancer survivors. Detailed findings and research/clinical implications will be presented.

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D030 10:00 AM-11:00 AM

SOCIAL CONSTRAINTS AND CARINGGUIDANCE PROGRAM EFFECTS ON PSYCHOLOGICAL ADJUSTMENT IN MONTHS AFTER BREAST CANCER DIAGNOSIS

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Social constraints are negative human interactions that prevent cognitive processing of a life-altering event. Avoidance, minimizing and preventing a person with cancer from expressing concerns, exemplify social constraints. Breast cancer diagnosis alters one's life-view and requires cognitive processing to reduce distress and depressive-symptoms toward achieving psychological adjustment. C*aringGuidance™ After Breast Cancer Diagnosis* is a new, Internet-based, self-guided, psychoeducational program developed to support psychological adjustment in the initial months after diagnosis. Learning modules include content on diagnosis disclosure, strategies for coping with social constraints and spouse/partner relationship changes.

Method: 100 women diagnosed within 0 - 3 months with their first, stage 0 – 2 breast cancer, randomized to self-guided use of the *CaringGuidance™* Internet-program or usual care for 3 months completed psychosocial measures including the Distress Thermometer (DT), CES-D, Impact of Event Scale (IES), and Social Constraints Scale (SCS) (once for spouse/partner (S/P) behavior and again for family/friend (F/F) behavior) at baseline and monthly. A custom data analysis system monitored program use.

Results: Subjects' mean age was 54.2 years (SD= 9.9). The majority was married; college educated, employed, with no prior mental health diagnosis. Groups did not differ significantly at baseline on demographic or psychosocial variables. The Intervention Group used the program a median 4.4 hours. The SCS was highly reliable at each time point for S/P -focused and F/F-focused responses (Cronbach's alpha >.90). Mean SCS scores ranged from 1.4 – 1.7. Higher scores (significant only at month 1) were noted for F/F-focused scale responses versus S/P. S/P and F/F-focused responses were highly correlated (r=.57 - .71). Significant positive correlations were also found between SCS responses and DT, CES-D and IES scores. A non-significant decrease in scores for both S/P and F/F-focused SCS responses occurred over the 3 months. However, a significant time by group interaction indicated that the Intervention group significantly decreased in their reports of social constraints over time.

Conclusion: Greater social constraints correlated as predicted with greater reported distress and depressive-symptoms among women newly diagnosed with breast cancer. Access to *CaringGuidance™* resulted in significantly fewer reports of constraints compared to usual care.

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D031 10:00 AM-11:00 AM

STUCK IN THE SPIN CYCLE: AVOIDANCE AND INTRUSIONS FOLLOWING BREAST CANCER DIAGNOSIS

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Cognitive processing theories of adjustment to chronic stress suggest that individuals alternate between periods of intrusive thoughts and feelings and periods of avoidance. Theoretically, phases of intrusions are characterized by stressor-related ideas and emotions that are brought to mind for eventual integration. These phases of intrusions alternate with periods of avoidance, which prevent individuals from becoming overwhelmed by intrusions. However, most relevant studies assess avoidance as a predictor of intrusions or vice versa rather than examining the theorized bidirectional process. The current study presents a longitudinal empirical investigation of the reciprocal relationship between intrusions and avoidance coping through the six to ten months following breast cancer diagnosis. Breast cancer patients (N = 460) completed measures of cancer-related intrusions (Impact of Event Scale) and avoidance (COPE Avoidance-oriented Coping composite) at study entry (i.e., zero - four months after diagnosis), three-, and six-month follow-ups.

Cross-lagged panel analyses tested a series of nested models that contrasted a hypothesized cross-lagged model demonstrating mutual influence between predictors with unidirectional models (intrusions predicting avoidance, avoidance predicting intrusions). Wald tests revealed that a model with bidirectional cross-lagged paths between avoidance and intrusions fit the data better than a model with only avoidance (X^2 =8.55 (2), p = .02) or intrusions (X^2 =11.87 (2), p =.003) as a predictor. In the best-fitting model, intrusions at study entry predicted greater avoidance three months later (b = .06, p < .001), and avoidance coping at study entry predicted more intrusions three months later (b = .34, p = .01), controlling for the stability of intrusions and avoidance as well as time since diagnosis. There was no significant relationship between avoidance and intrusions at the three-month to the six-month assessment (ps > .05).

These findings provide empirical support for theories of cognitive processing following stressful events in revealing a bidirectional relationship between avoidance and intrusions in approximately the first six months after breast cancer diagnosis, which appears to diminish in the next three months. Whether this process can be accelerated via psychosocial intervention is worthy of investigation.

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D032 10:00 AM-11:00 AM

SUN SAFETY, SKIN CANCER, AND SOCIODEMOGRAPHIC CHARACTERISTICS AMONG APPALACHIAN ADULTS COMPARED TO NON-APPALACHIAN ADULTS

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Background: Individuals living in the US Appalachian region experience greater cancer disparities compared to their non-Appalachian counterparts. Although melanoma incidence is comparable among Appalachians and non-Appalachians, melanoma mortality rates are 23% higher in Appalachia compared to the national average. Protective behaviors related to limiting UV exposure, such as sunscreen use and tanning bed avoidance, can help reduce skin cancer mortality among Appalachians. Previous research examined sunscreen use among Appalachian Ohio residents, but little is known about the entire 13 state region.

Objective: This study examines skin cancer and associated behaviors among Appalachian adults vs. non-Appalachian adults, along with related sociodemographic characteristics in a nationally representative US sample.

Methods: Data from four waves of the Health Information National Trends Survey, a nationally representative population-based survey collected from 2011-2014, were combined (N = 14,451). Descriptive analyses examined sunscreen use, tanning bed use, and history of melanoma and non-melanoma skin cancers among Appalachian respondents vs. non-Appalachians. Weighted multivariable analyses were conducted to examine sunscreen use, controlling for sociodemographic characteristics.

Results: Approximately 8% of the sample resided in Appalachia (n=1,015). Melanoma rates among Appalachians were low (0.5%). Non-melanoma skin cancer (2.6%) also did not differ statistically between Appalachian and non-Appalachian adults. Only 1.7% of Appalachian respondents reported using sunscreen often or always when going outside for more than 1 hour on a warm, sunny day, compared to 25.2% among non-Appalachians. Only 0.5% of Appalachian adults reported tanning bed use and residents appeared to be no more or less likely to use a tanning bed than non-Appalachians in multivariable models. In a multivariable logistic regression, individuals residing in Appalachia reported a lower odds of sunscreen use often or always compared to non-Appalachian residents (OR=0.73, $p < 0.05$), controlling for sociodemographics and general health status. Women were more likely than men to report sunscreen use often or always (OR=2.18, $p < 0.05$), as were individuals with a college degree or higher (OR=1.99, $p < 0.05$), compared with individuals with less than a high school degree.

Conclusions: Consistent with national surveillance data, Appalachian respondents were no more or less likely to report being diagnosed with melanoma or non-melanoma skin cancer, but were less likely to report sunscreen use than non-Appalachian residents. No differences in tanning bed use were seen, indicating that interventions should focus on increasing regular sunscreen use among Appalachian residents. Communication efforts in both occupational and recreational settings are needed to increase sun safety behaviors.

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D033 10:00 AM-11:00 AM

SURVIVORSHIP CARE PLANNING AND ADHERENCE TO GUIDELINE-RECOMMENDED CANCER SCREENING

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Introduction: With improvements to cancer screening and treatment, the number of cancer survivors living in the United States is increasing. Cancer survivors are at high risk of chronic health conditions and additional cancer diagnoses. To aid in long-term follow-up care, the National Cancer Institute recommends that all cancer survivors receive a written treatment summary and plan for follow-up care, jointly called a survivorship care plan. However, survivorship care planning is underutilized and there little evidence yet linking its use to positive patient outcomes.

Purpose: Thus, for this study we used data from the 2014 Behavioral Risk Factor Surveillance System (BRFSS) survey to look at the association between survivorship care planning and adherence to guideline-recommended cancer screening.

Methods: We used 3 multivariable logistic regression models to test whether receipt of a written treatment summary and receipt of instructions for follow-up care were associated with being up-to-date on mammography, cervical cancer screening, and colorectal cancer screening while controlling for patient demographic and cancer history related variables.

Results: In total, 4264 off-treatment cancer survivors completed the 2014 BRFSS cancer survivorship module and were included in our analysis. Most survivors were female (63%), white (93%) and 65 years old or older at the time of the survey (63%). Breast cancer was the most common cancer diagnosis (22%) followed by melanoma (18%), and prostate cancer (11%). In total, 40% of survivors reported receiving a treatment summary and 71% reported receiving instructions for follow-up care. Additionally, 79% of eligible survivors were up-to-date on mammography, 83% on cervical cancer screening, and 78% on colorectal cancer screening. In our adjusted models we found that receipt of a plan for follow-up care was significantly associated with adherence to guideline-recommended mammography (OR=2.2, 95% CI (1.6-2.9), cervical cancer screening (OR=1.9 (1.1-3.1)) and colorectal cancer screening (OR=1.7 (1.4-2.2). Receipt of a written treatment summary was not associated any of the cancer screening behaviors.

Conclusion: Timely cancer screening can be life-saving and is particularly important among cancers survivors who have higher odds of subsequent cancer diagnoses. Our study shows initial evidence for the impact of survivorship care planning on adherence to guideline-recommended cancer screening.

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D034 10:00 AM-11:00 AM

SYMPTOM CLUSTERS IN METASTATIC BREAST CANCER PATIENTS

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Co-occurring symptoms, or symptom clusters, have a negative, compounding effect on functional status and quality of life in cancer patients. Symptom clusters are also significant because they point to common mechanisms—both biological and psychological—that may underlie various symptoms. Psychoneurological symptom clusters consisting of mood disturbances, cognitive dysfunction, fatigue, sleep disturbance, and pain have been found in patients with early-stage breast cancer and other cancer types. Symptom cluster research in breast cancer patients has largely focused on patients with early-stage disease or survivors in remission, and little is known about symptom clusters in metastatic breast cancer patients despite their increasing longevity and high symptom burden. In order to address this gap, this study aimed to identify physical and psychological symptom clusters in metastatic breast cancer patients. Eighty women with metastatic breast cancer (91% Caucasian, average age = 55 years, SD = 11 years) were recruited from the Indiana University Simon Cancer Center to participate in this cross-sectional telephone interview study. The interview included valid measures of the severity of 10 common symptoms (i.e., pain, fatigue, anxiety, depressive symptoms, neuropathy, edema of arms or legs, nausea, hot flashes, sleep disturbance, and cognitive concerns). An exploratory cluster analysis was performed on measures of all 10 symptoms. Anxiety, depressive symptoms, fatigue, sleep disturbance, and cognitive concerns were found to cluster. A separate cluster consisted of pain, neuropathy, and nausea. Hot flashes and swelling did not cluster. The first cluster is consistent with a psychoneurological symptom cluster, which has been found in patients with non-metastatic breast cancer and other cancer types. The co-occurrence of pain and neuropathy may reflect neuropathic pain, which, along with nausea, is a common side effect of chemotherapy. Further research is needed to replicate these clusters and elucidate common mechanisms underlying co-occurring symptoms to inform intervention development.

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D035 10:00 AM-11:00 AM

THE AUDACITY OF ENGAGEMENT: HEARING DIRECTLY FROM YOUNG ADULTS WITH CANCER ON THE STATE OF CANCER SURVIVORSHIP RESEARCH

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Background: Adolescent and young adult (AYA) cancer survivors are an understudied and underserved patient population. This study aimed to better understand AYAs' perceptions of cancer survivorship research in order to identify barriers and inform research approach and methodology to ultimately improve evidence-based supportive care.

Methods: Individual interviews and small focus groups were conducted with AYA cancer survivors (N=17) attending an oncology conference and social networking event. Analyses were guided by grounded theory using an inductive data-driven approach to thematic content analysis.

Results: Participants averaged 33 years old (SD=5.5), were 10 years post-diagnosis (SD=2.3), and primarily female (79%); most common diagnoses were leukemia/lymphoma (37%) and sarcoma (11%). Major themes included: perceptions of cancer research (2 subthemes) and recommendations for improving research methodology and approach (3 subthemes). All participants reported uncertainty as to what "cancer survivorship research" encompassed, but drew from their clinical experiences and prior participation in clinical trials to inform their opinions. Perceptions of research were both positive and negative. Positive feelings included optimism about the potential to improve the cancer survivorship experience and wanting to give back to the AYA community through research participation. Negative perceptions included seeing research as inaccessible, overwhelming, and frustrating; participation as inconvenient and burdensome; and viewing researchers with skepticism and mistrust. Recommendations centered on: 1) making study materials age-appropriate and patient-focused; 2) increasing AYAs' control over participation requirements and the flexibility and convenience of procedures; and 3) creating a back-and-forth dialogue between researchers and the AYA community to improve study-specific communication (dissemination of findings), stay up-to-date on medical information specific to one's disease, and to have a voice in determining research priorities.

Conclusion: Specific strategies are needed to address AYAs' negative perceptions and perceived barriers to research participation. Future work should determine how to best improve communication with the AYA community including dissemination of research findings, providing opportunities to participate in age-appropriate research advisory roles, and building trust.

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D036 10:00 AM-11:00 AM

THE BEHAVIORAL MEASUREMENT AND INTERVENTION SHARED RESOURCE (BMISR) SUPPORTS RESEARCHERS CONDUCTING BEHAVIORAL STUDIES

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Background: The University of Arizona Cancer Center (UACC) BMISR provides support and services to UACC members and other University and national researchers studying human lifestyle behavior (diet, physical activity, sun safety, sexual practices, tobacco use) and quality of life (sleep, symptom management) related to cancer prevention and control. The BMISR supports the design and implementation of highly innovative behavioral measurement and interventions research within diverse populations. Specifically, the BMISR provides consultation for theory and research design, offers a repository of data collection tools and measurement equipment, facilitates development and use of ehealth and mHealth measurement and intervention strategies, and provides training for data collection, measurement, and multimodal lifestyle behavior coaching.

Purpose: To describe the structure of the BMISR and its effectiveness as a mechanism to promote behavioral health research in multiple populations, organizations and settings.

Methods: We evaluated BMISR recruitment techniques, usage from 2014 to 2016 by UACC members and nonmembers with and without peer-reviewed support, types of activities requested by researchers, implementation in diverse populations, and cost.

Results: The BMISR has successfully recruited users using strategies of local and national person-person networking, formal presentations to UACC and University faculty, and publication in newsletters. Innovative partnerships with a smoker's quitline program and mHealth development program has increased usage. The BMISR provided services to over 35 researchers nationally, including those in 9 comprehensive cancer centers. Of those researchers, 35% were UACC members with peer-reviewed support and 65% were nonmembers. Researchers requested support for questionnaire development (n=8 researchers) dietary measurement (n=21), health coaching (n=2), mHealth studies (n=4). These researchers were conducting studies in populations of adolescents, American Indians, Hispanics, healthcare providers, and cancer survivors. Fees for BMISR services such as survey analysis, dietary recalls, coaching calls, and accelerometer use were at least 50% less than charges from outside vendors.

Conclusions: The BMISR is an effective and economical means of supporting researchers who conduct behavioral research in diverse populations and settings.

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D037 10:00 AM-11:00 AM

THE BOTTOM LINE: WHY MENTAL HEALTH PROVIDERS NEED TO PARTICIPATE IN THE CARE OF NON-ELDERLY ADULTS WITH CANCER

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Background: This study examines the relationship of mental health comorbidities and cost in non-elderly cancer patients.

Methods: A cross-sectional analysis of Military Health System data was conducted on all beneficiaries (9.5 million) to select patients ages 18-64 with a primary diagnosis of cancer for fiscal years 2007 – 2014. General linear models were used to examine the relationship between mental health comorbidities and annual costs, the number of ambulatory visits, the number of hospitalizations, and the number of admission days. Predictors included demographic characteristics, type and location of enrollment, types of treatment modalities, number of chronic disease comorbidities, presence and type of mental health comorbidities, and tobacco use.

Results: On average, 92,318 patients had a primary cancer diagnosis each year of observation. The Department of Defense paid an average of $20,357 (adjusted to U.S. 2014 dollars) per patient per fiscal year. The mean number of annual visits per patient was 26.44; the mean number of annual hospitalizations was 1.62; and the mean number of admission days was 16.13. The majority of patients were ages 45 - 64, female, and military retired or a family member of a retiree. After controlling for other predictors, concurrent diagnosis of depression, anxiety, or adjustment disorder (DAA) was significantly related to annual cost ($p < 0.0001$), with only the receipt of chemotherapy being a stronger predictor. A concurrent diagnosis of DAA, or of a serious, persistent mental illness, were significant predictors of annual number of ambulatory visits ($p < 0.0001$).DAA comorbidity was highly related to annual number of hospital readmissions ($p < 0.0001$), as well as annual number of admission days ($p < 0.0001$). A comorbidity of alcohol and drug use disorder was statistically significant ($p < 0.0001$) in all regression models, though not as strong a predictor as DAA. Additionally, tobacco use was significantly related to annual cost ($p < 0.0001$), ambulatory visits ($p < 0.0001$), and hospital readmissions ($p < 0.0001$), but not to the annual number of admission days.

Conclusions: This study found that cancer patients had high levels of depression, anxiety, and adjustment disorder and that these patients generated increased annual costs, including costs

related to ambulatory visits, hospital readmissions, and admission days. These findings suggest that the increased involvement of mental and behavioral health professionals may be beneficial in improving patient care and reducing costs.

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D038 10:00 AM-11:00 AM

THE BREAST CANCER ONLINE REHABILITATION PROGRAM – FEASIBILITY OF A MUNICIPALITY-BASED UPPER-BODY REHABILITATION PROGRAM

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Background Following treatment for breast cancer, a considerable amount of women experience persistent upper-body issues. Innovative interventions for early post-surgery rehabilitation are needed. An online resource offers the opportunity to deliver homogenous, high-quality breast cancer rehabilitation that may reduce the prevalence or severity of persistent upper-body issues. We developed the Breast Cancer Online Rehabilitation (BRECOR) program through an iterative process (usability testing, discussion panels, and focus group interviews with women with breast cancer and physiotherapists). The program consists of a clinical assessment tool for physiotherapists to prescribe individualized exercises, and a website and education pamphlet to support the home-based rehabilitation prescriptions.

Objective To test the feasibility of integrating the BRECOR program into clinical practice to support upper-body rehabilitation for women after breast cancer surgery.

Design and setting Single-group, feasibility study in 11 municipalities in the Capital Region of Denmark.

Subjects Women age 18-80 years with 1) a surgery for breast cancer within the past 8 weeks, 2) access and ability to use internet, and 3) ability to read and understand Danish.

Methods All participants underwent an in-person assessment with a physiotherapist using the BRECOR clinical assessment tool, which then formed the therapist's decision-making for the prescription of specific exercises for a 12-week home-based upper-body rehabilitation program tailored to each participant's needs. Each participant received in-person instruction

by the physiotherapist for the specific exercises at that visit. To support this program, participants were asked to use the BRECOR education pamphlet and the BRECOR website to complete 5 to 7 exercise sessions weekly. At 12-weeks, the in-person assessment with a physiotherapist was repeated and used as a measure of retention. Primary outcomes were recruitment and retention rate, adherence, participant satisfaction, capacity/resources and secondly, self-reported shoulder function (QuickDASH).

Results From 49 women, who were eligible, 39 (79.6%) participated and 29 (74.6%) completed the 12-week follow-up assessment. 72% (21 of 29) adhered to the BRECOR program. 90% (26 of 29) reported to have benefitted “much” or “very much” from the BRECOR program. Capacity (total time spent by the physiotherapist in delivering the program) was 1.5 hour ±27 min at baseline and 54±13 min at follow-up. Self-reported shoulder function improved from baseline (mean 18.60±12.5) to 12-weeks (mean 13.97±16.1) but was not significant (p=0.08).

Conclusion The BRECOR program can reach and retain the majority of women in the early phase after surgery for breast cancer. Participants are satisfied with and adhered to the program.

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D039 10:00 AM-11:00 AM

THE DEVELOPMENT, IMPLEMENTATION, AND EVALUATION OF A COMMUNICATION SKILLS TRAINING PROGRAM FOR ONCOLOGY NURSES

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Many nurses express difficulty in communicating with their patients, especially in oncology settings where there are numerous challenges and high stakes decisions during the course of diagnosis and treatment. Providing specific training in communication skills is one way to enhance the communication between nurses and their patients. We developed and implemented a communication skills training program for nurses, consisting of three teaching modules: Responding Empathically to Patients, Discussing Death, Dying, and End-of-Life Goals of Care, and Responding to Challenging Interactions with Families. Training included didactic and experiential small group role plays. This paper presents results on program evaluation, self efficacy and behavioral demonstration of learned communication skills. Three hundred and forty two in-patient oncology nurses participated in a one-day communication skills training program, and completed course evaluations, self-reports, and pre- and post-Standardized Patient Assessments. Overall nurse participants rated the training favorably. Specifically, more than 90% of nurse participants indicated that they agreed or strongly agreed with 5 of the 6 evaluation items (with one item receiving endorsement by more than 80% but less than 90% of participants). As well, a majority of nurse participants (>80%) rated each individual module component as aiding in learning (as indicated by ratings of “somewhat aided my learning” to “aided my learning a lot”). Participants reported significant gains in self efficacy in their ability to communicate with patients in various contexts. Overall, nurses’ self-efficacy significantly improved [$t(1016) = 31.17$, $p < .001$] from pre- ($M = 3.31$, $SD = .88$) to post-training ($M = 4.05$, $SD = .65$). In addition, there was a significant increase in overall skill use from pre- to post-training. The biggest gain was observed in empathic skills. In particular, 4 out of 5 empathic skills (encourage expression of feelings, acknowledge, normalize, and praise patient efforts) significantly increased from pre- to post-training. Additionally, significant increase was observed in 1 out of 5 questioning skills (clarify) and 1 out of 4

information organization skills (summarize). This work demonstrates that implementation of a nurse communication skills training program at a major cancer center is feasible, acceptable, and has a significant impact on participants' self-efficacy and uptake of communication skills. A key practical implication of this work is that communication skills training for oncology nurses (as well as for other health providers) is an effective way of improving communication between nurse and patient/families, with putative improvements in patient-related outcomes. Future research should examine the impact of communication skills training on relevant patient outcomes.

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D040 10:00 AM-11:00 AM

THE EFFECT OF ACCEPTANCE AND COMMITMENT THERAPY ON COGNITIVE FUSION, DISTRESS, AND MOOD DISORDERS: A PILOT STUDY

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Acceptance and Commitment Therapy (ACT) is designed to promote psychological flexibility through various cognitive and behavioral processes, including cognitive defusion—the act of detaching from one’s thoughts and emotions. Defusion promotes greater flexibility in coping with difficult thoughts and emotions, which may help newly diagnosed breast cancer patients who experience psychological distress and mood disorders. A pilot study was conducted to examine whether ACT would reduce cognitive fusion, psychological distress, depression, and anxiety in a sample of 22 women diagnosed with breast cancer (stages 0 to 3) within the past year, who reported experiencing significant levels of distress. Participants were randomly assigned to an 8-week ACT intervention group or an attention-control group and were administered the Brief Symptom Inventory-18, the Cognitive Fusion Questionnaire-13, and the Hospital Anxiety and Depression Scale pre- and post-intervention. The small sample size limited power to detect interactions between the intervention groups and time points; thus, effect sizes were calculated to compare the two groups on change for each of the variables of interest. The results showed a reduction in cognitive fusion in both groups; however, the effect size was moderate for the ACT group ($d = 0.614$) and small for the attention-control group ($d = 0.246$). The attention-control group reported a greater reduction in psychological distress ($d = 1.615$) than the ACT group ($d = 1.475$), with both groups having large effect sizes. A large effect was detected in the ACT group for reduction of depressive symptoms ($d = 1.740$), with only a moderate effect size for those in the attention-control group ($d = 0.773$). Lastly, moderate effect sizes were obtained for both groups in the reduction of anxiety symptoms (ACT: $d = 0.765$; Attention-control: $d = 0.644$). A large randomized controlled trial is warranted to determine whether the promising effects of ACT found in this pilot study will be sustained among newly diagnosed breast cancer patients.

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D041 10:00 AM-11:00 AM

THE IMPACT OF CANCER ON THE SEXUAL FUNCTION OF ADOLESCENTS AND YOUNG ADULTS: A SYSTEMATIC REVIEW

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Background: Adolescence and young adulthood (ages 15-39) is a critical period for sexual development, and a diagnosis of cancer during this time may have negative implications for sexual health (Nathan, Hayes-Lattin, Sisler, & Hudson, 2011). To date, no review has examined the effect of cancer on the sexual function of either men or women within this age range.

Objective: To identify, with supporting evidence, the effect cancer and its various treatments on the sexual function of adolescent and young adult men and women.

Data sources: A systematic review of articles published in English using PsycINFO, PubMed, and CINAHL was conducted. Additional studies were identified through reference lists. A total of 1,465 articles were retrieved after duplicates were removed. Search terms included: cancer, adolescents, young adults, sexual function, sexual satisfaction, sexual desire, sexual arousal, sexual pain, orgasm.

Study selection: Studies were eligible for inclusion if they a) were published in peer-reviewed journals; b) presented original findings; c) used validated measures; and d) included men and/or women who were diagnosed with cancer between the ages of 15 and 39.

Data extraction: Quality assessments and data extraction were performed independently by the first two authors using The Strengthening the Reporting of Observational Studies in Epidemiology Statement (STROBE; von Elm et al., 2008).

Results: In the 14 final studies, there was a total of 2,265 participants (849 females), with sample sizes ranging from 9 to 793. The results showed that a diagnosis of cancer during the adolescent and young adult period affects the following domains of sexual function: desire, arousal, lubrication/erection, orgasm/ejaculation, pain, enjoyment/satisfaction, and frequency of sexual activity. For both women and men, a diagnosis of cancer during this time significantly impacted sexual satisfaction. In women specifically, the domain of sexual function that was most impacted was desire, whereas for men erectile function was most compromised.

Conclusion: Adolescents and young adults have been identified as particularly vulnerable to the negative impact of cancer and its treatments. Increased awareness of the potential consequences of cancer on sexual function in this population is essential to developing targeted interventions.

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D042 10:00 AM-11:00 AM

THE IMPACT OF MATCHING TO PSYCHOTHERAPY TREATMENT PREFERENCE ON THERAPEUTIC ALLIANCE IN PATIENTS WITH ADVANCED CANCER

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Background: A common challenge in randomized controlled trials (RCTs) is that participants may inherently prefer one treatment over another, which may impact attrition, outcomes, and therapeutic alliance. The purpose of these analyses is to examine whether matching patients with advanced cancer to their preferred psychotherapy treatment will positively impact their alliance with their therapist during treatment.

Method: Data were drawn from an RCT comparing the efficacy of Individual Meaning-Centered Psychotherapy (IMCP), Individual Supportive Psychotherapy (ISP), and Enhanced Usual Care (EUC) in a sample of patients with advanced cancer. Patients' preference for treatment was assessed with a categorical question, "if you were able to choose, which arm would you prefer?". Therapeutic alliance was measured before the fourth session by a member of the study team other than the therapist using the Working Alliance Inventory-Short Form.

Results: For the purposes of these analyses, only participants (N = 168) who prefer and are randomized to one of the two psychotherapy treatments (either IMCP or ISP) will be included. Eighty-six (51%) participants were matched to their preferred type of psychotherapy treatment. Of those 86, 49 participants preferred and received IMCP, and 37 participants preferred and received ISP. Eighty-two (49%) participants were categorized as having been mismatched to their preferred type of psychotherapy treatment. Of those 82 participants, 46 preferred IMCP but received ISP, and 36 preferred ISP but received IMCP. Results demonstrated that patients who matched to their preferred psychotherapy treatment had a significantly stronger therapeutic alliance than those who did not, (t = -3.10, p =.003). Further breaking down the mismatched group, those who preferred IMCP and received ISP, compared to other mismatched patients, demonstrated a significantly weaker therapeutic alliance, (t = 2.93, p = .005). By contrast, there was no significant difference in therapeutic alliance between those who preferred ISP but received IMCP and other mismatched patients, (t =

0.76, p = .451).

Conclusions: Matching to treatment preference appears to impact the therapeutic alliance between the therapist and patient, as reported by the patient, in a RCT comparing psychotherapeutic treatments for patients with advanced cancer. Mismatch seems to differentially impact therapeutic alliance, and might be less relevant for people who prefer ISP than those who prefer IMCP.

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D043 10:00 AM-11:00 AM

THE PSYCHO-PHYSIOLOGICAL IMPACTS OF SELF-COMPASSION TRAINING FOR CANCER SURVIVORS: A RANDOMIZED-CONTROLLED PILOT STUDY

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Background: Being self-compassionate is to treat yourself with kindness at times of adversity. Although self-compassion training was found to be associated with domains of positive mental health outcomes among non-clinical population, few studies examined the effectiveness of compassion training among people with chronic medical conditions. Utilizing both subjective self-report and the biomarkers Heart Rate Variability, this pilot study explored the benefits of mindfulness-based self-compassion training among cancer patients.

Methods: This pioneer study adopted a 2-arm randomized-controlled study design. A total of 37 Chinese cancer survivors were surveyed once at baseline and at post-training. They were surveyed on a self-report inventory of self-compassion, symptoms of anxiety and depression, positive and negative affect, and non-reactivity; they were also invited to participate in a stress task to capture clinical data heart rate variability.

Results: On subjective measures, co-varying age,participants of the Self-Compassion Training showed significant *Time x Group* effects on self-compassion, positive affect, non-reactivity, and depressive symptoms. However, no significant *Time x Group* effect was reported for negative affect. In terms of mood regulation, participants also showed significant improvements in heart rate variability as reflected on the measures of RMSSD, HF, and LF during a stress test at post-intervention.

Conclusions: Results of the pilot study revealed the potential effectiveness of cultivating self-compassion among cancer survivors through mindfulness practice. Participants showed improvements in self-compassion, non-reactivity, positive affect, depressive symptoms after the program, and they reported better emotional resilience during a stress task. Further study with a discrete sample of larger size is recommended to yield further evidence on effectiveness of self-compassion training.

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D044 10:00 AM-11:00 AM

THE ROLE OF SELF-EFFICACY IN INTENTIONS TO RECEIVE HPV VACCINATION AMONG FEMALE COLLEGE STUDENTS

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College women are at high risk for contracting human papillomavirus (HPV), and yet, up to 70% of young women do not complete the three-shot HPV vaccination series. Drawing upon the Health Belief Model (HBM), prior studies have identified cognitions (e.g., perceived risk of disease, perceived barriers) associated with young women's intentions to receive the HPV vaccine. Self-efficacy, a common target for intervention, may be a factor underlying the relationship between HBM variables and young women's vaccine intentions. The current study tested the hypothesis that self-efficacy for HPV vaccination would mediate relationships between five HBM variables (i.e., perceived risk, perceived benefits, perceived barriers, perceived severity, cues to action) and intentions to receive the vaccine among unvaccinated college women. Data were collected via an anonymous, web-based survey from 115 unvaccinated women aged 18-26 who were attending a Midwestern university. Five separate mediation analyses were conducted to examine whether self-efficacy mediated relationships between the five HBM variables and intentions while controlling for the other four unexamined HBM variables and prior knowledge of the HPV vaccine. As hypothesized, there were significant indirect effects of perceived risk on intentions through self-efficacy (indirect effect=.16, SE=.09, 95% CI=.02-.37) and perceived barriers on intentions through self-efficacy (indirect effect=-.16, SE=.06, 95% CI=-.31--.06). Specifically, perceived risk of developing an HPV-related condition was positively associated with self-efficacy for HPV vaccination which, in turn, was positively associated with vaccine intentions. In addition, perceived barriers to HPV vaccination were negatively associated with self-efficacy for vaccination which, in turn, was positively associated with vaccine intentions. Self-efficacy did not mediate the effects of the other HBM variables on intentions. Future intervention research might examine whether increasing self-efficacy for HPV vaccination by providing risk information and reducing perceived barriers promotes vaccination among college women.

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D045 10:00 AM-11:00 AM

TRUENTH LIFESTYLE MANAGEMENT: FEASIBILITY AND BENEFITS OF PHYSICAL ACTIVITY AND YOGA PROGRAMS FOR PROSTATE CANCER SURVIVORS

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TrueNTH Lifestyle Management (LM) aims to improve the quality of life for prostate cancer survivors through community-based physical activity and yoga programs. The LM physical activity program is a 12-week, evidence-based program with weekly group fitness and yoga classes, as well as education on key behaviour change skills that will help facilitate physical activity adoption and adherence. Instructors with specialized training followed a manual of operations that included (a) class plans that could be modified to the unique needs of participants based on baseline assessments, and (b) education topics to be delivered on a bi-weekly basis during the weekly classes. Assessments at baseline and 12-weeks included quality of life (Functional Assessment of Cancer Therapy-Prostate and PORPUS), weekly activity levels (Godin Leisure Time Exercise Questionnaire), body composition measures, and fitness assessments (functional aerobic capacity, flexibility, balance, muscular strength and endurance). Participants (n=69) mean age was 66 years, with 18% on active surveillance, 15% on active treatment, and 68% completed treatment. Treatments included surgery (60%), radiation (24%), ADT (26%), and chemotherapy (3%). Significant pre to post intervention improvements were seen in quality of life (FACT-P, *p=.046;* PORPUS, *p=.03*), total moderate/strenuous exercise (GLTEQ, *p=.018*), body composition (waist-to-hip ratio, *p=.012*), functional aerobic capacity (6-minute walk test, *p=.003*), flexibility (sit and reach, *p=.002*), dynamic balance (8-foot timed-up-and-go, *p=.000*), and muscular endurance (push-ups, *p=.042*; 30-second sit-to-stand, *p=.01*). Previously sedentary participants also reached ACSM physical activity guidelines at 12-weeks (GLTEQ, *p=.012*). Ongoing program implementation in additional sites (n=8) includes quality improvement cycles to update programming based on feedback from both participants and instructors, as well as on current evidence. The in-class programming is supplemented by a dedicated website that provides program participants as well as those men who may not have access to the programs (i.e., in rural locations) with the (a) educational resources for physical activity behaviour change as well as key nutrition and

stress-reduction topics, and (b) connection with experts online to aid in physical activity screening and prescription.

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D046 10:00 AM-11:00 AM

'ULTIMATELY, MOM HAS THE CALL:' VIEWING CANCER PATIENTS' CLINICAL TRIAL DECISION MAKING THROUGH THE LENS OF RELATIONAL AUTONOMY

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Rational decision models and shared decision making processes offer principles regarding how cancer patients should approach clinical trial (CT) decisions, but actual social circumstances may influence patients’ self-determination, resulting in departures from these decision processes. This study aimed to understand the social and familial contexts that may impact CT decisions. In-depth interviews were conducted with 33 ovarian cancer patients who had been offered a CT and 39 of their family members (FM). Data were analyzed thematically using constructs derived from the theory of relational autonomy (RA), which argues that social and structural contexts can support or undermine self-determination. Findings suggest that knowledge and self-reliance are important to patients as they actively seek the opinion of FM regarding participation and yet create boundaries around who to include, how, and when. Some patients exhibited strong self-agency by informing FM of their CT participation only after the decision had been made. While RA is focused on the self-determination of patients, this study also offered unique insights into how FM view patients’ autonomous decision making. FM largely confirmed that the decision ultimately rests with the patient (“ultimately, mom has the call”), as the patient is the one who will bear the risks and burdens of trial participation. Although most FM appear to be passive in this process there was evidence of deep relational engagement as FM sometimes sought clarification on the patient’s position and said they would influence a shift in perspective or intervene if they felt patients did not make the right decision. Similar to patients, FM were cautious and created boundaries around what to say and how to present their views to patients. Other influential social and contextual factors present in the data included altruism, provider recommendations, past CT experience, structural and logistic factors. Our study provides a comprehensive understanding of how social circumstances, significant relationships, and contextual factors may influence cancer patients’ autonomy when making CT decisions. It also provides novel insight into how FM view their role in supporting patient autonomy. CT presentations emphasize patient autonomy but also should call attention to the relational aspects that influence decision

making. Tools are needed to guide cancer patients and their FM through complex social factors during CT decision making.

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D047 10:00 AM-11:00 AM

UNDERSTANDING BARRIERS AND FACILITATORS TO COLORECTAL CANCER SCREENING AMONG LATINOS IN A BORDER REGION:FOCUS GROUP FINDINGS

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Title: Understanding barriers and facilitators to colorectal cancer screening among Latinos living in a border region: Focus group findings

Background. Latinos with colorectal cancer (CRC) are diagnosed at late stages and experience disproportionately higher rates of related mortality. CRC screening has been found to be an effective tool for management and prevention of this type of cancer, yet screening continues to be underutilized by Latinos.

Methods. As part of the formative research for developing an intervention to increase colorectal cancer screening in Latino men and women aged 50 and older, five focus groups were conducted with Latino males (n=8) and females (n=31); n=11 were not up-to-date with CRC screening. These focus groups aimed to further understand knowledge and attitudes about colorectal cancer, perceived barriers to participate in CRC screening as well as to inform the development of a related community-health care intervention. All focus groups were conducted in Spanish, audio recorded and transcribed verbatim. Transcripts were analyzed using inductive content analysis and thematic coding.

Results. Primary themes included: 1) poor access to care and low knowledge of resources for CRC as barriers to cancer screening; 2) among uninsured participants, fear of incurring economic costs/debt as a barrier to engaging in preventive health services; 3) significant influence of primary care provider recommendations to be screened. Overall, participants equated cancer and cancer treatment with negative outcomes (i.e. death) and were poorly informed about CRC and types of screening.

Conclusions. Study findings suggest that efforts to increase knowledge of CRC and screening are needed among Latinos. Further, low or no-cost CRC screening resources as well as culturally relevant health education is needed to increase CRC participation by individuals who are economically disadvantaged and underserved. As seen in prior work, provider recommendations may have a significant impact on CRC screening. Findings from this qualitative research will be used to further inform the development of an intervention in a culturally appropriate CRC prevention study.

Keywords. Colorectal cancer; Screening; Qualitative research; Latinos

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D048 10:00 AM-11:00 AM

UNDERSTANDING BARRIERS TO CERVICAL CANCER SCREENING USING PHOTOVOICE AMONG RURAL INDIAN WOMEN

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Objectives:

Cervical cancer is the second most common cancer diagnosed among women in India and current estimated indicate that coverage of cervical cancer screening in developing countries is on average 19% compared to 63% in developed countries. The goal of the present study was to explore perceptions and beliefs that can increase cervical cancer screening uptake among women using a community-based participatory approach called photovoice.

Methods

A total of 14 women between 30-60 years, residing in rural villages around Mysore, Karnataka, India participated in the project. Each participant was provided with a digital camera and asked to photo document their everyday realities which reflected the perceived barriers towards cervical cancer screening. During the 3 weeks of photo collection, participants met individually with the researchers to discuss the meaning of the clicked photographs. Group discussions were conducted to discuss the action steps required to address these barriers.

Results

Seven themes emerged from the data: lack of knowledge regarding cervical cancer, methods and the concept of screening for cancer; socioeconomic factors such as poverty and childcare that affect participation in cancer screening initiatives; lack of family support from husbands and mothers-in-law for participating in health care related activities including cancer screening and further treatment; personal religious beliefs that are not aligned with health care seeking behaviors in the present health systems for participating in cancer screening; misconceptions about screening test methodology and the role of physicians and health care workers in the cancer care continuum; fear of a positive screening test, embarrassment associated with a pelvic exam, and stigma surrounding a cancer diagnosis that is prevalent in the community; and lack of appropriate health care services including lack of privacy for physical examination in primary care clinics and access to a female doctor. Action steps were

identified for each of these themes in group discussions.

Conclusions

Study findings helped identify elements of the social and cultural context of rural communities thereby providing a rich understanding of the barriers of cervical cancer screening which can be integrated into pre-intervention capacity development in the future.

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D049 10:00 AM-11:00 AM

UNDERSTANDING MOTIVATION TO CHANGE THROUGH THE LENS OF A MOTIVATIONAL INTERVIEWING FRAMEWORK

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Introduction

Previous research indicates that for parents of pediatric cancer patients, their level of self-efficacy influences their child's level of distress and cooperation during cancer-related treatment procedures. Understanding factors that motivate parents to engage in Motivational Interviewing (MI) interventions to increase their self-efficacy is essential to improving parent and child coping and emotional well-being. The purpose of this study was to develop a typology, based on MI principles of importance and self-confidence, to characterize parents' motivation to change.

Methods

Participants were 19 parents of pediatric cancer patients receiving treatment in a Midwestern urban children's hospital. Data were compromised of audio-recorded treatment sessions between parents and a trained MI interventionist. Using qualitative methods, audio-recordings were analyzed to develop an exhaustive list of parent cognitions and behaviors that reflected reasons or motivation to change (or not change).

Results

A typology was developed consisting of four categories based on the MI dimensions of confidence and importance. Parents who were low importance/low confidence were characterized as unaware or cynical about the need for change and believing it was not their job to calm their child. Parents in the low importance/high confidence category were skeptical of the need for change, guarded in admitting weakness, and not open to suggestions for helping their child. Parents in the high importance/low confidence category were characterized as wanting to help their child but lacking confidence in their ability to help. Finally, parents in the high importance/high confidence category were characterized as optimistic about their ability to help and always “having a Plan B.”

Conclusions/Implications

This typology provides a framework for assessing parental levels of importance and self-confidence with respect to increasing their caregiving self-efficacy. This framework furthers our ability to identify parent’s motivation to change and ultimately will guide future MI interventions designed to improve coping and emotional well-being.

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D050 10:00 AM-11:00 AM

USE OF EHEALTH/MHEALTH TECHNOLOGIES FOR SELF-MANAGEMENT AMONG CANCER SURVIVORS

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Background and Purpose: Cancer survivors' use of eHealth/mHealth technologies for self-management needs is not well understood. The purpose of this study was to examine survivors' use of the Internet and mHealth apps for four self-management processes, including resource utilization, partnerships with healthcare providers, treatment decision-making, and taking action, and to explore correlates of technology use for each process.

Methods: Secondary analysis utilized data from the Health Information National Trends Survey 4 (HINTS 4) Cycle 4, a national health information collection program administered by the National Cancer Institute. Variables examined were chosen based on the Individual and Family Self-Management theory. All analyses accounted for the complex sampling features, including weights and stratification. Descriptive statistics were used to characterize the cancer survivor subpopulation in terms of self-management behaviors, and bivariate associations between the correlates and indicators of engaging in each process were tested.

Results: Just under 1/3 of cancer survivors had used technologies for seeking online cancer information (32%), accessing the patient portal (29%), and exchanging medical information electronically with healthcare professionals (30%). Forty one percent of cancer survivors did not have a smartphone or tablet, and 36% of those who had a smartphone or tablet did not have mHealth apps. Among cancer survivors having mHealth apps, 56.3% used the apps for achieving health-related goals, and 32.9% used the apps to help treatment decision making. Cancer survivors who were younger, married, employed, and had higher income had higher odds of using technologies for self-management. In addition, new diagnosis, receiving treatment, and the belief that everything causes cancer were correlates of online information seeking or exchanging information with healthcare professionals. BMI and rural residence were correlates of the use of mHealth apps.

Conclusion: Less than one-third of cancer survivors used eHealth/mHealth technologies for self-management. Their use may be limited by the availability of technologies and health-related applications, and was associated with their socio-demographic characteristics, as well as certain cancer-specific factors and beliefs. Findings from the study may aid the

development of appropriate technology-supported self-management programs for cancer survivors.

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D051 10:00 AM-11:00 AM

USING THE COMMON SENSE MODEL TO UNDERSTAND BRCA PREVIVORS' CONCEPTUALIZATION OF THEIR INCREASED RISK FOR CANCER

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Background: Women who have not had cancer, but test positive for a *BRCA* mutation (previvors) are at significantly increased risk for developing breast and ovarian cancer. Little is known about how *BRCA* previvors conceptualize their increased cancer risk, and subsequently, make risk management decisions. The Common Sense Model (CSM) provides a cognitive framework for exploring individual's risk perceptions and management decisions. Using this framework, we explored how *BRCA* previvors conceptualize and manage their cancer risk.

Methods: Female *BRCA* previvors over 18 years were recruited through social network sites to participate in a semi-structured telephone interview. Demographic information was collected during the interview. Interviews were audio recorded and transcribed verbatim. Two coders conducted content analysis based on an a priori code list including four CSM constructs: cause, timeline, control, consequence, and emotional response. Inter-coder reliability was established using Krippendorf's alpha.

Results: Twenty-five *BRCA* previvors participated. Coders were reliable at $\alpha = 0.73$. Most previvors obtained genetic testing due to a family history of cancer and/or *BRCA* mutation. They described their increased risk as something they always had, but became aware of through testing. Many identified a certain age at which they were most concerned about developing cancer, an age that often aligned with the age of the first cancer diagnosis in their family. This age became a self-imposed deadline for prophylactic surgery decisions, Knowledge of their *BRCA* mutation impacted family planning, and in some cases, personal relationships. Emotions were higher immediately after receiving genetic test results, but lessened over time, especially after completing prophylactic surgeries.

Conclusion: *BRCA* previvors conceptualized cancer risk as something they have always had, and managed their risk by engaging in surveillance prior to undergoing surgery at a self-imposed age based on family history. Prophylactic surgeries provided a return to normalcy

and eliminated negative outcomes. Understanding how *BRCA* previvors conceptualize their risk can inform intervention development.

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D052 10:00 AM-11:00 AM

WHAT GOOD IS SELF-COMPASSION? BRIDGING MINDFULNESS PRACTICE AND POSITIVE PSYCHOLOGICAL OUTCOMES AMONG CANCER SURVIVORS

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Background: The practice of mindfulness teaches one to respond to stress in non-reactive manner. Ample of evidence suggested the benefit of mindfulness in improving psychosocial well-being of cancer patients. However, little is known about how such transformations took place. With reference to the Buddhist root of mindfulness practice, this present study explored the role of self-compassion in mindfulness training for cancer patients.

Methods: 47 Chinese adult cancer survivors attending an 8-week mindfulness-based self-compassion training program were surveyed on a self-report questionnaire on their level of reactivity, self-compassion, positive and negative affect, as well as anxiety and depression symptoms.

Findings: Participants reported significant improvement in non-reactivity, self-compassion, as well as symptoms of anxiety and depression after attending the 8-week program. Regression analyses showed that non-reactivity was positive associated with self-compassion and positive affect; but association was not found either between non-reactivity and negative affect or anxiety symptoms. Further analyses showed that self-compassion completely mediated the relationship between non-reactivity and positive affect as well as depression.

Conclusions: Mindfulness practice emphasizes the non-reactive way in responding to daily life stress; the present study suggested that the association between non-reactivity and positive coping outcomes were mediated by the presence of self-compassion. Cancer survivors who are less reactive reported more positive affect and fewer depressive symptoms by means of becoming more self-compassionate. The cultivation of self-compassion could be one of the ways to cancer survivors to alleviate mood and nurture positive affect for cancer survivors.

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D053 10:00 AM-11:00 AM

WHEN CANCER STIGMA GETS UNDER THE SKIN: ASSOCIATIONS OF CANCER STIGMA WITH COGNITIONS AND QUALITY OF LIFE

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Objective:

The “pink ribbon” culture presents breast cancer as a disease of innocence, which results in much less public stigma against women with breast cancer. While surviving breast cancer is less stigmatized and even honored in the American culture, stigma remains a significant stressor among Asian breast cancer survivors. Therefore, the present study aimed to examine the association between internalized stigma and quality of life among Chinese American breast cancer survivors, and how impeded cognitive processing (i.e., reduced posttraumatic growth and more intrusive thoughts) may mediate this association

Methods:

One hundred and thirty-five Chinese breast cancer survivors aged between 33 and 82 (M = 54.55, SD = 9.37) were recruited from Chinese community organizations in Southern California. Interested and eligible individuals were invited to complete a questionnaire package assessing their levels of internalized stigma, posttraumatic growth, intrusive thoughts, and quality of life.

Results:

Results of correlation analysis showed internalized stigma was significantly associated with increased intrusive thoughts (*r* = .67) but reduced posttraumatic growth (*r* = -.28) and quality of life (*r* = -.48). Results of path analysis indicated the data fit well to the proposed mediation model, $\chi^2(1) = 0.45$, p = .50, CFI = 1.00, TLI = 1.02, RMSEA < .001, SRMR = .01. The indirect effects of internalized stigma on quality life through posttraumatic growth (standardized indirect effect = -0.09, *p* < .05, 95% CI: -.72 to -.07) and intrusive thoughts (standardized indirect effect = -0.39, *p* < .01, 95% CI: -1.79 to -.87) were significant, whereas the direct effect of internalized stigma on quality of life was not significant (standardized indirect effect = 0.00, *p* = .93, 95% CI: -.66 to .63).

Discussion:

Findings suggested internalized stigma was associated with poorer quality of life among Chinese American breast cancer survivors, and impeded cognitive processing may be the underlying mechanism. To attenuate the negative associates of internalized stigma and promote quality of life among Asian breast cancer survivors, cognition-focused interventions should be developed to foster posttraumatic growth and reduce intrusive thoughts.

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D054 10:00 AM-11:00 AM

YOUNG BREAST CANCER SURVIVORS' SPECTRUM OF REPRODUCTIVE AND SEXUAL HEALTH NEEDS FROM DIAGNOSIS TO SURVIVORSHIP

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Background: The long-term reproductive health impact of cancer treatments is a legitimate concern for premenopausal women with a breast cancer (BC) history, particularly since it is recommended that women delay childbearing for 2-3 years after diagnosis. Whether or not they desire to conceive after treatment completion, all young women with a BC history may experience treatment-induced reproductive/sexual health issues that potentially affect their quality of life in survivorship. This study aimed to determine the unmet reproductive healthcare needs of premenopausal BC survivors. **Methods:** We recruited women with a BC history, ages 18-45 at diagnosis, and living in North Carolina to participate in an in-person 2-part semi-structured interview that inquired about reproductive health history, BC experience, and reproductive/sexual health concerns around the time of diagnosis. To analyze the data, we used ResearchTalk's *Sort and Sift, Think and Shift©* Method, a multidimensional qualitative analysis approach. This approach along with member checking with a community advisory committee and interview participants allowed us to identify the most salient themes from the data. **Findings:** Seventeen women with a BC history completed the interview. The mean age at first BC diagnosis was 38.6 years. Of the 17 women, 12 delivered all of their children prior to diagnosis, 1 delivered her children after her diagnosis, 2 delivered children before and after their diagnoses, and 2 did not have any children. Ten of the women were white and 7 were women of color (e.g., black, Latina, and Asian). The 5 overarching themes were that women with a BC history: 1) received limited reproductive health information; 2) desired realistic expectations of conceiving post-cancer; 3) made lifestyle choices based on family history of BC; 4) struggled with adjusting to their altered physical appearance; and 5) had menopausal symptoms that led to sexual health and quality of life issues. Despite many commonalities in these women's experiences, there were subtle differences between women who did and did not have a child after their BC diagnosis, as well as between women of color and white women. **Conclusions:** Women with a BC history are in need of and desire more education and resources to address their reproductive and sexual health concerns. Young BC

survivors would greatly benefit from receiving reproductive health counseling to address their concerns during the BC treatment phase and beyond.

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D055 10:00 AM-11:00 AM

METABOLIC SYNDROME, INFLAMMATION, AND COGNITIVE FUNCTIONING IN A COMMUNITY SAMPLE OF AFRICAN AMERICANS

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Research has shown that Metabolic Syndrome (MetS) has adverse effects on cognitive functioning. Studies have illustrated that pro-inflammatory cytokines such as interleukin-1a (IL-1a), interleukin-6 (IL-6), and C-Reactive protein (CRP) mediate this relationship. African Americans are disproportionately affected by MetS and at greater risk for earlier onset and accelerated decline in cognitive functioning. Few studies have examined this relationship in African Americans. The current study investigated the relationship between MetS and cognitive functioning in an African-American community sample. The study also determined if the association between MetS and cognitive functioning is mediated by IL-1a, IL-6, and CRP and whether it is moderated by gender and socioeconomic status (SES). The study consisted of 214 African Americans in the Washington, D.C. metropolitan area. Participants underwent a medical examination conducted at the General Clinical Research Center at Howard University Hospital. Blood serum was collected using venipuncture procedure to determine cholesterol, triglyceride, IL-1a, IL-6, and CRP levels. Weight, height, and blood pressure were also taken. Participants completed a full health history, as well as a battery of psychosocial and neurocognitive measures, which included the Stroop, Trail-making A, and Trail-making B. Results showed no significant main effects of MetS on cognitive functioning. However, the relationship between MetS and cognitive functioning was mediated by Il-6 and CRP. This relationship was not moderated by gender or SES. Results emphasize the important role of inflammation as a mechanism by which MetS impacts cognitive functioning. Future research should consider the role of inflammation when determining risk for cognitive impairment in individuals with MetS. The central role of inflammatory processes associated with other chronic conditions and their impact on cognitive decline should be further investigated.

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D056 10:00 AM-11:00 AM

MILD COGNITIVE DEFICITS IN MEN AND WOMEN WITH AND WITHOUT CORONARY ARTERY DISEASE: PERSONALITY MATTERS

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BACKGROUND: Mild cognitive deficits and dementias are more prevalent with aging. Pro-inflammatory and vascular processes likely play a significant role in their pathophysiology. However, personality traits and affective states that drive much of how individuals interact with their world, and that have been shown to increase the risk of coronary artery disease (CAD) morbidity and mortality, may also be of importance. To examine the presence and correlates of mild cognitive deficits in men and women with and without CAD and no known cognitive disorder.

METHODS: Five hundred and eighteen men and 212 women with and without CAD (N = 478 and 252, respectively; Age=65.7 ± 6.7 years), and no known cognitive disorder, were administered the Montreal Cognitive Assessment (MoCA) as well as various psychological and health questionnaires. Blood was drawn in fasting state and anthropomorphic and BP data obtained to ascertain metabolic syndrome (MS), as well as CRP and Il-6 levels. Presence of mild cognitive deficits was determined on the basis of MoCA scores **RESULTS:** Patients with CAD showed significantly more mild cognitive deficits compared with similarly aged individuals with no CAD (41.4% vs 26.6%; $p < 0.001$). Differences were maintained after controlling for age, lifestyle, personality, depressive state, and Il-6 ($p < 0.007$). A forward logistic regression to predict presence of cognitive deficits led to the following stepwise inclusions: age (OR=1.071), Il-6 (OR=4.165), hostility (OR=1.044), CAD status (OR=1.634), social desirability (OR=1.082), and alcohol frequency (OR=0.907) (all $p < 0.001$, except for alcohol; Nagelkerke R^2=0.132, $p < 0.007$).

CONCLUSION: Prevalence of mild cognitive deficits among our participants without known cognitive disorders was high. We found a pro-inflammatory state, vascular impairment, as well as higher hostility and social desirability traits to predict concurrent cognitive deficits. Whether interventions targeting these physiological and psychological dimensions could delay conversion to dementia requires further study.

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D057 10:00 AM-11:00 AM

OPTIMISM INCREASES THE ODDS THAT ADULTS WITH CARDIOVASCULAR DISEASE ENGAGE IN EXERCISE

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Background: Exercise following a myocardial infarction (MI) is a critical part of care for cardiac patients. However, few cardiac patients regularly exercise. One key factor associated with adherence to recommended cardiovascular health regiments in the general population is optimism. To examine a potential factor that influences exercise participation among cardiac patients, we tested the association of dispositional optimism with exercise in a representative U.S. sample of adults with a history of MI. **Methods:** Data were collected from a national sample of 1485 adults with a history of MI (64% male; mean age: 68 ± 11 years). Participants completed an online survey that queried health beliefs and behaviors. Physical activity was self-reported by the item, “In the past week, on how many days have you done a total of 30 minutes or more of physical activity, which was enough to raise your breathing rate?” A regular exerciser was defined as those who reported >1 day of physical activity of 30 minutes or more. A revised version of the Life Orientation Test was used to assess optimism. Participants were stratified into low, moderate, and high optimism groups in accordance with previous publications. **Results:** Among the 1485 participants, 178 (11.9%), 736 (49.6%), and 571 (38.5 %) participants reported low, moderate, and high levels optimism, respectively. In a multivariable adjusted model that included age, gender, race, education, number of heart attacks, years since last MI, and depressive symptoms, the odds of being a regular exerciser were significantly higher with greater levels of optimism. Compared to participants with low optimism, participants with moderate and high optimism were 1.94 (95% Confidence Interval (CI): 1.35-2.79) and 2.26 (95% CI: 1.51.-3.40) times more likely to be regular exercisers, respectively (P-trend < 0.001). **Conclusion:** In this nationally representative sample of adults with a history of MI, our findings show that optimism is associated with a greater likelihood of exercising. Future studies should examine whether psychological interventions to improve positive affect improve adherence to health behaviors among adults with cardiovascular disease.

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D058 10:00 AM-11:00 AM

PHYSICAL ACTIVITY BUFFERS DETRIMENTAL INFLUENCE OF STRESS ON DEPRESSION AND ANXIETY AMONG PATIENTS WITH CORONARY HEART DISEASE

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Background: For patients with coronary heart disease (CHD), promotion of physical activity is an essential task in behavioral intervention to encourage comprehensive healthy lifestyle changes. Research has shown that stress, depression, and anxiety are prevalent and detrimental to CHD patients. This study investigated whether physical activity would buffer the negative effect of stress on depressive and anxiety symptoms among CHD patients.
Methodology: Participants were 161 CHD patients (84% men), with a mean age of 63.7 (SD=9.1), who participated in a community-based cardiac rehabilitation program. Physical activity was assessed with the International Physical Activity Questionnaire, stress by Perceived Stress Scale, depression by the Center for Epidemiologic Studies Depression Scale, and anxiety by the Hospital Anxiety and Depression Scale. Hierarchical multiple regression was conducted to examine (1) whether higher stress and lower physical activity were associated with elevated depression and anxiety symptoms, and (2) whether physical activity interacted with stress to buffer its negative impact on depression and anxiety. All models were adjusted for age, gender, and ethnicity as standard covariates.
Results: In the model to predict depressive symptom severity, both higher stress ($\beta = .55$, $p < .001$) and lower physical activity ($\beta = -.15$, $p = .03$) were significantly associated with higher depressive symptoms, and there was also a significant stress by physical activity interaction ($\beta = -.20$, $p = .004$), indicating that physical activity buffered the negative impact of stress on depression. The simple slope analysis showed that for patients with higher stress levels (1 SD above the mean), higher physical activity was strongly associated with lower depressive symptoms ($\beta = -.36$, $p = .002$), whereas for those with lower stress (1 SD below mean), physical activity ($\beta =.07$, $p = .47$) was not associated with depression. In predicting anxiety, higher stress ($\beta = .44$, $p < .001$) and lower physical activity ($\beta = -.16$, $p = .03$) were both significantly associated with more elevated anxiety, and there was a significant stress by physical activity interaction ($\beta = -.32$, $p < .001$) indicating a buffering effect. The simple slope analysis demonstrated that for patients with higher stress, higher physical activity ($\beta = -.51$, $p < .001$) was strongly associated with lower anxiety; in contrast, for those with lower stress, physical activity was related to higher anxiety ($\beta =.20$, $p = .03$).
Conclusion: The findings suggest that physical activity appears to be an effective stress buffer

among CHD patients. Promoting physical activity may be associated with lower depression and anxiety, especially for patients with higher stress levels.

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D059 10:00 AM-11:00 AM

POST-TRAUMATIC STRESS DISORDER SYMPTOMS AND AVERSIVE COGNITIONS ABOUT PHYSICAL ACTIVITY IN ACUTE CORONARY SYNDROME PATIENTS

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Background: ~1 out of 8 patients who survive an acute coronary syndrome (ACS) event develop post-traumatic stress disorder (PTSD). Patients with ACS-induced PTSD have twice the risk of recurrent cardiac events; however the contributing mechanisms have not been elucidated. The purpose of this study was to test our hypothesis that patients with ACS-induced PTSD symptoms avoid physical activity due to fear of trauma-related bodily sensations (e.g. increased heart rate, shortness of breath). **Methods:** We studied 133 patients who presented to the emergency room of a university hospital with ACS symptoms. PTSD symptoms were evaluated 1-month post-hospitalization using the 17 item PTSD checklist (PCL-5), tailored to those who incurred a cardiac-related event. Aversive cognitions about physical activity were also measured with the following items: 1) “It scares me when my heart beats rapidly during physical activity;” 2) “When I notice my heart beating rapidly during physical activity, it reminds me of my heart event;” 3) “When I become short of breath during physical activity, it reminds me I’m at risk of having another heart event;” 4) “I sometimes avoid physical activity because I’m afraid it will cause me to have a heart event.” **Results:** In multivariable adjusted analyses, a 5 point increase in PTSD symptoms was associated with a 1.55 (95% CI 1.23-2.04; $p < 0.001$) odds of feeling scared when the heart beats rapidly during physical activity, a 2.21 (95% CI 1.58-3.57; $p < 0.001$) odds of a rapid heartbeat during physical activity triggering reminders of the cardiac event, a 1.77 (95% CI 1.39-2.40; $p < 0.001$) odds of shortness of breath during physical activity triggering worry about future risk of another cardiac event, and a 1.30 (95% CI 1.10-1.58; $p=0.004$) odds of avoiding physical activity due to fear that it could trigger another cardiac event. **Conclusion:** ACS-induced PTSD is associated with aversive cognitions about physical activity, a critical secondary prevention behavior. Interventions that promote positive associations with physical activity may have potential to reduce the incidence of recurrent events in the high-risk group of ACS-survivors who develop PTSD symptoms.

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D060 10:00 AM-11:00 AM

PSYCHOLOGICAL DISTRESS IN FEMALE PATIENTS WITH SPONTANEOUS CORONARY ARTERY DISSECTION

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Symptoms of psychological distress often occur in patients after myocardial infarction (MI) and may be more common when MI is caused by Spontaneous Coronary Artery Dissection (SCAD) (Starovoytov et al., 2016). SCAD is an atypical vascular condition that occurs in patients who are often young (mean age = 42), female (>80%), and do not have traditional cardiac risk factors (Hayes, 2014; Giacoppo et al., 2014). Women with SCAD may be particularly susceptible to emotional distress due to the suddenness and severity of the condition, its lack of warning signs, and its relative untreatability. Three studies have described high rates of anxiety and depression in SCAD patients (Liang et al., 2013; Silber et al., 2015; Chou et al., 2016). As the condition is rare, most published studies include a small *n.* The goal of this study was to further characterize female SCAD patients' psychosocial distress. Female participants, identified by Stanford physicians as having had a SCAD event, were invited to participate in a psychosocial support group. Data was collected in two waves, first in October 2015 for group participants and second in April 2016 for women who had declined to participate in the group. Fourteen women (mean age = 51) returned self-report measures of physical and mental health and quality of life. Demographic information showed that, of 11 women reporting a history of mental health treatment, 8 indicated their treatment was related to having SCAD. Scores on self-report questionnaires suggest that most participants were experiencing clinically significant levels of anxiety and depression or PTSD warranting clinical concern or diagnosis. Nearly all participants reported high stress levels and many suffered from clinical levels of insomnia. Descriptive statistics revealed ongoing physical impairment, mostly high levels of social support, and beliefs that Doctors and Chance had the strongest influence on their condition. Findings are consistent with earlier studies documenting high rates of anxiety and depression; this study extends prior research by including other indicators of psychological distress and as the first known study to investigate PTSD symptoms in SCAD patients.

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D061 10:00 AM-11:00 AM

PSYCHOMETRIC PROPERTIES OF THE CONSULTATION AND RELATIONAL EMPATHY (CARE) MEASURE IN A CARDIOLOGY SETTING

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The Consultation and Relational Empathy (CARE) Measure is a 10-item questionnaire that rates the patient experience and the interpersonal quality of a medical visit. The measure has been validated in primary care and some sub-speciality disciplines, but it has not been assessed in cardiology. This was a preliminary study of the utility of the CARE Measure to assess physicians in cardiology fellowship training. Adult patients completed the CARE Measure after a medical visit. Face validity was estimated by the number of ‘not applicable’ responses. Statistical analysis included principal component analysis (construct validity), Cronbach’s alpha (internal consistency), and Generalisability theory (inter-rater reliability).Twenty-two cardiology trainees were assessed after 1372 total visits. The level of ‘not applicable’ responses was low, ranging from 0.2% to 5.3% per item (average 1.4% across all 10 items). Missing values were rare (0.2% overall). The measure showed high internal consistency (Cronbach’s alpha coefficient=0.97) and the removal of any of the items reduced reliability. Factor analysis revealed a single factor with high factor loading for each item. The mean CARE Measure score at the patient level (n=1372) was 48.3 (SD=4.00), with mean scores ranging from 23-50. The skew was -2.721 and the kurtosis 7.743 with 48% of patients reporting a maximum CARE score of 50. The mean CARE Measure score at the physician level (n=22) was 48.2 (SD=0.85), with an essentially normal distribution (skew -0.314, kurtosis -0.594). Although mean CARE scores did vary significantly between physicians, the variation was limited (range 46.5-49.5, $p < 0.005$) and thus the ability of the measure to discriminate between individuals in this sample was correspondigly low (G=0.36-0.48). Higher reliability, suitable for formative feedback (G=>0.5) would require $\geq$60 completed questionnaires per physician. Preliminary findings suggest that the CARE Measure has face and construct validity with internal reliability in cardiology fellowship training and it may provide a practical measure of interpersonal communication. Further investigation is needed with a larger number of physicians and patients in different cardiology settings to determine if the CARE Measure can differentiate between individuals within this sub-speciality.

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D062 10:00 AM-11:00 AM

RACIAL/ETHNIC DIFFERENCES IN PROGRESSION OF SUBCLINICAL ATHEROSCLEROSIS IN THE NORTH TEXAS HEART STUDY

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Compared to Whites, Blacks/African Americans experience a disproportionate burden of cardiovascular disease including higher prevalence, incidence, morbidity, and mortality. In contrast, Hispanics experience similar or relatively better outcomes compared to non-Hispanic (NH) Whites despite a significantly worse risk profile. One hypothesis is that atherosclerotic disease progresses more slowly among Hispanics contributing to lower early mortality. The aim of this study was to examine racial/ethnic differences in progression of carotid intima-media-thickness (cIMT) as a marker of preclinical atherosclerosis.

Participants were a community sample of 300 healthy adults (150 men, 150 women) ages 21 to 70 years (M=42.44 yrs), stratified by age within gender and race/ethnicity. The sample included 60% NH Whites, 15% NH Blacks, and 19% Hispanic/Latino. Participants completed a physical and underwent a bilateral ultrasound imaging of the extracranial carotid vasculature as part of a larger study. A returning sample of 239 participants (80% retention) repeated all procedures at a 2-year follow-up. Procedures were used to optimize test-retest over time. Images were scored by two blinded raters using Vascular Research Tools (V 5.0). Consistent with field standards, mean of the maximum scores was derived for the common carotid artery (CCA), bifurcation (BIF), and internal carotid artery (ICA) and difference scores (time 2 – time 1) were calculated.

Analyses of Covariance adjusting for demographics (gender, age), socioeconomic status (household income, education), BMI, and time 1 values of the matched cIMT variable revealed main effects for both the CCA and BIF, all $Fs(2,145) > 3.515$, $p < .05$, $np^2 > .045$. Progression was greater for NH Blacks than NH Whites with no difference between NH Whites and

Hispanics. A marginal interaction between race/ethnicity and gender was observed for ICA with the effect driven by differences among men, $F(2,46) = 5.237$, $p = .009$, $np^2 = .185$. Progression was significantly greater for NH Blacks compared to Hispanics.

These findings document important racial/ethnic differences in atherosclerotic progression and suggest that the rate of progression among Hispanics is similar to that of NH Whites despite a greater risk profile.

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D063 10:00 AM-11:00 AM

RACIAL/ETHNIC DIFFERENCES IN SUBCLINICAL ATHEROSCLEROSIS IN THE NORTH TEXAS HEART STUDY

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Evidence documents significant racial/ethnic differences in heart disease prevalence, incidence, morbidity, and mortality (Mozzafarian et al., 2015). Data also document black-white disparities with more recent data characterizing Hispanics as having rates similar to or better than non-Hispanic (NH) Whites; a paradox given their elevated risk factor profile. Diagnosis and outcomes can be influenced by access to care. Less known is whether racial/ethnic groups differ in the undiagnosed or objective measures of subclinical atherosclerosis. Therefore, the aim of this study is to examine differences in carotid intima-media-thickness (cIMT) as an objective marker of preclinical disease.

Participants were a community sample of 300 healthy adults (150 men, 150 women) ages 21 to 70 years (M=42.44 yrs), stratified by age within gender and race/ethnicity. The sample included 60% NH Whites, 15% NH Blacks, and 19% Hispanic/Latino. Participants completed a physical and underwent a bilateral ultrasound imaging of the extracranial carotid vasculature as part of a larger study. Images were scored by two raters using Vascular Research Tools (V 5.0). Consistent with field standards, mean of the maximum scores was derived for the common carotid artery (CCA), bifurcation (BIF), and internal carotid artery (ICA).

Racial/ethnic differences in each segment of cIMT were cross-sectionally evaluated with a series of Analyses of Covariance adjusting for gender, age, and BMI. No differences were observed for either the CCA or BIF. However, a main effect of Race/Ethnicity was found at the ICA, $F(2,223) = 6.261$, $p = .013$, $np^2 = .03$. Follow-up revealed that Hispanics had greater cIMT at the ICA than NH Whites (.777 vs. .719), $F(1, 185) = 4.833$, $p = .029$, $np^2 = .025$. Importantly, inclusion of household income rendered the main effect non-significant, $F(2,213) = 0.357$, $p = .70$, np^2 = ns.

Contrary to expectations, Hispanics in this study were found to have somewhat greater subclinical atherosclerosis in one segment of the carotid vasculature. However, these differences were accounted for by disparities in SES indicators.

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D064 10:00 AM-11:00 AM

RELATIONSHIP BETWEEN MINDFULNESS AND HEART RATE VARIABILITY IN PATIENTS WITH CHF

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Relationship between mindfulness and heart rate variability in patients with CHF

Chronic heart failure (CHF) is a growing concern, with over 5.1 million cases in the United States alone and a 5-year mortality rate. Reduced heart rate variability (HRV) is associated with increased morbidity and mortality. Research shows that psychological factors can impact HRV, which presents a possible mechanism influencing cardiac health. While mindfulness is associated with increased HRV in healthy individuals, it is unknown whether this relationship occurs in patients with serious heart conditions. **Methods:** Forty-three stage B and C heart failure patients (mean age = 65.69 +/- 8.23 and left ventricular ejection fraction (LVEF%) = 60.03% +/- 11.48%) from two separate studies were examined for HRV and components of mindfulness. Components of mindfulness were accessed through the Five Facets Mindfulness Questionnaire (FFMQ) in both groups. The resting HRV was collected using the Equivital EQ-01 heart rate sensor, while the participants sat quietly in an upright position for 10 minutes. **Results:** Regression analyses adjusted for LVEF% revealed a positive association between HRV and combined awareness and nonjudging facets of mindfulness (change R^2 = .125, t = 2.252, p = .034). Also, combined mindfulness facets, awareness and nonreactivity showed a positive association with HRV (change R^2 = .101, t = 2.204, p = .035). However, total mindfulness scores were not related to HRV. **Conclusions:** These results indicate that there are aspects of mindfulness that may promote increased HRV in CHF patients. Through the understanding of the various interactions of the facets of mindfulness, this can help lead to the development of interventions that may improve physiological responses and potentially improve CHF prognosis.

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D065 10:00 AM-11:00 AM

RISK FACTORS FOR HYPERTENSION IN EARLY TO MID-LIFE KENYANS: THE KENYA DEMOGRAPHIC AND HEALTH SURVEY

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Introduction: Hypertension is the leading cause of adult mortality in developing nations. However, data on the risk factors of hypertension, especially in Kenya is lacking. This study identified the risk factors associated with hypertension in Kenya.

Methods: Cross-sectional data from the 2014 Kenya Demographic and Health Survey (KDHS) was used to assess the risk factors among 12,578 men (age 15-54 years) and 30,431women (age 15-49 years). Multivariable logistic regression was performed to assess the association between risk factors and self-reported hypertension.

Results: We found a wide variation of risk factors of hypertension among males and females. Only age, diabetes, ethnicity, and region were common risk factors for hypertension in both gender. It was found that older age (OR: 1.80, 95% CI: 1.24, 2.61), having higher education (OR: 1.55, 95% CI: 1.23, 2.14), having diabetes (OR: 26.45, CI: 16.79, 41.67), and drinking alcohol (OR: 1.31, 95% CI: 1.05, 1.63) were significantly associated with the increased risk of hypertension for males. Moreover, living in urban areas (OR: 1.24, 95% CI: 1.06, 1.45) and being obese (OR: 2.44, 95% CI: 2.04, 2.93) were factors significantly associated with the higher risk of hypertension for females.

Conclusions: Regardless of gender, individuals over the age of 35 years were more likely to self-report hypertension compared to the individuals younger than 35 years. However, there were significant variations between gender and the risk factors associated hypertension.

Focus on gender-specific health education programs and interventions are critical in the early diagnosis of this debilitating disease in Kenya.

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D066 10:00 AM-11:00 AM

TREATMENT OF METABOLIC ACIDOSIS IN CHRONIC KIDNEY DISEASE WITH FRUITS AND VEGETABLES IMPROVES CARDIOVASCULAR RISK

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Background: Individuals with chronic kidney disease (CKD) have dramatically increased risk for cardiovascular disease (CVD), a major contributor to their premature mortality. Metabolic acidosis is a common co-morbid condition in CKD for which the currently recommended treatment is oral Na^+-based alkali therapy, commonly $NaHCO_3$. Base-producing fruits and vegetables (F+V) also improve metabolic acidosis in CKD and might have additional benefits. We tested the hypothesis that treatment of metabolic acidosis in CKD with F+V rather than $NaHCO_3$ yields a better cardiovascular risk profile. **Methods:** Individuals (N=108) with CKD (stage 3 eGFR 30-59 ml/min) and metabolic acidosis and plasma total CO_2 ($PTCO_2$) between 22-24 mM were randomized to either: F+V (n=36) to reduce dietary potential renal acid load (PRAL) by 50%; Oral $NaHCO_3$ (n=36) to reduce PRAL by 50%; or Usual Care (n=36), and followed for five years. Outcome variables were collected annually including $PTCO_2$, cystatin C calculated eGFR, body mass index (BMI), systolic blood pressure (SBP), and low-density lipoprotein cholesterol (LDL). **Results:** Baseline values were not different among groups. Five-year values for $PTCO_2$ were higher in both F+V (23.8±0.4 mM) and Oral $NaHCO_3$ (23.9±0.4 mM) than Usual Care (21.9±0.4 mM, $p < 0.01$) without significant differences between Oral $NaHCO_3$ and F+V. Similarly, 5-year values for eGFR were higher in F+V (29.3±6.1 ml/min/1.73 m^2) and Oral $NaHCO_3$ (27.4±6.1 ml/min/1.73 m^2) than Usual Care (20.5±6.1 mM, $p < 0.01$), with no differences between F&V and Oral $NaHCO_3$. By contrast, F+V had lower 5-year values than Oral $NaHCO_3$ for SBP (125±5 vs. 135±5 mm Hg, $p < 0.01$), BMI (26.6±1.7 vs. 28.4±1.9, $p < 0.01$), and LDL (116±9 vs. 136±10 mg/dl, $p < 0.01$). **Conclusions:** Treating CKD individuals with either F+V or $NaHCO_3$ improved metabolic acidosis and preserved kidney function. By contrast, those treated with F+V rather than the currently recommended $NaHCO_3$ had lower values for SBP, BMI, and LDL, indicating an improved CVD risk profile. Integrating F+V into CKD treatment has the potential to improve overall cardiovascular risk and population health.

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D067 10:00 AM-11:00 AM

“I JUST WANT TO DO EVERYTHING RIGHT:” PRIMIPAROUS WOMEN’S ACCOUNTS OF BREASTFEEDING FROM BIRTH TO EIGHT WEEKS VIA AN APP DIARY

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Background: First-time mothers are at risk for breastfeeding problems and early, unintended breastfeeding cessation for reasons yet to be fully explored.

Purpose: To describe the lived, early breastfeeding experience of primiparous women.

Methods: Sixty-one healthy, primiparous women intending to exclusively breastfeed downloaded a commercial infant feeding app during their postpartum hospitalization. Women were instructed to free-text breastfeeding thoughts and experiences daily through eight weeks postpartum using the app’s diary feature; diary data were emailed to investigators weekly. Diaries were independently coded by three authors line-by-line for content, implicit meanings, and narrative structure. Coding decisions and emergent themes were discussed in regular team meetings.

Results: Thirty-five participants completed at least one diary entry and were included in the analysis. Participants were primarily white, married, and college-educated. The overarching theme that encompassed the primiparous breastfeeding experience was *seeking validation and sustainability*. Particularly in the first weeks post-birth, women were overwhelmed, frustrated and anxious regarding infant satiety at-breast and the relentless nature of frequent feeds. Adequate sleep and opportunities for self-care were tipping points for the escalation and de-escalation of problems—as mothers despaired or expressed hope that they could withstand breastfeeding under evolving circumstances. Mothers yearned for, and actively sought work-arounds to achieve predictability in feeding routines. Perceived breastfeeding success was inextricably tied to maternal self-worth and identity, and almost entirely adjudicated (and re-adjudicated) through point-in-time weight checks and pediatrician feedback on adequacy of breast milk volume, rather than mother’s own day-to-day observations and enjoyment of the breastfeeding experience. When success was not immediate, or when setbacks occurred, self-trust plummeted; some sought absolution from perceived personal culpability. In later weeks, as problems resolved and the intensity of breastfeeding abated, women voiced a tentative confidence, future orientation, and resolve to establish a sustainable feeding schedule.

Conclusions: The primiparous breastfeeding experience is fraught with internally-imposed, and externally reinforced, negative pressure to produce rather than connect, to succeed rather than develop, and to control rather than accommodate.

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D068 10:00 AM-11:00 AM

ADAPTIVE SIGNIFICANCE OF PERSONAL PRONOUN USE IN FAMILIES OF ADOLESCENT SUBSTANCE ABUSERS

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A growing body of research suggests that patterns of personal pronoun use in couples – particularly *we*-talk (first person plural pronouns) and *you*-talk (second person pronouns) – are potentially meaningful markers of adaptive and maladaptive functioning, respectively. These associations have not only been demonstrated in terms of relationship quality, but couples pronoun use has also shown to correlate with various indicators of physical health. Very little, however, is known about the relational implications of personal pronoun use in larger social units like families, where relevant interaction patterns are often triadic and multigenerational. The present study employed data from a multi-site study of family therapy for adolescent substance drug abuse to (a) describe patterns of pronoun use in families during conversations that had a collaborative and a conflictual valence; and (b) explore associations between pronoun patterns and indicators of adaptive adolescent and family functioning. As hypothesized, automated text analysis of transcripts from 74 families revealed more *we*-talk in the cooperative task, more *you*-talk and *I*-talk in the conflict task, and significant variations in pronoun frequency by family role. Additional coding, guided by structural family systems theory, took into account the source and referent of each pronoun utterance (e.g., parent-parent *we*-talk, cross-generation *you*-talk). As predicted, structural pronoun variables showed stronger associations with adolescent and family functioning than global (raw count) pronoun variables. Contrary to expectation, *you*-talk was a stronger predictor of adaptive functioning than *we*-talk, and associations between pronoun patterns and indicators of functioning were stronger for the conflict task than the cooperation task. The results suggest that relational meanings of pronouns are substantially more complex in triadic intergenerational family interactions than in dyadic romantic relationships. Discussion of these results includes study limitations and possible directions for further research.

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D069 10:00 AM-11:00 AM

PROCESS EVALUATION OF A PROMOTORA-LED, HOME-BASED OBESITY PREVENTION PROGRAM TARGETING LATINO PRESCHOOL CHILDREN

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BACKGROUND. Latino preschool children have higher rates of obesity than children from other racial/ethnic backgrounds. Few effective, culturally-tailored obesity prevention interventions exist that target preschool children. The purpose of this study was to test the feasibility and acceptability of a promotora-mediated, home-based intervention to prevent obesity in Latino preschool children. ANDALE Pittsburgh included 10, 90 minute weekly interactive and tailored sessions that targeted changes in the home social and physical environment to build parental self-efficacy.

METHODS. Guided by a logic model, we assessed fidelity, dose, reach, recruitment, and contextual factors using multiple data sources and quantitative and qualitative methods. Feasibility of recruitment and intervention protocols were assessed using qualitative data from promotoras and parents, and Project Coordinator logs. Intervention completeness and fidelity were assessed through descriptive analyses of multiple data sources.

RESULTS. Six promotoras recruited participants primarily through their own social networks and delivered the intervention to 50 families (child-mother dyads) that were majority Mexican-origin, low-income, dual-parent households. Promotoras delivered 75% of sessions with fidelity (i.e., based on core elements identified pre-intervention, including physical activity breaks, recipe preparation, goal setting, supportive home environment, barrier counseling) and 96% of participants completed the whole 10-week intervention. Participants expressed that session topics were very or extremely useful (95%) and they intended to continue with changes related to physical activity (74.9%) and healthy eating (70.7%) after the intervention. Qualitative analysis revealed that shared cultural characteristics between promotora and participants and the flexible and adaptive intervention approach facilitated implementation. Barriers to implementation included lack of support from family members (e.g., husbands) and multiple families living in one home.

CONCLUSION. Initial evidence suggests that ANDALE Pittsburgh is a highly feasible and acceptable intervention in this sample of Latino families with preschoolers living in an

Emerging Latino Community. Additional research is needed to determine the effectiveness of the intervention on outcomes including child weight status, physical activity, and nutrition.

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D070 10:00 AM-11:00 AM

PROMOTING RESILIENCE IN PARENTS OF YOUTH WITH NEUROFIBROMATOSIS: USING QUALITATIVE DATA TO INFORM INTERVENTION DEVELOPMENT

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Introduction: Neurofibromatosis (NF1 and 2) are multisystemic, complex and rare diseases with many still unrecognized features in pediatric patients. Parents of children with NF are at an increased risk of emotional and physical health problems due to the demands associated with carrying for a child with NF, including guilt associated with passing on or potential causes for the NF, dealing with multiple medical, appointments, uncertainty of disease management and progression, cognitive, social and emotional difficulties experienced by the child, and trouble around self prioritization. Anecdotal information and clinical experience has shown that often children sense their parents' level of stress and worry, and shy away from sharing potential concerns, as to not add to their parents' distress; ultimately, this leads to increased stress for children. However, no psychosocial interventions targeting parental stress are available for this population.

Methods: We aimed to determine parents' perceptions of stressors associated with parenting a child with NF in order to inform the development of a resiliency intervention. We conducted three live video semi structured focus groups with parents of youth with NF (N=40), which were subsequently transcribed and coded using grounded theory.

Results: Parents reported heightened stress associated with the child's educational, medical and social needs, as well as concerns about their child's physical and mental health. They also reported stress associated with managing finances, multiple medical appointments, role challenges (i.e. being a parent or partner), and managing uncertainty/unpredictability around their child's NF diagnosis. These stressors reportedly affected employment status (i.e. work scale backs), relationships (i.e. social, familial, with partner, other children), and the self (i.e. negative effects on parents' physical and mental health). Few parents reported engaging in adaptive coping such as mindfulness, exercise, or use of social support.

All participants expressed interest in a mind body program aimed at improving resiliency by teaching coping skills (e.g., mindfulness, adaptive thinking, positive psychology skills) and providing support. Additional topics initiated by parents included facilitating healthy social interactions for the child, resource sharing, managing financial stressors, and parental role challenges. Barriers to participation included travel and time of intervention sessions, and all participants were in favor of the intervention being delivered via a web-based platform (i.e. Skype).

Conclusion: Results show parent’s enthusiasm for a resiliency intervention targeting stress associated with parenting a child with NF, and provide valuable information for the content of the intervention and its delivery modality.

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D071 10:00 AM-11:00 AM

REDUCTION OF PRETERM BIRTH RATE AMONG MEDICAID ELIGIBLE POPULATION THROUGH AN OUTREACH PROGRAM USING COMMUNITY HEALTH WORKERS

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Introduction

The Centers for Medicaid and Medicare (CMS) funded the Strong Start for Mothers and Infants grant in 27 centers across the United States (2013-2017). The focus of the grant was on enhancing prenatal care for at-risk clients to reduce the preterm birth rate and decrease the number of intensive care days required for preterm neonatal care. As one of the funded centers, the Maternity Care Home model using certified Community Health Workers (CHWs) was implemented to provide enhanced prenatal care.

Methods

The Medicaid eligible pregnant clients were referred for care navigation by CHWs from Texas Tech University Health Sciences Center following the initial nurse intake visit. The CHWs followed the clients until 6 weeks after birth. The CHWs provided education and services directed at improving the impact of the social determinants of health on pregnancy and enhancing routine prenatal care with additional support, services, and home visits. The primary outcomes include number of prenatal visits, birth weight, gestational age, and NICU length of stay and secondary outcomes include satisfaction with services, rate of birth control usage after delivery, and breast feeding rate tracked using both electronic medical record and surveys. Chi-Square tests, ANOVA and mixed model were conducted using SAS 9.4.

Results

Among the total of 605 clients who delivered between November 2013 to September 2016, 412 clients received at least one CHW visit in the third trimester and were considered as Active clients. The 193 clients who did not receive a CHW visit during the third trimester due to the shortage of CHWs or lost client contact were considered as Inactive clients. The preterm birth rate for the Active group compared with the Inactive group is 7.77% vs. 17.62% (OR=0.39 [0.23, 0.66], p=0.0004). The average gestational age at delivery among the preterm birth deliveries for Active group compared with Inactive group is 35.10±1.85 vs. 31.89±4.81 ($p < 0.001$). Compared with Inactive group, the Active group also experienced lower NICU admission rate (18.75% vs. 38.24%, p=0.08) and shorter NICU length of stay (26.17±10.80 days vs. 66.58±35.05 days, $p < 0.05$).

Conclusion

This Strong Start Maternity Care Home project provided evidence that enhancing prenatal care through CHW-provided services can significantly reduce the preterm birth risk among

Medicaid eligible clients. Additionally, such outcomes may reduce the cost for NICU length of stay for the preterm new born babies.

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D072 10:00 AM-11:00 AM

SOCIAL RELATIONSHIP DYNAMICS AMONG ADOLESCENTS WITH AND WITHOUT CHRONIC MEDICAL CONDITIONS

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Purpose: Social relationships have been shown to exert short- and long-term effects on health. As youth with chronic conditions (YCC) may struggle with behavior and adjustment problems or activity limitations that inhibit their social engagement, their social relationships may suffer, contributing to poor health. We sought to quantify disparities in various domains of peer relationships for YCC compared to their healthy peers. **Methods**: Data are from 2721 adolescents (ages 8-19 years) interviewed for the 2002 and/or 2007 Child Development Supplement of the Panel Study of Income Dynamics. We utilized multivariate-adjusted generalized linear mixed models to assess the relationship between having a chronic condition and each of seven scales measuring various domains of social relationships. Models included natural cubic splines (to model non-linear effects of age) and evaluated interactions between splines for age and chronic conditions to determine if age-trends differed for YCC compared to their healthy peers. **Results**: Compared to their healthy peers, YCC (58% of sample) reported experiencing significantly more bullying (1.46 vs 1.34, $p < 0.01$), less closeness to friends (2.59 vs 2.66, $p=0.01$), greater negative peer influence (1.55 vs 1.46, $p < 0.01$), and lower best-friend relationship quality (2.50 vs. 2.59, $p < 0.01$). Adjusted analyses revealed non-linear age-trends in closeness to friends, negative peer influence, and best-friend relationship quality; however, bullying decreased linearly with age. YCC reported higher levels of bullying ($\beta=0.15$, $p < 0.01$) and negative peer influence ($\beta=0.06$, $p=0.03$) across all ages. Disparities in reported closeness to friends appeared in middle adolescence for YCC (e.g., predicted scores: 2.58 vs 2.61 at age 13; 2.71 vs 2.86 at age 16). Disparities in relationship quality diminished in middle adolescence for YCC (e.g., 2.46 vs 2.56 at age 13; 2.52 vs 2.54 at age 16). **Conclusion**: Compared to their healthy peers, YCC report experiencing poorer social relationships and more bullying. As poor social relationships contribute to worse future health, while reports of strong social relationships contribute to better future health, it may be important for providers to assess social well-being as part of overall health, both to better understand disease burden and to improve health outcomes. Yet, additional work is needed to benchmark these measures against clinical metrics to guide clinician evaluation and interpretation of social health.

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D073 10:00 AM-11:00 AM

SOCIO-ECOLOGICAL FACTORS THAT INFLUENCE PERSISTENCE IN BREASTFEEDING AMONG APPALACHIAN WOMEN: A MIXED METHOD STUDY

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Background: The American Academy of Pediatrics recommends breastfeeding children for at least 1 year, with exclusive breastfeeding for the first 6 months of life. However, the state of West Virginia is among the lowest for persistence in breastfeeding compared to national rates. **Objective:** Guided by Sokol's Social Ecological Model, this study examined the association between persistence in breastfeeding (6-month breastfeeding and extended breastfeeding) and individual, interpersonal, community and public policy level factors among Appalachian mothers. **Methods:** A mixed-method study with convergent parallel design of women who lived and/or worked in WV who had at least one child aged < 36 months was conducted. For quantitative data, unadjusted analyses were conducted using Chi-square and Fisher's exact tests, and adjusted analyses were conducted using multivariable and multinomial logistic regressions. For qualitative data, kappa coefficient coding was conducted by two researchers. **Results:** Out of 131 women, 30.5% had breastfed for < 6 months, 39.7% for 6-12 months, 21.4% for 12-24 months, and 8.4% for ≥ 24 months. In the adjusted analysis, the likelihood of breastfeeding ≥6 months was associated with not having full-time employment (AOR=0.3, 95% CI; 0.1-0.9) and high perceived social support (AOR= 28.1, 95% CI; 2.1-381.2) as compared to full-time work and low perceived social support, respectively. Extended breastfeeding (≥24 months) was negatively associated with higher education (AOR= 0.06, 95% CI; 0.01-0.1), employment in a full-time work (AOR=0.16, 95% CI; 0.03, 1.0), and being a first-time mother (AOR=0.09, 95% CI; 0.01-0.8). With regard to qualitative data, insufficient milk supply, supplement with formula, work, and health issues for child were the most frequent obstacles reported by mothers who breastfed their children < 6 months. Natural nutrition, bonding, economic, and health benefits for children were the most frequent incentives reported by mothers who breastfed their children ≥ 24 months. **Conclusion:** Individual and interpersonal level factors from the Social Ecological Model were key to persistence in breastfeeding among Appalachian mothers. In light of 'lost generations' of breastfeeding mothers, social support is critical during the first 6 months to overcome issues that mothers could experience, such as insufficient milk supply, work, and

health issues, and our study informs future interventions to improve the breastfeeding experience.

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D074 10:00 AM-11:00 AM

MERITORIOUS AWARD WINNER

THE ACROSS-TIME RELATIONS BETWEEN MOTHERS' DEPRESSIVE SYMPTOMS, MOTHERS' PROVISION OF SUPPORT, AND CHILD VERBAL COGNITION

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The trajectory of children's cognitive development is shaped by the interaction of supportive engagement, responsiveness, and provision of learning materials by mothers. Maternal postnatal depression is known to dampen mothers' emotional sensitivity and verbal stimulation to her child and has been linked with lower child cognitive outcomes. However, little is known about this interplay on a longitudinal scale. The current study sought to examine how mothers' depressive symptoms predict their subsequent ability to provide emotional-verbal and learning material support to their child, and how this influences their child's verbal cognitive outcomes from infancy to adolescence.

A sample of 880 Chilean infants and their mothers was studied across a 16-year period as part of an iron deficiency anemia preventive trial and follow-up study. Mothers' depressive symptoms, their emotional-verbal responsivity and learning material support to their child, and child verbal cognition were measured when children were 1 year, 5 years, 10 years, and 16 years. Child gender, family socioeconomic status, family stress, and maternal educational level were controlled at all time points.

Using cross-lagged structural equation modeling, we found that mothers' depressive symptoms were both directly and indirectly related to their child's verbal cognition scores across the 16-year period. Indirect effects indicated that higher levels of maternal depressive symptoms at infancy contributed to lower levels of maternal support at age 5 - both emotional-verbal responsiveness and learning material support, which in turn was related to lower child cognitive scores at age 10. Similarly, higher maternal depressive symptoms at age 5 contributed to lower maternal support at age 10 (both emotional-verbal responsiveness and learning material support), which in turn was related to lower child cognitive scores at age 16.

Findings suggest that the relation between mothers' depressive symptoms and child verbal

cognition is mediated by maternal emotional-verbal and material support throughout a child's lifetime. Ultimately, this may provide clearer entryway into the developmental pathways of child cognition as well as new insight into age-appropriate mother-child intervention approaches for clinical practice.

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D075 10:00 AM-11:00 AM

THE LIVED EXPERIENCES OF MALE PARTNERS OF WOMEN WHO HAVE BEEN PREVIOUSLY DIAGNOSED WITH POSTPARTUM DEPRESSION

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Postpartum depression (PPD) is a real complication in the postpartum period that affects 50 to 80% of all women giving birth but is not a condition that solely affects women (Beck, 2006). This qualitative descriptive phenomenological study based upon Husserl's (1960, 1970) philosophical underpinnings was designed to gain a broader perspective about the phenomenon of postpartum depression (PPD) and its impact on the family structure through the lived experiences of male partners of women previously diagnosed with the disorder. A sample of seven men recruited through a community hospital participated in face-to-face audio taped interviews that were later transcribed verbatim. The transcripts were rigorously, critically, systematically analyzed and compared to identify common thematic patterns within and between the fathers' individual experiences using a two group analysis and Spiegelberg's (1965, 1975) six step process. The men experienced overarching feelings of being vulnerable when their partners' behavior began to change in such a way that they did not recognize the person their partner had become after the birth of their baby. They began to rationalize the cause for the changes, with feelings ranging from annoyance to wanting a divorce. But as things changed within their family, fathers felt the overwhelming need to try to make things better for their families. The second major theme was one of being helpless to know what to do or say; but whatever they did was not right or good enough which they attributed to their lack of knowledge about postpartum depression. Given time, the third overall theme of coping emerged in which they were able to identify methods of dealing with the changes that occurred in their lives when their partner was diagnosed with postpartum depression. Suggestions included the need for more one to one education with parents, Also fathers need to be patient and more attuned to the needs of their partner. The foremost clinical implication from the study is the need for healthcare providers to develop better educational methods to relate information about postpartum depression to childbearing couples.

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D076 10:00 AM-11:00 AM

THE ROLE OF FAMILY IN CURRENT LIFESTYLE CHOICES: A QUALITATIVE SECONDARY DATA ANALYSIS OF INTERRACIAL AND SAME-RACE COUPLES.

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Loved ones, including family of origin, have a large impact on our long-term eating behavior (Bandura, 1999; Savoca & Miller, 2001). In addition, recent studies have established a recursive link in health patterns (e.g., exercise) between romantic partners; however, how family of origin and romantic partners interact together to impact current individual health related behaviors including eating and exercise has received less attention in the empirical literature. More importantly, how these influences play out between same-versus-interracial couples may differ, given that racial disparities exist among health outcomes (e.g., higher probability of chronic diseases, life expectancy, etc.). Notably, it is important to focus on Hispanic and Non-Hispanic White individuals due to the higher prevalence of obesity found among Hispanics and general unhealthy patterns in ethnic minorities (Morales et al., 2007; Ogden & Elder, 1998). Therefore, the goal of this study is to extent results from previous research by qualitatively exploring how the families of origin for both partners in romantic relationships (same versus interracial) interact together to impact current health related behaviors, with an emphasis on the viewpoints that were held in the families of origin about eating and exercise. Qualitative data analysis and interpretations were based on 14 romantic couples 7 same-race couples (Non-Hispanic White partners) and 7 interracial couples (Non-Hispanic White partner and Hispanic partner). A grounded theory approach was taken to analyze four interview questions to fit the unique needs of the study (Patton, 2002; Strauss & Corbin, 1998). The data was analyzed within two coding cycles using five different coding methods. A total of 4 central themes emerged from the data: family of origin eating patterns; family influence in the adult diet; family of origin physical activity approach; and family influence in physical activity. Individuals described families as being aware and unaware of families making healthy and unhealthy food choices during upbringing. Additionally, individuals described families as making high effort and no effort to be physically active while growing up. The different perceptions of family of origin in food and exercise were narratively related to certain eating habits and physical activity behaviors in romantic couples. Different perspectives from family of origin were found in food and exercise across same-race and interracial couples. Our results advise that prevention and treatment programs should be targeting family systems rather than individuals to captivate permanent healthy lifestyle changes.

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D077 10:00 AM-11:00 AM

RELIGIOSITY AND DIET IN A COLLEGE AND COMMUNITY SETTING

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Some researchers have indicated more religious individuals have healthier diets; however, research is inconsistent. Diet is known to predict the incidence of a variety of diseases, therefore identifying predictors of diet may inform methods to improve individuals’ overall health. A sample of 903 college students and community members (age 18 to 60) participated in an online survey during spring 2013 or fall 2014. Measures included a demographic questionnaire, the *Perceived Stress Scale* (PSS), the *Religious Surrender and Attendance Satisfaction Scale* (RSASS), an *Intrinsic Religiosity* (IR) question, and *Starting the Conversation* (a brief dietary questionnaire). Our aim was to determine whether religiosity variables predicted diet, while controlling for age, gender, and stress. Hierarchical multiple linear regression indicated 3.5% of diet was predicted by covariates in block one (R^2 = .035, F change (3, 864) = 10.368, p < .001), with the largest proportion predicted by stress (β = .175, p < .001). After entry of IR, religious commitment (RC) and satisfaction with RC in block two, the total variance explained by the model was 4.5%, with one percent of the variance being explained by *RC* and *satisfaction with RC* (R^2 = .045, R^2 change = .011, F change (3, 861) = 3.172, p = .024). Healthier diet was predicted by lower levels of religious commitment (β = .088, p < .05) and by being satisfied with religious commitment (β = -.077, p < .05). In the study region, “breaking bread” is a central activity within religious communities and may partially explain the negative association between RC and healthy diet. Future studies should investigate whether RC may buffer effects of poor diet on health, as the religion/health association is robust across studies.

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D078 10:00 AM-11:00 AM

OLDER ADULTS' AGE AND SEX PREFERENCES FOR VARIOUS PROFESSIONAL PROVIDERS

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Purpose: Previous research has found that people have age and sex preferences when choosing physicians and mental health counselors, but it is not clear whether older adults in particular have similar preferences when choosing these and other service providers. The purpose of this study was to explore older adults' age and sex preferences for various kinds of professionals to understand factors that may influence older adults' help-seeking behaviors, which may have important implications for their health outcomes. **Methods:** Fifty Caucasian, community-dwelling older adults ages 64 and over completed an online survey. The sample was 48% female, and participants ranged in age from 64 to 89 years (*M* = 72.8). The survey included photos of six individuals representing three age categories (young, middle aged, older adults) and two sexes (male, female). For each photograph, participants rated their comfort with and perceived competence of the individual, if their services were sought in five different professional settings (financial, legal, medical, mental health, and religious). Ratings were given on a 6-point scale and photographs were presented in a randomized order. In total, each participant provided 60 ratings (comfort and competence, for each photograph, for each setting). Responses were analyzed using a within-subjects three-way repeated measures ANOVA. **Results:** Older adults preferred older professionals across all five settings. Female participants preferred female professionals across all settings, and a significant interaction between sex and profession revealed that in mental health settings, both male and female participants preferred female therapists. Professionals in the religious setting were rated lower on comfort and competence than professionals in other settings. **Conclusions:** Findings suggest that older adults have age and sex preferences for a broad range of professionals. It may be beneficial for service providers to inquire about preferences and accommodate them when possible. Future work is needed to inform whether these preferences influence actual help-seeking behaviors.

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D079 10:00 AM-11:00 AM

PROSTATE CANCER PATIENTS' UNDERSTANDING OF THE GLEASON SCORING SYSTEM: IMPLICATIONS FOR CLINICAL DECISION MAKING

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The Gleason Scoring System is critically important for patients in making decisions about their prostate cancer treatment. A patient's Gleason score is designed in part to facilitate risk communication and to help achieve informed treatment decision making. However, the system is complex and difficult to communicate to patients, often undermining well-informed and high-quality decision making. Prostate cancer patients (N=50) that had completed treatment were recruited to complete a survey during follow-up appointments. Measures assessed included demographics, Gleason Scoring System knowledge, perceptions of their Gleason score's impact on their decision making, and anxiety. Biopsy date, cancer stage, Gleason score at diagnosis, PSA score at diagnosis, and treatment type and completion date were obtained from patients' medical records. Patients had low overall knowledge of the Gleason Scoring System (66% scored below 50% on a Gleason knowledge scale). However, a majority of patients (58%) felt their physician's explanation of their Gleason score made sense to them. This was positively associated with health literacy, Gleason Scoring System knowledge, and Gleason score at diagnosis ($p < .05$). Most patients (64%) stated their understanding of their Gleason score significantly impacted their treatment decision. This was positively associated with patients' age, health literacy, Gleason score knowledge, and cancer staging ($p < .05$). PSA anxiety was positively associated with education and time since treatment completion ($p < .05$) and a striking 80% of participants reported a fear of recurrence. While patients have low knowledge of the Gleason Scoring System, most understand their score is an important part of decision making. However, factors such as low health literacy and stage of cancer diagnosis are associated with poorer patient understanding and use of their Gleason score in their decision making. Future research is needed to better understand how physicians can better communicate patients' Gleason score and its impact on decision making.

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D080 10:00 AM-11:00 AM

THE IMPACT OF FINANCIAL INCENTIVES ON ORGAN DONATION INTENTIONS AMONG AFRICAN AMERICANS

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The Impact of Financial Incentives on Organ Donation Intentions among African Americans

Transplantation is the therapy of choice for many patients experiencing end-stage organ failure, but a lack of available organs inhibits the number of life-saving transplants that occur. Offering financial incentives in exchange for a commitment to organ donation has been explored as a means to increase the donor pool, however, such an act is controversial. Additionally, while the “law of behavior” asserts that incentives heighten behavioral effort[1], prior research shows mixed results regarding the extent to which incentives can influence prosocial behaviors[2], such as organ donation. Understanding how financial incentives may influence donation decisions among African Americans (AA) is of particular importance, as AAs are overrepresented among those in need of organs yet donate at less than comparable rates, and historically have had a stronger distrust in the healthcare system than Whites[3]. Little is known about the extent to which donation decision making is influenced by financial incentives among AAs.

In January 2016, 1,339 AA adults residing in Georgia completed a cross-sectional survey measuring donation-related attitudes and knowledge, and views of financial incentives. Approximately 56% of participants indicated that financial incentives would not influence their decision to donate their organs. Among those who had no intention to donate, approximately half indicated that financial incentives would have no effect on their decision, 27% said that financial incentives would make them less likely, and 24% more likely to donate.

Greater knowledge of organ donation was associated with greater likelihood of changing a decision to donate from ‘no’ to ‘yes’, if given a financial incentive, OR=1.09 (95% CI=1.01, 1.17).

Financial incentives were associated with increasing organ donation intentions among AAs. Efforts exploring the influence of financial incentives on donation decisions should continue to examine the potentially negative effect of financial incentives, particularly among communities with higher levels of distrust of healthcare.

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D081 10:00 AM-11:00 AM

TO TAKE OR NOT TAKE PREP: DIFFERENTIATING PERCEPTIONS OF APPROPRIATENESS AMONG MEN WHO OBJECTIVELY MEET CRITERIA TO BEGIN PREP

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Background: Pre-exposure prophylaxis (PrEP) is the most effective biomedical HIV prevention tool currently available, however implementation has been slow. Existing research has identified that the largest barrier to uptake is not viewing oneself as a suitable candidate for PrEP. The present study sought to investigate what factors contribute to viewing oneself as being a PrEP candidate among GBM who all meet objective CDC qualifications for eligibility.

Methods: Within a larger U.S. national sample of 1,013 HIV-negative GBM, 438 (43.2%) met objective CDC qualifications for PrEP eligibility and had engaged in condomless anal sex in the past 90 days. These men provided demographic characteristics and completed scales measuring depression, anxiety, internalized homophobia, anticipated HIV stigma, and perceived social support.

Results: In bivariate analyses, those who did not consider themselves an appropriate candidate for PrEP were significantlyolder ($t(436) = 9.68$, $p < .01$) and more likely to be in a relationship ($\chi2(1) = 11.0$, $p < .01$). No differences were noted for race/ethnicity or education. In logistic regression analyses with demographic factors, mental health indicators (depression and anxiety) and perceived social support entered as covariates, higher scores on anticipated HIV stigma predicted not seeing oneself as an appropriate candidate for PrEP (OR = 0.96, $p < .01$).

Conclusions: These results indicate that among GBM who are eligible for PrEP uptake, those who have less social support and more HIV stigma are less likely to view themselves as appropriate candidates, thus less likely to initiate a regimen or talk to a health care provider about PrEP. It is important to target this group for intervention as they are objectively at risk for HIV infection despite not viewing themselves as at risk. These findings

indicate that one way to increase uptake for this group may be to focus interventions on building a social support network and destigmatizing HIV.

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D082 10:00 AM-11:00 AM

TRENDS IN GLOBAL COGNITIVE FUNCTIONING AND HEALTH LITERACY IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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Background

Poor cognition and low health literacy (HL) have been associated with chronic obstructive pulmonary disease (COPD). However, limited information is available about the longitudinal trajectory of cognition and HL in these patients and whether disease progression over time is associated with worsening function.

Methods

We used data from 258 participants from a prospective cohort study of outpatients with COPD. Participants were recruited from two major metropolitan hospitals in New York City, NY and Chicago, IL. Eligible patients were English- or Spanish-speaking, ≥55 years old, and had a physician diagnosis of COPD. Individuals were excluded if they had asthma or other chronic respiratory disease, dementia, or any condition profoundly affecting cognition. Face-to-face interviews were completed at baseline, 12 and 24 months. HL was measured using the Short Test of Functional Health Literacy in Adults (S-TOFHLA), which assesses an individuals' ability to read and understand prose passages selected from commonly found healthcare-related materials. The Mini-Mental State Examination (MMSE) was administered to assess global cognitive functioning. Spirometry was used to determine percent predicted forced expiratory volume at 1 second (FEV_1), a well-established marker of COPD severity. Unadjusted and adjusted fixed effects models were used to analyze the trajectory of MMSE and STOFHLA over the 24-month follow up period.

Results

The study cohort consisted of 258 participants, of whom 61% were women, with a mean age of 67.5 (SD: 7.8) years. Almost half (48%) of the study population was Black, 38% white, and 13% Hispanic. Unadjusted models showed no significant decrease in HL over the 24-month follow-up period (P=0.83). However, cognition significantly decreased over time, with a baseline mean MMSE score of 25.4 (SD:3.4) and a decrease to mean=24.7 (SD:3.9) at 24 months (p1 over time was independently associated with a 2.5% increased odds (95% CI:

1.01-1.03) of impaired cognition.

Conclusions

COPD patients showed significant declines in cognition but not HL over a relatively short follow-up period. Patients with worsening disease severity appear at the highest risk for cognitive decline and may require close follow up and support interventions to maintain adequate functioning and outcomes.

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D083 10:00 AM-11:00 AM

UNDERSTANDING AND PROMOTING ORGANIZATIONAL HEALTH LITERACY IN A PUBLIC HEALTH SETTING

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Title: Understanding and promoting organizational health literacy in a public health setting

Introduction: Organizational health literacy (HL) is the extent to which health organizations and systems support individuals as they seek, receive, and use information and services. Documented efforts to address organizational HL within a public health setting are lacking. To address this opportunity, a collaborative HL team was formed between researchers and four southwest Virginia Department of Health (VDH) districts serving federally designated medically underserved counties. This study describes an organizational HL needs assessment.

Methods: This research is guided by the Agency for Healthcare Research and Quality (AHRQ) HL Toolkit. VDH staff completed a 56-item survey adapted from the toolkit and based on four domains of organizational HL. VDH customers completed a validated 3-item individual-level HL screening measure (1=lowest HL, 14=highest HL) and seven questions on 4-point scale (1=never, 4=always) pertaining to personal perceptions of VDH services. Analysis included descriptive statistics and Spearman's correlations.

Results: Among 279 VDH staff, about 50% reported "doing well" across each HL domain; however, a subset reported "needs improvement" or "not doing" across written communication (31.4%), self-management and empowerment (23.9%), oral communication (18.7%), and supportive systems (16.5%) domains. Among 177 VDH customers (82% female, 94% white, 40% ≤ high school education) HL scores averaged 12.8 (SD=1.7). Average ratings pertaining to personal perceptions of VDH services ranged from 3.05-3.64, including following instructions (M=3.05, SD=1.01), reference to personal history (M=3.25, SD=.81), comprehension of forms (M=3.43, SD=.73), comprehension of written materials (M=3.51, SD=.70), time spent with staff (M=3.54, SD=.68), encouragement of questions (M=3.55, SD=.73), and explanation of services (M=3.64, SD=.60). Customer HL status was significantly correlated (p< 0.05-0.01) with comprehension of forms (r=.50) and written materials (r=.49), explanation of services (r=.26), following instructions (r=.16), and reference to personal history (*r*=.16).

Implications: Findings reveal notable strengths in current HL practices, as well as opportunities to improve customer experiences. This data has been shared with VDH and the HL Team is developing an Organizational HL Improvement Plan, including implementation of evidence-based resources from the AHRQ HL Toolkit. To capture changes over time, a 3-year evaluation process has been established.

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D084 10:00 AM-11:00 AM

WEBMDON'T: CREATING A SCALE TO MEASURE ONLINE HEALTH INFORMATION SEEKING BEHAVIOR

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Individuals examine health information online due to the immediate access to medical information and minimal costs. About 80 percent of internet users search for health information online (Fox, 2011). A consequence of obtaining online health information is inaccurate information. Specifically, reliability and trustworthiness of online health information is a major concern and extremely hard to measure (Morris, 2008). Very few studies have examined how online health information is evaluated by individuals seeking medical advice. For this reason, this study aimed to examine how users assess online health information. Research questions included: What predicts an individual's willingness to go the internet to seek medical information? What criteria are individuals using to assess health information online? What predicts an individual's confidence in the obtained medical information? What barriers are related to an individual seeking health information online? We proposed several inductively and deductively generated themes in response to the qualitative questions. Proposed theoretically grounded themes included: high levels of self-reported digital literacy, high levels of self-reported self-efficacy regarding internet usage and information consumption, high levels of confidence in the obtained medical information, and financial barriers to seeing a medical professional. 152 participants contributed qualitative and quantitative data via Amazon Mechanical Turk. Qualitative prompts assessed health information seeking behavior, specifically, what characteristics make the online information reliable and what antecedents lead participants to pursuing medical information online. Several themes were generated from the qualitative data. One third of the sample reported that information found online is very trustworthy. Obtaining the same medical advice from multiple sites, specifically WebMD, was a method used by participants to check for validity. Severity and longevity of the health condition was directly linked to willingness to seek health information online. Top barriers to seeing a healthcare professional included issues with insurance and financial concerns. Participants reported using information found on google as a decision making tool to decide whether or not they needed to go to the doctor. The results from this study highlight how online information is being used to make important health decisions. The results from this study will also be used to inform the development of a scale to measure online health information seeking behavior.

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D085 10:00 AM-11:00 AM

FAMILY DIABETES HISTORY AND ITS INFLUENCE ON HEALTH OUTCOMES

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The present study is part of a larger NIH funded investigation that examined the influence of family illness-history of diabetes on perceptions of disease threat and health outcomes among Latino college students who are at-risk for diabetes acquisition due to genetic predisposition. Type 2 diabetes is a disease previously seen mostly in older age groups; however, in recent years its prevalence among teens and young adults has increased at an alarming rate. This study aimed to test a theoretical model linking family history of diabetes (i.e., degree of genetic risk, relative's illness severity, and distress caused by a relative's illness) and perceptions of disease threat (i.e., illness seriousness and self-rated risk for disease acquisition), to objective as well as psychological health status indicators (i.e., BMI, diabetes risk score, health importance and self-rated health). The sample consisted of 156 Latino college students who had a first-, second-, or third-generation relative afflicted with Type 2 Diabetes. A path-analysis using linear regression was used to test the proposed theoretical model. The results revealed a direct path between genetic risk of disease to having a higher diabetes risk score ($\beta = .268$). Similarly, psychological distress caused by a relative's illness was also directly related to having a higher diabetes risk score ($\beta = .304$). Furthermore, a relative's illness severity impacted health importance ($\beta = .221$) as mediated by disease threat ($\beta = .353$). This suggests that the severity of a relative's illness influenced perceptions of diabetes as a threatening illness, which impacted the value participants placed on their health. In addition, the degree of psychological distress experienced due to a relative's diabetes was associated with having a higher self-rated risk for disease acquisition ($\beta = .156$), which in turn was related to having a higher BMI ($\beta = .340$) among participants. Lastly, familial genetic risk was positively associated with having a higher perceived risk for acquiring the disease ($\beta = .255$) among participants, which resulted in having a lower self-rated perceived health status ($\beta = - .351$). These results will be discussed in terms of the Health Belief Model and Common Sense Illness Model of disease.

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D086 10:00 AM-11:00 AM

LIFESTYLE INTERVENTIONS FOR PRIMARY PREVENTION OF TYPE 2 DIABETES IN U.S. HISPANIC YOUTH: A SYSTEMATIC REVIEW

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Prevalence of type 2 diabetes in youth has risen rapidly in recent decades along with increases in childhood obesity. Disparities in both risk and prevalence of type 2 diabetes are evident in Hispanic/Latino (hereafter, Hispanic) youth compared to their non-Hispanic counterparts. Targeted diabetes prevention programs have been recommended to reduce risk factors prior to adulthood in this vulnerable, high-risk population. The current systematic review explored effectiveness of lifestyle-based diabetes prevention interventions for Hispanic youth following Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines.PubMed/Medline, PsychInfo, Web of Science, and Cochrane Central Register of Controlled Trials were searched from database inception to August 2016 for studies evaluating lifestyle-based diabetes prevention trials in U.S. Hispanic youth without diabetes. Fourteen publications met criteria for inclusion. Ten of fourteen studies were randomized controlled trials (RCTs); four were uncontrolled. Interventions were heterogeneous in intensity, content, and setting. The majority of interventions were 12-16 weeks in duration and were conceptualized as pilot studies. Mean age of participants ranged from 9.8 to 15.8 years, samples sizes were generally small (15-100 participants), and the majority of participants were overweight [age-and sex-specific body mass index (BMI) ≥ 85th percentile]. Fewer than half of interventions (n = 5) resulted in changes in BMI, and 50% (n = 7) reported changes in fasting glucose or insulin. Of the ten RCTs included, three (33%) reduced BMI and five (50%) reported significant changes in fasting glucose or insulin. Study quality ranged from moderate to strong, but effect sizes were generally small. Only four studies reported cultural tailoring or adaptation of intervention content to improve engagement with the Hispanic community. In conclusion, evidence for the effectiveness of lifestyle-based diabetes prevention interventions targeting U.S. Hispanic youth remains limited. Few interventions demonstrated success in reducing BMI and fasting glucose, effect sizes were small, and follow-up times were brief. More studies are needed that recruit larger samples sizes, extend follow-up times, explore innovative delivery modalities, measure and increase youth engagement, and examine effectiveness across sex and age or pubertal stage groups.

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D087 10:00 AM-11:00 AM

SECURE E-MAIL IN DIABETES CARE. A PILOT STUDY

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Background: Patient-provider e-mail communication has the potential to fill unmet needs of patients with chronic conditions. E-mail use in diabetes care has been associated with improved patient outcomes. This pilot RCT tested the effects of access to a practice-integrated secure e-mail service (EMS), compared to usual care on problem areas such as anxiety, depression, quality of life (QoL) satisfaction with treatment and changes in glycemic control (HbA1C) in patients with Diabetes type I who were followed for 6 months.

Methods: 78 patients at a university hospital were randomized into the EMS group (n=39), whose members could send messages to, and receive answers from nurses, physicians and nutritionists at their hospital or the usual care group (n=39). Linear mixed models for repeated measures were fitted to compare effects on patient outcomes over time, using an intention to treat approach. In addition, interviews were conducted with four patients in the EMS group.

Results: There was a large range in time since diagnosis among the respondents (0-58 years) and the usual care group members were significant older than the EMS group (49 years/39 years; p.041). In the EMS group 23% (n=9) sent e-messages (median 1, range 1-13). There were no significant differences over time between the EMS group and the control group in terms of problem areas in diabetes (PAID), anxiety (Hospital Anxiety and Depression Scale (HADS)), depression (HADS), QoL (WHO-5), satisfaction with treatment (DTSQ) or HbA1c. Interviews revealed that the patients were satisfied with having the opportunity to send messages to their health care providers.

Conclusion: No differences were revealed between the group with access to e-mail compared to the control group on self reported outcomes or changes in HbA1c. Lessons learned are to recruit a more homogenous group in terms of time since diagnosis to be able to detect differences. E-mail access to health care providers might be more beneficial to newly

diagnosed people with diabetes type I and thus address unmet information needs in this patient group.

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D088 10:00 AM-11:00 AM

SELF-CARE TRACKING AND BLOOD GLUCOSE STABILITY AMONG ONE DROP MOBILE APP USERS

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Background: Self-tracking of weight, diet and exercise is growing in popularity in the United States. These variables are also important metrics for the self-management of both type 1 (T1D) and type 2 (T2D) diabetes. However, the purported health benefits of consistent tracking behavior using smartphone applications have been hard to quantify. Here, we investigated the impact of self-care tracking on self-reported blood glucose (BG) levels in individuals with T1D and T2D using the One Drop application, a diabetes management app for people living with TD1, TD2 and Pre-Diabetes.

Methods: We analyzed self-care and BG data entered between January 2015 and January 2016 by 3,378 users with T2D and 999 users with T1D having at least 20 BG readings over a 90-day period. Self-care data included self-reported carbohydrate (carbs) intake, medication/insulin doses, and physical activity. We aggregated BG data on a per-user-month basis. For each user-month, we computed the percentage of out-of-range BG readings (%OOR) (range defined as mg/dl below 70 or above 180) and the logarithm of the counts (log-count) of each type of self-care behavior during the month. We used fixed-effects panel regression analysis to model the association between users' self-care and %OOR on a per-month basis while controlling for inter-user variability. We included logged carbs, medication/insulin taking, activity, and BG log-counts as explanatory variables.

Results: Users were 62% male with an average of 21±40 and 16±27 BG readings/month in the T1D and T2D populations respectively. For the T1D cohort, the 37% of BG readings were out of range compared to 20% out-of-range for the T2D cohort. We found an association between increased BG logging and decreased %OOR among users with T2D. Doubling the amount of BG logging was associated with a reduction in %OOR by 0.78 (95% CI [0.28 - 1.29], p = .002). Users with T1D had a similar, but non-significant pattern, decreasing the %OOR by 0.59.

Conclusions: Increased BG logging with the One Drop app was associated with a lower monthly percentage of BG readings outside the 70-180 mg/dl range, after controlling for

inter-user variability in self-care tracking. Future analyses will examine any relationships by user age, insulin status, and duration of diabetes. Further research should assess whether the increased stability in observed BG measurements reflects improved glucose control among One Drop users.

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D089 10:00 AM-11:00 AM

SOMATIC AND COGNITIVE ANXIETY IN TYPE 1 AND TYPE 2 DIABETES PATIENTS USING INSULIN

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Background: Anxiety is established as highly comorbid with many chronic medical conditions, including obesity. Anxiety has been linked to increased number of diabetes mellitus (DM) symptoms and complications, increased pain, and reduced quality of life. However, research on anxiety levels in DM populations is scarce. Recent studies suggest that anxiety symptoms are generally higher in individuals with DM than in the general population, but this relationship is poorly understood**.**

Aims: This study aims to 1) describe somatic (sensations) and cognitive (thoughts) anxiety in DM patients using insulin and (2) explore specific diabetes and health characteristics associated with both types of anxiety.

Method: Forty three DM patients were recruited from a hospital-based diabetes outpatient clinic (44% female, 93% White, *M* age = 42); 72% of the sample had Type 1 and 28% had Type 2 DM. All participants were using insulin, and 44% had a history of significant hypoglycemic episodes; 72% were overweight or obese. Self-report measures assessed DM history, general anxiety (Beck Anxiety Inventory, somatic and cognitive scales), and hypoglycemia-related anxiety (Fear of Hypoglycemia Scale).

Results: Participants' diabetes was moderately controlled (*M* HbA1c = 8.55, *SD* = 2.04). Nearly half of the sample (46%) reported anxiety symptoms. Somatic levels were generally lower (*M* = .41, *SD* = .38) than cognitive (*M* = .45, *SD* = .62). Anxiety was not associated with time since diagnosis, frequency of blood sugar testing, injections, or perception of accuracy in estimating blood sugar. Higher cognitive anxiety was associated with higher levels of worry about hypoglycemia episodes (*r* = .51, *p* < .001) and higher somatic anxiety with higher BMI (*r* = .53, *p* < .001). Somatic anxiety significantly differed by weight classification (ANOVA, *F* = 5.23, *p* = .01) with planned comparisons revealing higher somatic anxiety in obese vs. overweight participants (*t* (36) = -3.00, *p* = .005).

Conclusion: The results support previous findings of high levels of anxiety in DM samples and may point to important differences in anxiety symptom type. While cognitive anxiety may be linked to worry about managing diabetes symptoms, such as hypoglycemia, somatic anxiety may be related to comorbid conditions, such as obesity. Because anxiety has been linked to

poorer diabetes outcomes, further understanding of this comorbidity is needed and may be a key to improved diabetes management.

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D090 10:00 AM-11:00 AM

THE RELATIONSHIP BETWEEN CHANGE IN HBA1C, DEPRESSION, AND DIABETES-DISTRESS FOLLOWING A 6 MONTH, STEPPED CARE INTERVENTION.

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Objective: Diabetes and diabetes-related distress are commonly comorbid with Type 2 diabetes mellitus (T2DM) and both depression and diabetes-related distress have been found to be positively correlated with HbA1c. The purpose of this project is to further explore the relationships between HbA1c, depression, and diabetes-related distress following a 6 month integrated, collaborative stepped care intervention for primary care patients with uncontrolled T2DM and co-morbid distress or depression.

Methods: One hundred thirty nine (Mage = 52.6, 77.6% Female, 71% African American) with uncontrolled T2DM (MHba1c = 9.6) were randomly assigned to intervention or control. Intervention group participants were placed into one of three steps based on depression and distress symptoms as assessed by Diabetes Distress Scale (DDS-17) and the Patient Health Questionnaire (PHQ-9). Participants with low distress or depression received assistance with self-management; those with moderate distress or depression received problem-solving therapy; and those with high distress or depression received cognitive behavioral therapy.

Results: At 6 months there was no significant difference in HbA1c change, $t(137) = .737$, $p = .46$, or PhQ9 change, $t(107) = 1.9$, $p = .06$ between intervention and control participants. Participants in the intervention arm ($M = -.75$, $SD = .92$) experienced significantly greater decrease in DDS as compared to controls ($M = -.35$, $SD = .60$), $t(107) = 2.72$, $p = .008$. Reduction in DDS scores significantly predicted decreases in HbA1c within intervention participants $F\,(1, 52) = 9.28$, $p = .004$ with an $R^2 = .15$; however, there was no relationship between change in DDS and change in HbA1c within control participants.

Conclusions: A collaborative, stepped-care intervention approach appears to reduce diabetes-related distress in patients with T2DM and comorbid depression or distress.

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D091 10:00 AM-11:00 AM

WEIGHT GAIN IN YOUTH WITH TYPE 1 DIABETES COMPLETING INTERNET PSYCHO-EDUCATION PROGRAMS

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Background: Prevalence of overweight among adolescents with type 1 diabetes has grown at alarming rates since the 1980s. Our Internet-based behavioral interventions have successfully maintained glycemic control and improved quality of life and diabetes management, but little is known about the impact of such interventions on weight gain/maintenance.

Methods: We performed a secondary analysis for changes in body weight from the TeenCope study, a multisite clinical trial where 320 youth, age 11-14 years; 37% minority; 55% female; HbA1c 8.5±1.4% were randomized to one of two interventions; TeenCope or Managing Diabetes. Research assistants retrieved height, weight, and HbA1c data from medical records before and 12 months after the intervention for 223 participants, who comprised the cohort for this analysis. We used mixed linear models to examine change in body weight and body mass index percentile (BMI %'ile) over time and whether such changes were influenced by potential moderators [intervention assignment, change in HbA1c, therapy type (pump versus injections), gender, and age of diabetes onset].

Results: Among the patients with normal weight at baseline (n=134, BMI≥5th and < 85th %'ile), average BMI %'ile increased from 59.5±20.7 to 78.3±14.6 ($p < 0.001$) and 41% became overweight. Among the patients with overweight at baseline (n=58, BMI≥85th and < 95th %'ile), average %'ile increased from 90.7±2.3 to 95.4±2.5 ($p < 0.001$) and 62% of them became obese while virtually all others (36%) remained overweight. The patients with obesity at baseline (n=31, ≥95th %'ile) did not change %'ile on average (97.7±1.4 to 98.5±1.6, $p>0.05$) and virtually all (97%) remained obese. None of the potential moderators influenced weight changes.

Conclusion: A substantive number of teens became overweight or obese during the programs. Future studies should investigate behavioral factors moderating these abnormal BMI increases over 12 months and ways our future interventions could address them.

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D092 10:00 AM-11:00 AM

A DIGITAL HEALTH INTERVENTION FOR WEIGHT LOSS IMPROVES DIET QUALITY AMONG MEDICALLY VULNERABLE PATIENTS: RESULTS FROM AN RCT.

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Background: The Dietary Approaches to Stop Hypertension (DASH) dietary pattern is a proven behavioral strategy to manage chronic disease; yet national compliance rates hover around 20%. We examined DASH dietary pattern compliance among high-risk, low-income patients with diabetes, hypertension, and/or hyperlipidemia enrolled in a behavioral weight loss intervention.

Methods: Participants (n=351) were enrolled in the Track study; a randomized controlled trial examining a digital health weight loss intervention that included self-monitoring via mobile technologies and provider counseling in community health centers, as compared to usual care. At baseline and 12 months, we used the Block Food Frequency Questionnaire to assess usual dietary intake. Using valid questionnaires (n=241), we calculated a DASH compliance score based on recommended levels of 10 nutrients; carbohydrates, protein, total fat, saturated fat, cholesterol, fiber, magnesium, calcium, potassium, and sodium. Total scores ranged from 0-10, with higher scores indicative of greater adoption of the DASH dietary pattern.

Results: Participants were on average 50.7 years old and obese (BMI 35.9 kg/m2). Most were female (68%) and Black (54%); 12.5% were Hispanic. Half (51%) had an income ≤ $25,000/y and 21% had all 3 chronic diseases. At baseline, average DASH scores were low (2.04 ±1.16) and 48% had a score ≤ 1.5. DASH compliance improved among intervention participants compared to usual care; although this was marginally significant (mean change: 0.28±1.3 vs. -.01±1.2; p=.08). This difference was driven by group differences in sodium reduction (intervention: -1011mg±1168 vs control: -249mg ±1244; < .0001). Among intervention participants at 12 months, controlling for baseline, women had significantly higher DASH scores compared to men (2.42±1.1 vs. 1.83±1.1; p=.012) and those with all 3 chronic diseases reported poorer DASH scores compared to those with fewer (1.79±0.9 vs. 2.39±1.2; p=.062). Further, improvements in DASH adherence were associated with greater weight loss (r=.27; p=.004).

Conclusion: A digital health intervention marginally improved adoption of the DASH dietary pattern among medically vulnerable patients; particularly among women, those managing fewer chronic conditions, and those who lost weight. Despite these improvements, overall compliance remains poor. Interventions should focus on improving diet quality to reduce chronic disease burden.

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D093 10:00 AM-11:00 AM

DEPRESSION AND DIETARY FACTORS IMPLICATED IN OBESITY DEVELOPMENT: A REVIEW

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Objective: Although “poor diet” has been proposed as one pathway through which depression promotes the development of obesity, no review has summarized the literature on depression as a potential predictor of dietary factors. Accordingly, our aims were (1) to summarize and evaluate the extant literature on depression and 21 dietary factors implicated in obesity development and (2) propose a conceptual framework and formulate a future research agenda for this area.
Methods: A total of 109 studies were included in this review, which was conducted between March 3, 2016 and July 1, 2016. For 17 of the dietary factors, comprehensive literature searches were conducted using PsycINFO, MEDLINE, and EMBASE databases. For the other four dietary factors, results of recent meta-analyses and/or comprehensive reviews were synthesized.
Results: Findings indicate that there is: (1) strong longitudinal evidence of greater depression predicting greater eating disorder pathology; (2) strong cross-sectional evidence linking greater depression to greater emotional eating, dietary restraint, rates of night eating syndrome, and frequency of skipping breakfast; (3) modest cross-sectional evidence suggesting that greater depression is inversely associated with Mediterranean and healthy diets but is unrelated to Western diet and protein intake; (4) mixed cross-sectional evidence regarding the associations of depression with energy intake, fat intake, carbohydrate intake, fast food intake, fruit and vegetable intake, sweet food/beverage intake, and external eating; and (5) insufficient evidence regarding the relationship between depression and the remaining four dietary factors of adherence to dietary recommendations, meal preparation, snacking, and portion size.
Conclusions: Based on these results, we developed a conceptual framework clarifying the relationship between depression and dietary factors implicated in the development of obesity. We also identify key knowledge gaps and propose a future research agenda for this area. Of greatest importance, there is a critical need for prospective studies utilizing large, representative samples. This review may increase researchers’ and providers’ awareness of the numerous ways in which depression could influence dietary factors and, ultimately, the development and progression of obesity.

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D094 10:00 AM-11:00 AM

ENGAGING EFNEP AUDIENCES: AN ANALYSIS OF SOCIAL MEDIA POST CONTENT AND PARTICIPANT ENGAGEMENT

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Background: The prevalence of social media use among low-income internet users in the US (56%) suggests that social media may be an appropriate platform for engaging and retaining participants in programs such as the USDA Expanded Food and Nutrition Education Program (EFNEP). Although a growing number of health promotion organizations such as EFNEP are using social media, little formal research has been done to determine best practices in social media message design around health topics. Identifying effective social media messaging strategies could improve program engagement resulting in improved behavioral and health outcomes.

Objective: to describe EFNEP social media campaign message characteristics and identify those that are associated with greater levels of participant engagement.

Methods: We obtained objective server log data on participant interactions from the Facebook Insights analytical platform for 406 moderator messages posted across 24 county and state EFNEP Facebook fan pages over a 26-month period. Codes representing key engagement strategies were developed through qualitative content analysis and from existing categories (e.g., message type). Multiple coders then applied the appropriate set of codes to each message. Using a Welch's adjusted ANOVA due to homogeneity of variance and unbalanced sample sizes between groups, we examined the association between message engagement strategies (e.g., messages including pictures, messages focusing on significant others) and a measure of engagement that summed participant message interactions (Comments + Shares + Likes + Link clicks + Photo views + Video plays + Other clicks).

Results: Categories of engagement strategies included message types [text only (3.9%), text with links (74.4%), text with pictures (75.1%), and text with videos (6.7%)], and message content [use of credible sources of information (21.2%), emphasizing significant others

(48.0%), encouraging discussion of a topic (21.4%), and posing rhetorical questions (35.0%]. The mean number of interactions was 14.84 (SD = 13.35). Engagement strategies positively associated with interactions included having a picture F(1, 136.48) = 5.75, p < .05 and posing a rhetorical question F(1, 271.03) = 5.26, p < .05. Negative associations were observed for emphasizing significant others F(1, 400.42) = 4.54, p < .05; being related to a holiday F(1, 84.38) = 6.39, p < .05; being text only F(1, 15.52) = 15.87, p < .01;and containing motivational language F(1, 39.49) = 4.90, p < .05.

Implications: Social media messages with a greater number of interactive elements can be employed by organizations to increase engagement. In some cases, message characteristics hypothesized to increase engagement produced the opposite effect, highlighting the importance of continued research that can guide practitioners in the design of social media campaigns that maximize engagement.

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D095 10:00 AM-11:00 AM

FAMILY FUNCTIONING MODERATES ASSOCIATIONS BETWEEN MOMENTARY MOODS AND BINGE EATING AMONG URBAN ADOLESCENTS

Anna Lee, MPH, MA, Kim Reynolds, PhD, Alan Stacy, PhD, Zhongzheng Niu, MS, MD, Bin Xie, PhD

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Background and purpose

This study builds upon prior research on associations between moods, family functioning (FF), and binge eating behaviors, using ecological momentary assessment (EMA), an intensive longitudinal data collection technique that involves participants' reportage of data from within their natural environments. Momentary associations between moods (e.g. positive and negative emotions) and binge eating behaviors, as well as moderating effects of FF on these associations, were examined among a nonclinical sample of urban adolescents.

Methods

This study included both time-invariant data reported on survey questionnaires, as well as time-variant data reported on handheld PDA devices over a 7-day period. Time-invariant data included demographics and five FF constructs adopted from FACES-IV (e.g. 'balanced cohesion,' 'balanced flexibility' 'communication,' 'satisfaction,' and 'balance,'); time-variant data included moods (13 items from the Daily Affect Scale) and binge eating behavioral responses (2 items from a subscale of the Eating Disorder Diagnostic Scale - binge eating associated with 'embarrassment' (BE1), and binge eating associated with a sense of 'loss of control' (BE2)). A multilevel modeling approach was employed to examine associations between momentary moods and binge eating behaviors moderated by FF constructs, after controlling for age, gender, ethnicity and obesity status.

Results

All negative emotions were significantly and positively associated with at least one form of binge eating (BE1 or BE2; *p*-values < 0.05). The positive association between feeling 'tired' and binge eating was significantly buffered by 'family balanced cohesion' (BE2: $\beta = -0.0016$, $p = 0.04$), 'family satisfaction' (BE2: $\beta = -0.0012$, $p = 0.03$), and 'family balance' (BE1: $\beta = -0.072$, $p = 0.01$; BE2: $\beta = -0.0071$, $p = 0.03$). Such significant main and interaction effects were not observed among positive emotions and binge eating (neither BE1 nor BE2).

Conclusions

Findings indicate that FF buffers positive associations between negative emotions and binge eating behaviors; this finding indicates the importance of inclusion of FF in the development of eating behavior interventions for adolescents.

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D096 10:00 AM-11:00 AM

HOUSEHOLD SOCIAL CONTRIBUTORS TO EVERYDAY DIETARY BEHAVIOR AMONG BLACK AMERICAN ADOLESCENT FEMALES

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Background: Black American adolescent females are disproportionately impacted by obesity and exhibit high rates of obesity-associated dietary behaviors. However, given that food is best understood within a social context, it is essential to examine food-related behaviors situated within a person's household— a place shared and created by its members.

Purpose: The purpose of this research was to deeply explore the household relationships and social processes contributing to Black American adolescent females' everyday food consumption behaviors.

Methods: Data are from a mixed methods, multiple case study conducted with 14 mother-adolescent female cases (7 adolescent females with obesity). Sixteen different data sources, including repeated administrations of questionnaires, anthropometrics, interviews, daily diaries, and field notes, were collected across four home visits for each case and analyzed using within- and across-case techniques. A highly detailed view of dietary behavior, including on average 45 distinct food consumption occurrences (more than 14 days of data), was produced for each adolescent female, along with comprehensive descriptions and evaluations of the social processes within her household.

Results: An explanatory configuration consisting of three sufficient factors (Mother's Consistent Mindfulness of the Healthfulness of Foods, Daughter's Agreement and Accommodation to Household Food, Household Member Available and Willing to Plan, Acquire, and Prepare Food) was developed to elucidate the various household social contributors to a healthy profile of everyday food consumption among adolescent females. The configuration's explanatory power was estimated by illuminating properties for each factor and examining their presence across each case (e.g. one of six properties for Mother's Consistent Mindfulness is whether she frames "healthy eating" as a best practice for life).

Conclusions: This study is an initial step to understanding the multiple household social processes contributing to various forms of healthy and unhealthy everyday food consumption

behavior among adolescents. By examining the nuanced ways the cases varied, context-dependent knowledge essential to understanding the complicated health challenges of obesity-associated dietary behaviors among Black American adolescent females was produced; thus, informing both the development and refinement of household-level obesity interventions.

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D097 10:00 AM-11:00 AM

A CONTENT ANALYSIS OF A BARIATRIC SURGERY SUPPORT PAGE ON FACEBOOK: IMPLICATIONS FOR PROVIDERS

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Abstract

Background: In-person support groups are an integral part of the post-operative lifestyle for patients after bariatric surgery. Past research shows that patients who attend support groups lose more weight. In today’s technological revolution, online bariatric surgery support groups have formed on social media platforms. Due to the novelty of an online format, a gap exists in the literature on the content of these support groups. The current study hopes to bridge this gap by examining the online posts on a Facebook bariatric surgery support page with over 42,000 members.

Methods: All posts from May 1st, 2016 to June 1st, 2016 were coded (*N* = 3,556 posts). Content analysis was performed by coding the presence of thematic categories in individual posts. Categories included seeking nutritional information, posting about progress after surgery, and commenting about experiences of weight bias. Coders were trained to reliably code the presence of thematic categories (all $\kappa > .70$).

Results: Content analysis indicated that seeking or providing recommendations was most prevalent (66%), followed by writing supportive content to group members (37%) and sharing postoperative progress (21%). When members sought recommendations, questions were frequently related to nutritional (44%) or medical content (56%). When providing recommendations, 23% of these posts suggested a specific product or tool (e.g., specific brand of protein supplement). Patients often described changes in weight (69%) or provided weight statistics before and after surgery (20%) when writing a progress post. Internalizing weight bias or writing about experiencing weight bias was more common when posts centered around changes in appearance (*p’s* < .05).

Conclusion: Results indicate that online bariatric support groups are primarily used for asking and answering questions, receiving support, and sharing experiences. These findings may be useful to inform patients about the risks and benefits of joining these groups, and to develop

higher quality support for bariatric surgery patients. Future research examining the accuracy of online support group content and the credentials of group administrators is warranted.

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D098 10:00 AM-11:00 AM

COLLEGE STUDENTS' USE OF MOBILE APPLICATIONS FOR PHYSICAL ACTIVITY

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Physical activity (PA) is important for both mental and physical health. Mobile applications (apps) have potential to increase PA, especially among heavy technology users such as college students.

As part of an annual survey of college student health, students were asked: “have you ever used a mobile application (“app”) for physical activity or exercise?” Users, those who reported using an app for PA, were asked about their most and least liked feature for the most used app. Responses to these open-ended questions were categorized by 3 coders (percent agreement ranged 71-82%).

Of total participants (n=1906; 67% female; 30% overweight/obese), less than half (39%) reported using an app for PA. Users were more likely to be women (41% of women vs 35% of men; p=0.008), and more likely to have a BMI of less than 25 (41% of normal BMI vs 35% of ovwt/obese, p=0.02).

Most users (43%) reported primarily using PA apps to track PA, 23% to increase PA, 11% for fun, 11% because an app was recommended, and 8% to lose weight. Many (38%) reported using a PA app for less than one month, 25% 1-2 months, 18% 3-4 months, 19% reported use of 5 months or longer. Length of use did not differ based on reason for use.

Most users (48%) liked tracking/self-monitoring features most followed by receiving tutorial or instruction (24%). Half of students (50%) did not clearly identify least-liked app features in response to open-ended questions, 17% listed activity tracking, 6% tutorial/instruction, and 6% financial or time cost.

Over one third of college students have used an app for PA, although most use them for 2 months or less. Just under half of users were using apps to track a preexisting PA habit while far fewer were using apps to increase PA suggesting that behavioral strategies in apps may not be attracting sedentary individuals. Almost 2/3 of users reported using the app for less than 2 months with only 19% using these apps for 5 or more months. Further research is needed to identify how to enhance PA app features to attract sedentary users for longer periods of time.

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D099 10:00 AM-11:00 AM

DIGITAL FOOD RECORDS: A MIXED-METHODS STUDY TO EVALUATE FEASIBILITY AND ACCEPTABILITY FOR COMMUNITY-BASED INTERVENTIONS

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Background

Optimized dietary assessment tools are needed for use in community interventions for vulnerable populations. Digital Food Records (DFR), which use handheld devices to capture dietary intake through text and photography, are a particularly promising mobile assessment method. Less is understood about the acceptability and feasibility of DFR in community-based participatory research (CBPR).

Methods

This CBPR-based pilot study was conducted among church-based populations in resource-limited wards of Washington, D.C. as part of the D.C. Cardiovascular (CV) Health and Needs Assessment (NCT01927783). Participants (n=17) received a mobile device (iPod Touch) to photo-document dietary intake for a 3-day DFR using a mobile application (app), FitNinja (Vibrent Health). After 2 weeks of use, qualitative data were collected in a moderated focus group (n=8). Acceptability of DFR was explored through thematic analysis of verbatim transcripts. Feasibility was evaluated by the percentage of participants complying with instructions (i.e., capturing both before and after meal photos for at least two meals/day for

three days).

Results

Themes identified were related to: 1) feasibility and acceptability of the mobile device and app, including issues in recording dietary information and difficulty with photo-documentation; 2) suggestions for additional support and training experiences; and 3) comparisons to other mobile apps. Overall, participants (all African American, 53% female, 28-80 years old) were accepting of the photo-documentation tool, contributed to the discussion of ways to improve the tool, and expressed interest in receiving expert feedback regarding their diet. Fifteen of the 17 participants (88.2%) photo-documented at least one meal over the study period. Most meals (89.4%) were recorded with at least one photo. Only 3 participants (17.6%) provided before and after photos for at least two meals for three days.

Conclusion

This study demonstrates DFR as an acceptable tool in CBPR. Participation rates and feasibility may be improved with the development of a tailored system of reminders to increase before/after meal pictures. CBPR allows novel assessment methods to be optimized for use in real-world settings by tailoring tools based on feedback from community members. Increasing knowledge of the acceptability and feasibility of digital technology to measure dietary intake in CBPR could improve interventions that promote healthy eating and reduce CV health disparities.

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D100 10:00 AM-11:00 AM

DIGITAL HEALTH TOOLS FOR SLEEP SELF-MANAGEMENT: WORKING MOTHERS USE CASE

Katarzyna Wac, PhD[1], Laura Montanini, MSc[2], Kimie Bodin Ryager, MSc[3], Homero Rivas, MD[4]

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Ever sophisticated wearable activity trackers and mobile applications enable to assess individual’s daily life patterns and factors influencing their long-term health state. Working mothers may be especially vulnerable to experience poor sleep hygiene – as they try to balance work with family obligations, suffering from chronic stress, and having poor social support and insufficient personal resources to deal with daily challenges. Poor sleep hygiene may be developing over a longer period, resulting in fatigue and exhaustion and may have destructive long-term influences on the individual’s psychological and physical health, cognition, and behavior, leading to a burnout state.

We present an approach to operationalizing the major risk factors for the prevalence of poor sleep hygiene in working mothers - including physical factors (e.g., physical activity, alcohol, time to bed), psychological factors (e.g., stress, feeling 'lack of control'), social factors (e.g., family settings, social pressure for socializing) and environmental factors (e.g., light, noise, room temperature). We have thoroughly examined these factors to identify which of those can be operationalized via ICT-based tools and quantified by leveraging unobtrusive sensors, including sensors embedded in personal smartphones and wearables. Such an operationalization will enable to provide reliable assessment and prediction of risk exposure, which, in turns, will permit early recognition and preventive interventions.

To support our research claims we have conducted an explorative pilot study with six working mothers wearing BASIS PEAK activity and sleep tracker for a minimum of three months each. We have collected both their subjective views (via interviews) and the underlying smartphone and wearable device usage logs ‘in situ’. The results expose, on the one hand, the low physical activity levels, late time to bed, high stress and social pressure as well as poor environmental conditions of most of the mothers. On the other hand, the results indicate a high importance of routines and predictability in the daily lives of mothers, which may enable better sleep hygiene. Additionally, a wearable device’s features like interaction design, battery lifetime and fashion-ability; influence the quality of the data collected. Given the results and existing research so far, we discuss design implications for monitoring and assessment of multi-dimensional events, subjective symptoms as well as physiological and behavioral variables in

the natural daily settings of the working mothers for assurance of their sleep hygiene and prevention of burnout condition in a long term.

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D101 10:00 AM-11:00 AM

EFFECTS OF AN ONLINE BOOSTER INTERVENTION ON BEHAVIORAL CHANGE IN A LONGITUDINAL BONE HEALTH TRIAL

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Osteoporosis is a serious public health problem affecting 52 million Americans. Although several interventions have been shown to be effective in optimizing bone health, they have not been fully incorporated into individuals' daily lives. In an online dissemination study, our research team assessed the impact of two online theory-based bone health programs on selected health outcomes in older adults. The two interventions were the (1) Bone Power program (8-week) and the (2) Bone Power Plus program, including a 10-month online booster intervention followed by the 8-week Bone Power program. The aim of the study was to test the impact of the online booster intervention on self-efficacy/outcome expectations for calcium intake and exercise, and calcium intake and exercise behaviors. (8-week outcomes of the study were published elsewhere.) The study was guided by social cognitive theory. This was a 3-arm RCT with 4 observations (baseline, 8 weeks, 6 months, and 12 months). Individuals were eligible if they were age 50 or older and could use the Internet/e-mail independently. Participants were recruited from two online communities*, SeniorNet* and *My HealtheVet.* The 8-week Bone Power program was comprised of learning modules, moderated discussion boards, Ask-the-Experts, and a virtual library. Participants also had access to video lecture libraries and a health toolkit. The booster intervention used for the Plus program was a 10-month biweekly eHealth Newsletter. The newsletters included contents that highlighted major health topics in the learning modules, recent research findings, calcium-rich recipes, an interactive goal attainment form, and participants' success stories. For the primary analysis, linear mixed models were used to compare the intervention effects between intervention groups on each of the outcomes. A total of 866 participants were randomized into either the control (n=263), Bone Power (n=301), or Bone Power Plus (n=302) group (mean age, 62.8±8.5 years). At 12 months, participants in the Plus group showed substantially greater improvement compared to the control group in calcium self-efficacy (t[1309]=1.99; p=.046), exercise self-efficacy (t[1309]=2.1, p=.036), amount of exercise (t[1309]=2.38, p=.018) and minutes of exercise (t[1309]=2.48, p=.013). Participants in the Bone Power group showed greater improvement in calcium outcome expectation (t[1309]=2.68, p=.008) than those in

the control group. Although no statistical significance was observed, participants in the Plus group tended to have a higher improvement than those in the Bone Power group in self-efficacy for calcium and exercise and amount of exercise. Overall, the findings suggest promising potential for using eHealth behavior interventions for large numbers of older adults. The effects of booster interventions, however, need further investigation using varying approaches.

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D102 10:00 AM-11:00 AM

MERITORIOUS AWARD WINNER

ENGAGEMENT OVER ONE YEAR IN A BILINGUAL TEXT MESSAGING INTERVENTION PREDICTS WEIGHT LOSS AMONG OVERWEIGHT/OBESE ADULTS: CONTXT

Margaret A. Crawford, BS[1], Gina Merchant, PhD[2], Matthew Allison, MD, MPH, FAHA[2], Job Godino, Ph.D.[3], Kevin Patrick, MD, MS[4]

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Purpose: Text messaging is a promising weight-loss intervention tool because it allows for continuous support, minimizes cost, and maximizes distribution. However, limited work has investigated how participant engagement with study-delivered text messages impacts weight loss, especially among diverse populations. We present a quantification of engagement and its association with change in weight throughout a 12-month intervention.

Methods: 197 participants were randomized to receive the text messaging intervention (BMI > 27 to < 40, ages 21-62, 128 female, 66 Hispanic). Our analyses include participants who had complete information for the respective timepoints: 171 participants at 6 months and 159 participants at 12 months. Participants received 2-4 messages/day that were tailored on baseline weight management strategies. Messages were iterative and interactive, enabling goal setting and self-monitoring of physical activity and diet. Engagement was defined as: the number of texts participants replied to / the number of texts received that asked for a reply ("interactive messages"). Engagement was anchored to participants' individual study start dates, and was aggregated across two time periods: baseline-6 months and 6-12 months.

Results: Participants received a total of 210+24 and 278+36 interactive messages from baseline-6 months and 6-12 months, respectively. Participants sent 230+98 and 230+140 replies from baseline-6 months and 6-12 months, respectively. Average engagement score from baseline-6 months was 1.1+ .48, and 0.85+ .52 from 6-12 months. Average weight change was -2.5 kg+5.79 from baseline-6 months, and .05 kg+4.73 from 6-12 months. In multiple linear regression models that adjusted for baseline weight, age, sex, and ethnicity, higher engagement was significantly associated with lower weight at 6 and 12 months. For every SD increase in engagement, participants lost 1.63 kg of weight from baseline-6 months, and 1.62 kg of weight from 6-12 months (p's < .001). Separate models assessed the association of weight change with the number of replies sent, instead of the engagement

variable, and adjusted for number of interactive messages recieved, age, sex, and ethnicity. In these models, the number of replies sent by the participant remained signficiantly associated with weight loss at 6 and 12 months (p < .001).

Conclusion: An engagement score that accounts for replying to text messages and the number of interactive messages received predicts weight loss in participants who received a 12-month texting intervention. Our findings indicate that participants who have higher levels of engagement with the texting system are more successful in losing weight. Future mobile health interventions should include measures to monitor participant engagement during the intervention and to include as a dosing variable when assessing intervention effects.

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D103 10:00 AM-11:00 AM

EVALUATION OF PRO MUJER, A FACEBOOK-BASED WORKSITE WELLNESS PROGRAM IN LATIN AMERICA

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Title: Evaluation of a Facebook-based Worksite Wellness Program in Latin America

Purpose: Chronic conditions account for 68% of mortality in Latin America. This is largely attributed to increasing obesity, and adoption of a Westernized diet along with inactivity. Latin America is also the fastest growing social media market; 94% of Internet users in the region are on social media. Pro Mujer is a women’s development organization that offers financial services and healthcare in 5 countries in Latin America. In 2014, Pro Mujer launched a Facebook page, Pro Mujer Salud, to help its employees adopt healthy eating and physical activity habits. The page now has over 5,000 followers.

Methods: We conducted a mixed-methods evaluation to assess the relationship between the Facebook page, employees’ self-reported adoption of healthy eating and physical activity, and on social norms promoted by the page. The evaluation consisted of 2 focus groups (n=16) and 3 key informant interviews in Nicaragua, and a survey to all employees in Bolivia, Argentina, Peru, Nicaragua, Mexico and the United States.

Results: Survey respondents (n=728; 36% of staff) were mostly female (73%), with a mean age of 33 years and mean BMI of 26.7 ± 4.7 kg/m^2. The majority (80%) of employees with Facebook follow Pro Mujer Salud; most followers (76%) interact with the page by clicking "like" on posts or photos. After adjusting for BMI, country and education, there were marginally statistically significant relationships between the length of time an employee followed Pro Mujer Salud and the odds of reporting more exercise (OR [95% CI]: 1.16, [1.01, 1.34], p= .04), as well as eating healthier (OR [95% CI]: 1.15, [1.001, 1.32], p= .048). The perception that coworkers were exercising more was a strong predictor of diet and exercise change. For each increase in amount of agreement that coworkers exercise more as a function of a Facebook page campaign called Sábado Saludable (Healthy Saturday), the odds of *also* reporting more exercise nearly doubled (OR [95% CI]: 1.92 [1.45, 2.56], p< .0001), and the odds of reporting diet related behavior change increased by 79% (OR [95% CI]: 1.79 [1.36, 2.34], p< .0001). Qualitative data analysis revealed high trust in the health information on the Pro Mujer Salud page. It also revealed themes of increasing anxiety about a changing food

environment (increasing processed foods and a loss of connection to the local food landscape) and low confidence in the ability to achieve recommended levels physical activity.

Discussion: This is the first evaluation of a Facebook-based worksite wellness program in Latin America. This highly scalable intervention holds great promise for being able to influence social norms, promote behavior change, and support a workplace culture of health.

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D104 10:00 AM-11:00 AM

CITATION AWARD WINNER

EVIDENCE-BASED NOVELTY IN THE DELIVERY OF ONLINE CBT: THE IMPACT OF USER-DRIVEN PROGRESSION THROUGH CBT CONCEPTS AND TECHNIQUES

Megan Jones Bell, PsyD[1], Clare Purvis, PsyD[2], Tess Brown, BA[2]

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The efficacy of digital CBT-based interventions for common mental health disorders is clearly demonstrated, with many studies showing that digital interventions are equally effective to face-to-face treatment. Despite this, digital interventions are plagued by low engagement and poor user retention; fully 50% of people using a digital health tool discontinue use within six months. One contributing factor may be that digital health interventions have traditionally followed fixed protocols and, as a result, have been unable to account for individual user characteristics, situations, and needs - a mandate of effective evidence-based practice. We propose that digital interventions can address this limitation by providing users a more personalized experience. For example, by adopting a more flexible design, digital interventions can allow users to select the content most relevant to their current concerns and practice skills at a self-determined pace. This approach mirrors a “flexibility within fidelity” approach to implementing empirically-supported treatments in face-to-face settings.

The present study investigates the effect of specific changes to the protocol and design of a mobile app-delivered, guided CBT program, Lantern, on user engagement, retention, and clinical outcomes. Two methods for delivering digital CBT were compared: a traditional protocol in which CBT concepts and skills are delivered following a fixed sequence and pace (standard CBT), versus an innovative delivery in which users determine the sequence and pace at which they progress through CBT (nonlinear CBT). The same concepts and skills are delivered across both conditions; users in both conditions also receive individual, in-app, text-message based coaching.

Data from two ongoing deployments of Lantern with N=1000 adults (500 per condition) in employer settings will be collected from January, 2016 to January, 2017 in quarterly cohorts. All users have provided informed consent to data being used for research and product development purposes. The first three cohorts of the N=1000 target have already been recruited and are actively enrolled in Lantern. Outcome measures to be reported include engagement (completion of sessions, techniques, coach messaging), retention, primary symptom reduction (anxiety and/or stress). The study highlights the impact of an innovative, evidence-based delivery of digital CBT.

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D105 10:00 AM-11:00 AM

FORMATIVE EVALUATION OF A TEXT MESSAGE-BASED INTERVENTION FOR ABNORMAL PAP SMEAR FOLLOW-UP CARE TARGETING UNDERSERVED WOMEN

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Women of low socioeconomic status (SES) have poorer adherence to follow-up care after an abnormal Pap smear. Text messaging is widely used among low SES populations and has been reported as a feasible method to deliver health behavior messages. A formative evaluation was conducted to assess the receptivity of a text message-based intervention guided by the Cognitive-Social Health Processing Model (C-SHIP) for women of low SES to increase adherence to abnormal Pap smear follow-up care. Women (N=28) attending a colposcopy appointment for an abnormal Pap smear were recruited to complete a short demographic survey and qualitative interview. Interview questions sought to identify participants' interest in a text message-based intervention and psychosocial factors. Participants evaluated 25 prototype counseling messages previously used in a telephone-based counseling intervention and targeted to psychosocial barriers to adherence, with content guided by C-SHIP. The messages were evaluated on a scale of 1 to 5 for personal helpfulness, understandability, and culturally appropriateness. Participants were predominately African American (68%) and Latino (21%), and had a household income below $15,000 (71%). Participants expressed strong interest in receiving counseling messages to be delivered via text (68%). Most participants (68%) felt nervous or worried before their follow-up appointment. However, participants reported colposcopies as helpful (96%) and important (89%). Evaluations of prototype messages indicated high favorability with mean scores of 4.7 (*SD*=0.4) for personal helpfulness, 4.8 (*SD*=0.4) for understandability, and 4.6 (*SD*=0.6) for cultural appropriateness. Women of low SES undergoing follow-up care for an abnormal Pap smear reported interest in a text messaging-based intervention to increase adherence to follow-up care. High message favorability indicates prototype messages guided by C-SHIP are appropriate for the target population. Findings will be used to develop a text message-based intervention to increase adherence to abnormal Pap smear follow-up.

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D106 10:00 AM-11:00 AM

INSPIRATION OR THINSPIRATION: THE ASSOCIATION AMONG PROBLEMATIC INTERNET USE, EXERCISE DEPENDENCE, AND EATING DISORDER RISK

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Introduction: Internet use provides the opportunity to access helpful information about health behaviors, but excessive use of the Internet has been associated with engaging in pathological health behaviors. Specifically, engagement and use of online social media platforms may negatively impact health by promoting unhealthy behaviors and providing inappropriate recommendations aimed at manipulating one's body shape and size. Problematic Internet Use (PIU) has been associated with eating disorder (ED) risk factors and pathological patterns of exercise (e.g., Exercise Dependence, EXD). Similarly, previous research has demonstrated an association between EXD with increased risk of developing an ED. However, no study to date has examined the co-occurrence among PIU, EXD, and ED risk simultaneously. The purpose of this study was to examine the co-occurrence of PIU and EXD in ED risk in a population-based sample of women. We hypothesize that PIU and EXD scores will be higher in individuals with ED risk. **Method:** Participants were 898 women [*M* age = 27.61(±10.22); 65.02% Caucasian; *M* Body Mass Index = 26.87(±6.36)] who completed the Exercise Dependence Scale, Eating Disorders Examination-Questionnaire (EDE-Q), and Problematic Internet Use Questionnaire as part of a larger online survey study. First, participants were grouped by ED risk status. PIU and EXD categories were also determined using previously published algorithms. Next, differences in continuous PIU and EXD scores by ED risk were assessed. Finally, Chi-square analyses were used to examine differences in PIU and EXD risk categories were examined by ED risk status. **Results:** Overall, 14.32% reported PIU, 1.96% reported EXD, and 35.07% reported EDE-Q scores ≥ 2.3 indicating ED risk. Independent samples t tests revealed significantly higher EXD [t(637) = -4.79, *p*=.01] and PIU [t(673) = -8.40, p < .01] scores in individuals at-risk for ED. Chi-square analyses revealed significant differneces in PIU [X^2(2)=33.81, p.01] and EXD risk status by ED risk (X^2(2)=8.71, p=.01]. **Conclusion:** Excessive use of the Internet may allow for misinformation regarding body shape satisfaction that encourages pathological health behaviors related to exercise and eating. The main clinical implication of this study is that health professionals should be aware of potential overlapping symptoms and consequences of Internet use, exercise, and ED behaviors. The results also suggest a common factor may explain increased use of the internet, exercise, and ED behaviors. Further research is needed to elucidate such factors.

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D107 10:00 AM-11:00 AM

INTEGRATION OF PEER SUPPORT AND DIGITAL HEALTH: CONSIDERATIONS FOR CHRONIC DISEASE MANAGEMENT INTERVENTIONS

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Peer support and digital health are often used independently to address chronic disease management barriers. Few studies have examined their integration in real-world settings. In this study, we evaluated how integration occurred in the context of a feasibility trial that combined health coaching and an "app" for patients with diabetes in a primary care practice. Semi-structured interviews were conducted with 12 patients, 2 health coaches, and 5 project staff (e.g., care coordinator, program manager) affiliated with the program. Coding of transcripts used deductive and inductive codes and consensus among three coders to ensure accuracy. Integration of the coaching and the app occurred in several domains. In terms of organization of care, the health coaching and diabetes app provided distinctive, but complementary roles for diabetes management; most patients reported using both program components, while a minority reported only using one. A common theme of this integration was that patients saw the diabetes management app as providing instrumental and informational support to participants, whereas they saw the health coaching as providing emotional and appraisal support. Both patients and coaches valued reports of blood glucose measures and other indicators as anchoring their discussions. Further integration with the electronic health records and general clinical care remain important opportunities. Lastly, study staff discussed the potential role of digital health and peer support to increase efficiency and reach of diabetes management interventions, carefully weighed with the need for more resources required by such integration. These findings indicate that peer support and digital health address distinctive, unique roles in diabetes management support and that their integration may benefit future chronic disease care in diabetes and other areas.

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D108 10:00 AM-11:00 AM

MIXED METHOD EXPLORATION OF USER ENGAGEMENT WITH A MOBILE APP-SUPPORTED SMOKING CESSATION ATTEMPT: PRELIMINARY FINDINGS

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Introduction: Despite rapid development in the area of mobile health (mHealth), there remains a dearth of research on user engagement, the specific ways and extent to which users interact with a system over time. Although studies generally suggest that increased user engagement leads to better behavior change outcomes, little is known about the variety of patterns in which users might interact with mHealth apps to support behavior change. The present study seeks to explore different user engagement patterns with a mobile smoking cessation app, “MyQuit USC (MQU)”, over the course of four weeks using a mixed methods approach.

Methods: Data came from a preliminary subset of 18-25 year old Korean American smokers (N=16) participating in an ongoing smoking cessation study. To explore patterns of engagement with MQU, individual user interaction logs of the app during the study period were used to generate engagement plots detailing number and type of app interactions each day. Semi-structured interviews were conducted on the same participants shortly after completing the study. Interview data were analyzed deductively using pre-identified codes corresponding to different dimensions of user engagement of interest to researchers.

Results: Our data revealed notable heterogeneity in user engagement patterns and suggested potential influential factors on different patterns. Individual engagement plots indicated varying patterns differentiated by average number of daily app interactions over time (min=1.1, max=11.2) and extent of daily variation in interaction volume (SD min=0.8, max=6.1). Interview data shed light on several factors that appear to influence user engagement patterns. App-related factors included novelty of intervention content and whether a given interaction with MQU was user- or app-initiated. User-related factors included users’ perceived role of MQU in their quit attempt, cessation progress and success, and momentary mood.

Conclusions: In combination, our data shed light on diverse patterns of engagement with MQU and factors that may influence an app-supported quit attempt. To improve future

versions of MQU, intervention content should be responsive to dynamic app- and user-related factors, e.g. tailoring intervention contents to patterns of engagement or behavior change success at a previous time point.

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D109 10:00 AM-11:00 AM

PREFERENCES IN WEIGHT LOSS APP FEATURES AMONG AFRICAN AMERICANS

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More than 75% of African Americans are overweight or obese. Research has shown that culturally tailored interventions may be more effective in improving dietary habits and increasing physical activity in African Americans, yet treatment models that require frequent in-person visits have poor feasibility, especially among low-income African Americans. 56% of African Americans own a smartphone, suggesting that a culturally-tailored weight loss mobile app may be an effective way to reach this population with weight loss programming. This study examined commercial weight loss apps used by African Americans, features they find most and least useful, and features they would find most relevant. We conducted 4 in-depth semi-structured interviews and 2 focus group discussions (N=10). We content analyzed resulting open-ended question using an inductive method with pair coders. Participants self-identified as African American, smart phone users, on average were 35 years old (SD=6.0), and 80% were college-educated. MyFitnessPal was the most commonly used app (kappa=1.0), reported by 5 participants. Other apps included S Health (n=3), Fitbit (n=3), Weight Guru (n=1), C25k (n=1), Apple Health (n=1), and LoseIt! (n=1). Of the apps they have used the features they found most useful (kappa=.83) were tracking (n=4), auto-syncing to other devices/apps (n=2), feedback about tracked data (n=2), ease of use (n=1), exercise suggestions (n=1), diet suggestions (n=1), community (n=1) and calculate activity into calories burned (n=1). Least useful app features (kappa=1.0) included missing relevant/ethnic foods (n=3) and tracking is time consuming (n=3), issues with delayed syncing of steps and weight (n=1), difficulty setting helpful calorie goal (n=1), notifications of progress w/o context (n=1), and ads on free versions of apps (n=1). The feature requested for a culturally-tailored weight loss app by the most participants (kappa=.91) was nutrition education including healthy alternatives to ethnic food (n=4), stress management (n=2), music w/ exercise prompts (n=2), exercise suggestions (n=2), community chat (n=1), voice to text (n=1), and diversity in visual representation (n=1). Further research should examine which features are wanted by a larger population of African Americans.

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D110 10:00 AM-11:00 AM

PROFILING APP USERS FROM NUTRITION, WEIGHT MANAGEMENT, AND FITNESS-RELATED WEBSITES

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The use of online communities and websites for health information has proliferated along with the use of mobile apps for managing health behaviors such as diet and exercise. The evidence available to date suggests that users of these websites and apps differ in significant ways from non-users but most data come from US and UK-based populations. In this study we recruited users of nutrition, weight management and fitness-oriented websites in the Czech Republic to better understand their motives, expectations, and usage patterns with respect to app use. The online survey was initiated by 1096 users and data were analyzed for respondents aged 13-39 who provided information on app use (n=719; $M(SD)$ age=24.0(5.2); 84%female). Respondents using apps for managing nutrition, weight and fitness (n=420, 58%) were more likely to be female (OR 2.111, 95% CI 1.364–3.268) and reported more expert telephone skills (OR 1.450, 95% CI 1.305–1.611). Among app users, male users reported less frequent use of diet-oriented apps but more frequent use of weight-gaining apps as did younger users (13-18yrs). Underweight app users reported more frequent use of weight loss apps while obese users reported less frequent use of exercise-related apps (all $p < .05$). There was a positive relationship between app use and drive for thinness (EDI-3), self-reported excessive exercise (EPSI), internalizing, and social support, and for neuroticism with weight loss apps and conscientiousness with exercise-related apps, respectively (all $p < .05$). Significant differences were also found based on age, BMI, and gender in the frequency of use and value of specific app functions such as those for monitoring, planning, comparing with others, and communicating with others, along with differential impact of app use on self-reported outcomes. These data unveil the motives and expectations of nutrition, weight management and fitness website users with respect to smartphone apps, helping inform subsequent development of mobile intervention strategies in this non-US based select population.

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D111 10:00 AM-11:00 AM

REDUCING THE PATIENT INTERVAL FOR BREAST CANCER: THE DEVELOPMENT OF A DIGITAL INTERVENTION USING THE PERSON-BASED APPROACH

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Background

Early detection of breast cancer increases survival rates. The key to improving early detection is decreasing the Patient Interval. This refers to (i) the time taken to interpret a bodily change and (ii) the time taken to act upon that change and seek help from a health care professional (HCP). The most successful interventions designed to decrease the Patient Interval to date have been delivered by a HCP in a clinic setting. HCP delivered interventions however are costly and time intensive. A novel way to decrease the Patient Interval is through a digital intervention (DI). Research to date has established that DIs are a feasible and acceptable way to deliver healthcare interventions. Furthermore, interventions incorporating public and patient involvement throughout the design process are more successful. This study represents phase one of the Person-Based Approach (PBA) to intervention development. This approach is meant to complement the traditional evidence- and theory-based approaches to intervention development while including end-user input at multiple stages of design process.

Objectives

The objective of this study is to complete phase one of the PBA by eliciting feedback from potential end-users of the (currently) hypothetical DI that will then be used to shape the design of the DI. The study aimed to facilitate broad discussion about the acceptability of a hypothetical DI with end-users.

Research Design

A qualitative design was used to collect data via focus group interviews which were audio-recorded, transcribed verbatim and thematically analysed. Participants (n=28) were sampled purposively based on age, sex and occupation and were either individuals who would potentially use the DI i)for their own healthcare purposes or ii) in an official capacity to recommend to others e.g. Doctors.

Results

Five theme’s emerged: uncertainty, interest, legitimacy, aesthetics/usability, efficiency. Participants expressed uncertainty that a website could help them manage their health but they were interested in trying it. Participants highlighted time as a primary barrier to using a website for this purpose. It was stressed that the website would have to be aesthetically pleasing and easy to use. Furthermore is was discussed that it should be obvious that it was provided by a reputable source e.g. a university/hospital so that they could trust the information provided.

Conclusion

Participants were eager and motivated to contribute to research at this early stage. It is now accepted as good practice to elicit end-user/patient views at the design phase of interventions. It is hoped that incorporating the views of theses participants will enhance the acceptability and therefore success of the DI.

Future Plans

These results will be combined with a literature review of both qualitative and quantitative research to allow the research team to design the DI.

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D113 10:00 AM-11:00 AM

ENHANCING CARE OF THE AGING AND DYING IN PRISONS (ECAD-P): USABILITY OUTCOMES FOR AN END-OF-LIFE TECHNOLOGY TRAINING IN PRISONS

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About 18% of U.S prison inmates are 50 years or older. The growth of the older inmate population increases burden of care on prisons. Inmates are significantly more likely to have chronic conditions or disability, and despite advances in the free world, best practices for managing geriatric issues and end-of-life care (EOL) have not be adapted for use in corrections settings. Geriatric and EOL care training via technology has had a marked impact on disseminating best practices. However, these technology approaches have been inaccessible within prison walls due to the need to maintain care, custody, and control. *Enhancing Care of the Aging and Dying in Prisons (ECAD-P;* R41AG049570*)* was a Phase I Small Business Technology Transfer (STTR) project that examined the acceptability and feasibility of developing a media-rich, technology-based program for training prison staff on geriatric and EOL care. Previously developed and tested empirical materials for this setting and population were adapted using instructional designapproaches and then programmed into an interactive, web-based prototype. The prototype was evaluated by multidisciplinary prison staff on its user interface, ease-of-use, perceived barriers, and for understanding and optimizing the organizational culture for implementation. *ECAD-P* contained three modules each with multiple interactive features (e.g., drag and drop, hover, click and reveal, video, etc.) and a quiz. Usability and acceptability were tested to identify and rate the severity of potential problems (n=16) with staff from two state correctional institutions (SCIs). Actions, eye movements, utterances, and problems encountered were observed, and the System Usability Scale (SUS), a validated tool for assessing the usability and acceptability of technology-based products, served as the criterion measure.The SUS score was 87.8% (68% is “above average”) suggesting a high level of acceptability and usability for visual design, functionality, and content. Fisher’s exact and Wilcoxon Mann-Whitney tests were conducted to assess whether there were any differences in usability outcomes between the two SCI facilities. Analyses revealed non-significant findings (*p*s > .05) suggesting there were no significant differences among usability testers regardless of their SCI affiliation.Additional usability results, the design and development process for creating *ECAD-P*, and programming updates on the recently funded Phase II project will be presented.

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D114 10:00 AM-11:00 AM

INTEGRATING THREE EVIDENCE-BASED PROGRAMS TO CONSTRUCT A RURAL COMMUNITY-BASED CARDIOVASCULAR DISEASE PREVENTION PROGRAM

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BACKGROUND: Strong Hearts, Healthy Communities (SHHC) is a lifestyle modification program that aims to reduce body weight, improve dietary habits, and promote physical activity among overweight/obese women aged 40 and older.

METHODS: Program development included in-depth community assessments and integration of core concepts from three nationally disseminated evidence-based curricula. In 10 medically underserved rural towns in Montana, 17 focus groups were held with 126 sedentary, overweight/obese adults aged 40-91 years; 30 key informant interviews were conducted with community leaders, educators, and healthcare providers; 10 community assessments were conducted by local educators and researchers. The focus group and key informant topic guides focused on barriers and enablers to health (nutrition, physical activity, and tobacco) and access to healthcare services. Findings from the community assessments and qualitative data informed the integration of three evidence-based programs to create the SHHC curriculum.

RESULTS: The resulting SHHC is a 24-week program with twice weekly hour-long classes, plus six out of class community-focused sessions. SHHC components include progressive strength training, aerobic exercise, nutrition education, and civic engagement. The program has 13 evidence-based behavioral aims and is divided into three phases: (1) Get moving and eat well (Weeks 1-8); (2) Assess individual progress and create supportive community (Weeks 9-16); (3) Maintenance strategies and social support for healthy lifestyle (Weeks 17-24).

CONCLUSION: Integrating formative data with multiple evidence-based curricula into a comprehensive, tailored program presents unique opportunities and challenges. Based upon preliminary feedback, future implementation should consider the timing and framing of content as well as dose adjustments.

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D115 10:00 AM-11:00 AM

NURSE COORDINATOR ADOPTION OF AN ADAPTED, EVIDENCE-BASED WEIGHT LOSS PROGRAM: A HYBRID EFFECTIVENESS-IMPLEMENTATION TRIAL

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The purpose of this study was to determine, if, when compared to a continuing medical education (CME), a consultee-centered implementation strategy (IS) with goal setting and feedback would improve the reach, effectiveness, adoption, implementation, and sustainability of an adapted evidence-based weight loss intervention that included 20 patient sessions over 12 months (Healthy Lifestyles). The IS included a 2.5 hour CME workshop and a package of ready-to-deliver Healthy Lifestyles resources but added ongoing consultation at 1-3-6, and 12-months to address patient recruitment and engagement in Healthy Lifestyles. In addition, electronic medical record smart-phrases were used facilitate and document Healthy Lifestyle session completion, fidelity, and costs. All nurse care coordinators in a regional health care system participated (n=45) and 14 nurses in one region received the IS. Reach did not significantly differ over 12 months (n=14±21.9/CME nurse; n=24±31.4/IS nurse), but IS trained nurses were significantly more likely to adopt Healthy Lifestyles (100% vs 61%, p=5% weight loss was higher for patients that received the intervention from IS trained nurses (14% CME; 19% IS, $p < .05$). By 12 months there were no differences in weight loss (-2.1±5.9 CME; -2.4±6.5 IS) or the proportion reaching a 5% weight loss (14% CME; 16% IS). Consultation and action planning may accelerate adoption and organizational maintenance of evidence-based weight loss programs compared to a CME approach while supporting a higher proportion of patients to achieve a clinically meaningful weight loss, though a focus on weight loss maintenance in future trainings appears warranted.

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D116 10:00 AM-11:00 AM

RETURNING AGGREGATE RESEARCH RESULTS TO PARENTS OF YOUTH IN A DISEASE REGISTRY: ADVANCING PATIENT-CENTERED OUTCOMES RESEARCH

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Background. To improve the evidence base about pediatric onset chronic disease, sustainable approaches are needed for engaging cohorts in providing patient-reported outcomes (PROs) about child wellbeing, disease and treatment experiences. Returning research results has been touted as a means for contextualizing healthcare decision-making and motivating research engagement, areas of top national interest. We tested whether returning aggregate research results (ARR) to parents of children with rheumatic disease (RD) would affect interest in research participation and spur action on behalf of a child.

Methods. Parents of children enroled in a national clinical rheumatic disease registry provided validated PROs about child quality of life, disease and treatment experiences, side effects and problems (response rate: 69.2%). Subsequently, parents viewed ARR in the form of a slide-deck of curated, annotated data about cohort patterns of these measures and then reported their reactions and the perceived value of this information. We used principal components analysis (PCA) to analyze reaction patterns elicited by ARR and multivariate logistic regression to model the effect of reaction patterns on interest in future research participation and planned next steps.

Results. Among 196 participating parents, 107 (54.6%) received ARR; 89 did not. Groups did not differ on measures of child socio-demographics, clinical characteristics, or disease and treatment PROs. Parents perceived ARR as “very valuable” for understanding their child’s condition and making care decisions; 76.6%, 57% and 41% reported ARR to be "very valuable" for understanding medication side effects/problems, pain interference, and morning stiffness, respectively. PCA identified two ARR reaction domains from 6 questions: Affirmation/Validation (AV) of own experiences and Information Burden (IB). Overall, 54.2% of parents reported being *more* interested (versus less or unchanged) in participating in future research after seeing ARR. Parents with higher AV scores had twice the odds of reporting more interest in future research compared to those with lower AV (AOR=2.04; 95%CI:1.20-3.50). IB scores were related to planned actions: Compared to parents with lower IB scores, those with higher IB were less likely to discuss ARR with their child (AOR=0.60; 95 CI:0.36-0.98), and more likely to discuss ARR with providers (AOR=1.81; 95%CI:1.04-3.16).

Conclusion. Returning ARR to cohorts may foster a “virtuous cycle” of sustainable research engagement to advance patient reported outcomes research and affect planned actions to share and discuss ARR in support of a child’s chronic disease care and treatment via a model with high translation potential across pediatric chronic disease.

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D117 10:00 AM-11:00 AM

SETTING THE STAGE FOR ENGAGING COMMUNITY IN EVIDENCE-BASED PROGRAMS TO REDUCE TYPE 2 DIABETES

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Diabetes is one of the top 10 leading cause of death in urban settings such as Philadelphia. Unfortunately, African Americans have the highest rate of diagnosed diabetes. Thus, there remains a critical role for understanding how community, academic and industry partnerships can operate to engage with and offer evidence-based programs that align with a community's need to reduce health disparities, particularly for minority and high-need populations. The Getting People in Sync (GPS) study worked with lay facilitators to implement a diabetes prevention program. Implementation strategies of the GPS study across the partners included a multi-step process involving church identification, memorandums of understanding, a detailed communication plan, non-disclosure agreement, as well as facilitator and data training sessions. While this program demonstrated that intervention participants could lose weight (-7.96 lbs., SD=10.62; t(56)=-5.66 p < .000), aspects of the partnership were critical to the successful implementation in the community. Lessons learned from this multi-sectorial partnership included communication, connectivity, seasonality and training needs. Additional considerations for implementation included flexibility in timelines for legal documentation. In conclusion, community, academic and industry partnerships can be models for implementation of quality evidence-based programs that have measurable and clinically meaningful outcomes however, more information discussing successes and challenges across these types of partnerships is needed.

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D118 10:00 AM-11:00 AM

USING CBPR TO UNDERSTAND LOCAL COLLABORATIONS ADDRESSING CVD RISK

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Introduction: Rural African Americans suffer from considerable cardiovascular disease (CVD) disparities that no single agency can address alone. Inter-organizational networks and collaboration can impact a community's capacity to address CVD by influencing activities such as coordination of services, diffusion of information, and adoption of evidence-based interventions. In rural African American communities, grassroots community-based organizations (CBOs) and faith-based organizations (FBOs) potentially play a critical role in these activities; yet, we have limited understanding how they collaborate. The objective of our study is to describe the inter-organizational networks among CBOs and FBOs in a rural, African American community and explore factors that influence their collaboration around CVD-related activities. **Methods:** We used a mixed-methods CBPR approach to develop a survey and in-depth interview guide using existing network and collaboration assessment tools. We used respondent-driven sampling to establish a census of organizations currently collaborating on CVD-related activities and services. We completed surveys with an initial seed sample of n=53 organizations and are currently in the process of conducting additional surveys and interviews to obtain a more comprehensive understanding of collaboration. **Results:** About half (n=25, 49%) of the seed sample of fifty-three CBOs and FBOs are currently collaborating with at least one other organization on CVD-related activities. They most commonly indicated collaboration with one of 11 healthcare service agencies (e.g., hospitals, county health departments). Few (n=4) indicated collaboration with other CBOs/FBOs, and preliminary results indicate current network density for CVD collaboration is low, 0.06. A non-profit healthcare system and a community health center had the highest betweenness centralities (i.e., are key connectors between other organizations in the community). **Conclusions:** This CBPR approach was successful in identifying inter-organizational networks of CBOs and FBOs and will improve understanding of factors that influence collaboration. We will use the findings to identify strategies for creating stronger partnerships and will continue to collect information over time in order to understand how networks influence CVD services in the community such as adoption of evidence-based CVD interventions.

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D119 10:00 AM-11:00 AM

CONCEPTUALIZATIONS OF PRIVACY AMONG EARLY ADOPTERS OF EMERGING HEALTH TECHNOLOGIES

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Introduction: Advances in health technology such as genome sequencing and wearable sensors now allow for the collection of highly granular personal health data from individuals. It is unclear how people think about privacy in the context of these emerging health technologies. An open question is whether early adopters of these advances conceptualize privacy in different ways than non-early adopters. **Purpose:** This study sought to understand how early adopters of emerging health technologies conceptualize privacy. **Methods:** Transcripts from in-depth, semi-structured interviews with early adopters of genome sequencing and health devices and apps were analyzed with a focus on participant attitudes and perceptions of privacy. Themes were extracted using inductive content analysis. **Results:** Interviewees were proponents of sharing personal data to support scientific advancements, however they still voiced concerns, as well as uncertainty about who has access to their data, and for what purpose. In short, they were not dismissive of privacy risks. Key privacy-related findings are organized into four themes: (1) contributing personal data to science; (2) concerns about discrimination; (3) control over personal information; and (4) personal data security. **Conclusion:** Early adopters of emerging health technologies appear to have more complex and nuanced conceptions of privacy than might be expected based on their adoption of personal health technologies and participation in open science. Early adopters also voiced uncertainty about the privacy implications of their decisions to use new technologies and share their data for research. Though not representative of the general public, studies of early adopters can provide important insights into evolving conceptions of privacy in the context of emerging health technologies and personal health data research.

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D120 10:00 AM-11:00 AM

FITSPO AT EVERY SIZE?: A CONTENT ANALYSIS OF #CURVYFIT VS. #CURVYYOGA INSTAGRAM IMAGES

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Recent scholarship indicates that “fitspiration” or “fitspo” content posted to popular Internet sites frequently conflates notions of “health” and “fitness” with a thin-toned athletic appearance ideal and conveys problematic themes emphasizing weight loss, body objectification, and aspects of disordered eating. To extend this burgeoning line of research, the present study examined how aspects of fitness were represented in more size-inclusive social media contexts. The current analysis compared relevant themes depicted in images posted to #curvyfit versus #curvyyoga on Instagram. Three hundred images (i.e., 150 per hashtag) were systematically coded for type (i.e., visual, text, visual + text) and for the following key thematic content domains: 1) image attributes (e.g., gender, race/ethnicity, body size, and body shape), 2) health-exercise focus (e.g., health or fitness at any size, functional body pride, problematic relationship with exercise, etc.), and 3) weight-appearance focus (e.g., weight loss, body skin exposure, objectifying attire, etc.). Categorical tests of association and ANOVA models were computed to address the primary study aims. Overall, the findings indicate that #curvyyoga posts exhibit greater inclusion of individuals with higher body weights ($p < .001$) and rounder body shapes ($p < .001$) and tend to represent health and fitness in terms of body competence (e.g., endorsing health/fitness at every size: $p < .001$; performing an action: $p < .001$; functional body pride: $p < .001$). Conversely, like traditional “fitspo” content, #curvyfit images more often convey appearance-focused and objectified attributes of “fitness” (e.g., weight loss: $p < .001$; bare midriff: $p < .001$; bare thighs/legs: $p < .01$; visible cleavage: $p < .001$). Preliminary results help clarify the ways in which the Health at Every Size® health promotion paradigm is disseminated and differentially actualized among peers in social media contexts who identify as “curvy”. Findings also contribute to illuminating how such content could help transform current stereotypes regarding the embodiment of “fitness” along with who can and does practice yoga.

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D122 10:00 AM-11:00 AM

HEALTHCARE PROVIDER ADVICE ON GESTATIONAL WEIGHT GAIN: UNCOVERING A NEED FOR MORE EFFECTIVE WEIGHT COUNSELING

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Women who gain excessive gestational weight are at risk of serious health complications both during and after pregnancy. In an effort to reduce the disease burden associated with excessive gestational weight gain (GWG), the Institute of Medicine reissued guidelines for GWG that are based on prepregnancy body mass index (BMI). However, limited research has assessed whether women are adequately counseled on these revised GWG guidelines by their healthcare providers. Participants for the present study were women who began pregnancy overweight or obese (N = 116) and who were enrolled in a larger study assessing changes in disordered eating symptoms and other psychological variables across the perinatal period. Between 12 and 20 weeks gestation, women provided demographic information and were asked to report whether they knew the recommended amount of gestational weight they should gain during their current pregnancy. At 6 months postpartum, women were asked whether a healthcare provider, such as a doctor, nurse, or midwife, ever advised them on weight gain during pregnancy and how much weight they were told to gain. On average, women were 27.08 ± 5.26 years of age and 60% (n = 69) were black. At the beginning of pregnancy, 48% (n = 56) of women reported knowing how much gestational weight to gain. However, only 52% (n = 29) of these women reported a GWG within the recommended range for their prepregnancy BMI. Women were more likely to have knowledge on appropriate GWG if they were more highly educated, had a greater income, were white, or began pregnancy overweight (ps < 0.02). Interestingly, only 35% (n = 41) of women received specific advice about GWG from a healthcare provider, and only 39% (n = 16) of these women were instructed to gain weight within the recommended range for their prepregnancy BMI. Healthcare providers were more likely to appropriately inform women about GWG if they began pregnancy overweight and tended to advise women who began pregnancy obese to gain more weight than what is recommended ($p = 0.03$). Taken together, these findings indicate that women who belong to a racial minority group, are socioeconomically disadvantaged, or begin pregnancy obese are less likely to be knowledgeable on appropriate GWG and that healthcare provider advice on GWG is largely insufficient and may be inappropriate. Thus, there is room for behavioral interventions to aid both in the delivery of

education about GWG and in the management of weight gain during pregnancy among overweight and obese women.

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D123 10:00 AM-11:00 AM

INFLUENCE OF PARENTAL HEALTH LITERACY ON REACH, RETENTION, AND OUTCOMES IN A FAMILY-BASED CHILDHOOD OBESITY TREATMENT PROGRAM

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Introduction. Few interventions have evaluated the influence of parent health literacy (HL) status on weight-related child outcomes. This study explores how parent HL impacts the reach, attendance, retention, and outcomes from a three-month multi-component family-based childhood obesity treatment program (iChoose).

Methods. This pre-post, quasi-experimental trial occurred in the Dan River Region, a federally designated medically underserved area. iChoose research protocol and intervention strategies were designed using a HL universal precautions approach. Validated measures and standardized data collection techniques were used, along with generalized linear mixed effect parametric models to determine the moderation effect of parent HL on outcomes.

Results. There was no statistically significant difference in HL scores between parents who enrolled their child in the study [14.07 (1.52)] and parents who did not [14.13 (1.37)]. Of 94 enrolled parents, 34% were low HL, 49% income < $25,000, and 39% <high school education. Of 101 enrolled children, 61% were black, and the mean age was 9.8 (1.3) years. Children with low and high HL parents attended and were retained at similar rates. Significant main effect improvements were observed for child BMI z-score [-0.05 (0.02)], ounces of SSB [-9.06 (3.17)], and quality of life [3.00 (2.74)] and for parent BMI [-0.28 (0.04)], minutes of moderate to vigorous physical activity [110.64 (40.74)], servings of fruits and vegetables [0.58 (0.27)], and ounces of SSB [-6.63 (0.37)]. Parent HL status did not significantly influence improvements in these outcomes, with the exception of child video game/computer screen time (coefficient 0.52, SE=0.11, $p < 0.001$; low HL decreased, high HL increased).

Conclusion. By incorporating design features that attended to the HL needs of parents/caregivers, children with low HL parents engaged in and benefited from a family-based childhood obesity treatment program similar to children with high HL parents.

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D124 10:00 AM-11:00 AM

SELF-DETERMINATION THEORY, INTEREST IN AN MHEALTH INTERVENTION FOR IMPROVING EXERCISE, AND EXERCISE MOTIVATION

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With a mixed-methods approach, we examined the acceptability of HealthyYouTXT-Physical Activity, an mHealth intervention developed by the US National Cancer Institute and self-determination theory's (SDT) motivations as predictors of physical activity intentions. The mHealth program is grounded in SDT, which predicts that intrinsic motivations, over extrinsic motivation and amotivation, promotes intentions. The study was conducted in California's Central Valley, a majority-Hispanic region with high poverty and low education levels.

A community sample of 130 (61% female; M age=32, range=18-76), completed an initial survey and structured interview in English (n=102) or Spanish (n=28). Participants received and reviewed SMS text messages from the HealthyYouTXT-Physical Activity in English or Spanish. Participants identified as Hispanic (62%), White (22%), Asian (9%) and Black (5%); 25% had 12th grade education or less; 37% were unemployed.

Thematic analyses of interviews revealed that most participants viewed the program favorably. Many expressed strong interest in using it to overcome barriers such as amotivation, work/family demands, lack of support, and weather conditions. Age-related differences in receptivity to the program included younger adults being motivated by its utility to assist in weight control and older adults being drawn to its potential to improve health and longevity. Those who were already physically active perceived the program as a valuable maintenance tool. Surprisingly, the program was viewed as a valuable source of extrinsic motivation that would hold users accountable to adherence. Regression analyses revealed that extrinsic motivation was the strongest predictor of physical activity intentions (B=.26, $p <$ .01); intrinsic motivation and amotivation were not significant predictors. Interviews revealed positive evaluations and demand for the HealthyYouTXT program among adults in rural areas. Although the program is grounded in SDT and based on promoting intrinsic motivation, extrinsic motivation emerged as the primary predictor of physical activity intentions. Future research can further explore extrinsic motivation as a target of this and other mHealth programs, particularly for ethnically diverse populations.

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D125 10:00 AM-11:00 AM

THE ROLE OF MENTAL ILLNESS IN THE SELECTION OF SOURCES FOR HEALTH INFORMATION

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Depression and anxiety symptoms make up a large proportion of the global disease burden of mental illness. Although there is evidence that depression and anxiety symptoms might make coping and seeking help particularly difficult, less is known about the specific patterns in which affected individuals engage with sources of health information – patterns that could inform effective health communication interventions. Using 2014 data from the nationally representative Health Information National Trends Survey, the present research tested the effects of depression and anxiety symptoms (e.g., "Over the past 2 weeks, how often have you been bothered by –little interest or pleasure in doing things/feeling down, depressed, or hopeless/feeling nervous, anxious, or on edge/not being able to stop or control worrying?") on engagement with health information ("The most recent time you looked for information about health or medical topics, where did you go first?"). Confirming previous findings in the literature, preliminary results from binary logistic regression analyses indicated that more severe symptoms of depression showed a negative relationship with seeking health information from health professionals (OR=.81, 95%CI=.67-.98), indicating a preference for internet sources, whereas mild symptoms of depression showed a positive relationship with seeking health information from health professionals (OR=1.32, 95%CI=1.12-1.56). Anxiety symptoms, on the other hand, showed a strong positive relationship with seeking health information from health professionals (OR=1.23, 95%CI=1.03-1.47) and a negative relationship with seeking health information from internet sources (OR=.80, 95%CI=.69-.93). An encouraging result emerged from the data – neither depression nor anxiety symptoms showed a negative relationship with seeking health information from interpersonal sources, suggesting potentially effective pathways for reaching highly vulnerable individuals with health information. Implications for the design and dissemination of such interventions will be discussed.

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D126 10:00 AM-11:00 AM

A MOBILE APP TO PROMOTE ART ADHERENCE AND FRAMED IN THE INFORMATION-MOTIVATION-BEHAVIOR SKILLS MODEL: BASELINE DATA

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Rural HIV + populations often have difficulties adhering to antiretroviral therapy (ART). The Music for Health Project (MFH) is a randomized controlled trial that tests the efficacy of a smart phone application (app) on ART adherence and symptom self-management in rural Georgia. The intervention app contains a music-based messaging program and manual designed to educate and motivate HIV+ rural dwelling persons to adhere to ART and self-manage symptoms and side effects. The control app contains a general education program in a comparable format. Eligibility criteria are HIV+ and: ART naïve or ART change due to drug resistance or detectable VL or ART prescribed. We analyzed baseline data of all 149 enrolled to examine associations of self-report ART adherence (3 scales) self-efficacy (2 scales), ART motivation, depressive symptoms (CESD-R), and HIV health literacy with the components of the Information-Motivation-Behavior (IMB; Life Windows Scale) model and determine if differences existed by eligibility groups and demographics. Analyses included descriptive statistics, Spearman's rho correlations, Mann Whitney tests and Kruskal-Wallis ANOVA. The average age of the group was 39.1 years old, 66% were male, 77% African American (AA) and 48% self-reported as heterosexual. The majority (80%) lived with others versus alone; and 16% lived with another HIV+ person. The regimen change and treatment naïve groups had higher Information scores ($p=.048$). AA had higher Behavior skills scores ($p=.041$). Higher ART Information, Motivation and Behavior skills scores were significantly correlated with better self-reported adherence ($p < .001$), higher self-efficacy for symptom self-management ($p < .05$) and ART adherence ($p < .001$), and higher intrinsic motivation for adherence ($p < .001$). Higher HIV health literacy was associated with higher Information scores ($p=.015$). Depressive symptoms were associated with lower Motivation and Behavior scores ($p < .001$). These data support use of the IMB model for ART adherence behavior technology interventions for rural dwelling HIV+ persons.

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D127 10:00 AM-11:00 AM

ACCEPTABILITY OF A SMOKING CESSATION AND EMOTION REGULATION INTERVENTION FOR ADULTS LIVING WITH HIV

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Background: The prevalence of cigarette smoking among persons living with HIV (PLWH) is three times that of the general population. PLWH who smoke experience greater morbidity and mortality than non-smokers and tobacco use is associated with poorer HIV-related health outcomes among this population. Similarly, mood and anxiety disorders are especially common among PLWH. We developed a novel 8-week, integrated, transdiagnostic cognitive-behavioral intervention for PLWH aimed at (1) promoting successful smoking cessation, and (2) improving emotion regulation skills. The aim of this study was to assess the acceptability of the intervention via qualitative interviews and preliminary outcome data.

Methods: HIV+ smokers were recruited from a community health center and an infectious disease clinic at a large medical center in Boston, MA. Exit interviews were conducted with a subsample of participants (N = 10, 90% Male, 50% Black/African America and 40% White, Mcpd = 17.64) who completed through the 6-month follow-up visit. Interviews were recorded, transcribed, and analyzed using an iterative approach.

Results: The majority of participants indicated that quitting smoking, becoming healthier, and finishing what they started were primary motives for starting and completing the intervention. Participants reported that the homework, handouts, and cognitive restructuring skills were helpful in quitting smoking, whereas thought tracking and awareness aspects were reported as helpful for managing distress. Five of the participants described using intervention components to maintain abstinence at their 6-month follow-up, and almost half of the participants reported using skills learned in treatment to manage distress. Participants described some aspects of the treatment as challenging (i.e., using the patch consistently, delaying smoking a cigarette, practicing certain skills), but also indicated that these aspects were helpful. All participants reported that they would recommend the treatment to others.

Five participants had quit completely and four participants reduced the amount of cigarettes smoked per day by the 6-month follow-up.

Discussion: Overall, participants found this newly developed treatment to be acceptable. Preliminary outcome data suggest the intervention was successful in helping participants to quit or reduce smoking at the 6-month follow-up. Further randomized controlled studies are needed to test the efficacy of this novel, transdiagnostic treatment.

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D128 10:00 AM-11:00 AM

ADHERENCE TO PRE-EXPOSURE PROPHYLAXIS FOR HIV AND SEXUAL RISK COMPENSATION AMONG MEN WHO HAVE SEX WITH MEN AND TRANSGENDER WOMEN

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Introduction: There is mixed evidence suggesting that use of pre-exposure prophylaxis for HIV prevention predicts increases in sexual risk behaviors, also known as sexual risk compensation. It is unclear whether the degree of change in risk behavior depends on how well a PrEP user adheres to the regimen.

Objective: The purpose of this study is to test whether adherence to PrEP affects changes in sexual risk behavior among a cohort of men who have sex with men initiating PrEP.

Methods: Participants (N = 377, mean age 35.1 yrs; 28.9% Latino, 11.4% Non-Hispanic Black, and 9.3% other non-White) were obtained from multiple clinics in Southern California taking part in a PrEP demonstration study and were followed for 60 weeks following PrEP initiation. Self-reported PrEP adherence and sexual risk behaviors in past 4 weeks were assessed after baseline at 4 , 12, 24, 36, 48, and 60 weeks, with participants who self-reported having ever missed a dose within the prior 4 weeks considered non-adherent. We used negative binomial mixed modeling, adjusting for age, race (White or non-White), drug abuse, clinic site, and study arm to test whether adherence to PrEP predicts changes in prior-4-week sexual risk behavior over 60 weeks.

Results: Over 60 weeks, participants overall reported increased unprotected receptive anal intercourse (URAI) acts ($p < .001$). Participants who never missed a dose (ranging 66.6-80.1% across all waves) had a significantly greater increase in URAI ($p = .037$) and UIAI ($p = .002$) in the prior 4 weeks compared to participants who reported imperfect adherence in the prior 4 weeks. Participants who reported imperfect adherence did not significantly change in any sexual risk behavior.

Discussion: Sexual risk compensation behaviors increased following PrEP initiation in those that reported they did not miss a dose in the past 4 weeks. This suggests that PrEP users

conscientiously adhere to F/TDF when they they have increased sexual risk behaviors to minimize HIV acquisition.

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D129 10:00 AM-11:00 AM

BODY IMAGE AND SEXUAL RISK AMONG SEXUAL MINORITY MEN LIVING WITH HIV

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Background: It is unclear under what conditions body image impacts sexual risk behaviors (SRB). It is possible that body dissatisfaction only predicts increased sexual risk for individuals who also have high appearance investment. However, to date, there are no known studies that have examined the interaction of body dissatisfaction and appearance investment in predicting SRB.

Methods: Participants were 105 sexual minority men living with HIV who reported having sex with a man within the previous 12 months. Participants completed a battery of self-report measures, including the Appearance Orientation (AO) subscale from the Multidimensional Body Self-Relations Questionnaire (MBSRQ) as a marker of appearance investment, the Muscle Dysmorphic Disorder Inventory (MDDI) as a marker of body dissatisfaction, and SRB (i.e., a count of the number of condomless anal intercourse acts with HIV-negative or HIV-unknown status male partners in the past 3 months).

Results: A generalized linear model with a Poisson distribution (to account for the count SRB outcome variable) was employed, with the main effects of appearance investment, body dissatisfaction, and their interaction term entered as independent variables. The main effects of appearance investment and body dissatisfaction were non-significant. A significant appearance investment by body dissatisfaction interaction was revealed ($b = .08$, $SE = .03$, 95% CI: .007, .159, Wald $\chi^2 = 4.5$, $p = .033$). To probe this significant interaction, simple slope analyses were conducted, setting values of appearance investment at ± 2 SD from the mean. Results suggested that body dissatisfaction negatively predicts SRB at low levels of appearance investment ($b = -.07$, $t = -1.89$, $p = .06$), whereas it positively predicted SRB at high levels of appearance investment ($b = .10$, $t = 1.9$, $p = .05$).

Conclusions: Appearance investment significantly moderated the relationship between body dissatisfaction and SRB, underscoring the multidimensional impact of body image in SRB for sexual minority men living with HIV. Further understanding of the mechanisms through which

body image concerns impact SRB has the potential to inform future screening and treatment efforts meant to promote psychological well-being and reduce HIV sexual transmission risk behaviors.

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D130 10:00 AM-11:00 AM

EXAMINING THE ACCEPTABILITY OF MHEALTH TECHNOLOGY IN HIV PREVENTION AMONG HIGH-RISK DRUG USERS IN TREATMENT

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Introduction: Despite promising trends of the efficacy of mobile health (mHealth) based strategies to a broad range of health conditions, very little if any studies have been done in terms of the examining the use of mHealth in HIV prevention efforts among people who use drugs (PWUDs) in treatment. Thus, the goal of this study was to gain insight into the real-world acceptance of mHealth approaches among high-risk PWUDs in treatment.

Methods: A convenience sample of 400 HIV-negative drug users, who reported drug- and/or sex-related risk behaviors, were recruited from a methadone clinic in New Haven, CT. Participants completed standardized assessments of drug- and sex-related risk behaviors, neurocognitive impairment NCI), and measures of communication technology access and utilization, and mHealth acceptance. Chi-square and t-tests were conducted to examine the statistical differences on ownership or utilization of communication technologies and mHealth acceptance between individuals with and without NCI.

Results: We found a high prevalence of current ownership and use of mobile technologies, such as cell phone (91.5%) including smartphone (63.5%). Participants used mobile technologies to communicate mostly through phone calls (M = 4.25, SD = 1.24), followed by text messages (M = 4.21, SD = 1.29). Participants expressed interest in using mHealth, particularly text messaging service, for medication reminders (72.3%), to receive information about HIV (65.8%), and to assess drug-related (72.3%) and sex-related behaviors (64.8%). Participants who were neuro-cognitively impaired were less likely to own a cell phone (OR = 0.453, χ^2 = 4.976, p = 0.026), particularly smartphone (OR = 0.476, χ^2 = 11.251, $p < 0.05$) and more likely to use cell phone without internet [$t(398)$ = -2.747, p = 0.006, d = -0.301] . Furthermore, individuals who were cognitively impaired were significantly more likely than those without NCI to show interest in using mHealth to remind them to take medication(s) [$t(398)$ = -2.490, p = 0.013, d = -0.262], to receive information about HIV [$t(398)$ = -4.220, $p <$ 0.001, d = -0.437], to assess drug-related risk behaviors [$t(398)$ = -2.003, p = 0.046, d = -0.242], and sex-related risk behaviors [$t(398)$ = -2.617, p = 0.009, d = -0.312].

Conclusions: The findings from this study provide empirical evidence that mHealth-based programs, specifically cell phone text messaging-based health programs, may be acceptable to this high-risk population. Researchers are encouraged to conduct formative research to explore opportunities to integrate cell phone text messaging into HIV prevention programs designed for implementation, followed by practical development, implementation, and evaluation among PWUDs in treatment.

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D131 10:00 AM-11:00 AM

HIV TREATMENT OPTIMISM AS IT RELATES TO PERCEIVED SEXUAL TRANSMISSION RISK IN MSM

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Greater perceived risk of contracting HIV or other sexually transmitted infections has been linked to increased use of protective health measures such as condoms. In the US, men who have sex with men (MSM) are at particularly high risk for HIV infection, and thus these perceptions may be especially consequential for preventing risky sex behavior within this population. Recent research has found that optimism about HIV treatment advances may reduce the perceived risk associated with acts such as unprotected anal sex, thereby potentially increasing risky sex behavior. Thus, treatment optimism may be an important consideration in understanding and reducing sexual risk-taking. This study sought to examine the relationship between HIV status, treatment optimism, and the perceived reduction of HIV transmission risk associated with antiretroviral (ARV) treatment in sample of 318 sexually active MSM recruited at a 2015 Atlanta Gay Pride event (mean age=35.17 years; 96% Caucasian; 17.3% tested HIV positive). To examine this relationship, a mediation model was tested by bootstrapping the indirect effect. As hypothesized, a direct effect of HIV status on perceived risk reduction was found (b=-0.48, 95% Confidence Interval: -0.88 to -0.05, p=0.03), such that HIV-positive men perceived a greater risk reduction associated with ARV treatment than HIV-negative men. However, this effect was not significantly mediated by treatment optimism. One potential reason for this lack of a mediation effect is that treatment optimism was relatively high across all individuals surveyed (mean score of 12.8 (range of 4-16)). When these relationships were examined within HIV status subgroups, no relationship between treatment optimism and perceived risk reduction was found among HIV-positive individuals. However, among nonpositive individuals, greater treatment optimism was associated with greater perceived risk reduction (p=0.057). This finding suggests that optimistic nonpositive individuals may be more likely to perceive HIV treatment as reducing the risk of unprotected anal intercourse with an HIV-positive partner. Such beliefs may predispose such individuals to a greater likelihood of engaging in risky sex behaviors.

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D132 10:00 AM-11:00 AM

PROGRESO EN SALUD, AN HIV RISK REDUCTION INTERVENTION FOR LATINA SEASONAL FARMWORKERS: PRELIMINARY FINDINGS

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Introduction. Latina seasonal workers in the US are an underserved population with limited access to health care and health education. In 2015, the HIV diagnosis rate in South Florida, a region where many Latina seasonal farmworkers reside and work, was the highest among all metropolitan areas in the US (38.8 per 100,000). The lack of culturally tailored evidence-based HIV prevention programs for Latina seasonal workers led to the development and implementation of Progreso en Salud, which is a cultural adaptation of the CDC's evidenced based intervention VOCES/VOICES. We will present preliminary findings of our adapted intervention.

Methods. We measured sex behaviors at baseline and 6-month follow-up among 114 Latina seasonal workers who participated in the Progreso en Salud intervention. Analyses included McNemar's test, Related Samples Marginal Homogeneity Test, Related Samples Wilcoxon Signed Rank Test, and Mediation Analysis.

Results. A higher percentage of women at 6-month follow-up used condoms during the past 30 days every time (13.5% vs. 9.6%) or sometimes (24.0% vs. 17.3%) when they had vaginal and/or anal sex. There was also a decrease in the percentage of women who never used condoms (57.7% vs. 49.0%) when they had sex. There was a significant increase in HIV testing from baseline (15.0%) to 6-month follow-up (27.9%). There were also significant increases in the percentages of HIV/AIDS-related communications with friends, HIV knowledge, condom use self-efficacy, and correct use of condoms. Condom use self-efficacy had a positive effect on the relationships between: (a) HIV knowledge and condom use; and (b) Communication with friends regarding HIV prevention and condom use.

Conclusions. Our results suggest that existing best practice interventions (e.g. VOICES/VOCES) can be tailored to improve HIV knowledge, HIV testing, and condom use among Latina seasonal workers. For such interventions to be successful, they should address Latino cultural values and be conducted in an environment that allows Latina seasonal workers to feel comfortable discussing these culturally taboo and sensitive topics. Our findings suggest that Progreso en Salud may have helped participants increase their knowledge about HIV, assisted with practices regarding condom use, and increased rates of HIV testing. Also, many participants maybe in the process of forming their condom use self-efficacy as a result of the intervention. Future research is needed to support our findings.

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D133 10:00 AM-11:00 AM

PSYCHOSOCIAL CORRELATES OF INSULIN RESISTANCE IN AN ETHNICALLY AND RACIALLY DIVERSE SAMPLE

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Introduction: Methamphetamine (MA) use has increasingly common in the United States and is prevalent among MSM in South Florida (18%). Among HIV infected MSM who report drug use, 43% reported trading sex for MA, and overall, MSM are at great risk for MA use. Long term MA use has been implicated in insulin resistance, which in turn has been associated with sleep disorders, antiretroviral use, trauma, and obesity. Despite the high prevalence of MA use among MSM, insulin levels and associated risk factors have not been assessed in this population. This study examined the relationship between MA use, HIV status, and insulin resistance among ethnically and racially diverse MSM living in South Florida.
Method: Participants (n = 335) were men 18-55 years of age recruited in South Florida, and comprised three groups: 1) HIV uninfected-non-MA-using (HIV-MA-; n = 136, 2) HIV-infected, MA-using, MSM (HIV+MA+; n = 147) and 3) HIV-uninfected, MA using, MSM (HIV-MA+; n = 52). Participants completed assessments on demographics, depression, trauma history, sleep disturbance, and drug use, provided a fasting blood sample to assess glucose and insulin. Body mass index (BMI) was derived from measurement of height and weight and insulin resistance was calculated using the Homeostasis Model.
Results: Participants were aged 18 - 55 years (mean = 37, SD = 9.91). The majority were Hispanic, 60% of participants had completed at least high school, 60% were overweight or obese, and 50% had a monthly income of less than US$500. Groups differed with regard to age, race, income, BMI, insulin resistance and severity of sleep disturbance. Polydrug use was associated with insulin resistance in bivariate analyses, but in multivariable analysis, insulin resistance levels were highest among obese men in comparison with normal weight men, highest among HIV-MA- men in comparison with other groups, and highest among Hispanics in comparison with non-Hispanic whites.
Discussion: Insulin resistance levels among this sample of ethnically and racially diverse methamphetamine-using HIV-negative men were higher than among HIV-infected men, likely due to decreased hunger associated with stimulant use and those participants either overweight or obese in the non-MA group, many of whom were Hispanic. Future studies should explore the association of insulin resistance with a history of marijuana use in comparison to polydrug use, as decreased levels of insulin resistance may also be specific to marijuana use, and continue to examine the relationship between antiretroviral use and insulin levels. Funded by a grant from NIDA, R01DA031201.

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D134 10:00 AM-11:00 AM

SOCIAL ISOLATION AND AFFECT IN OLDER ADULTS LIVING WITH HIV: NEW INSIGHTS USING MOBILE TECHNOLOGY

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Older adults with HIV are more likely to live alone than their peers without HIV, which puts them at risk for loneliness and social isolation. Social isolation is a major and prevalent health problem, and is an under-assessed condition in older HIV+ adults. The repeated sampling of daily experiences in a naturalistic setting, known as ecological momentary assessment (EMA), offers a potentially useful method for examining social isolation in relation to other health-related factors. We examined the real-time relationship between social interactions with concurrent and future affect and physical symptoms in a sample of older HIV+ adults. Twenty older adults infected with HIV (*Mean* (*M*) age=59; 85% male; 70% Caucasian; *M* current CD4: 476.21; *M* duration of HIV: 20.4 years) participated in one week of intensive daily monitoring via smartphones. Participants' provided five real-time reports per day of their current social functioning (alone vs. not alone and number of social interactions since last report), as well as their current affective state (sadness, stress, happiness), tiredness, and pain. HIV disease characteristics were obtained in-person prior to the EMA portion of the study. Participants spent an average of 63% of their time alone. HIV disease characteristics were unrelated to being alone or number of social interactions. Mixed-effects models showed being alone was related to lower concurrent happiness (*Wald F*=10.22, $p < 0.01$); however, being alone was unrelated to concurrent sadness, stress, tiredness, or pain. The average number of social interactions over the week was unrelated to affect, tiredness, or pain. Within-day time-lagged analyses were conducted with alone vs. not alone at one time point predicting affect and physical symptoms at the next time point. Lagged analyses found participants felt more pain (coef=0.027, p=0.02), were more tired (coef=0.17, $p < 0.001$) but had less stress (coef= -0.05, $p < 0.001$) over the course of the day. Increases in social activity predicted greater increases in tiredness. Our findings support a framework for understanding happiness in the context of social interactions among older HIV+ adults. While participants became more tired and had

increasing reports of pain over the course of the day, they experienced greater happiness when spending time with others as compared to being alone. Clinical interventions that promote social engagement, despite the presence of pain and fatigue, may positively impact well-being in this growing population.

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D135 10:00 AM-11:00 AM

THE RELATION OF HEROIN USE, A REGULAR SOURCE OF HEALTH CARE, AND AMBULATORY CARE UTILIZATION IN HOMELESS ADULTS

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The physical and mental health care needs of homeless adults are extensive, however, those needs regularly go unmet. Substance use in homeless adults is associated with worse health outcomes and decreased access to health care services. Overall, health care patterns in homeless adults are characterized by elevated rates of emergency department and inpatient services coupled with low levels of ambulatory care. Studies have consistently found that having a regular source of health care is related to improved ambulatory care utilization. Little research has been conducted to examine the relationships between substance use, a regular source of health care, and rates of ambulatory care. This study investigated the association between heroin use in the past year and ambulatory care use during that same period while controlling for whether participants had a regular source of health care.

Data were collected at a community mental health clinic in Midtown St. Louis. The sample consisted of 131 homeless adults, the majority of whom were male (70%) and African-American (70%). Mean age was 39 years 4 months (*SD* = 12.2). Because ambulatory care use in the past year was a dichotomous variable (one or more ambulatory care visits vs. none), a hierarchical logistic regression was used. Use of heroin in the past year and having a regular source of health care were entered as independent variables. At Step 1, regular source of care was a significant predictor (b = 1.43, *Wald Statistic* = 13.87, $p < .01$). At Step 2, regular source of care remained a significant predictor (b = 1.44, *Wald Statistic* = 13.87, $p < .01$), and heroin use was a significant predictor (b = -1.45, *Wald Statistic* = 4.28, $p = .04$).

These results fit with previous findings that show 1) heroin use in homeless adults decreases the likelihood of ambulatory care use and 2) a regular source of health care increases the likelihood of ambulatory care use. These results also demonstrate that while having a regular source of health care may buffer the negative affect of heroin use on ambulatory care access, additional efforts are required to ensure that this vulnerable group receive sorely needed ambulatory care services.

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D136 10:00 AM-11:00 AM

A CUSTOMIZED ADHERENCE ENHANCEMENT INTERVENTION + LONG ACTING INJECTABLES FOR HIGH RISK PATIENTS WITH SERIOUS MENTAL ILLNESS

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Aims: Long-acting injectable antipsychotic medication (LAI) can be a practical treatment option to optimize adherence for high-risk groups such as homeless individuals with serious mental illness (SMI). The authors of the current study developed a Customized Adherence Enhancement (CAE) intervention and combined it with LAI to improve treatment adherence of recently homeless individuals with schizophrenia (SZ) or schizoaffective disorder (SA). For this analysis, preliminary data from 2 prospective, 6-month open-label, uncontrolled studies of LAI + CAE were pooled. Haloperidol decanoate as used in Study 1 and paliperidone palmitate was used in Study 2. Since the literature suggests that SA is more complex to treat because of the added mood component, this analysis investigated differences in baseline and follow up (6 months) between the two diagnostic groups, SZ and SA.

Methods: Both trials combined CAE + LAI in recently homeless individuals with SZ (N=16) or SA (N=44) for a total combined sample of 60. Clinical outcomes included medication adherence using the Tablets Routine Questionnaire (TRQ), LAI injection frequency and psychiatric symptoms measured by the Positive and Negative Syndrome Scale (PANSS), Brief Psychiatric Rating Scale (BPRS) and global psychopathology (Clinical Global Impressions /CGI).

Results: Mean combined age of the sample was 42.7 years (SD=9.0), majority male (56.7%), minorities (88.3% African-American), single/never married (71.2%) with a mean of 11.4 years of education. Baseline rate of substance abuse within the past year was 25.0% and rate of incarceration within the past 6 months was 21.6 %. Non-adherence at screen was 55% of missed doses in the past week for SZ and 57% in SA. No demographic differences were found between the SZ and SA group at baseline aside from a larger number of Hispanic ethnicity in

the SZ group (20%) than the SA group (2.3%) (x^2=5.56, p=.02) and no difference in severity of clinical symptoms or medication adherence (t=-.200, df=55, p=.84). There was a trend of more homeless days spent outdoors for SAs than SZs at baseline (x^2=20.2, p=.09). There was no difference between the groups on response to treatment with both groups improving adherence to oral medications (t=.2.64, df=4, p=.058 and t=3.02, df=20, p=.007 for SA and SZ, respectively) and no difference in injection frequency between the two groups at 6 months (t=-.47, df=48, p=.64).

Conclusion: Highly symptomatic SMI is common in the homeless population and LAI combined with a targeted adherence enhancement approach may be a useful therapeutic approach in these high-risk individuals, both for those with SZ and those with SA. Despite the added burden of mood symptoms for the latter, they are as likely to benefit from this combined treatment and show an equally strong response.

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D137 10:00 AM-11:00 AM

A MIXED-METHODS EXPLORATION OF THE ROLE OF PARTNERS IN BREAST CANCER SURVIVORS' ADHERENCE TO AROMATASE INHIBITORS

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Background:The relationship between marital status and cancer-specific mortality is particularly strong among breast cancer patients. It has been suggested that partner support provided in marriages may improve adherence rates to treatment, thereby increasing survival rates. The purpose of this study was to explore whether partner specific support for aromatase inhibitors (AIs), an adjuvant hormonal therapy for breast cancer survivors, was associated with increased AI adherence. ***Method:*** We used both qualitative and quantitative methods to explore this topic. In the qualitative study, using a grounded theory approach, we interviewed 25 breast cancer survivors and 15 partners about the role of partner support in decision-making around AI initiation and continuation, and management of AI side effects. The sample represented both survivors who were still on treatment and survivors who had prematurely discontinued. In the quantitative study (n = 240), we examined cross-sectional associations between different types of received support (informational, tangible, emotional, and affection), and satisfaction with support. ***Results:***In both studies, we found that breast cancer survivors placed greater value on emotionally nurturing support than on solution-focused support. In the qualitative study, partners of adherent survivors were more frequently aware of the impact of AI treatment on survivors' self-concept and provided more support around sexual dysfunction caused by AIs than partners of non-adherent survivors. Quantitative findings showed that after accounting for depression, received affection had the strongest association with women's satisfaction with AI-specific support from partners (sr = .30, p < .001), followed by emotional/esteem support (sr = .11, p = .052). Neither AI-related tangible support nor informational support was significantly associated with support satisfaction. These relationships were the same among women with both high and low levels of AI side effects. ***Conclusion:*** The findings of these studies suggest that spousal support, especially in the form of emotional support and affection, is relevant to the experience of AIs and persistence with treatment. Survivors with adverse effects, who are vulnerable to premature discontinuation of treatment, may benefit from interventions that not only target personal coping, but also their romantic relationships, to enhance couples' abilities to be emotionally expressive and partners' abilities to provide support that is responsive to survivors' needs.

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D138 10:00 AM-11:00 AM

AVOIDANCE AND DISEASE MODIFYING TREATMENT (RE)INITIATION AMONG MS PATIENTS

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Disease modifying therapies (DMTs) reduce annualized relapse rates and disease progression among those with relapsing-remitting MS (RRMS), yet the majority of MS patients choose not to take DMT or prematurely discontinue taking them. Anecdotal evidence from a successful randomized trial of Motivational Interviewing – Cognitive Behavior Therapy to promote initiation of DMT suggested avoidant coping was the main reason for not taking DMT.

The aims of this study were to follow up on these observations to (1) determine whether avoidant patients could by reliably identified, (2) compare the clinical and psychological characteristics of these patients to those with other reasons for not taking DMT, and (3) examine whether their outcomes differed from those with other reasons for not taking DMT.

Audio recordings (N=77) from the first of 5 counseling sessions from the trial were examined. Using a grounded theory approach researchers identified cost barriers, mild course, side effects, and avoidance as the main reasons participants were not taking DMT. Avoidant participants tended to downplay the seriousness of MS, and provided irrational justifications for not taking medications characterized by distorted reasoning and exaggerated or paranoid concerns. Criteria were developed and two raters independently classified each participant according to their main reason (K= .88). Coding data was analyzed with baseline and end of treatment surveys of psychological and clinical characteristics as well as follow-up assessments of motivation and confidence to initiate and self- reported initiation.

Coding indicated that 33 participants (42.9 %) were avoidant. Chi-square and one-way

ANOVAs revealed few differences between groups on clinical and self-reported psychological characteristics other than those that validated the categorization (e.g., those in the cost barriers group were more likely to report not being able to afford medication, those in the side effects group were more likely to report side effects being intolerable). One-way ANOVAs and post hoc tests indicated that compared to each of the other groups avoidant individuals self-reported lower motivation to take DMTs at the end of treatment ($p < .001$), but did not differ in confidence ($p=.78$). Chi squares analyses revealed that avoidant participants were less likely to initiate DMTs (24% compared to 52.5% of non-avoidant participants) by week 10 follow-up, $p=.023$, $X^2(3, 69)= 5.14^2$.

Patients that appeared to be avoidant were not distinguishable with self-report clinical and psychological measures and likely present a particular challenge for intervention because they appeared less responsive to a generally effective intervention.

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D139 10:00 AM-11:00 AM

DISPARITIES IN MEDICATION ADHERENCE PERSIST AFTER CONTROLLING FOR SOCIODEMOGRAPHICS AND LITERACY/NUMERACY SKILLS

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Background:

Taking antihyperglycemic agents and/or insulin improves glycemic control, preventing diabetes complications. Several factors facilitate medication adherence such as sufficient literacy and numeracy skills, and one’s motivation, self-efficacy, financial/practical support and resources. Populations with fewer facilitators and more barriers to adherence (e.g., limited diabetes knowledge, negative beliefs about medication) often have high rates of non-adherence, and, in turn, high rates of suboptimal glycemic control. We used the Adherence to Refills and Medications Scale for Diabetes (ARMS-D) to assess the relationship between race and adherence among adults with type 2 diabetes (T2D).

Methods:

We analyzed cross-sectional data from English-speaking adults with T2D recruited for a medication adherence trial at Vanderbilt University Medical Center in Nashville, TN. We collected self-reported demographics (age, gender, race, education, income), diabetes characteristics (diabetes duration, insulin status), and responses to the Brief Health Literacy Screen (BHLS), Subjective Numeracy Scale (SNS), and ARMS-D. We performed a hierarchical regression model to examine the association between race and medication adherence adjusting for demographics, diabetes characteristics, and health literacy and numeracy skills.

Results:

Participants (N=151) were 55.3±10.9 years old, 60% female, and 24% non-White (69% were Black/African American), with 15.2±1.8 years of education, 25% annual incomes < $40K, and 43% on insulin. In the unadjusted model, being non-White was significantly associated with less adherence ($\beta = -.31$ $p = -.29$ $p < .01$), explaining 9.4% of the variance in adherence.

After adjusting for covariates, being non-White remained significantly associated with being less adherent (β=-.29 $p < .01$).

Conclusions:

Non-Whites were less adherent to diabetes medications than Whites after accounting for sociodemographics, diabetes characteristics, and literacy/numeracy skills often associated with medication adherence. Disparities in adherence may contribute to persistent disparities in glycemic control and other diabetes outcomes.

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D140 10:00 AM-11:00 AM

LINGUISTIC ACCULTURATION AND ADHERENCE TO CARDIAC MEDICATIONS AMONGST HISPANICS IN THE UNITED STATES

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Background: According to the Hispanic Paradox, Hispanics in the US have a lower rate of cardiovascular disease mortality and longer life expectancy among the three largest racial/ethnic groups despite a higher prevalence of CVD risk factors. Differential adherence among racial/ethnic groups to cardiovascular medications might help explain this paradox. We tested the independent association of Hispanic ethnicity and linguistic acculturation with medication adherence.

Methods: Between 2013 and 2015, we enrolled a consecutive cohort of 654 English and Spanish-speaking patients who were evaluated for suspected acute coronary syndrome (ACS) in the emergency department of an academic medical center in New York City. Participants self-reported ethnicity and first language at enrollment. Medication adherence was assessed 1 month after discharge by asking "How much of the time do you take your heart medications?" Participants who reported missing their medications at least some of the time were categorized as nonadherent. Logistic regression was used to determine the association between Hispanic ethnicity and language with and with adjusting for age, sex, race (white vs non-white), education, comorbidity (Charlson score), prior history of established coronary artery disease, discharge diagnosis (ACS vs non-ACS), and depressive symptoms (8-item Patient Health Questionnaire score).

Results: The mean age was 62 ±13 years, 43% were women, 73% were White, 55% were Hispanic, and 35% had less than a high school education. Among Hispanics, 19% identified English as their first language. Overall, a lower proportion of Hispanics than non-Hispanics was nonadherent (11.9% vs 18.3%, p=0.03). Amongst Hispanics, a greater proportion of those who spoke English as a first language versus those who did not speak English as a first language were nonadherent (23.1% vs 9.3%, p=0.002). In unadjusted models, Hispanic patients were less likely to be nonadherent (OR 0.60, 95%CI 0.39, 0.94; p=0.03). In a model adjusting for first language and other covariates, first language as English (AOR 2.30, 95% CI 1.12, 4.76; p=.02), but not Hispanic ethnicity (AOR 1.09, 95%CI 0.55, 2.16; p=0.80) was associated with increased likelihood of nonadherence. In an adjusted model limited to participants who did not speak

English as a first language, increasing ability to speak English well was associated with increased likelihood of nonadherence (p=0.002).

Conclusion: Hispanics with increasing English language acculturation are at increased risk for nonadherence to cardiovascular medications.

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D141 10:00 AM-11:00 AM

MHEALTH TECHNOLOGY INTERVENTIONS FOR ANTIHYPERTENSIVE MEDICATION ADHERENCE: A SCOPING REVIEW

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The purpose of this scoping review was to identify and describe how mHealth technologies have been used in interventions to support antihypertensive medication adherence in adult patients. Google Scholar, Ovid, and EBSCOhost databases were searched to find primary studies of adult patients published in English between January 2010 and June 2016. Extracted data included: descriptions of mHealth interventions; measurement of medication adherence; whether adherence data were shared with patients and/or providers; and patient satisfaction with mHealth intervention.

Ten studies met inclusion criteria and were included in this review. Reviewed studies used different combinations of Smartphone technologies as an intervention: unidirectional text messaging where patients only received messages (n=8); bi-directional text messaging (i.e. patients received and sent messages) (n=3); scheduled reminders and alerts (n=6); real-time reminders (n=2); voice messaging (n=2); email (n=4); app (n=1); and internet of things (IoT) (n=2). A combination of self-reporting (n=6) and/or electronic/manual pill counts (n=1/n=4) were used to measure medication adherence and this data was emailed to providers either on a weekly or bi-monthly basis (n=5). Adherence data was used to send text-message reminders for patients to pick up medication refills (n=1) or notify patients who had not accessed their electronic pillbox within a prescribed timeframe (n=1). Provider satisfaction of shared data was measured in one study. Patient satisfaction with the intervention was measured in five studies.

This review found relatively few published studies that used mHealth interventions for antihypertensive medication adherence. Of those published, the mHealth interventions varied in the technologies used to support adherence. Further studies and meta-analysis linking behavior change techniques with mHealth technology components would be useful as the knowledge base of mHealth interventions grow. Future research is needed to determine which mHealth technologies and technology strategies are the most effective and for whom, along with exploring how mHealth can be leveraged to provide patients with feedback regarding their medication adherence behavior.

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D142 10:00 AM-11:00 AM

THE ASSOCIATION OF MARITAL CONFLICT WITH ADHERENCE TO LONG-TERM OXYGEN THERAPY AMONG CHRONIC LUNG DISEASE PATIENTS

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The Association of Marital Conflict with Adherence to Long-term Oxygen Therapy among Chronic Lung Disease Patients

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Background: Long-term oxygen therapy (O_2) is often a critical component for the treatment of chronic lung diseases such as chronic obstructive pulmonary disease (COPD) and interstitial lung disease (ILD). Rates of adherence to long-term O_2 therapy are below 50%. No studies have yet examined the potential impact of interpersonal relationships on O_2 adherence. The aim of this study is to examine the impact of marital conflict on O_2 adherence in patients with chronic lung disease.

Methods: Patients with COPD or ILD who were married and had a prescription for 24-hour oxygen use completed self-report questionnaires regarding their demographic and medical history, interpersonal relationships, mood, and oxygen adherence. Conflict was assessed using the conflict subscale of the Quality of Relationship Inventory (QRI). Oxygen adherence was coded as adherent or non-adherent based on any admission of non-adherence on six questionnaire items. Logistic regression was used to determine whether conflict was associated with adherence to oxygen after adjusting for age, education, smoking history, type and duration of lung disease, symptoms of depression and anxiety, and length of marriage.

Results: Data were analyzed from 132 patients (mean age = 70.14; 75% COPD, 25% ILD; mean duration of oxygen use = 8.13 years). 76% of the sample was categorized as being adherent.

Conflict had a negative association with O_2 adherence (OR = .36, 95% CI = .18 – .75, p = .006) after adjusting for demographic and medical characteristics as well as length of marriage and symptoms of depression and anxiety.

Conclusions: Patients who reported less conflict in their marital relationship were more likely to be adherent to their O_2 than patients who reported higher levels of conflict. These findings suggest that patients with higher levels of conflict may be at risk for poorer adherence. Given that marital conflict is a potentially malleable factor, it may be an important target for psychosocial interventions that aim to promote adherence to O_2 in patients with chronic lung disease who are married.

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D143 10:00 AM-11:00 AM

ACUPUNCTURE AND MINDFULNESS-BASED STRESS REDUCTION AMONG ADULT SURVIVORS: A RANDOMIZED WAIT-LIST CONTROLLED STUDY

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Background. Adult survivors of childhood sexual abuse (CSA) often suffer psychological consequences: Post-Traumatic Stress Disorder (PTSD) and depression. To relieve these symptoms, this study compares efficacies of Mindfulness-Based Stress Reduction, Acupuncture, and Wait-List Control in CSA survivors.

Methods. Randomized were 83 CSA survivors to Mindfulness-Based Stress Reduction, 2.5 hours weekly/ 8 weeks; Acupuncture, 35-40 minutes bi-weekly/ 8 weeks; or Wait-List Control. Outcomes were assessed at baseline, four, eight, and 12 weeks, post-randomization. Primary outcomes were measured using the PTSD Checklist and Beck Depression Inventory. Secondary outcome assessment utilized the Pittsburgh Sleep Quality Index and the Mindful Attention Awareness Scale.

Results. Large effect sizes were indicated with Acupuncture for PTSD symptoms, versus the controls (Cohen’s $d = 1.38$). Moderate effects for depression with Mindfulness-Based Stress Reduction (Cohen’s $d = 0.99$) were reported. Both treatments significantly improved mindfulness, sustainable for 12 weeks ($F = 5.85$; $p = .00101$). Acupuncture significantly improved PTSD symptoms ($F =3.37$; $p = .0052$) and sleep quality ($F = 3.74$; $p = .0076$) for up to 12 weeks. Although not as sustainable, both treatments also improved depressive symptoms ($F = 2.78$; $p = .0165$). This study demonstrates and compares the benefits of Acupuncture and Mindfulness-Based Stress Reduction to conventional treatments.

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D144 10:00 AM-11:00 AM

COMORBIDITY AND EATING BEHAVIOR IN INDIVIDUALS WITH SYMPTOMS OF AVOIDANT/RESTRICTIVE FOOD INTAKE DISORDER (ARFID)

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Avoidant/Restrictive Food Intake Disorder (ARFID) is an eating disorder (ED) diagnosis for individuals whose eating behavior leads to failure to meet nutritional/energy needs and/or significant psychosocial impairment. ARFID was added to DSM-5 to capture impairing eating pathology without compensatory behavior or shape/weight concerns. DSM-5 describes three types of eating disturbance that can lead to ARFID symptoms: picky eating (PE), low appetite/interest in eating, and fear of negative consequences from eating (e.g., choking, vomiting).

A 2016 study found that adults whose PE led to the nutrition/energy or psychosocial symptoms of ARFID reported just as much distress and comorbidity as individuals screening positive for risk of anorexia or bulimia (AN/BN).The current study extends these findings to ARFID symptoms due to other ARFID manifestations.

Participants were screened for ARFID due to any of the three eating behaviors via self-report measures. Analyses were replicated in two samples: 1219 college students; 450 adults recruited specifically for the eating difficulties of interest. Participants responded online to the Nine-item ARFID screen (NIAS), which assesses the three eating restrictions, and the ARFID symptom checklist (ARFID-cl), which assesses DSM-5 criteria to establish a possible diagnosis. Four groups were created: 1) No restrictions, 2) restrictions/no ARFID symptoms, 3) subclinical ARFID, and 4) full ARFID criteria. Groups were compared on psychological comorbidities (anxiety, depression, eating quality of life) with bootstrapped ANCOVAs, covarying self-reported symptoms of AN/BN.

In each sample, ARFID symptom group was associated with anxiety and depression. Eating quality of life impairment was assessed in the second sample and significantly differed across the ARFID symptom groups. Severity of symptoms/impairment increased with level of ARFID symptomatology with small-moderate to large effect sizes observed ($\eta p^2 = .04 – .27$). Post-hoc comparisons in the general sample revealed differences in reported symptoms/behaviors between ARFID-symptom levels, with the most consistent differences between groups with no ARFID symptoms (groups 1 and 2) and the groups with some degree of ARFID symptoms (groups 3 and 4). In the selected sample, only groups on either end of the continuum (groups 1 and 4) differed on symptoms of anxiety and depression. In this sample, each group differed significantly from all other groups on quality of life impairment.

These findings highlight the need for more recognition of, and research on, ARFID. ARFID is an ED that is associated with a distinct pattern of eating behavior and a high level of comorbidity and distress.

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D145 10:00 AM-11:00 AM

COMPARISON OF SELF-RATING OF COGNITION AND DEPRESSION IN PATIENTS WITH MAJOR DEPRESSION

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Background: Traditionally clinicians have utilized neuropsychological tsts to evaluate cognitive impairment in patients with major depression. However, the burden of many of these instruments to both clinicians and patients make these tools difficult to access for the majority of patients. These burdens include the time it takes for these tests to be administered, lack of coverage for these tests by insurance carriers and the difficulty in finding a trained clinician who can administer these test. The recently developed Massachusetts General Hospital Cognitive and Physical Functions Questionnaire (CPFQ) is a 7 item self-questionnaire that has been found to have strong internal consistency. To our knowledge this is the only self-Rating scale for cognitive function in existence. Many self-rating scales for depression have been in existence for many years. The Beck Depression Scale (BDI) is one of the most common in use. We set out to assess patient's responses when both scales were administered and to see if there were any particular correlations between items on these two scales.

Methods: 100 adult patients with Major Depression will be evaluated during their regular scheduled outpatient appointment in a mental health clinic. Diagnosis will be based on their medical record. These patients did not carry any other primary psychiatric disorder on Axis I. Everyone will be administered both the CPFQ and BDI. We will also collect patients age, sex and time since first diagnosed with major depression. To date 36 patients have been evaluated and it is estimated that by November 15, 2016, data from 100 patients will have been collected and ready for full analysis.

Results: We will evaluate responses to all 7 items on the CPFQ and all 21 items on the BDI initially to see if there is any correlation of items with patients age, sex and duration of major depression. Then direct analysis and comparison of the items on the CPFQ and BDI will occur to determine if there are particular relationships that emerge between cognitive items and depressive items. All analysis complete by December 15, 2016 for presentation at the Society of Biological Medicine Meeting in San Diego from March 29 to April 1, 2017.

Conclusion: We will discuss our findings comparing patients with major depression self-response on the CPFQ and self-response on the BDI. We will determine with items on each scale have a high correlation with each other. We will also determine how user friendly the

CPFQ is in a general outpatient mental health clinic. This will help clinicians determine the utility of a self-rating cognition scale in major depression patients. Most importantly clinicians will now be able to assess cognition in a rapid fashion and determine if the treatment being prescribed is resulting in improved psychosocial functioning as it is now felt that cognition improvement is a more important marker than depression with regards to patient outcome.

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D146 10:00 AM-11:00 AM

EVENING SALIVARY CORTISOL, DEPRESSION, AND SYMPTOMS OF CHRONIC FATIGUE SYNDROME/ MYALGIC ENCEPHALOMYELITIS

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Introduction: Chronic fatigue syndrome/ myalgic encephalomyelitis (CFS/ME) is commonly comorbid with depression. Individuals suffering from CFS/ME and depression can also share some similar somatic symptoms and markers of neuroendocrine dysfunction, such as fatigue and elevated evening cortisol. Depression is correlated with elevated evening cortisol in otherwise healthy individuals, but less is known about cortisol associations with depression and CFS/ME symptoms in CFS/ME patients.

Methods: Baseline data were drawn from diagnosed CFS patients (N = 150) participating in studies testing the efficacy of a remotely-delivered cognitive behavioral stress management (CBSM) intervention. CFS/ME symptom and depression questionnaires and salivary cortisol were used for multiple regression analyses using SPSS.

Results: The majority of the sample (69%) had clinically significant depressive symptoms (CES-D ≥ 16). Depressive symptoms (β= 0.212, p= 0.019) and CDC CFS Symptom Severity (β= 0.309, p= 0.036) were positively correlated with evening cortisol, while perceived stress, fatigue, tension/anxiety, and sickness impact were not (all p’s>0.05).

Discussion: Results highlight the importance of considering neuroendocrine processes that are associated specifically with both CFS/ME symptoms and depression. Further mechanism-based, longitudinal research might elucidate the underlying etiology of both CFS/ME and depression symptoms.

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D147 10:00 AM-11:00 AM

EXPLORING DEMORALIZATION AMONG PATIENTS WITH MEDICAL ILLNESS

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The experience of demoralization in patients with medical illness has been extensively documented; however, limited research has highlighted the bidirectional relationship between demoralization and medical illness. The current study examined the relationship between medical illness and experience of demoralization (as measured by the MMPI-2-RF). Specifically, the purpose of this study was to explore the multifaceted relationship between demoralization, psychological symptoms, and physical illness. The study sample consisted of 279 adults who completed a valid MMPI-2 or MMPI-2-RF at a university-based outpatient psychological services center. Of the 279 participants, 154 comprised a “medical patient” sample. Results of this study suggest significant differences in mean Demoralization (RCd) T-scores for medical patients with comorbid depressive or anxiety related psychological disorders when compared to medical patients without comorbid depressive or anxiety related disorders. Medical patients with comorbid psychological disorder(s) (i.e., inclusive of all clinical disorders) were found to have significantly higher mean Demoralization (RCd) T-scores when compared to those without a comorbid psychological disorder. The results of this study help to expand the understanding and conceptualization of the interconnectedness between medical illness and experience of demoralization. Based on the results of this study, implications and future research directions are discussed.

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D148 10:00 AM-11:00 AM

FACEBOOK FOR SUPPORTING LIFESTYLE INTERVENTIONS FOR PEOPLE WITH MENTAL ILLNESS

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Objective: Facebook could support efforts to address elevated obesity rates, high cardiovascular risk, and resulting early mortality that disproportionately impact people with mental illness. In this exploratory study, we examined whether actively engaging in a Facebook group as part of a community-based lifestyle intervention was associated with clinically significant weight loss and fitness outcomes among individuals with mental illness.

Methods: We invited participants with mental illness and obesity enrolled in a 6-month group lifestyle program delivered through a community mental health center to join a private Facebook group to promote group support for achieving shared physical activity and weight loss goals. Two volunteer peers moderated the Facebook group. Participants' interactions in the Facebook group were defined as active engagement including posts, comments, or likes. We measured the proportion of participants who achieved ≥5% weight loss or improved fitness (increase >50 meters on the 6-Minute Walk Test). We also explored content of the Facebook posts.

Results: Participants (n=25) were 52% female and had major depressive disorder (44%), bipolar disorder (36%), or schizophrenia (20%), a mean age of 49.2 years (SD=11.8), and a mean BMI of 37.3 kg/m^2 (SD=8.1). Nineteen (76%) participants joined the Facebook group. These participants contributed 956 interactions consisting of 326 unique posts, 275 comments, and 355 likes. Participants who achieved ≥5% weight loss (37%) were more likely to interact in the Facebook group (mean=23.0 interactions, SD=8.3) compared to participants who did not achieve ≥5% weight loss (mean=3.9 interactions, SD=5.9; t=-2.9; df=17; $p < 0.01$). Clinically significant improved fitness was not associated with interactions in the Facebook group. Facebook posts contained content about healthy eating (30%), program reminders (19%), personal sharing about successes and challenges of health behavior change (18%), humor (13%), exercise (8%), community events (7%), and motivational messages (5%). After adjusting for multiple comparisons, posts involving personal sharing generated significantly greater response in terms of interactions compared to posts containing program reminders, motivational messages, and healthy eating content.

Conclusions: Facebook appears promising for supporting community-based lifestyle

interventions for people with mental illness. Given the wide reach of Facebook, our findings can inform future initiatives to scale up health promotion efforts targeting this at-risk group.

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D149 10:00 AM-11:00 AM

HOW IS HEALTH ANXIETY DEFINED AMONG INDIVIDUALS WITH A CHRONIC ILLNESS: A SYSTEMATIC REVIEW

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Purpose. One of the difficulties with the literature on health anxiety (HA) among chronically ill individuals is that several terms are used to refer to this phenomenon, such as fear of cancer recurrence, fear of hypoglycemia, or cardiac anxiety. The heterogeneity of HA definitions reflects a lack of agreement on what constitutes the core features of this construct and makes cross-disease comparison difficult. Therefore, the goal of this study was to delineate the differences and the commonalities between these definitions to better understand HA across chronic illnesses. **Methods.** A systematic review of the literature was undertaken on HA in individuals living with a chronic illness. Relevant studies were identified via PsycINFO, PubMED, CINAHL, Web of Science, and SCOPUS, from January 1996 to October 2014. A total of 244 articles and abstracts were retained. A standardized data spreadsheet was designed and utilized to extract and summarize data. **Results.** Of the 244 articles that were reviewed, only 62 cited a definition of the investigated HA construct (cancer n=32, Parkinson’s disease n=8, diabetes n=4, cardiac diseases n=10, other n=8). Among these 62 articles, 6 used a general definition of HA; the remainder defined it as a realistic, disease- or symptom-specific form of HA ranging from normal to pathological. Most definitions included an emotional (e.g., fear) and/or a cognitive (e.g., worry) aspect (n=49 and n=32, respectively). Perceptual (e.g., misinterpreting physical symptoms) and behavioral (e.g., body checking) aspects were much less frequently included. **Conclusions.** Most of the definitions of HA currently in use are symptom- or disease-specific; it is difficult to transpose them to different chronic illnesses. In comparison with general HA definitions, disease-specific definitions exclude the inaccurate perception of illness. Ample work remains to determine if behaviors such as avoidance of activities, body checking, or other compensatory behaviors and perceptual processes should be part of the definition of HA in these populations.

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D150 10:00 AM-11:00 AM

IMPACTS OF OBESITY AND MOOD DISORDERS ON PSYCHOLOGICAL WELL-BEING, COMORBIDITIES, HEALTH BEHAVIOURS AND USE OF SERVICES.

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Introduction: Obesity is highly prevalent in North-America people with mood disorders (e.g., bipolar disorder, major depressive disorders) are more likely to be affected. Even though obesity and mood disorders frequently co-occur, few studies examined if the presence of a mood disorder can be an aggravating factor of obesity-related conditions.

Objective: to analyze whether people with obesity and mood disorders (POMD) differ from those without mood disorder (Ob) in terms of psychological well-being, comorbidities, health behaviours and use of health services.

Methods: Cross-sectional study based on the Canadian Community Health Survey (CCHS) conducted in 2007-2008. Sample of people with obesity (n = 1298) was weighted to represent the inhabitants from the province of Quebec (Canada). The CCHS used diagnostic criteria outlined in the DSM-IV-TR to screen respondents.

Results: POMD (n = 99) were more likely to be women than Ob (n = 1199), (65%, 95%CI[56.29-75.05%] vs 45%, 95%CI[42.92-48.56%]). In terms of psychological well-being, POMD were more likely to report poor mental health (40%, 95%CI[31.81-51.32%] vs 3.17%, 95%CI[2.32-4.34%]) with more psychological distress (37.5%, 95%CI[28.96-48.55%] vs 4.25%, 95CI [3.23-5.59%]) and anxiety disorders (39.79%, 95%CI[31.19-50.76%] vs 4.01%, 95%CI[3.04-5.28%]).

Regarding comorbidities, higher percentages of POMD reported arthritis (32.65%, 95%CI[24.57-43.39%] vs 16.58%, 95%CI [14.60-18.83%], low back pain (41%, 95%CI[32.41-51.87%] vs 19.48%, 95%CI[17.36-21.86%]). No significant differences were found in migraine, hypertension and type 2 diabetes.

In terms of use of services, compared to Ob, POMD had more frequent consultations to doctors (86.87%, 95%CI[80.46-93.78%] vs 74.21%, 95%CI[71.77-76.73%]), nurses (27.27%, 95%CI[19.77-37.62%] vs 15.44%, 95%CI [13.52-17.63]) and psychologists (21.21%,

95%CI[14.51-31.0%] vs 3.08%, 95%CI[2.25-4.24]).

Regarding their health behaviours, higher percentages of POMD reported to be inactive (79.59%, 95%CI[71.99-87.98%] vs 66.67%, 95%CI[64.05-69.39%]), or to be limited in their physical activity (37.37%, 95%CI[28.96-48.23%] vs 13.90%, 95%CI[12.07-16.01%]). No differences were found on tobacco and fruits/vegetables consumption.

Discussion: The presence of a mood disorder seems to be an aggravating factor in obesity because it was associated with poor health in several areas. There is a need to more consider obesity as health behaviours among POMD.

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D151 10:00 AM-11:00 AM

IMPROVING COMMUNITY-BASED MENTAL HEALTH TREATMENT FOR LATINO IMMIGRANTS

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Background: There is a significant need for mental health treatment and prevention programs, for the 50 million Latinos living in the United States. Twenty-five percent (25%) of Americans suffer from mental disorders and 60% receive no treatment. Although the prevalence rate of mental disorders among Latinos is equal to or greater than the rate among non-Latino whites, Latinos are less likely to access mental health services, and more likely to have chronic and persistent mental illness or receive poor quality mental health care. *Methods:* We developed a mental health treatment program (Tu no estas solo / You are not alone) between a university and a community-based non-profit which serves as medical home for 3,500 Latino patients in an Immigrant Gateway City. Master's and doctoral level health professions trainees in counseling, social work, and health psychology provide individual mental health treatment to adult patients under the supervision of faculty preceptors. Most students and preceptors are bilingual (English/Spanish), but interpreters are available if needed. Patients are referred by medical clinic providers or self-referred from the community, and participate in a 14-session treatment program. We conducted a feasibility pilot from January 1, 2016 – April 15, 2016, to examine enrollment, appointment keeping, and student satisfaction with the program. *Results:* Forty-one (N=41) patients enrolled in the program during the 15-week pilot phase. About 32% of patients (N=13) were unable to complete the program; among those not completing the program the most frequently cited reasons were transportation (5/13, 38%) or conflicts with their work schedule (4/13, 31%). Adherence with appointment keeping was high; 78% of patients (N=22) completed 80% of their scheduled visits and almost 86% (N=24) completed 70%. Student trainee satisfaction with the program was very high; in a focus group session trainees (N=6) agreed that the experience enhanced their understanding and professional development, increased their multicultural awareness, and added to their mental health management skills. All trainees indicated high satisfaction with the program experience. *Conclusions:* There is a shortage of mental health treatment programs and trained mental health providers, for addressing the high and increasing needs of Latinos with mental health disorders. Our pilot study indicated that student trainees can manage the mental health needs of Latino patients and in a way

that contributes to high levels of patient appointment-keeping. University mental health trainees and faculty collaborating with a trusted community organization, offer an innovative means of providing low-cost mental health care to underserved Latino patients.

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D152 10:00 AM-11:00 AM

MENTAL HEALTH CONSEQUENCES OF STIGMA: RESULTS FROM A QUALITATIVE STUDY EXAMINING THE LIVES OF RURAL GAY, BISEXUAL, AND QUEER MEN

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Background: Gay, bisexual, queer and other men who have sex with men (GBQ men) are more likely to report symptoms of depression and anxiety than their heterosexual counterparts. Additionally, rural, especially Southern, GBQ men may face additional stigma compared to urban men, which may increase their risk for depressive and anxiety symptoms due to perceived and actual social stigma. However, few studies have studied GBQ men in rural and Southern areas, leaving a gap in the literature.

Methods: This qualitative study explored the health, relationships, and technology use of GBQ men in rural areas of the United States, the majority of which resided in the Southeast. Eligibility criteria included identifying as a man who experiences attraction to other men, residing in a rural area, and being at least 18 years old. In total, 20 semi-structured interviews were conducted from July 2015 to June 2016. Interviews were transcribed verbatim and analyzed in NVivo 11 by a diverse coding team using grounded theory approaches.

Results: Social stigma themes, both observed and perceived, of religious conservatism, familial rejection, and peer disapproval were consistently prevalent throughout the interviews, and were all mentioned as resulting in a lack of social support and need to conceal one's identity. The *Minority Stress Model* describes how concealment and isolation (distal and proximal factors) contribute to negative mental health outcomes, such as anxiety and depression. Our participants' did describe experiences, especially with depression, that are consistent with Meyer's *Minority Stress Model*. Additionally, these themes usually corresponded with the participants disclosing that they felt unsafe, insecure in their relationships, and anxious about being in public. Participants who felt the need to conceal their identities often felt that there were very few spaces that they felt safe enough to be themselves, or be open about their relationships. This would, in turn, cause strain on a personal relationship, isolating the individual more.

Conclusion: Understanding the factors that lead to mental health issues among GBQ men is important as researchers and practitioners create more interventions focusing on emotional

wellness. Understanding how stigma impacts individuals' lives through isolation and concealment can help inform programs that intervene on multiple levels.

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D154 10:00 AM-11:00 AM

PASSIVE AND ACTIVE SOCIAL MEDIA USE AND DEPRESSIVE SYMPTOMS AMONG YOUNG ADULTS

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Introduction. Recent research suggests associations between increased social media (SM) use and increased depressive symptoms. However, little research has examined specific associations between depressive symptoms and active (e.g., more frequent posting and responding) versus passive (e.g., observation only) SM use. The purpose of this study was to investigate independent associations between active and passive SM use and depressive symptoms in a convenience sample of US adults.

Methods. In July and August of 2016, we recruited adults ages 18-30 via mental health related message boards on Reddit, a popular social networking platform. We assessed depression using the 4-item Patient Reported Outcomes Measurement Information System short form with a cut off score of 11 (on a scale that ranged from 4 to 20) to define depression. We assessed active and passive SM use using Likert-type items asking about frequency of behaviors on SM such as actively posting, responding to comments, or primarily reading others' posts. We used logistic regression to assess associations between active and passive SM use and depression while controlling for six potentially related socio-demographic variables (age, sex, race/ethnicity, living situation, relationship status, and education level).

Results. Complete data were received from 613 participants. About one-third (36.5%) of respondents were defined as depressed according to our *a priori* criteria. Factor analysis on SM items revealed a two-factor solution representing active ($\alpha = 0.80$, 4 items) and passive ($\alpha = 0.72$, 3 items) SM use. We used weighted averaging to scale each SM variable from 1 to 5. Distributions were normal with a mean of 3.8 (standard deviation [SD] = 1.1) for active use and skewed left with a median of 4 (interquartile range [IQR] = 3-5) for passive use. In multivariable analyses that controlled for all covariates, adjusted odds ratios for depression were 0.80 (95% confidence interval [CI] = 0.69, 0.93) for each 1-point increase in active use and 1.45 (95% CI = 1.21, 1.74) for each 1-point increase in passive use.

Conclusion. In a convenience sample of individuals with relatively high levels of depressive symptoms, active SM use was associated with reduced odds of depression and passive SM use was associated with increased odds of depression. The magnitude of effect was stronger for

passive use. Future longitudinal and qualitative data may help disentangle directionality of these associations.

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D155 10:00 AM-11:00 AM

THE MENTAL AND SPIRITUAL EFFECTS OF A MINDFULNESS INTERVENTION ADAPTED FOR HISPANIC PRIMARY CARE PATIENTS

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Substantial risk factors (e.g., high poverty rates, acculturative stress) exist for Latinos that are manifested in significant health needs and inequities. The purpose of this study was to examine the potential of mindfulness-based interventions for facilitating mental and spiritual well-being in Latinos. Specifically, peace, spirituality, and meaning were examined due to the growing focus of their health promotion and coping with illness effects. The participants were 23 Latino primary care patients who completed an eight-week Mindfulness-Based Stress Reduction (MBSR) course. The course was adapted for Latinos by including (1) motivational interviewing, (2) problem-solving retention barriers, (3) testimonial by a past Latino participant, and (4) increasing perceived applicability. Pre-to-post changes in mindfulness were examined through the *Five Facet Mindfulness Questionnaire* (FFM; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006), as well as in meaning, peace, and faith through the Functional Assessment of Chronic Illness Therapy-Spiritual Well-being Scale (FACIT-Sp; Peterman, Fitchett, Brady, Hernandez, & Cella, 2002). The results indicated significant increases over time in mindfulness, $t(22)=3.49$, $p < .001$, $d=0.88$, as well as the overall FACIT-Sp, $t(21)=3.02$, p=.007. Additionally, there were significant increases in the peace subscale $t(21)=2.36$, p=.028 and spirituality subscale $t(21)=2.32$, p=.030, however not the meaning subscale $t(21)=1.73$, p=.099.

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D156 10:00 AM-11:00 AM

THE PSYCHOLOGY TOOLBOX: IMPLEMENTING A DISTRESS REDUCTION INTERVENTION FOR HIV+ PRIMARY CARE PATIENTS IN CHINA

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In China, where there are few mental health resources, the majority of HIV-related efforts have focused on medical treatment and transmission prevention rather than psychosocial support. Yet people living with HIV/AIDS (PLWHA) report high levels of psychological distress, especially upon first receiving their HIV diagnosis. Recently diagnosed Chinese PLWHA who are men who have sex with men (MSM) are particularly vulnerable to psychological distress as they face both HIV and sexual orientation stigma. We conducted mixed methods research of a qualitative study with (N = 31) individual interviews and 3 focus groups (n = 6 in each group), and a quantitative survey (N = 200) with HIV affected participants in Shanghai and Beijing, China. Our qualitative data revealed major themes of *forms of distress* experienced and *types of psychosocial support* that our participants wished they could have accessed upon diagnosis as well as *suggestions for intervention* structure that would be most feasible and acceptable. Our quantitative surveys provided further evidence of the high degree of psychosocial distress among recently diagnosed PLWHA. Our findings informed the development of the Psychology Toolbox intervention, a brief CBT skills-based intervention comprising an Automatic Thought Record, Behavioral Activation, and Paced Breathing, designed to be integrated into primary care for recently diagnosed PLWHA. We then conduct a pilot Type 1 hybrid effectiveness-implementation trial (Curran et al., 2012) implementing the Psychology Toolbox with recently diagnosed MSM for mental health outcome data as well as feasibility, acceptability, and appropriateness information. Ten recently diagnosed MSM at an HIV primary care center in Shanghai China completed the intervention provided by the first author. Paired-samples t tests demonstrate significant reduction in HIV-related distress, depression, problems with adjustment, as well as improvements in coping and perceived social support. Participants found the intervention highly acceptable and appropriate. Community advisory board members of nurses, physicians, a caseworker, a hospital administrator, and community peer leaders suggested that the intervention is feasible and appropriate. Future research will involve randomized controlled testing of the intervention in larger samples as well as among other recently HIV diagnosed populations.

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THE ROLE OF DISTRESS TOLERANCE IN ASTHMA OUTCOMES

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The Role of Distress Tolerance in Asthma Outcomes

Asthma is a chronic obstructive lung disease that affects nearly 19 million adults in the United States (CDC, 2015). If not well controlled through medical intervention, asthma can result in significant rates of morbidity and mortality. One important contributor to the negative impact of asthma is the presence of psychopathology, particularly panic psychopathology (Goodwin et al., 2010; McCauley et al., 2007). In order to better understand the association between asthma and panic psychopathology, recent literature has begun examining the role of anxiety-related cognitive risk factors in asthma outcomes. This work has primarily focused on the cognitive risk factor of anxiety sensitivity (AS; fear of arousal-related sensations; McNally, 2002) and found that higher levels of anxiety sensitivity are predictive of poorer asthma outcomes (Avallone et al., 2012; McLeish et al., 2011; McLeish et al. 2016). An important next step in this area of work is to explore associations between asthma and other anxiety-related cognitive risk factors. One such factor to examine in this regard is distress tolerance (DT), defined as an individual's perceived or behavioral capacity to withstand distress related to aversive affective states (Simons & Gaher, 2005; Zvolensky et al., 2011). Indeed, low DT is associated with increased risk for anxiety disorders as well as greater AS (Keough et al., 2010). Therefore, the aim of the current study was to examine the unique predictive ability of distress tolerance in terms of asthma control, asthma-related quality of life and lung function among non-smoking adults with current asthma. (n = 61; 61.9% female, 54.8% African-American, M_{age} = 34.72, SD = 13.58). Results indicated that, after controlling for the effects of age, race, and anxiety sensitivity, greater self-reported DT significantly predicted better lung function (β = .39, t = 2.80, p < .01), asthma control (β = .31, t = 2.77, p < .01), and asthma quality of life (β = .27, t = 2.53, p < .05). These findings suggest that developing interventions targeting DT may be an effective way to improve asthma outcomes.

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UTILIZATION OF COUNSELING SERVICES FROM RELIGIOUS LEADERS IN AFRICAN AMERICAN CHURCH POPULATIONS: THE ROLE OF RELIGIOUS COPING

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African Americans (AAs) are disproportionality affected by mental health issues. They are 20 percent more likely to experience serious mental health issues than the general population, and suicide is the third leading cause of death amongst AA males ages 15 through 24. AAs are half as likely to seek out mental health services than their White counterparts. The Black church is an institution of influence in the AA community, and has the potential to address mental health concerns for parishioners and community members served through outreach ministries. AAs have the highest rate of church attendance amongst all racial and ethnic groups in the United States, and they are more likely to seek out support for mental health issues and emotional stress within their church compared to other settings. In order to tailor interventions in AA faith-based communities, provide better access to care, and address mental health disparities, predictors of counseling-seeking behaviors within church communities should be examined. The present study examined potential predictors related to participants' seeking counseling (e.g. romantic relationship issues, family issues, mental health issues, financial/employment issues; range 0-9) from their pastor or a religious leader using baseline survey response from Project FIT (Faith Influencing Transformation), a health promotion intervention piloted in AA faith-based settings. Participants (N= 352) were predominantly female (*n* = 240, 68%) and an average age of 54 years old (*SD* = 13). Results indicated that 53% of participants sought counseling from their pastor or religious leader. Findings indicated that the top three reasons for seeking counseling from their pastor/religious leader were spiritual growth (25%), family issues (24%) and romantic relationship issues (22%). Preliminary analyses indicated significant relationships between seeking counseling and religiosity (r = .18, p = .003), past diagnosis of mental health condition (r = .18, p = .002), and mental health screening in the past 12 months (r = .14, p = .013). Seeking counseling was also significantly related to collaborative religious coping (r = .13, p =

.019) and self-directive religious coping (r = -.15, p = .009). Linear regression analyses revealed that collaborative religious coping (β = .12, p = .096) and self-directive religious coping (β = -.13, p = .038) predicted seeking out counseling. Religiosity, past mental health diagnosis, and recent mental health screening were not significant predictors of seeking counseling. Although religiosity and past diagnosis did not meet significance levels, results suggest a trend that they may impact counseling-seeking behaviors. Findings of this study suggest that tailoring interventions based upon religious coping style may increase the effectiveness and scope of mental health interventions in AA faith-based communities.

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ASSESSING MEASUREMENT INVARIANCE OF THE MODIFIED WEIGHT BIAS INTERNALIZATION SCALE

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Objective: The internalization of weight bias (i.e., having negative perceptions of one’s own weight) has been associated with eating disorders, psychopathology, and poorer quality of life. Definitions of weight bias have usually only included perspectives of individuals with overweight or obesity; however, an emerging literature suggests that biases are experienced across varying weight categories, sex, and race/ethnicity. The Modified Weight Bias Internalization Scale (WBIS-M), an instrument to assess internalized weight bias across all weight categories, has adequate internal reliability and validity. Yet to be examined is whether the construct of weight bias internalization is measured similarly across weight categories, sex, and racial groups. Accordingly, we examined measurement invariance of the WBIS-M in a sample of emerging adults.

Methods: Responses to the WBIS-M were collected from 425 college students (18-25 years old, M_{age}=19.6) from a MidSouth university subject pool (47% White, 52% Black, 72% female). Trained research assistants measured participants’ height and weight. Data obtained were used to calculate body mass index (BMI), 52.2% were categorized as normal weight (BMI= 18.5-24.9) and 47.8% as overweight/obese (BMI > 25). Mplus 7.4 was used to run a confirmatory factor analyses (CFA) to confirm the factor structure of the WBIS-M and multigroup CFA was used to examine if the WBIS-M assessed the same construct of internalized weight bias across weight, sex, and race by comparing fit across increasingly stringent models (configural, metric, and scalar).

Results: The CFA suggested that that WBIS-M has an adequate factor structure yielding acceptable fit with CFI of 0.93. Multigroup CFA suggested invariance across weight categories (normal weight compared to overweight/obese) and sex. However, race was not invariant yielding a decrease change in CFI > .01 at the scalar level.

Discussion: Although the WBIS-M adequately assessed weight bias internalization similarly across weight categories and sex, responses should be interpreted with caution when evaluating across racial groups, particularly with regard to mean differences. Future research

should explore potential cultural adaptions of the WBIS-M to ensure that internalized weight bias is captured consistently across race groups.

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AUTOMATED MEASUREMENT OF SCREEN TIME USING A WEARABLE LIGHT SENSOR

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Exposure to electronic screens (TV, computers) has been linked to a variety of health concerns, including obesity, cardiometabolic disease, sleeping disorders, circadian disruption, and socio-emotional disorders in children. These pathological manifestations are not only due to the sedentary behavior often associated with “screen time”, but are also the result of neuro-endocrinological pathways that are stimulated by blue light exposure. Unfortunately, there is currently no convenient automated method for collecting screen exposure data, and clinical research generally relies on fairly laborious or subjective conventional methods such as self-report, interviews, or direct observation. While the use of mobile devices such as smart phones and tablets can be tracked using software installed on the device, measuring the exposure to large (>36”) television or computer screens has remained elusive. Addressing this need, our group has developed a method for automated measurement of electronic screen exposure, which makes use of a color light sensor, which can be worn as a wrist band, necklace or pendant. By computing the time correlation between red, green, and blue light components, we show that is it is possible to create a machine learning model that can distinguish between electronic screens and other sources of ambient light. We present data collected from two different users and two different home environments using wrist band sensors, and achieved a classification score of AUC=0.90 for television alone, AUC=0.89 for computer alone, and AUC=0.83 for computer and TV combined; this compared favorably with traditional methods of screen time measurement. We also present screen time data from an ongoing clinical study (AHRQ R21 HS24001-02) of 60 children ages 6-12, in which we track specific behaviors associated with cardiometabolic risk over a period of 6 months. Given the widespread availability of wearable sensors, we believe that the integration of color light sensors for automated screen time measurement can serve as a useful tool for behavior medicine research. Sponsored by the SBM Behavioral Informatics and Technology SIG.

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CONFIRMATORY FACTOR ANALYSIS OF ILLNESS BEHAVIOR IN THE SWEDISH ADOPTION/TWIN STUDY OF AGING (SATSA)

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Background: Illness behaviors—or affective, cognitive, and behavioral responses to symptoms of illness—predict patient outcomes, including symptom exacerbation and functional recovery, and they account for a large proportion of U.S. healthcare costs. Although prior cross-sectional work has examined illness behaviors like symptom reporting in isolation, the measurement of illness behavior using a longitudinal, multi-indicator approach has yet to be explored. **Aim:** We evaluated illness behavior as a latent, developmental construct in the Swedish Adoption/Twin Study of Aging (SATSA). **Method:** Participants were up to 1,886 individuals (from 1,223 twin pairs) ages 29 to 102 years (M_{age} baseline = 62.32 years; *SD* = 13.69; 59% Female). Illness behavior indicators included somatic complaints, non-prescription medication use, pain-related disability and perceived illness complications. The psychomotor retardation subscale of the CES-D was used to index somatic complaints, and medication use was a simple composite of 9 dichotomous items on participants' use of non-prescription medications, such as over-the-counter analgesics, in the previous month. Pain-related disability included a simple composite of three dichotomous items on the presence of neck, back, or shoulder pain that prevented participants from performing daily tasks or activities. Perceived illness disability was a composite of difference scores, calculated from subtracting a physician panel's objective ratings of disability for each of 35 medical conditions (on a 3-point scale; 1= *Little or no disability*; 3= *Severe disability*) from participants' self-ratings of how much each of the same endorsed medical conditions interfered with their daily lives (on the same 3-point scale; 1= *Not at all*; 3= *A lot*). Positive composite scores reflected higher perceived disability relative to what was expected from the objective ratings, whereas a composite score of zero reflected "accuracy" or agreement in perceived illness complications. Confirmatory Factor Analysis (CFA) was used to evaluate invariance in the loadings of these four indicators on a latent illness behavior factor across four questionnaire waves (1987-2004). **Findings:** Confirmatory factor analyses revealed moderate factor loadings of the four indicators (standardized loadings ranged from .49 to .52, all *p*s < .0001). Also, practical fit indices from the nested model comparisons suggested strong factorial invariance in the loadings across

time (CFI = .96; TLI = .95, RMSEA= .03, 90% CI: [.026, .035]). **Conclusion:** Illness behavior as a latent, multi-indicator construct represents a promising focus for longitudinal work on behavior change and maintenance.

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CURRENT EXPERIENCES SCALE: AN ASSESSMENT OF RESILIENCY CONSTRUCTS

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Introduction: We present our perspective on resiliency as the ability to maintain effective and adaptive functioning in response to everyday stressors - the chronic stress of living. We propose that there are 3 core resiliency processes that can be intervened upon: (1) promoting relaxation methods through mind-body techniques; (2) enhancing stress awareness through cognitive behavioral techniques which decrease stress response; and (3) promotion of adaptive strategies through a positive psychology lens. Our multi-modal resiliency intervention is assessed by the Current Experiences Scale (CES), a self-report measure of resiliency recently adapted from the Posttraumatic Growth Inventory, is a promising measure for assessing this conceptualization of resiliency, though no research has examined associations between the CES and resiliency processes.

Methods: We used zero-order correlations to explore the relationships between the CES and validated measures of resiliency constructs: General Self-Efficacy Scale, Measure of Current Status (coping), MOS Social Support, Patient Health Questionnaire-8 (depression), Penn State Worry Questionnaire, and Generalized Anxiety Disorder-7 item (stress awareness components), and Life Orientation Test-Revised (optimism), Cognitive and Affective Mindfulness Scale (mindfulness), Gratitude Questionnaire, Interpersonal Reactivity Index (empathy) (positive psychology components). We also administered the Resilience Scale 14-item (RS-14). Measures were administered before 48 patients participated in the resiliency intervention.

Results: The CES significantly correlated with all resiliency constructs (all ps < .001):self-efficacy (r=0.80), coping (r= 0.72), optimism (r= 0.70), mindfulness (r=0.63), gratitude (r= 0.35), empathy (r= 0.51), social support (r=0.51). The CES also correlated with negative constructs; in particular, depression (r= -0.52), worry (r= -0.40), and anxiety (r= -0.33). Moreover, it significantly correlated with a standard measure of resilience (RS-14; r=0.81).

Conclusions: The CES mapped on to our resiliency model, significantly correlating with measures of resiliency processes in expected directions. The CES may be a useful assessment of our proposed resiliency constructs. This study has implications for broader uses of the CES for assessing healthy functioning and resiliency training.

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EVALUATING A VIRTUAL REALITY BUFFET TO MEASURE PARENT FOOD CHOICE BEHAVIOR

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Childhood nutrition and obesity are priority research areas and require further investigation to understand the feeding behaviors of parents. However, child feeding is difficult to measure, particularly in laboratory settings. As such, many studies rely on parent reports of feeding and feeding intentions, or of choices among static food images. A virtual reality-based buffet food choice simulation can measure parent feeding decisions in a realistic, yet completely controlled environment. In the virtual buffet, parents choose a meal for their child from an array of foods and beverages that vary in nutrient and calorie density. Data collected include type and amount of each food selected, nutritional metrics, timing, and orderings of selections. Given the novelty of this approach, there is a need to assess tool performance and acceptability among parents. Assessments were conducted over two studies. The first study included 221 mothers of 4-5 year old children. Mothers felt the feeding scenario was realistic (M=5.55, SD=1.41; 1-7 scale), and that they were able to select the intended amount of food (M=6.31, SD=1.08). In addition, the higher a mother's reported feeding restriction with respect to her child at pretest, the fewer calories she selected for her child in the virtual buffet; β=-.156, *p*=.023. The tool was also sensitive to intervention effects related to the presentation of childhood obesity information. The second study included 116 mothers and fathers of children ages 4-7. In this study, parents similarly perceived high realism of the virtual buffet simulation (M=4.29, SD=.88; 1-5 scale). In addition, those who indicated serving their child more fruits and vegetables on a food frequency questionnaire at pretest chose more fruits and vegetables in the buffet β=.421, *p*=.045. Accumulating evidence points to the virtual reality buffet simulation as a useful behavioral measure of child feeding that is associated with accepted external measures and is sensitive to feeding-relevant interventions.

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INTERPERSONAL VULNERABILITY SCALE: ASSESSING THE WILLINGNESS TO TAKE RISKS IN RELATIONSHIPS

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Vulnerability, though commonly regarded with negative connotations in the social sciences, has more recently been explored for its potential value. Brown’s (2006) qualitative research demonstrated that vulnerability may be associated with both relationship and mental health benefits, but quantitative research on this construct is scant or missing, and a scale has yet to be developed to measure vulnerability in this context. The purpose of this study was to develop and assess a newly developed measure of interpersonal vulnerability defined by the willingness to take risks in relationships. The interpersonal vulnerability scale (IVS) included 24 items with 4 six-item subscales assessing the willingness to (1) admit mistakes, (2) ask for help, (3) confront others, and (4) express love. Additional details related to the development of the scale will be published in a manuscript that is in preparation. The participants were 1,042 undergraduates (M_{age}=21.16; SD=6.12; 70.2% female; 46.5% Hispanic, 44.4% non-Hispanic Caucasian). Interpersonal vulnerability and a full range of mental health, social relationship, and personal strength variables were assessed. Exploratory factor analysis (EFA) of the IVS suggested the presence of 4 factors with each item loading onto the expected subscale, and all loadings were between .616 and .846. Confirmatory factor analysis (CFA) was used to examine construct validity. The sample was randomly split into a validation sample and a replication sample to allow for model respecification to improve model fit. After model respecification, the CFA provided acceptable fit ($c^2(184) = 615.858$; RMSEA = .067 (90% CI: .061, .073); CFI = .979). The final model consisted of one higher order factor (interpersonal vulnerability), and 4 lower order factors, which were the subscales. In the final model, one item was removed from each of the subscales except for the “ask for help” subscale which retained all 6 items. The final model demonstrated excellent internal consistency for the overall IVS at .940 and good to excellent internal consistency for each of the subscales, ranging from .878 to .928. The overall scale and subscales were generally related in the expected directions to the mental health, social relationship, and personal strengths measures. Differences in IVS scores according to gender an ethnicity were also explored. The findings suggest that IVS could be a valid and meaningful way to begin to assess vulnerability and how it interacts with health and well-being.

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OPTIONS FOR MEASURING THE QUALITY OF BEHAVIORAL AND PSYCHOSOCIAL CARE IN BARIATRIC SURGERY

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Quality of care measurement in behavioral medicine is not well developed relative to mental health or medical care. In particular, the psychosocial care of bariatric surgery patients is an area of behavioral medicine in which measures of care quality are under-developed. Given (a) increased stakeholder interest in measuring quality for system monitoring, (b) need for quality improvement in bariatric surgery, and, critically, (c) the importance of psychosocial evaluation and behavioral treatment options for this patient population, it is essential to identify and develop quality measures for both surgical and behavioral care of the bariatric patient. To this end, we conducted an environmental scan for measures available to research or monitor the quality of behavioral and psychosocial care in bariatric surgery. After developing a conceptual model, we searched accreditation standards, practice guidelines, quality measure inventories, reports from practice organizations, and peer-reviewed manuscripts. Existing quality measures or potentially-measurable concepts were abstracted if relevant to either surgical or behavioral processes of care in bariatric surgery. Of 226 measures or potentially-measurable concepts identified, 17 were related to behavioral or psychosocial care; 14 were potentially-measurable processes of care (e.g., referral to pre-surgical evaluation and support groups) and 3 were fully-developed outcome measures currently used for accreditation (e.g., excess weight loss after surgery). Although current outcome measures are promising, options appear limited for measuring the quality of behavioral health care processes in bariatric surgery. More work is needed to determine which behavioral or psychosocial care processes are most closely linked to outcomes. Future research should investigate how access, engagement, or process of care measures might be used to measure quality, particularly to inform care planning for complex outcomes that share medical and behavioral etiology, such as long-term weight loss and regain.

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OUTCOME OF THE STAKEHOLDER ENGAGEMENT IN QUESTION DEVELOPMENT (SEED) METHOD: A STAKEHOLDER DERIVED LUNG CANCER RESEARCH AGENDA

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Background: There is a need to engage the public in research to increase accountability, relevance, and transparency while generating new insights. Research topics are usually selected by researchers or sponsors, with minimal input from community stakeholders, and few frameworks have been developed for the collaborative generation of research questions. We tested a new method for engaging stakeholders in research question development around lung cancer outcomes which was a community identified health issue in this community.

Methods: The SEED (Stakeholder Engagement in quEstion Development) method is a model that engages stakeholders in the development of causal models to predict health outcomes, and development and prioritization of research questions. Stakeholders are engaged at three levels, collaborative, participatory, and consultative. A disparity in lung cancer outcomes was identified in Martinsville/Henry County, Virginia during a cancer needs assessment conducted in 2013. Eleven Martinsville community residents were recruited to be part of a participatory research team that collaborated on the development of a research agenda around lung cancer outcomes. Team members completed a stakeholder identification matrix to identify relevant stakeholder groups to participate in facilitated concept model building, research question development and prioritization. In addition, diverse stakeholders were consulted via interviews and focus groups to gather relevant information.

Results: The research team identified and recruited 22 participants in 3 stakeholder groups, (1) lung cancer patients and caregivers, (2) clinical care providers, and (3) individuals who influence access to healthcare. These groups identified 10 key stakeholders and 5 focus groups with a total of 20 participants from whom information was gathered to inform their lung cancer outcome concept models. Three separate concept models were developed by the groups and an average of 25 research questions were created per group. Through a facilitated process of prioritization, four research questions were selected per group resulting

in a final research agenda of 12 questions. These questions fell into 4 broad categories: barriers to care, quality of care, support systems/coping mechanisms, and social determinants of health.

Conclusions: The SEED Method effectively engaged key community stakeholders in the development of an actionable research agenda that addressed community relevant questions. Participants with diverse viewpoints brought a range of perspectives on the social and environmental factors affecting health behaviors, decision making and health outcomes. The SEED method has the potential to generate stakeholder centered research agendas on a variety of health-related topics.

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VALIDATION OF A SHORTENED VERSION OF THE CHILDREN’S EATING BEHAVIOR QUESTIONNAIRE IN A CLINICAL SAMPLE OF LATINO CHILDREN.

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Background: The Children’s Eating Behavior Questionnaire (CEBQ) is a psychometric tool commonly used to assess dimensions of child eating behaviors that contribute to overweight. This study focuses on the validity of the CEBQ through the associations of its three subscale scores with Body Mass Index (BMI). **Methods:** Participants were parents of 5-10-year-old Latino pediatric patients enrolled in an obesity prevention and control study. Parents rated each CEBQ item on a 5-point Likert-type scale (1= never to 5= always) to indicate the frequency of their child’s eating behavior. Child BMI (kg/m^2) was calculated using measured height and weight. BMI-for-age percentile was computed utilizing the standardized program for the 2000 Center for Disease Control Growth Charts. **Analysis:** CEBQ subscale scores were calculated by taking the mean of the item ratings if at least 80% were completed. Cronbach’s alpha was used to assess the internal consistency of the CEBQ subscales (5 FR, 4 SE, 5 SR). A principal components analysis (PCA) was conducted on 14 items of the CEBQ to confirm the theoretical factor structure and determine if its three subscales would be replicated in our sample. Separate multivariate linear regressions were conducted to examine the associations between scores on CEBQ subscales with child BMI-for-age percentile. **Results:** Parents (N = 295) completed the CEBQ in English (n = 22) or Spanish (n = 273). Children’s mean age was 7.6 years; 38% of children were overweight and 45.1% were obese. PCA showed a relatively similar factor structure to the original CEBQ subscales, with acceptable internal consistency and between-subscale correlations. Analyses demonstrated the validity of the three subscales, as child BMI was positively associated with food responsiveness ($\beta = 0.336$, $P \leq 0.001$), and negatively associated with slowness in eating ($\beta = -0.209$, $P \leq 0.001$) and satiety responsiveness ($\beta = -0.211$, $P \leq 0.001$). **Conclusion:** The 14-item CEBQ scale may be a useful tool to assess obesogenic eating behaviors of Latino children. However, further study is needed to replicate our findings.

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CHANGES IN CPAP ADHERENCE OVER TIME ARE MODERATED BY PTSD AND DEPRESSION STATUS IN VETERANS

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Sleep apnea has great public and personal health costs including risk for morbidity and early mortality. CPAP treatment is clinically efficacious, yet has high rates of non-adherence. To empirically identify risk-factors responsible for this low adherence, this study examines psychological determinants (i.e., PTSD and Depression) of 24-week CPAP adherence. As a secondary analysis from a large parent study on CPAP adherence, *N*=390veteran participants ages 24–88 years (*M*=53.85, *SD*=12.33) were grouped by two independent predictors indicating presence or absence of PTSD and depression. Adherence was objectively measured via average nightly minutes of CPAP machine worn over course of 24-week treatment. We hypothesized veteran participants with *either* PTSD or depression would display poorer adherence than non-disordered participants. In addition, veterans with comorbid PTSD *and* Depression would adhere poorest to CPAP relative to non-disordered veterans and those with either condition alone. A multilevel model (MLM) tested the 3-way interaction between PTSD and Depression over time on CPAP adherence. Controlling for covariates, age, type of PAP, PAP pressure, apnea/hypopnea severity, comorbid insomnia symptoms, and medical comorbidities, results showed a significant main effect of Time (*b*=-7.37, *t*(304)= -2.06, *p*=.04), such that CPAP adherence differed during the first week among the groups. Additionally, we found a significant PTSD*Time interaction (*b*=-10.12, *t*(321)= -2.56, *p*=.01), but not with Depression*Time (*p*= .19), such that having PTSD quickened the decline of CPAP use. However, quadratic change of Time^2*Depression was significant (*b*= .27, *t*(195)= 2.16, *p*=.032), such that those with depression showed early decline but later improvement over time. As hypothesized, we found significant interactions for Time*Depression*PTSD (*b*=12.36, *t*(315)=2.71, *p*=.01) and Time^2*PTSD*Depression (*b*= -.52, *t*(207)= -2.22, *p*=.028), indicating that quadratic change depended on the presence of mental illness. We found those dually diagnosed with PTSD and Depression evidenced the lowest overall CPAP adherence through the initial phase of observation. These results infer potential clinical utility in considering premorbid mental health history in the context of long-term sleep apnea treatment. Findings also underscore the need for targeted intervention strategies to boost behavioral adherence

in patients with mood and trauma conditions—particularly those with psychological comorbidity.

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D169 10:00 AM-11:00 AM

SUICIDALITY AMONG VETERANS WITH GULF WAR ILLNESS

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Background: Suicide, the 10th leading cause of death in the U.S., is a serious public health issue that has warranted national prevention efforts, including the identification of vulnerable populations. Compared to U.S. civilian adults, Veterans are at a disproportionately high risk for suicide (~21% greater), accounting for ~18% of suicides though they only constitute ~8.5% of the population. The majority of Veteran suicides (~65%) are by those $\geq$50 yrs. Veterans deployed to the Gulf War often experience several medically unexplained physical, neurocognitive, and affective symptoms collectively known as Gulf War Illness (GWI). Many aspects of GWI overlap with factors associated with increased suicidality, including chronic pain, insomnia, functional limitation, impaired executive functioning, depression and PTSD. Demographic factors combined with comorbid chronic health problems may increase vulnerability for this subpopulation. **Objective**: Describe suicidal thoughts and behaviors among Veterans with GWI. **Method**: During screening for an active RCT, Veterans who experience symptoms of GWI were assessed for suicidality using the Columbia Suicide Severity Rating Scale (C-SSRS). Those who met eligibility criteria for the RCT were included in the analyses. **Results**: This sample of Veterans with GWI (N=70) was primarily White (66.2%), male (94.1%), M_{age}=50.6 yrs., and 86.8% receiving disability. In their lifetime, 12.9% of these Veterans reported a past suicide attempt. The majority (~75%) of first suicide attempts occurred within 5 yrs. postdeployment, and the modal number of lifetime attempts was one. Examination of current suicidal ideation (past 6 months) showed 22.9% of Veterans endorsed passive ideation (i.e., wishing they were dead or wishing they could go to sleep and not wake up) and 7.1% reported having actual thoughts of killing themselves. Of those with current suicidal ideation, 4.3% reported thinking about how they would commit suicide. **Conclusions**: This preliminary exploration of suicidality among Veterans with GWI suggests that they may

be at an increased risk for suicide given their vulnerability factors and evidenced by their rates of past suicide attempt and current ideation. **Limitations**: This sample consisted of self-selected participants in a research study for GWI. The rates could be an underestimate given that more serious suicidality was an exclusion criterion. A larger sample size is necessary to provide more accurate population estimates.

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D170 10:00 AM-11:00 AM

A PILOT RANDOMIZED CONTROLLED TRIAL TO DEVELOP A PRESCHOOL OBESITY INTERVENTION FOR WIC FAMILIES: OUTCOMES AND LESSONS LEARNED

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Background: Preschoolers from low-income backgrounds are underrepresented in weight control trials despite persistent obesity disparities. This study examined the feasibility, acceptability, and preliminary efficacy of a 4-month, 14-session community and home-based preschool obesity intervention for families enrolled in WIC developed from our formative work.

Methods: Families were recruited from Detroit WIC clinics and randomized to WIC standard of care (W-SOC) or W-SOC+behavioral intervention (BI). BI was led by a community health worker, targeted reduction in obesity status for preschoolers and caregivers, and included the following components: diet and activity education, behavioral strategies for weight regulation, child behavior management training, and life skills (e.g., budgeting, time management). Preschooler and caregiver height and weight were measured at baseline, end of treatment (4-months), and 3-months post-treatment (7-months). Caregivers also completed semi-structured qualitative interviews about their intervention experience at the 4- and 7-month assessments.

Results: Nineteen preschooler(47% girls, 100% African American, M_{age}=3.14±0.73 years, M_{BMIz}=2.47+1.34) and caregiver (90% mothers, M_{BMI}=42.32+12.91) dyads enrolled (49% recruitment). At treatment end, BMIz decreases were greater for preschoolers who completed the intervention (n=2; M=-0.33) than partial intervention completers(n=7; M=-0.09) or W-SOC preschoolers (n=4; M_{WSOC}=-0.15). By 3-months post-treatment, BMIz decreases were greater for preschoolers who received at least some intervention ($M_{Completers}$=-0.46, $M_{Partial}$=-0.32) compared to W-SOC(M=-0.19). Caregiver percent weight loss was greater at the end of treatment for those who received intervention compared to W-

SOC $M_{Completers}$=-3.57, $M_{Partial}$=-1.70, M_{WSOC}=0.36) and 3-months post-treatment ($M_{Completers}$=-5.27, $M_{Partial}$=-0.48, M_{WSOC}=0.16). In qualitative interviews, intervention families (including drop outs) reported high intervention satisfaction and offered suggestions to improve feasibility and acceptability (e.g., all home-based program).

Conclusions: Findings suggest brief, intensive, family-based BI may be a promising approach for reducing obesity disparities in early childhood. Future research to identify strategies that improve intervention enrollment and retention among low-income families of preschoolers into weight control trials is necessary to fully evaluate the efficacy of this intervention.

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D171 10:00 AM-11:00 AM

ACCUMULATIVE AND DYNAMIC EFFECTS OF PARENT-CHILD RELATIONSHIP ON CHILD'S ADIPOSITY DEVELOPMENT

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Introduction: Cross-sectional studies found parent-child relationships affect child's development, but the effects may be accumulated and also vibrant through time. Besides, few studies differentiated between maternal and paternal relationship effects on children's health. Using longitudinal Study of Early Child Care and Youth Development, this study explores the dynamic and cumulative effects of child-parent relationships on child's adiposity development.

Methods: From age 12 to 15 years 844 children with 4 complete annual measurements of average triceps skinfold thickness (ATST), body length and weight were included for analyses. Both parents reported their perceived relationship with the child 6 times from child age of 54 months to 12 years. Accumulative effects of parent-child relationship were calculated as the average scores of all measurements, while dynamic effects are calculated as the slopes of relationship scores regressed on child's age. Multilevel models were employed to explore the effects of accumulative and dynamic relationship effects on the development of child's BMI percentile and ATST, with adjustment of family income-to-need ratio, education level, and gender.

Results: In mother-child relationship, both accumulative and dynamic conflict scores were found to increase child's ATST over time (b=0.10 P=0.04, and b=0.20 P=0.02, respectively), while the dynamic total positive score decreased ATST over time (b=-0.13 P=0.03). In father-child relationship, the accumulative effects of closeness and total positive relationship scores decreased child's BMI percentile over time (b=-0.09 P=0.02, and b=-0.03 P=0.04, respectively), but the dynamic effect of conflict decreased child's BMI (b=-0.19 P=0.04) while the dynamics in closeness and total positive scores increased BMI (b=0.29 P=0.01, and b=0.09 P=0.01, respectively). We did not find any significant effects of mother-child relationship on BMI nor effects of father-child relationship on ATST.

Conclusion: Long-term parent-child relationships influence child's adiposity development through accumulative and dynamic processes and the dyadic effects are different from mother to father.

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D172 10:00 AM-11:00 AM

DIETARY INTAKE AND PHYSICAL ACTIVITY RESULTS FROM MIM TARGETING YOUNG LOW-INCOME OVERWEIGHT AND OBESE WOMEN

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Background. *Mothers In Motion* was a community-based lifestyle behavioral intervention aimed to help young low-income overweight and obese mothers with young children prevent further weight gain. The objective was to test the intervention effect on dietary intake (total fat, fast food, fruit and vegetable) and physical activity. **Method**. Participants (N = 569) were recruited from 7 Special Supplemental Nutrition Program for Women, Infants and Children (WIC) offices in Michigan. Eligible participants were randomly assigned to an intervention (n = 387) or a comparison (n = 182) group. During the 16-week intervention period, intervention participants watched theory-based culturally sensitive videos (in DVD format) at home. The videos featured peers from the target audience who provided personal testimonies and skill demonstrations for recommended lifestyle behavioral changes. Participants also dialed into peer support group teleconferences led by peer educators or WIC dietitians using motivational interviewing and group facilitation skills. Total fat, fast food, fruit and vegetable intakes and physical activity were measured at baseline (T1), immediately following (T2), and 3 months after the 16-week intervention (T3). Intervention effectiveness was tested via general linear mixed modeling. **Results**. Compared to the comparison group, the intervention group ate significantly less total fat (effect size [D] = 0.24) at T2, but intervention effect diminished at T3. Also, the intervention group ate fast foods less frequently (D = 0.31) at T2 but not T3. We did not find any statistically significant differences in fruit and vegetable intake and physical activity between the intervention and comparison groups at T2 and T3. **Conclusion**. *Mothers In Motion* was effective in helping participants make changes in fat and fast food intakes, but the changes did not endure 3 months after the intervention period.

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D173 10:00 AM-11:00 AM

EATING RESPONSES TO EXTERNAL FOOD CUES AND INTERNAL SATIETY SIGNALS IN WEIGHT DISCORDANT SIBLINGS

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Background: Compared to normal-weight children, overweight children are more responsive to external food cues and less sensitive to internal satiety signals. Both mechanisms may promote greater energy intake. Adolescents show less compensation for prior energy (kcal) intake than children, suggesting that the ability to regulate kcal intake may decrease with age. Studies of fraternal siblings discordant for weight status control for genetic and within-family factors, allowing examination of non-shared environment that may explain intra-family weight differences.

Objective: Two randomized controlled trials determined whether weight-discordant sibs would differ in responsiveness to external food cues and compensation for prior kcal intake. It was predicted that compared to their non-overweight sibs, overweight sibs would consume more kcal in response to external food cues and would compensate less for prior kcal intake.

Methods: Results are from same-sex biological sibs (N = 38 pairs). For cue reactivity, sibs were exposed to an appetizing food (pizza) and allowed to consume as much as they desired. For compensation, sibs were given a low-calorie or a high-calorie preload, followed by dinner. Multilevel models predicted kcal intake, cue responsivity, and compensation. Predictors included gender, birth order, adiposity group, perceived parental control of child's feeding, and children's dietary restraint.

Results: There was little sibling similarity (ρ = 0.08) for cue responsiveness. For compensation, a slight sibling similarity was found, ρ = 0.20. Sib groups did not differ in kcal intake, in both experiments. Sib differences in zBMI were not predicted by differences in cue responsiveness or compensation, but were associated with differences in eating restraint.

Conclusion: Sibs differ in their responses to internal and external food cue responsiveness. However, these differences did not predict differences in sib adiposity. Thus, other non-shared factors must contribute to adiposity differences.

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EVALUATION OF METHODS FOR PREDICTING DAILY ENERGY INTAKE AND HANDLING MISREPORTING IN PREGNANT WOMEN

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Background: Energy balance modeling is critical to understanding the effects of an intervention to manage gestational weight gain (GWG); however, its effectiveness is limited as a result of energy intake (EI) misreporting. Traditional methods for identifying under-reporting are limited, as participants are often excluded from analyses if identified as misreporting. **Methods**: We examined a series of novel model-based approaches originating from systems science techniques (system identification and state estimation) to characterize reporting accuracy of 17 overweight and obese pregnant women (OW/OBPW; age *M:* 28.9, *SD*: 5.1, and BMI *M:* 29.6, *SD:* 4.0) participating in an intervention to manage GWG. Method 1 back-calculates energy intake from a closed-form energy balance model and daily weight and physical activity measurements. Method 2 applies a constrained semi-physical identification approach that estimates the extent of systematic under-reporting in the presence of noisy measurements and possibly missing data. Method 3 is an adaptive algorithm that uses Kalman filtering. **Results**: Misreporting was common among the intervention population, with under-reported EI (determined as a percentage of participant-reported EI from MyFitnessPal (MFP)) ranging from 5.2% to 118% for Method 1. Despite conceptual differences between the techniques, the estimated % EI under-reported by the intervention population was similar among the three methods, consisting on average of *M:* 50.9% *SD*: 35% for method 1, *M*: 39.7%, *SD*: 42% for method 2, and *M:* 48.3% *SD:* 29% for method 3. All three methods led to better predictions of GWG in comparison to reported EI. **Conclusion:** Understanding EI under-reporting is an important consideration in a GWG intervention for OW/OBPW, which must be recognized in order to obtain meaningful weight predictions from energy balance models. The examined methods are amenable for use in real-time clinical settings, which remains a topic for further study.

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D175 10:00 AM-11:00 AM

IMPULSIVITY MODERATES THE RELATIONSHIP BETWEEN AFFECTIVE AND PHYSICAL STATES AND DIETARY LAPSES: AN EMA STUDY.

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Lack of success in weight loss programs can be partially attributed to lack of adherence to dietary recommendations, i.e., dietary lapses. Yet, research attempting to identify momentary predictors of dietary lapses is mixed, potentially because there are baseline characteristics that moderate the relation between momentary factors and subsequent lapse occurrence. In particular, baseline levels of impulsivity (i.e., the tendency to make decisions without proper forethought), a well-established correlate of obesity and weight outcomes, may moderate the relation between momentary changes in affective and physical states and likelihood of dietary lapses.

As such, we examined baseline impulsivity as a moderator of the relation between momentary changes in affective and physical states and the subsequent likelihood of lapse occurrence in overweight and obese adults (n=190) completing a 2-week ecological momentary assessment (EMA) protocol at the beginning of a behavioral weight loss intervention. Specifically, we examined inhibitory control (the ability to inhibit a prepotent response) and negative urgency (the tendency to act rashly in the context of negative affect) as baseline moderators. Generalized estimating equations indicated that the relation between increases in stress and likelihood of lapsing was more pronounced for those with poorer inhibitory control (b=.001, p=.01). Similarly, the relation between increases in loneliness and subsequent lapse likelihood was strongest for those higher in negative urgency (b=.32, p =.03). Interestingly, the relationship between momentary increases in hunger and subsequent lapse likelihood was strongest for those lower in baseline levels of negative urgency (b=-.23, p

Results support the notion that baseline impulsivity moderates the relationship between momentary changes in affective and physical states and subsequent lapse likelihood. Impulsivity may strengthen the relationship between affective states and subsequent lapses, while increases in physical states, such as hunger, may be particularly predictive of lapses for those lower in impulsivity. With replication, results could point towards tailoring the provision of weight loss strategies based on impulsivity level.

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D176 10:00 AM-11:00 AM

INDIVIDUALS' PERSPECTIVES ON FACTORS INFLUENCING THE DECISION TO INITIATE WEIGHT LOSS TREATMENT

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Background: Although effective behavioral weight loss treatments are available, only a small portion of adults with obesity initiate these treatments. We sought to understand individuals' perspectives on factors contributing to initiation of behavioral weight loss treatment. **Methods:** Our population was adults with obesity who reported an effort to lose weight in the past year. Participants were recruited at primary care clinics and at commercial- and health system-based behavioral weight management programs. We conducted three focus groups with individuals who had initiated treatment in the past year (n=27), and three focus groups (n=24) and eight individual interviews with individuals who had not initiated treatment in the past five years. Questions focused on reasons for initiating or not initiating treatment. Directed content analysis was used to analyze transcribed data. **Results:** Participants were 61% female, 51% Caucasian, and had a mean age of 55 years. Five domains were identified: treatment content, practical aspects of treatment, social aspects of treatment, evaluation of the evidence, and identity factors. Treatment content factors that reportedly influenced treatment initiation included prescribing of certain foods, how individualized treatment would be, and how much of the content would be new to participants. Practical treatment features reported to be important included reasonable cost, schedule compatibility, and delivery modality. For some participants, treatment entry was motivated in part by social aspects of treatments, including accountability and enhancement of motivation through support or competition; alternatively, some viewed social aspects as reasons to avoid treatment due to risk of embarrassment, disappointing others, and loss of autonomy. Participants were influenced by their evaluation of the evidence for treatment effectiveness, which was driven by their prior experiences, observation of others' experiences, health care providers' advising, and trust in the information source. Also relevant to treatment initiation were identity factors, including perception of obesity severity, desire to be self-sufficient, and viewing treatment use as consistent with identity. **Conclusions**: These factors can inform strategies to increase treatment initiation, thereby increasing population weight loss.

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D177 10:00 AM-11:00 AM

INTEGRATING MINDFULNESS INTO A PHONE-BASED BEHAVIORAL WEIGHT LOSS PROGRAM: A RANDOMIZED PILOT STUDY

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In an attempt to improve weight loss outcomes in those with high levels of emotional eating, the present project integrated mindfulness and mindful eating training into an existing phone-based behavioral weight loss program delivered by health coaches. Participants were enrollees into the employer-sponsored weight loss program with starting BMI between 25 kg/m^2 and 35 kg/m^2 and who had high levels of emotional eating.

Seventy-five participants were randomized to the new mindfulness weight loss program (n = 50) or the standard behavioral weight loss control (n = 25). They ranged in age from 26 to 68, were predominately white non-Hispanic (65.3%) females (92%) with some college (95%), and had a mean BMI (31.5 kg/m^2) in the obese range. Nearly half (46.6) had clinically significant anxiety (GAD-7 scores of > 10).

Results: Percent weight lost did not significantly differ for intervention (m = 2.7%, SD = 4.9%) vs. control (m = 3.1%, SD 3.7%) at 6 months. Intervention participants had significantly better scores at follow-up on mindful eating (F = 9.3 (1, 66), p < .01), binge eating (F = 8.29 (1, 63), p < .01), weight related experiential avoidance (F = 8.55 (1, 63), p < .01), and one mindfulness subscale (F = 21.63 (1, 63), p < .001). At follow-up, 25.6% of the intervention group had clinically significant anxiety compared to 45.5% of control participants, $\chi^2(1,N=65)=2.63$, p = 0.11. Exploratory analyses showed that improvements on several measures predicted more weight loss in the intervention group: mindful eating, $r_\tau(n = 40) = -0.24$, $p = 0.03$, disinhibition, $r_\tau(n = 40) = -0.26$, $p = 0.02$, and weight related experiential avoidance, $r_\tau(n = 38) = 0.25$, p = 0.03. Intervention participants who meditated the most lost twice as much weight (4.39%) as those who meditated less or not at all (1.96%), p = .13.

Conclusions. This small randomized pilot found that integrating mindfulness into a phone-based behavioral weight loss program was feasible and acceptable, but did not produce more weight loss. However, intervention participants decreased binge eating and anxiety.

Mechanisms of change observed in the intervention group suggest that some who embrace mindful eating and meditation may lose more weight with mindfulness. Future research should investigate how to identify those who might benefit from this type of intervention.

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META-ANALYSIS OF THE PREVALENCE OF CLINICAL AND SUBTHRESHOLD BINGE EATING BEFORE AND AFTER BARIATRIC SURGERY

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Recurrent binge eating has been associated with lower quality of life, impaired functioning, psychological comorbidities, higher body weight, and related cardiovascular and metabolic health problems. Recent studies also suggest distress is comparable among those with Binge Eating Disorder and subthreshold binge eating behavior, yet prevalence varies widely across studies. The present study sought to synthesize this literature by using meta-analytic techniques to better estimate the prevalence of both BED and subthreshold binge eating among obese adults before and after weight loss surgery and assess the degree of heterogeneity among these studies.Odds ratios were extracted from eligible studies using standardized assessments to determine the prevalence of BED or subthreshold binge eating in a single sample of adults at pre-surgical baseline and post-surgical follow-up. Separate meta-analyses were performed for the prevalence of BED and subthreshold binge eating. Odds ratios (ORs) were extracted from 16 published studies reporting on a total of 1,481 bariatric patients; 9 reported the prevalence of BED, 11 reported the prevalence of subthreshold binge eating. A binary random effects model indicated the prevalence of BED was nearly six times greater at baseline than follow-up (OR: 5.89, 95% CI [3.05, 11.39]), with an I^2 statistic indicating 45% of the variance among studies was attributable to heterogeneity rather than chance. Prevalence of subthreshold binge eating was more than four times greater at baseline compared to follow-up (OR: 4.34, 95% CI [2.33, 8.08], with 81% of the variance attributed to heterogeneity. This study is among the first to quantify changes in the prevalence of binge eating before and after bariatric surgery. While not causally interpretable, it is interesting to note that studies consistently reported a large and significant decrease in binge eating following bariatric surgery, even when criteria were adjusted to accommodate the consumption limitations imposed by the procedure. Future research may wish to examine whether differences in heterogeneity stem from variations in study methodology or real variation in treatment effects, as the latter offers the opportunity to identify factors which may modify the impact of treatment.

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D179 10:00 AM-11:00 AM

OBESE GIRLS HAVE LOWER INTERPERSONAL TRUST SCORES THAN HEALTHY WEIGHT GIRLS

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Purpose: The purpose of this study was to describe the relationship between interpersonal trust beliefs and body mass index (BMI) in a sample of adolescents.

Rationale: A need exists for innovative interventions targeting weight self-management among adolescents. Our study presents preliminary evidence supporting the addition of trust as a component in weight self-management interventions for use with adolescents.

Methods: Participants were 211 adolescents aged 14-19 years attending public high school in the Midwestern United States. Trust beliefs were measured using the total trust score from the ten Likert items of the Interpersonal Trust in Physician Scale. BMI was determined using self-reported height and weight following measurement during a school screening. The relationship between interpersonal trust and BMI was evaluated using correlation. Differences between underweight, healthy weight, overweight, and obese BMI groups were evaluated using ANOVA.

Results: Overall, trust had a small, negative correlation with BMI ($r = -.17$, $p = .02$), and a medium, negative correlation among girls ($r = -.30$, $p = .002$). There were no statistically significant linear relationships between trust and BMI for boys. One-way ANOVA demonstrated significant differences in trust scores according to BMI group among girls [$F(3, 99) = 4.3$, $p = .007$] with a large effect size ($\text{eta}^2 = .12$). Posthoc Tukey comparisons indicated the mean trust scores were significantly different between the healthy BMI and obese BMI groups of girls.

Conclusions: Results of this study support inclusion of trust-building as a component in weight self-management interventions for use with adolescents.

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D180 10:00 AM-11:00 AM

PERCEPTIONS OF WEIGHT STIGMATIZING COMMENTS AND COMMENTERS: THE INFLUENCE OF SOCIAL DISTANCE AND COMMENTER CHARACTERISTICS.

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Objective: The purpose of the study was to examine factors that affect perceptions of weight stigmatizing comments including characteristics of the commenter and their relationship to the individual receiving a weight stigmatizing comment.

Methods: Participants were 844 (*M* age = 18.6, 66.6% Female, 76% European American) students recruited from a large southeastern university. Participants viewed a vignette describing an overweight woman receiving a weight stigmatizing comment from a target individual. The target individual's weight (thin/overweight), social relationship (friend/romantic partner/salesperson) and gender (male/female) were manipulated and participants provided personality trait ratings (hard working, will power, self-sacrificing, good self-control, good self-esteem, intelligent, successful, kind) and ratings of acceptability of the comment made by the target individual.

Results: There was a significant interaction between social relationship and gender $F(2,762)=6.41$, $p=.002$ with $\eta^2=.02$, such that when the target was a male romantic partner or salesperson, they were rated significantly more negatively than male friend targets, while female friend and salesperson targets were rated more negatively than female romantic partner targets. In addition a significant main effect was found for weight $F(1,762) = 35.65$, $p < .001$ with $\eta^2=.05$ indicating that overweight targets were rated more negatively on personality traits than thin targets in all conditions. Additionally, there was main effect of social relationship on social acceptability $F(2, 821) = 36.14$, p2=.08. Post hoc analysis using a Bonferronni correction indicated that participants viewed the stigmatizing comment from the salesperson target as more unacceptable than a comment from a romantic partner or friend, while there were no differences in acceptability of the stigmatizing comment from the friend or romantic partner targets.

Conclusions: The acceptability of weight stigmatizing comments and the perception of commenters is dependent on their social distance from the individual receiving the comments and the gender and weight status of the commenter.

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D181 10:00 AM-11:00 AM

PREVALENCE OF OBESITY IN AUTISTIC YOUTH FROM 2003 TO 2011: TRENDS IN ENVIRONMENTAL AND BEHAVIORAL RISK FACTORS

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Prevalence of Obesity in Autistic Youth from 2003 to 2011: Trends in Environmental and Behavioral Risk Factors

Background: Obesity occurs at higher rates in youth with autism spectrum disorders (ASD); however, little is known about trends in the co-occurrence of ASD and obesity across recent years.

Objectives: Using nationally representative samples from 2003, 2007, and 2011, examine changes over time in ASD diagnosis as a risk factor for obesity, trends in environmental and behavioral factors contributing to obesity independent of ASD, and the impact of functional limitations and diagnostic severity on the likelihood for obesity in youth with ASD.

Methods: Data from youth age 10-17 collected from the 2003, 2007, and 2011 National Survey of Children's Health were used. Binary logistic regression models were conducted for each year examining the impact of ASD diagnosis, environmental and behavioral factors, functional limitations, and diagnostic severity on obesity rates in individuals with and without a self-reported ASD diagnosis.

Results: Prevalence of ASD increased at each time point; prevalence of obesity in ASD youth increased from 2003 (22.64%) to 2007 (30.17%) then decreased in 2011 (23.42%). Youth with ASD demonstrated approximately 1.5 times the risk for obesity compared to those not diagnosed in 2003 and 2011, and nearly twice the risk for obesity in 2011 (2003 OR=1.48; 95%CI=0.99-2.21; 2007 OR=1.94; 95%CI=1.56-2.41; 2011 OR=1.43; 95%CI=1.22-1.68). Environmental and behavioral risk factors consistently associated with increased rates of obesity in youth with ASD included age, race, gender, socioeconomic status, screen time, and physical activity (p's < .001). Prevalence rates of mild and moderate diagnoses of ASD rose from 2007 to 2011, however those who reported a more severe diagnosis were more likely to

be obese compared to those who reported a mild diagnosis in both years (2007 OR=2.27; 95%CI=1.11-4.62; 2011 OR=1.53 95%CI=1.08-2.17). Functional limitations associated with ASD were related to significantly increased risk for obesity in youth with ASD (p’s < .05).

Conclusions: ASD is a significant, consistent risk factor for obesity. Environmental and behavioral factors that increase likelihood of ASD and obesity in youth (i.e., age, gender, race) appear to contribute to the increased risk of co-occurrence. Additionally, severity of ASD diagnosis and functional differences associated with the diagnosis contribute to increased risk of obesity in youth with ASD.

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D182 10:00 AM-11:00 AM

PSYCHOMETRIC EVALUATION OF THE BARRIERS TO HEALTHY EATING SCALE IN FOUR WEIGHT LOSS STUDIES

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Background: The Barriers to Healthy Eating (BHE) scale was developed to measure factors that may thwart adherence to a weight management eating plan such as food shopping, affordability, or emotions related to food intake restriction. **Objective:** The purpose of this study was to evaluate the internal consistency, construct validity and convergent validity of the BHE in four independent weight loss intervention studies conducted over a 12-year period. We hypothesized a moderate negative correlation between the BHE total score and the Weight Efficacy Lifestyle Questionnaire (WEL) total score. **Methods:** Internal consistency was assessed using Cronbach's α and convergent validity was tested by correlating baseline BHE and WEL total scores. Principal component analysis (PCA) with Promax rotation was performed to examine the factor structure of the BHE. Analyses were conducted separately for the four sequential studies: PREFER (2002-2004, N=176), SMART (2006-2008, N=197), SELF (2009-2011, N=129), and EMPOWER (2012-2014, N=129). **Results:** The four samples had similar gender (female 82.9% - 89.9%) and race (white 70.5% - 81.4%) distributions. Compared to the two earlier studies, participants in SELF and EMPOWER studies were significantly older (51.9 ± 10.2 vs. 45.4 ± 9.1). Across the four studies, Cronbach's α for the BHE ranged from 0.85 to 0.88. Total scores for the BHE and the WEL were moderately negatively providing support for the convergent validity of the BHE (r = -0.51 to -0.59, pself-control and motivation, food preparation, *absence satisfaction*, and *social support*. *Food preparation* accounted for a larger proportion of variance (28.6%) in the EMPOWER study. **Conclusion:** The BHE showed very good psychometric properties across the four studies, supporting its use in measuring factors that may influence an individual's ability to overcome barriers to adopting a healthy eating pattern that supports improved weight loss and maintenance. Additional work is needed to examine the psychometric properties in more diverse samples having a greater proportion of males and those with less education.

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D183 10:00 AM-11:00 AM

TARGETING BODY IMAGE AMONG ADULT WOMEN ATTEMPTING WEIGHT LOSS: IMPACT ON EATING, EXERCISE, QUALITY OF LIFE, AND WEIGHT

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Body dissatisfaction (BD) is prevalent among overweight and obese adults. Because negative body image is a risk factor for maladaptive eating and exercise behaviors, it may be a barrier to weight loss. This study targeted BD among overweight and obese women by evaluating effects of a randomized intervention on eating and exercise behavior, quality of life (QOL), and weight loss.

Overweight and obese women (n=44; 71%white; 7.9±7.6years; BMI: 30.5± 2.9) were recruited and screened for BD and a desire to lose weight. Participants were randomized to one of two, 4-week, treatment conditions: a usual care (UC) group (n=21) engaged in daily tracking of diet and activity level; or an intervention (INT) group (n=23) engaged in daily tracking with four weekly, one-hour Body Project group meetings. The Body Project is a widely studied intervention designed to target BD among adolescent females. At baseline and program completion, height/weight were measured and participants completed self-report questionnaires of body image, eating and exercise, and QOL. Analysis of variance (ANOVA) was utilized for analyses.

Results indicated time main effects for BMI (F(1, 33)=8.00, p=.01), BD (F(1, 33)=14.93, p < .001), and QOL: mental (F(1, 33)=7.05, p=0.01), physical (F (1, 32)=5.19, p=0.03) and weight-related (F(1, 33)=17.33, p < .001). In both groups, BMI and BD decreased and quality of life improved. Neither group reported change in thin ideal internalization, body appreciation, eating- and exercise-related variables, or negative affect. Post-hoc repeated measures ANOVAs among individuals who endorsed elevated BD (n=26) at baseline revealed significant time by group interactions for body appreciation, thin ideal internalization, and BMI. Improvements in all outcomes were observed only in the INT group.

The results suggest that BD can be targeted successfully among adult women attempting weight loss, but not all individuals may benefit from body image treatment. Among women with elevated BD, the Body Project intervention generated beneficial results and could be useful in treating select participants in behavioral weight management.

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D184 10:00 AM-11:00 AM

THE EFFECT OF NEIGHBORHOOD WALKABILITY ON BMI, A RETROSPECTIVE LONGITUDINAL STUDY OF 1.7 MILLION MILITARY VETERANS

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Background

Attributes of the built environment thought to support or present barriers to physical activity are correlated with residents' body weight but causal relationships have proven difficult to demonstrate. The Weight and Veterans' Environments Study I is a retrospective longitudinal study of over 2.5 million military veterans living in U.S. metropolitan areas and receiving Department of Veterans Affairs health care. The objective of this analysis was to determine the extent to which neighborhood walkability helped people to maintain healthier BMI over time, up to 6 years.

Methods

The analytic sample was 1,522,848 men and 183,619 women aged 20-65 at baseline. For each study year, we constructed a walkability index based on population, housing, street intersection, and walking destination density and percentage of 4-way intersections within 1 mile of veterans' homes. The VA Corporate Data Warehouse provided veteran BMI, demographics, and health conditions. Gender-stratified panel data regression models including time and person fixed effects and controlling for area SES, parks, and commercial fitness facilities estimated the effect of walkability on BMI. This approach exploited change in walkability arising from neighborhood change and residential moves.

Results

BMI (SD) at baseline was 30.2 (6.0) for men and 29.5 (6.4) for women. Among men and women (6,668,095 and 773,506 person-year observations), greater walkability led to significant though small BMI reductions (for a 1 SD increase in walkability: men b -0.035, $p < 0.000$; women -0.044, $p=0.001$). These effects were 75% smaller than cross-sectional model results (not shown). In longitudinal sensitivity analyses using a 1/4-mile walkability measure, effects were even smaller and statistically insignificant.

Conclusions

Results provide some support for the hypothesis that greater neighborhood walkability has salutary effects on BMI among adults. The longitudinal study design rules out reverse causality

as an explanation. However, the results are sensitive to the scale at which walkability is measured and the much smaller coefficients obtained from models more robust to selection bias suggest that walkability effects on BMI are modest. Additional work is needed to determine whether policy interventions aimed at increasing walking may be more productive in certain subpopulations (e.g., older age, lower income, central city) or when directed at specific walkability components (e.g., walking destination density).

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D185 10:00 AM-11:00 AM

THE MEDIATING EFFECT OF PSYCHOLOGICAL AND ENVIRONMENTAL FACTORS BETWEEN SOCIOECONOMIC STATUS AND UNHEALTHY DIET BEHAVIORS

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Unhealthy diet is one of major modifiable risk factors of obesity in African Americans (AAs). While many independent risk factors of unhealthy diet behaviors have been identified, little is known about the potential associations between them or the complex mechanism explaining diet behaviors. The aim of the study was to examine the direct and indirect effects of socioeconomic status (SES) on the latent variable of unhealthy diet behaviors through psychological and environmental factors in overweight or obese AAs.

A total of 225 AAs overweight or obese (mean BMI = 33.3 ± 6.1 kg/m2; mean age = 54.4 ± 13.6 years; 76.4 % women; median income=about $40,000) participated in a cross-sectional study. The model included four latent variables: SES (education, employment, income), psychological factors (diet self-efficacy, barriers to healthy diet, health perception), environmental factors (aesthetic quality, walking environment, food environment, safety, violence, social cohesion), and unhealthy diet behaviors (% energy from fat intake, soda/sweetened beverage consumption, fast food consumption). Data were obtained by using validated measures. Data were analyzed using structural equation modeling with bootstrapping procedures.

In a regression equation without the mediators, the relationship between SES and unhealthy diet behaviors was significant (β=-.20, p=.04). In the multiple mediation model with the two mediators, psychological and environmental factors, SES did not have a significant direct effect (β=.06, p=.61) on unhealthy diet behaviors, which indicated an indirect effect of SES on unhealthy diet behaviors (β=-.27, p=.01). SES had a direct effect on psychological (β=.53, $p < .01$) and environmental (β=-.40, p=.02) factors. Psychological (β=-.31, p=.02) and environmental (β=.26, p=.01) factors also had a direct effect on unhealthy diet behaviors. Thus, the relationship between SES and unhealthy diet behaviors was fully mediated by the two mediators. The fit indices were acceptable for the conceptual model (χ^2/df=1.62, GFI=.92, RMSEA=.05, TLI=.92, CFI=.93), which explained 17.2% of the variance in unhealthy diet behaviors.

Psychological and environmental factors play a significant role in the relationship between SES and unhealthy diet behaviors for overweight or obese AAs. Enhancing diet self-efficacy, reducing barriers to a healthy diet, and improving the physical and social environment of AA adults may be important strategies to promote healthy diet behaviors.

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D186 10:00 AM-11:00 AM

THE MISPERCEPTION OF BODY WEIGHT CATEGORIES IN COLLEGE STUDENTS

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Background: Current literature suggests that approximately 20%-33% of Americans inaccurately predict their own BMI category. This can be a problem for many since this perception can contribute to one’s perceived need to integrate healthy behaviors into their lifestyle.

Purpose: The purpose of this study was to determine the frequency of individuals with an inaccurate view of their Body Mass Index (BMI) category. More understanding of individual perceptions regarding body weight can assist in increasing awareness and promoting behavior change.

Method: 966 were participants recruited from college classes and social media outlets completed an online survey regarding their gender, height, weight, and perception of their body weight category. The traditional calculation of BMI, as well as the established categories of underweight, normal weight, overweight, and obese were calculated after data collection and compared to participants’ perceptions.

Results: 39.4% of our sample reported a self-perceived weight category different than their traditional BMI category. Additionally, 39.8% of overweight participants felt they were normal weight. Amongst obese participants, 74.3% reported feeling overweight, 8.7% believed they were normal weight, and just 17% reported belonging in the obese category.

Discussion and Conclusions: Clinicians would benefit from this study by more fully understanding the scale of patient misperception regarding their obesity status. Increased awareness can encourage patients to make necessary adjustments to manage their weight. Future research should employ clinical samples regarding patient perception of weight category. Health care providers should take into account that people often misperceive their weight categories as they discuss individual's health status and need for behavior change.

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D187 10:00 AM-11:00 AM

UNDERSTANDING THE IMPACT OF RURAL WEIGHT LOSS INTERVENTIONS: A SYSTEMATIC REVIEW

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Introduction: Adults in rural areas are at a higher risk of developing obesity than their urban counterparts. As a result, a number of interventions have attempted to deliver evidence-based weight management strategies in rural regions where health education, public health, and clinical resources are scarce. However, the impact of these interventions, defined as reach by effectiveness, has not been examined.

Methods: A systematic review was conducted using PubMed, Scopus, Embase, and CINAHL databases to identify interventions that took place in a rural community, targeted adults, and reported weight loss as the main outcome. All non-intervention studies and articles not published in English were excluded. Data on reach (e.g., number of participants, participation rate, representativeness) and effectiveness (e.g., weight change, percent body weight change) were abstracted from each article. A secondary goal was to determine the availability of data on cost of implementation and cost per clinically meaningful weight loss.

Results: 62 articles were identified that reported on rural weight loss interventions, including 51 unique interventions and 4 protocol papers with no published primary outcomes associated with those interventions. Median study duration was 12 weeks (n=43 studies). The median number of participants was 108 (n=51 studies) with a median participation rate, defined as the proportion of participants relative to the number of eligible individuals, of 69.3% (n=20 studies). When participation rate was considered as the proportion of participants relative to those exposed to recruitment, the median rate fell to 35.1% (n=24 studies). No studies reported on the representativeness of the sample when compared to the target population. Median weight loss per participant was 3.15kg (n=41 studies), while the median proportion of participants that reached effective weight loss (≥5% of body weight) was 50% (n=13 studies). Only 2 of the 62 articles reported on cost-effectiveness; depending on the intervention group, costs ranged from \$22-\$33 per kg body weight lost in one study, or \$714-\$1029 per participant that lost 10% body weight in the other study.

Conclusion: Rural weight loss interventions appear to be effective at supporting significant weight loss, but the reach and cost of interventions delivered to a rural population is still difficult to determine.

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D188 10:00 AM-11:00 AM

CORRELATIONAL STUDY OF OCCUPATIONAL DISTRESS AND HEALTH AMONG PROFESSIONAL CLERGY

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Psychosocial stress is associated with an increased risk for obesity and chronic disease. High rates of obesity and chronic disease has been documented among professional clergy. Occupational distress may be a contributing factor to poor health outcomes among professional clergy. Thus, the purpose of this study was to examine correlations among occupational distress, physical and mental health, and health behaviors among a sample of clergy. A convenience sample of full-time clergy in Illinois (*N* = 221) completed a self-report questionnaire regarding their demographics, job characteristics, personal health, physical activity, and sedentary behavior. Clergy also completed the Clergy Occupational Distress Index (CODI). Data were analyzed using descriptive statistics and Pearson's product moment correlations. Clergy were mostly middle-age (*M*=51.9 years, *SD*=12.1), male (74%), white (95%), and held a Master's degree or higher (93.1%). The average years in ministry was 18.7 (*SD*=13.2) and the average hours worked per week was 46.1 (*SD*=16.1). Many clergy reported being treated for high blood pressure (33.5%), high cholesterol (29%), diabetes (10.4%), heart disease (6.8%), depression (14.9%), and anxiety (12.7%). Many of the clergy were also obese (52.0%), yet the majority perceived they were in good physical health (58.4%). Clergy reported spending an average of 6.58 hours/day sitting (*SD*=3.47) and a median of 87.5 min/week (*IQR*=0 – 255) in moderate-to-vigorous physical activity. The average score on the CODI was 11.5 (*SD*=3.41). Perceived occupational distress was positively correlated with hours worked per week ($r(221) = .277$, $p < .001$), diabetes ($r(221) = .148$, $p = .028$), depression ($r(221) = .262$, $p < .001$), anxiety ($r(221) = .234$, $p < .001$), and hours/day spent sitting ($r(221) = .157$, $p = .020$). Perceived occupational distress was negatively correlated with years in ministry ($r(221) = -.184$, $p = .006$) and age ($r(221) = -.318$, $p < .001$). The present study provides support for the negative influence of occupational distress on the health of full-time clergy, especially those who may be less experienced. Further research is needed to examine the temporal associations among occupational distress, health, and health behaviors among full-time clergy.

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D189 10:00 AM-11:00 AM

MERITORIOUS AWARD WINNER

DOSE RESPONSE RELATIONSHIP BETWEEN MATERNAL WORK STRESS AND EARLY CHILDHOOD AGGRESSION IN THE FRAGILE FAMILIES COHORT

Kathryn P. Smith, MPH[1], Cassandra A. Okechukwu, ScD, MSN[2], Janine Bacic, MA[3]

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Introduction

Much of the research on working mothers has concentrated on whether or not maternal employment influences children's behavioral and health outcomes. However, studies of impacts of employment on workers' health demonstrate that deleterious effects arise not from employment per se, but from hazardous workplace exposures, such as psychosocial stress. We contend that maternal work stress is an underexplored exposure associated with behavioral outcomes in children, especially in early childhood. Informed by the ecological systems model (Bronfenbrenner, 1986), the goal of this project is to investigate whether the levels of maternal work-stress during child's first year is associated with early childhood aggression.

Methods

Our sample includes 1471 mothers from the Fragile Families & Child Wellbeing study, a cohort of nearly 5,000 children born in large U.S. cities between 1998 and 2000. Mothers eligible for the analytic sample reported working during their child's first year of life and also completed the Child Behavioral Checklist (CBCL) when child was 3 years old. Work stress was measured using an adapted version of the Emlen Scale of Work Flexibility, categorized as low (36.44% of sample), medium (44.73%), high (18.83%) work stress based on data distribution. Child aggression scores were generated by adding 19 aggression-related items from the CBCL. We estimated multivariable associations using linear regression, controlling for mother's age, race/ethnicity, education, marital status, income, and # of other biological children. Further complex analyses controlling for other parental and child variables are planned. Additionally, analyses to test potential mechanisms explaining this association will be conducted.

Results

The study sample is comprised of non-Hispanic Black (53.16%), non-Hispanic White (23.93%), Hispanic (19.31%), and Other (3.60%). Over 76% of mothers were unmarried at baseline and over 57% had a high school education or less. Nearly 43% of the sample reported a pre-tax total household income less than $19,999 in the previous year. Unadjusted models revealed that each 1 point increase in maternal work stress score is associated with a 0.44 increase in child aggression score ($p < 0.001$). The relationship held in multivariable models. Compared to mothers with low work stress, those with medium work stress reported, on average, a 1.06 higher aggression score in child ($p=0.006$), while those with high work stress reported, on average, a 2.33 higher aggression score in child ($p < 0.001$).

Conclusion & Policy Implications

Analyses to date reveal a positive association between maternal work stress and early childhood aggression. This research supports the need to consider parenting interventions and childcare policies in tandem with workplace interventions focused on stress reduction.

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D190 10:00 AM-11:00 AM

ORGANIZATIONAL AND CO-WORKER SUPPORT, DIABETES RISK AND JOB STRESS AMONG EMPLOYEES

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Purpose: Examine the moderating role of perceived organizational and coworker support on the relationship between job stress and type 2 diabetes risk among employees.
Design: A cross-sectional survey was administered to employees at the workplace.
Setting: One national retail organization.
Subjects: Baseline data were obtained from 1,595 employees in 21 retail stores.
Measures: Self-reported organizational and coworker support to encourage and fulfill job responsibilities, and job stress. Diabetes risk was calculated using age, gender, race/ethnicity, blood pressure, physical activity, weight status, and self-reported diagnosed type 2 diabetes.
Analysis: Multilevel multiple regression was conducted to test the interaction effect of support on the association between job stress and diabetes risk.
Results: Mean age was 37.95 years (±12.03) and BMI was 26.72 (±4.95). Three percent of participants reported diagnosed diabetes. Organizational support was positively associated with co-worker support. Both were negatively associated with job stress. Organizational support, but not coworker support, moderated the relationship of job stress with diabetes risk. Participants with greater perceived organizational support had lower diabetes risk scores compared to those with lower perceived organizational support.
Conclusion: Organizational support may be a key factor for workplaces to reduce stress and diabetes risk. Further testing of organizations' supportive role on employee health may be helpful in developing future workplace programs.

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D191 10:00 AM-11:00 AM

SELF-COMPASSION PREDICTS BETTER SUPERVISOR EVALUATIONS IN UNIVERSITY FACULTY AND STAFF

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Self-Compassion Predicts Better Supervisor Evaluations in University Faculty and Staff

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Introduction

Self-compassion, an attitude of self-kindness, mindfulness, and a sense of common humanity, has been consistently related to numerous health behaviors[1], stress and procrastination[2], psychopathology and resilience[3], and well-being[4]. Self-compassion has also been linked to increased compassion toward others and greater professional quality of life[5]. Thus, self-compassion appears to be an important factor in personal health and well-being across multiple domains. This study examined the relationship between self-compassion and supervisor evaluations in the workplace.

Methods

The sample (N = 54) was aged 46.52 ± 10.76, 79.6% female, and 83.3% Caucasian. Participants completed the Self-Compassion Scale (SCS), which measures three components, including self-kindness, common humanity, and mindfulness. Supervisor evaluations (scaled from 1 to 4) of employees at a large Midwestern university from four consecutive years (2011-2014) were used as dependent variables. Hierarchical linear regressions were performed to determine whether self-compassion explained variability in supervisor evaluations after controlling for age, sex, and education.

Results

Demographic variables did not explain variability in supervisor evaluations of employee work performance for any year. Adding the SCS composite improved model fit, such that overall self-compassion accounted for significant variability for each year that supervisor evaluations were recorded.

Discussion

In this sample of employees at a large Midwestern university, self-compassion predicted work performance, such that those who exhibited more self-compassion were more positively evaluated by their supervisors. Self-compassion likely promotes greater resilience, by encouraging individuals to see personal flaws and weaknesses accurately and approach them with kindness rather than judgment and harsh criticism[6]. Additionally, a self-compassionate approach includes being more mindful of one's environment and internal experiences and a sense of shared experiences with others, which most certainly influences workplace behaviors and achievement. These findings should be used to promote a focus on increasing self-compassion and foster healthier work environments.

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D192 10:00 AM-11:00 AM

FACTORS ASSOCIATED WITH LOW PAIN DISABILITY AMONG PATIENTS WITH HIGH PAIN INTENSITY

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Purpose:
A subset of patients with chronic pain report very high pain intensity, but low pain-related disability; little is known about this group. The purpose of this study is to examine the extent to which demographic and clinical variables are associated with low pain-related disability among patients with high self-reported pain intensity.

Methods:
Patients with chronic pain who were prescribed long-term opioid therapy (LTOT) (n=517) were recruited from two large integrated health care systems. We identified a subset of patients who endorsed severe pain intensity and compared demographic and clinical factors among three groups of patients based on their scores of pain-related disability (low, moderate, or high pain disability). All patients were administered a battery of commonly used and well-validated measures assessing pain, mental health, and quality of life.

Results:
One hundred eight-nine of 517 patients (36.6%) endorsed severe pain intensity on the Chronic Pain Grade. Of these patients, 16.4% endorsed low pain disability, 39.2% moderate pain disability, and 44.4% endorsed high pain disability. There were no differences among the three groups on any demographic variable, current opioid dose, or alcohol and substance abuse variables (all *p*-values>0.05). Those in the low pain disability group endorsed less impairment on measures of depression, anxiety, physical and mental quality of life, pain catastrophizing, and self-efficacy for managing pain. In a multinomial logistic regression, after adjusting for demographic and clinical factors, variables that were significantly associated with pain disability were depression severity (OR=1.14, 95% CI=1.03 – 1.26) and self-efficacy for managing pain (OR=0.93, 95% CI=0.89 – 0.97).

Conclusion:

Among patients prescribed LTOT with severe pain intensity, 16% endorsed low pain disability. The variables most strongly associated with pain disability in the subset of patients with severe pain intensity, were depressive symptoms and self-efficacy for managing pain. These results provide targets for optimizing chronic pain interventions among patients with severe pain intensity.

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D193 10:00 AM-11:00 AM

PAIN SELF-EFFICACY AS A MEDIATOR BETWEEN DEPRESSIVE SYMPTOMS AND PAIN OUTCOMES FOR PERSONS WITH CHRONIC PAIN AND DISABILITY

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Depression, a common predictor and outcome of pain interventions, consistently varies directly with pain intensity and pain-related disability, yet the mechanisms underlying these relationships is poorly understood. Pain self-efficacy, also a consistent predictor of pain-related outcomes, may mediate the relationship between depression and pain treatment outcomes. Here we sought to examine depressive symptoms as a predictor of pain intensity and interference, and pain self-efficacy as a mediator of these relationships at both trait- and state-levels. Data were from a randomized controlled trial evaluating the efficacy of telephone-based interventions (cognitive-behavioral therapy and pain education) for persons with chronic pain and disability. Participants (N=188) were individuals with chronic pain and multiple sclerosis (n=81), spinal cord injury (n=70), amputation (n=33), or more than one disability (n=4). We utilized multilevel structural equation modeling (MSEM) to test the study hypotheses across three time points (before, during, and after treatment), controlling for participant race, treatment group, and disability. MSEM allows for questions of “who” (between-person/individual differences) and “when” (within-person/changes in state over time), while accounting for within-person clustering.The between-person analysis found that people who tended to be more depressed reported greater pain interference (b = .22, pb = .08, p = .014) on average. Pain self-efficacy mediated the relationship between depressive symptoms and pain interference (ab = .05, p = .007), but not depressive symptoms and pain intensity (ab = .004, p = .864). The within-person analysis showed that when individuals felt depressed they reported feeling greater pain intensity (b = .09, p and pain interference (b = .18, $p\text{ab}_{\text{INTENSITY}}$= .033, $p\text{ab}_{\text{INTERFERENCE}}$ = .04, p < .001) for the within-person analysis. Findings suggest that trait pain self-efficacy may have stronger effects on outcomes related to pain interference versus intensity, while state pain self-efficacy partially explains both relationships. Research examining the mechanistic role of pain self-efficacy in in this context is warranted. This work was supported by a grant from the Department of Health and Human Services, National Institutes of Health (Grant #: 5R01HD057916; PI: Ehde, PhD).

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D194 10:00 AM-11:00 AM

PROVIDERS’ INTEREST IN USING A MOBILE APP WITH PATIENTS WITH CHRONIC PAIN

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Mobile apps for health are increasingly popular, but little data exists on healthcare providers’ interest in using apps with patients. VA Pain Coach is a mobile app that allows patients to learn about pain, complete pain self-assessments, set goals, and practice skills; app data can also be shared with providers. As part of a pre-implementation study, members of primary care patient aligned care teams (PACTs) including physicians, psychologists, PA/APRNs, RNs, and health technicians, completed self-reported surveys (N=61) and semi-structured interviews (N=20) to gauge interest in using a brief stepped intervention to promote use of VA Pain Coach. Current frequency of recommending apps or websites about chronic pain was low; the majority of providers had never recommended websites (53.5%) or apps (52.6%) about pain to patients. Despite current practices, providers responded that they were likely (28.1%) or very likely (49.1%) to recommend the VA Pain Coach to patients. They expressed willingness to demonstrate the app to patients during an appointment (55.6% likely/very likely) and to use the app collaboratively with patients for assessment (60.0% likely/very likely) and goal setting (64.2% likely/very likely).The three most commonly endorsed facilitators for recommending the app to patients included availability of technical support for using the app, clear instructions about how to best recommend the app to patients with chronic pain, and the perception that pain management is necessary. Thus far, themes from qualitative data include beliefs that apps would be especially well-received among younger and already motivated patients and that the pain coping skills training portion of the app would be particularly important in promoting improvement in the pain and functioning; providers expressed concern about limited time to use the app and its data during appointments. In summary, PACT staff report a willingness to use the VA Pain Coach app. Primary barriers include time to use app during visits; app use could be facilitated by technical support availability and clear instructions regarding when to recommend the app.

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D195 10:00 AM-11:00 AM

PSYCHOLOGICAL PREDICTORS OF FUNCTIONING AND DEPRESSION IN ACTIVE DUTY NAVY AND MARINES WITH CHRONIC PAIN

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Various psychological factors have been implicated in the functioning and well-being of patients with chronic pain, including pain self-efficacy, kinesiophobia, pain catastrophizing, and pain acceptance. Isolating those psychological factors most pertinent to patient impairment can lead to the refinement of chronic pain treatments toward improved functional outcomes. The current study includes 61 active duty service members (43 Navy, 18 Marines) with chronic pain conditions enrolled in an intensive outpatient functional pain restoration program (FRPP) at Naval Medical Center San Diego. The FRPP was developed to promote the return of service members whose careers are threatened by chronic pain conditions to full, world-wide, deployable duty status. Prior to participation in the program, patients completed measures assessing pain interference, physical and social functioning, and depression, as well as measures of various purported psychological mediators. Pain self-efficacy, kinesiophobia, pain catastrophizing, and pain acceptance were examined simultaneously in the prediction of the various measures of functioning and depression in a series of regression analysis while controlling for patient’s average pain level. Both pain self-efficacy ($p < .005$) and kinesiophobia ($p < .05$) were significant predictors of pain interference, along with pain level ($p < .001$). Both pain self-efficacy ($p < .05$) and pain acceptance ($p < .05$) significantly predicted physical functioning. Pain acceptance was the sole predictor of social functioning ($p < .05$) whereas pain self-efficacy was the sole predictor of depression (p < .005). Pain catastrophizing was not a significant predictor of any functional measure or of depression after accounting for the other psychological factors. Results indicate that the psychological factors most pertinent to functioning in active duty service members with chronic pain vary by functional domain. Interventions for active duty service members with chronic pain aimed at increasing both pain self-efficacy and pain acceptance are indicated for improving functioning across various domains.

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D196 10:00 AM-11:00 AM

EXAMINING ACTIVITY AND DIET AS MEDIATORS OF THE RELATIONSHIP BETWEEN TV TIME AND BMI IN YOUTH

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Objective: To investigate sedentary time, physical activity, diet quality, and energy intake as potential mediators of the relationship between TV time and BMI in youth.

Methods: 928 youth ages 12-16 (*M* age=14.1, 65.8% white, non-hispanic) reported time spent watching television during non-school time and completed a 3-day dietary recall. Adolescents wore an accelerometer for 7 days to measure moderate-to vigorous physical activity (MVPA) and total sedentary time, which were summarized only for non-school time. Youth height and weight were reported by the parent. MPlus was used to test direct and indirect effects (through the diet and activity variables) of TV time on BMIz in boys (n=460) and girls (n=468).

Results: The total direct effect for TV time and BMIz was significant in boys ($B = .002$, $p < .05$) and in girls ($B = .001$, $p < .05$). Significant direct effects in the sample of boys included negative associations between MVPA and BMIz ($B = -.009$, $p < .01$), TV time and diet quality ($B = -.022$, $p < .01$), and unexpectedly with energy intake and BMIz ($B = -.00$, $p < .05$). In girls, significant direct effects included negative associations between MVPA and BMIz ($B = -.008$, $p < .05$), TV time and diet quality ($B = -.028$, $p < .01$), and energy intake and BMIz ($B = -.00$, $p < .01$). There were no signficiant indirect effects between TV time and BMIz of sedentary minutes, MVPA minutes, diet quality, or caloric intake.

Conclusions: There was a consistent association between TV time and BMI in this study and numerous prior studies. However, none of the four activity/diet variables examined in the present study explained this association. Future research should continue to examine variables that may mediate the relationship between time watching television and weight status.

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D197 10:00 AM-11:00 AM

ADVENTURE PHYSICAL ACTIVITIES AND PERSONALITY: A SYSTEMATIC REVIEW

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Adventure Physical Activities and Personality: A Systematic Review

Context: The popularity of adventure physical activities such as rock-climbing, white-water kayaking, and skydiving has grown increasingly in the last two decades (Brymer, 2010). Participation in adventure physical activities can lead to positive outcomes such as courage, humility, and a positive psychological connection with the natural world (Brymer & Oades, 2009). Several consistent and enduring traits, which define personality, may predispose participants to engaging in behaviors such as taking part in adventure physical activities. The purpose of this article is to review, for the first time, the research on personality profiles of adventure physical activity participants. The term adventure physical activities describes physical activities that are challenging, are out of the ordinary, and are usually associated with higher levels of risk. Evidence Acquisition: The studies reviewed include the physical activities labeled as ‘alternative sports’, ‘extreme sports’, ‘action sports’, and ‘lifestyle sports’ in previous academic research. Papers were considered eligible if they were published in English or French language peer-reviewed journals and examined correlates of adventure physical activities and trait personality. Literature searches were conducted in accordance to PRISMA guidelines in September 2016 among five search engines yielding 876 potentially relevant records; of these, 35 papers (34 independent samples) passed eligibility criteria. Evidence Synthesis: The dominant trait applied to understand adventure activities has been sensation seeking, using Zuckerman’s sensation seeking scale (80% of studies). However, studies have also explored excitement seeking via Arnett’s inventory of sensation seeking. Most studies showed a significant correlation in the small to medium effect size and compared adventure physical activity participants to low-risk sport participants. It is possible that a certain threshold for sensation seeking is necessary to initially participate in certain adventure physical activities. Conclusions: Over 42 years, research on the personality traits of adventure physical activity participants has been limited to the study of sensation seeking traits, but other personality traits are not well understood. It is recommended that future studies also examine the bi-directional correlation between adventure physical activities and personality. Recent studies examining social, environmental, or individual factors such as flow states may better explain motivations to participate in adventure physical activities.

Keywords: Adventure Physical Activities, Extreme Sports, Personality, Review

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D198 10:00 AM-11:00 AM

AFFECTIVE IMPROVEMENTS FOLLOWING ACUTE EXERCISE ARE NOT DEPENDENT ON HABITUAL PHYSICAL ACTIVITY LEVELS IN MDD

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Exercise is an effective treatment for major depressive disorder (MDD), yet few patients are physically active. Habitual physical activity can moderate the mood response to a single bout of activity in healthy people, resulting in limited acute psychological benefit for those with low levels of regular activity. However, it is unknown whether habitual activity affects mood responses to exercise in MDD. Exercise-induced elevations of brain-derived neurotrophic factor (BDNF), a protein implicated in the pathophysiology of depression and its treatment, may be similarly influenced by low habitual physical activity. This investigation aimed to determine the relationships between regular physical activity participation and both mood and BDNF responses to acute exercise in depressed women.

METHODS:

Females with MDD (n = 24) participated in three exercise bouts at light, moderate and hard intensities, each separated by at least 1 week. Prior to, 10min and 30min after exercise the Profile of Mood States (POMS) was completed. Blood was drawn before and within 10 minutes post-exercise. Serum BDNF content was assessed via enzyme-linked immunosorbent assay. Participants wore an accelerometer (Actigraph GT3X+) for one week to assess habitual physical activity, and were divided into two groups based on whether or not they accumulated at least 60 minutes of moderate or vigorous physical activity (MVPA) each day. Independent samples t-tests compared mood and BDNF responses to exercise between groups.

RESULTS:

Participants who accumulated 60 minutes of MVPA each day (n = 15) had similar improvements in POMS Depression after the exercise bouts at 10m and 30m compared to those who did not accumulate an hour of MVPA/day for each of the three intensities (all $p > .05$). Statistically similar increases in BDNF were found in response to exercise between the groups for each of the three intensities (all $p > .05$).

DISCUSSION:

Patients with MDD can realize the acute mood-enhancing effects of exercise regardless of pre-existing activity level. Low levels of regular activity did not significantly alter the BDNF increase following acute exercise. Although exercise may appear daunting for patients, reductions depressed mood occur even in patients who do not regularly exercise across a range of intensities. Practitioners should encourage all patients to engage in exercise as a method of acute psychological relief as improvements are likely to occur regardless of pre-existing activity level.

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D199 10:00 AM-11:00 AM

AGE MODERATES THE EFFECT OF SELF-PACED WALKING ON EXERCISE ADHERENCE AMONG OVERWEIGHT ADULTS

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National guidelines recommend exercise of at least moderate intensity. However, recent evidence suggests that exercising at one's own pace (self-paced exercise) may lead to better adherence to exercise programs relative to prescribed moderate intensity exercise. The present study tested the hypothesis that the positive effects of recommending self-paced exercise, relative to prescribing moderate intensity exercise, on adherence to exercise programs are more pronounced among adults who are older rather than younger. Fifty-nine low-active overweight adults (18–65yr) were encouraged to walk 30–60 min/day, and randomized to either a self-paced (n=30) or prescribed moderate intensity (64–76% maximum heart rate; n=29) condition. Affective response to exercise and perceived exertion were measured using ecological momentary assessment. Using mixed-effects-models, we confirmed our hypothesis that the effect of the randomization was moderated by age (main effect of condition: b=6.14, SE=2.54, p=0.02; condition * age effect: b=-11.55, SE=3.77, p=0.002). Among participants > 50 years, those in the self-paced condition exercised 6 more minutes/day than participants in the prescribed moderate intensity condition (p=0.02); however, among participants ≤ 50 years, those in the self-paced condition exercised 5.4 *fewer* minutes/day than those in the prescribed moderate intensity condition (p=0.05). We further investigated affective response to exercise and perceived exertion as potential mediators of the age moderator effect. Perceived exertion, but not affective valence, mediated the moderating effect of age (indirect effect for those over 50: ab=7.15, p < .01). As age increases, adults may more likely to adhere to self-paced exercise versus prescribed moderate-intensity exercise, because of higher perceived exertion with increasing age.

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D200 10:00 AM-11:00 AM

CAN WE PREDICT SEDENTARY BEHAVIOUR? USING THE TPB TO PROSPECTIVELY PREDICT OCCUPATIONAL SITTING AND STANDING BREAKS.

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In 2008, Healy and colleagues observed that office workers who frequently interrupted their sitting had better cardiometabolic risk profiles relative to those who engaged in prolonged sitting. Standing breaks have since been proposed as one solution to the problem of excessive sedentary behaviour; however, little research has examined the psychological predictors of standing breaks. Are people motivated to take such breaks? What factors influence standing break engagement? Do the psychological predictors of sitting differ from those of standing breaks? The purpose of our research was to prospectively predict workplace sitting and standing via the Theory of Planned Behaviour (TPB). Participants (N = 325 office workers) completed questionnaires, with measures of attitudes (AT), subjective norms (SN), perceived behavioural control (PBC), behavioural intentions, and self-reported behaviour at several prospective time points. AT, SN, and PBC emerged as significant predictors of intention, collectively accounting for 3.6% to 18.1% of variance in sitting intentions; and 2.7% to 32.7% of variance in standing break intentions, *p*s < 0.05. Intention and PBC significantly predicted between 62.0% and 79.7% of sitting variance; and between 28.4% and 68.6% of standing break variance, *ps* < 0.05. Collectively, results speak to the importance of intentions in predicting occupational sitting and standing breaks: can changing intentions produce significant changes in sedentary behaviour? Results also raise questions about how we measure the cognitive predictors of sedentary behaviour: as AT, SN, and PBC accounted for a small proportion of variance in intention, what other psychological factors might be important? Suggestions for future sedentary behaviour research will be discussed.

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D201 10:00 AM-11:00 AM

CHANGES IN MOTIVATION FOR PHYSICAL ACTIVITY FOLLOWING AN AEROBIC TRAINING AND PHYSICAL ACTIVITY INTERVENTION: ICAN RESULTS.

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Background: Increased aerobic activity and decreased sedentary time have been shown to reduce risk of cardiovascular disease and therefore interventions to aid in the increase and maintenance of regular activity are an important public health initiative. Physical activity motivation and behavioral regulation have been shown to be important factors in physical activity engagement; however, little is known how these psychological factors change in response to exercise training and increasing physical activity.

Methods: Participants were randomized to one of three treatments: 1) supervised aerobic training (AERO), 2) supervised aerobic training plus an individual behavioral coaching intervention focused on increasing non-exercise physical activity 3,000 steps from baseline (AERO-PA), or 3) non-exercise control (CON) for a period of 6-months. Changes in motivation and behavioral regulation for physical activity between baseline and post-test were compared between arms.

Results: Forty-five individuals were enrolled and thirty-nine individuals (AER0 = 13, AERO-PA = 12, CONTROL = 14) (mean age = 53.5, 71% White, 21% male) completed the randomized clinical trial. Completer-only analyses were conducted to examine group differences. There was a significant difference between groups in identified regulation for physical activity change $F(2, 34) = 4.87$, $p = .014$. Tukey post hoc tests indicated greater increase in identified regulation in the AERO-PA arm relative to the CON arm at $p =.014$ and a trend towards greater increase in the AERO-PA arm relative to the AERO arm at $p = .071$. Additionally, a non-statistically significant trend was found for differences between groups in interest-based motivation for physical activity $F(2, 36) = 3.08$, $p = .058$. Tukey post hoc tests indicated a trend towards a greater increase in interest-based motivation in the AERO-PA arm relative to the AERO arm at $p = .052$.

Conclusions: The combination of exercise training and increasing non-physical activity through behavioral coaching may increase participant motivation for physical activity through the increase of identified regulation and the increase of interest in engaging in physical activity.

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D202 10:00 AM-11:00 AM

DEMOGRAPHIC AND CLINICAL CORRELATES OF ACCELEROMETER-ASSESSED PHYSICAL ACTIVITY AND SEDENTARY TIME IN LUNG CANCER SURVIVORS

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Background: The primary purpose of this study was to determine demographic and clinical correlates of accelerometer-assessed moderate- to vigorous-intensity physical activity (MVPA) and sedentary time among a sample of lung cancer survivors. **Methods**: Lung cancer survivors in Southern Alberta (N=527) were invited to complete a mailed survey that assessed self-report demographic variables. Clinical variables were extracted from participant medical records. Consenting participants wore an Actigraph® GT3X+ accelerometer on their hip for seven days. Average daily MVPA and sedentary time were derived from the accelerometer data, and processed using 60-second epochs. Linear and logistic regression was used to determine correlates of physical activity (including meeting MVPA guidelines of at least 150 minutes per week) and total sedentary time. All models were adjusted for accelerometer wear time. **Results:** A total of 127 lung cancer survivors participated (Mean age = 71 years; Mean time since diagnosis = 75 months) for a 24% response rate. MVPA (minutes) was significantly associated with being over 60 years of age (B=-7.1, CI: -14.2 to -.14, p=.015) and having smoked at least 100 cigarettes (B=-9.2, CI: -18.1 to -.3, p=.043). Total sedentary time (minutes) was associated with having smoked at least 100 cigarettes (B=60.0, CI: 21.9 to 97.3, p=.002), and being overweight/obese (B=39.2, CI: 10.9 to 67.5, p=.007), and not having received surgery (B=-36.1, CI: -70.2 to -1.9, p=.039). Meeting physical activity guidelines was positively associated with having at least a post secondary education [Odds ratio (OR)=3.9, CI: 1.1 to 13.7, p=.037], negatively associated with smoking at least 100 cigarettes (OR=.29, CI: .10 to .94, p=.040) and being over 60 years of age (OR=.27, CI: .09 to .78, p=.016). **Conclusion:** In this sample of lung cancer survivors, different demographic and clinical correlates emerged across accelerometer assessed behaviours including MVPA and sedentary time. These results have implications for developing programs and interventions directed toward faciltating physical activity and reducing sedentary behaviour in lung cancer survivors.

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D203 10:00 AM-11:00 AM

DETANGLING EFFICACY AND EXPECTANCY: A PROSPECTIVE, CROSS-LAGGED PANEL STUDY OF CANCER SURVIVORS’ PHYSICAL ACTIVITY

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While interventions based on the social cognitive theory have proven successful for increasing cancer survivors’ moderate-to-vigorous physical activity (MVPA), scientists continue to debate the temporality of the relationship between the two most studied constructs: self-efficacy and outcome expectancy. Data from the American Cancer Society’s Survivor Transition Study was used to prospectively examine relationships among self-efficacy, outcome expectancy, and MVPA across two time points within a sample (N = 1099) of prostate, breast and colorectal cancer survivors within 12 months of completing their treatment. A fully saturated cross-lagged panel model, with covariates (age, cancer stage, cancer type by gender, time since treatment, education, cancer symptom burden, comorbidity burden, and body mass index), and using FIML was conducted using Mplus (version 7.4). Results indicated that baseline self-efficacy has a significant positive effect on follow-up outcome expectancy (standardized: 0.08; unstandardized: 0.05, s.e. = 0.02, p = 0.03). The relative size of this effect, however, is smaller than the association between baseline outcome expectancy and follow-up self-efficacy (standardized: 0.10; unstandardized: 0.16, s.e. = 0.53, p = 0.002). Thus, Bandura’s assertion that perceived capability to perform a behavior causally influences perceived behavioral outcomes, but not vice versa, is not supported. Furthermore, baseline outcome expectancy did not have a significant direct relationship with follow-up MVPA (standardized: 0.04; unstandardized: 1.16, s.e. = 0.96, p = 0.23), while baseline self-efficacy did maintain a significant direct relationship with follow-up MVPA (standardized: 0.11; unstandardized: 1.95, s.e. = 0.61 , p = 0.001). Overall, results from this study suggest the most likely model is one in which self-efficacy mediates the relationship between outcome expectancy and MVPA. This study adds to the literature by using a prospective design, advanced statistical techniques, and a large sample of cancer survivors. Results suggest the need for the modification of existing theory, and can inform the development and implementation of optimally effective social-cognitive interventions to improve MVPA among cancer survivors during post-treatment re-entry.

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D204 10:00 AM-11:00 AM

CITATION AWARD WINNER

EFFECTS OF WORKSITE-BASED WEIGHT LOSS INTERVENTIONS ON PHYSICAL ACTIVITY AND SELF-EFFICACY: A RANDOMIZED CONTROLLED TRIAL

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Worksite physical activity interventions have demonstrated efficacy in producing changes in employee activity time. However, there are relatively few studies that examine the changes in physical activity and potential mediators as the result of scalable worksite weight loss interventions. Further, relatively little data exists on the maintenance of physical activity in the months following the intervention period. The purpose of this study was to determine the magnitude of change in moderate to vigorous physical activity (MVPA) and self-efficacy for physical activity (PASE) as a result of exposure to minimal contact, electronically supported weight loss programs. Twenty-eight worksites were randomly assigned to one of two intervention groups both lasting 12 months: an internet-based intervention with monetary incentives delivered via daily e-mails (n=14 worksites; 1001 employees) or a less intensive intervention delivered quarterly via both newsletters and on-site educational sessions (n=14 worksites; 789 employees). Both programs recommended graduated exercise from beginner (working up to 150 minutes of moderate intensity PA/week), to intermediate (introduced resistance training), and to advanced (vigorous activity 3-5 days per week and resistance training). PASE and MVPA were assessed with validated tools at baseline, 6 months, 12 months (program completion), 18 months and 24 months. Group x Time ANCOVAs for MVPA and PASE, controlling for worksite, both revealed a significant main effect for time (F(df)=2.46-3.07(4);*p*<.05), with no group effect (*p*>.05). MVPA increased from baseline to 6-months (23.14±95.0), with no significant changes at 12, 18, or 24 months. Across time points men reported more MVPA than women (*p* < .01). PASE significantly decreased from baseline to 6 months (-15.34±75.1), but gradually increased from 6 to 24 months (6.8±82.4;*p*=.02). Gender moderated this relationship, such that PASE did not significantly change in men, whereas women demonstrated the same pattern as the main effect. Finally, correlations (r) between change in MVPA and PASE ranged from 0.10 to .22, *p* < 0.01. Positive correlations between change variables indicate that those who increased MVPA the most experienced the least amount of decline in PASE. In conclusion, a detailed graduated protocol for physical activity

embedded within scalable worksite weight loss interventions may produce sustained changes in physical activity for up to a year after intervention completion.

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D205 10:00 AM-11:00 AM

GOTTA CATCH 'EM ALL: POKEMON GO MOTIVATES ITS PARTICIPANTS TO INCREASE PHYSICAL ACTIVITY AND DECREASE SEDENTARY BEHAVIORS

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Pokémon Go is an interactive internet-based mobile game that incorporates physical activity (PA, primarily walking) as a major game component using real-time and location-based augmented reality technology with cooperative and competitive elements. No research to date has evaluated the influence of Pokémon Go on PA or sedentary behavior. Therefore, this study investigated if playing Pokémon Go increased PA and decreased sedentary behaviors. Participants (n=486; 57.8% female; most prevalent ethnicities: 59.9% White and 28.5% Asian; mean age = 28.6 (SD=8.5) years; mean BMI = 26.4 (SD=6.8)) played Pokémon Go an average of 23.3 (SD=10.0) days and completed an online survey assessing their PA and sedentary behavior retrospectively pre-starting to play Pokémon Go and post-currently. Significant increases were seen for strenuous PA (pre: 80.74 (SD=92.63) minutes/week, post: 94.96 (SD=101.36), t(483)=5.72, $p < .001$), moderate PA (pre: 112.06 (SD=109.55) minutes/week, post: 150.54 (SD=124.83), t(484)=8.34, $p < .001$), and mild PA (pre: 163.11 (SD=136.14) minutes/week, post: 210.72 (SD=137.66), t(483)=9.77, $p < .001$). Significant decreases were seen for TV watching (pre: 2.69 (SD=1.97) hours/day, post: 2.14 (SD=1.73), t(478)=9.65, $p < .001$) and Internet surfing (pre: 3.22 (SD=2.37) hours/day, post: 3.02 (SD=2.33), t(479)=3.58, $p < .001$), whereas video game playing (about 1 hour/day) did not change (t(481)=1.95, ns). No interactions with sex, age or ethnicity were found. BMI was positively related to strenuous, moderate and mild PA change ($ps < .01$) and there was a dose-response effect of number of days playing Pokémon Go and moderate and mild PA change ($ps < .05$). Pokémon Go seems to have a positive effect on increasing PA and decreasing sedentary behavior of individuals who play the game. This supports the potential of internet games being able individually tailor the game, both motivationally and geographically, to promote health behaviors reaching large populations. Long-term, rigorously designed studies should look at mechanisms, long-term effects, and generalizability to investigate the potential impact of Pokémon Go and other promising internet-based mobile games on health outcomes.

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D206 10:00 AM-11:00 AM

GUT MICROBIAL COMPOSITION ASSOCIATED WITH CARDIORESPIRATORY FITNESS, PSYCHOSOCIAL FACTOR CHANGES IN BREAST CANCER SURVIVORS

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Background: Breast cancer survivors (BCS) are often plagued by significant psychosocial sequelae post treatment including fatigue and anxiety. The mechanisms whereby physical activity improve these symptoms have not been fully elucidated. *Objective*: To determine correlations between gut microbiota composition and changes in cardiorespiratory fitness and psychosocial outcomes among post-primary treatment BCS. *Methods*: Composition of the gut microbiota of BCS (n=12) was assessed at baseline (M0) and at the end of a 3 month physical activity trial (M3) using Illumina MiSeq DNA Sequencing of the 16S rRNA gene. Gut microbiota composition was analyzed using QIIME bioinformatics software and represented through diversity metrics and taxa analyses. Cardiorespiratory fitness, fatigue, anxiety, depression, and sleep dysfunction were assessed at M0 and M3 via submaximal treadmill test, Fatigue Symptom Inventory, Hospital Anxiety and Depression Scale, and Pittsburgh Sleep Quality Index, respectively. *Results*: Increased fatigue interference in BCS was associated with increased mean within-sample Shannon diversity (organism richness and evenness) (p=0.009). Weighted UniFrac analysis (shifts in taxa relative abundance) revealed significant differences in between-sample (beta) diversity for changes in fatigue interference (p=0.01) and anxiety (p=0.022), with a trend observed for fatigue intensity and sleep dysfunction ($p < 0.1$). Unweighted UniFrac analysis (shifts in taxa types) found significant beta diversity differences for cardiorespiratory fitness (p=0.026). Prior to false discovery correction (FDR), changes in fitness, fatigue, anxiety, and sleep dysfunction were associated with the frequency of certain gut bacteria genera (e.g., Faecalibacterium, Prevotella, Bacteroides)($p < 0.05$). *Conclusions*: These pilot results indicate that correlations may exist between alterations in gut microbiota composition and longitudinal changes in cardiorespiratory fitness, fatigue, and anxiety in BCS. Further research examining the role of the microbiota-gut-brain axis in exercise-induced effects on psychosocial outcomes in breast cancer survivors is warranted.

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D207 10:00 AM-11:00 AM

HEALTHY AGING IN MIDLIFE: MODELING PSYCHOLOGICAL CORRELATES OF PHYSICAL ACTIVITY

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Background: Physical activity (PA) is an important determinant of health and well-being across the lifespan. Middle-aged adults are increasingly sedentary compared to younger cohorts, but are poorly represented in the exercise science literature. This segment of the population represents a key target for health promotion, as engaging in PA in midlife may help establish an active lifestyle that continues into older adulthood and prevents the medical and functional complications associated with physical inactivity and aging.

Method: The present study used structural equation modeling (SEM) to assess the relationship of three social cognitive latent variables (self-efficacy, self-regulation, and outcome expectations) and PA. Cross-sectional data were collected from 225 community-dwelling adults aged 45-64 (M_{age} = 56.86±5.45 years, 66.1% female, 11.1% ethnic minority) with varying activity levels. Manifest variables were modeled using multiple self-reported measures of self-efficacy, self-regulation, and outcome expectations. PA was assessed using the International Physical Activity Questionnaire-short form (IPAQ-SF) and supplemented with two simple, validated questions assessing exercise over the past week and month.

Results: The sample tended to be active; 44.4% reported moderate-to-vigorous activity of at least 150 min/week. The three latent variables of self-efficacy, self-regulation, and outcome expectations were highly correlated with one another ($r > 75$, $p < .001$). Univariate analyses of the manifest variables suggested that self-efficacy, self-regulatory strategies, and attitudes and outcome expectations were all significantly associated with physical activity levels reported by participants. The hypothesized model provided an adequate fit to the data and explained a large amount (63%) of the variance in PA. The best fitting model was one in which outcome expectations exerted an indirect, rather than direct, effect on PA through self-efficacy and self-regulation. This final model explained 58% of the variance in PA and had adequate fit indices, CFI = .94, TLI = .90, RMSEA = .09, 90% CI = .08-.11.

Conclusions: These findings extend the centrality of these three social cognitive constructs to PA in middle age. A more thorough dismantling of PA determinants in each decade of mid- and later life could inform more effective intervention targets for specific age groups. Future

studies should extend these findings using longitudinal, objective PA data to develop interventions for PA in the context of age-related changes in cognitive, social, environmental, and physical health domains.

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D208 10:00 AM-11:00 AM

HIPPOCAMPAL VOLUME AND PHYSICAL ACTIVITY ACROSS THE LIFESPAN

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Background and Purpose: Alzheimer's-related brain changes begin during a preclinical stage, 20 or more years before symptoms occur. Physical activity in cognitively asymptomatic adults is associated with attenuated Alzheimer's disease pathology and increased volume in brain structures that are important for memory, such as the hippocampus. Yet it is not known if there is an ideal period during the lifetime to participate in physical activity to preserve brain function and structure into middle- and older- age. The purpose of this study was to examine the association between hippocampal volume and measures of physical activity at periods of school-age, adolescence, young-, middle- and mature adulthood.

Methods: Cognitively asymptomatic adults (N=39, age 48.9-72.0 years, mean = 61.9, SD = 6.0, 72.6% female) from the Wisconsin Registry for Alzheimer's Prevention and the Wisconsin Alzheimer's Disease Research Center completed the Lifetime Total Physical Activity Questionnaire during face-to-face interviews which estimated the average metabolic equivalent (MET) hours per week per year of occupation, transportation, household and leisure-time physical activity for a total physical activity score. Participants also underwent T1-weighted structural magnetic resonance imaging on a GE 3.0 Tesla MR750 scanner (Waukesha, WI) with an 8-channel head coil to obtain hippocampal volumes. Partial correlations controlling for age, sex and APOE4 genotype were performed between hippocampal volumes and physical activity across various developmental stages based on Erikson's Theory of Psychosocial Development: school age (age 6-11), adolescence (age 12-18) and young (age 19-39), middle (age 40-64) and mature adulthood (age 65+).

Results: Right hippocampal volume was associated with physical activity during young ($r = .683$, $p = .007$) and middle adult ($r = .608$, $p = .021$), with a trend during school age ($r = .528$, $p = .052$) and adolescence ($r = .498$, $p = .07$). There was no association between right

hippocampal volume and physical activity in mature adulthood. Left hippocampal volume was not predicted by physical activity at any lifetime stage.

Conclusion: These results are consistent with the hypothesis that physical activity across the lifespan may slow the progression of Alzheimer's disease by preserving brain regions important for memory function in the preclinical stage.

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D209 10:00 AM-11:00 AM

MEDIATION EFFECT OF CHILD DEPRESSION ON PATHWAY FROM PARENT-CHILD RELATIONSHIP TO CHILD PHYSICAL ACTIVITY

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Introduction: Childhood activity habits may be important for later obesity development. Limited prior research explore the influence of parent-child relationship in formation of habits of physical activity and potential mediation role of child depression. Prior research has not compared mother-child and father-child relationships to differentiate effect. We seek to examine the associations of parent-child relationships with physical activity participation and if this association may be mediated by child depression.

Method: We used the existing data from the Eunice Kennedy Shriver National Institute of Child Health and Human Development Study of Early Child Care and Youth Development (SECCYD). Sample included 514 children with weekend physical activity of at least moderate intensity and 602 children with weekday and all day physical activity levels of at least moderate intensity as measured by a physical activity monitor at age 15. Parents reported perceived relationships with children 6 times from age 54 months to grade 6, with accumulative effects of parent-child relationships calculated as the average scores of all measurements. The association of parent-child relationship with physical activity was analyzed using multivariate regression models, controlling for income, maternal age, gender, and BMI z-score. Mediation analysis with bias-corrected bootstrapping resampling approach was employed to obtain 95% confidence intervals for indirect effects of childhood depression, measured using the Children's Depression Inventory administered at age 15.

Results: Significant associations of maternal-child relationship with moderate and/or moderate-vigorous activity in children at age 15 (range β -1.50 to β -.330, $p < .05$). Prospective analysis linking parent-child relationships by grade 6 of the study child to child's physical activity levels at age 15 revealed a statistically significant positive or negative relationship depending on relationship type. Maternal or Paternal conflict had a negative total effect (-.113 to -.049, 95% CI: -.245, -.004) while positive relationship had a positive effect (.066 to .086, 95% CI: .019, .1636). These results were consistent for Maternal and Paternal relationships along the spectrum of physical activity levels and days.

Conclusion: Longitudinal parent-child relationships may influence child's physical activity during adolescents through an accumulative process and is mediated by child depression. This relationship suggests that physical activity participation may be regulated by parent-child relationships, which underscores the important role of family dynamics in obesity prevention.

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D210 10:00 AM-11:00 AM

RELATIONSHIPS OF MUSCULOSKELETAL SYMPTOMS, EMPLOYMENT STATUS, OBESITY AND LEISURE TIME PHYSICAL ACTIVITY AMONG NURSES

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There is established evidence for the benefits of physical activity for health, but high rates of physical inactivity were reported among nurses. Musculoskeletal symptom (MS) comorbidities may be risk factors of physical inactivity but data are limited for nurses who are vulnerable to MS comorbidities. The purpose of this study was to describe the relationships of MS, employment status, body mass index (BMI) and leisure time physical activity among nurses.

This study used cross-sectional data of 454 nurses randomly selected from the California Board of Registered Nursing list. Data on demographic and employment characteristics, MS (past 12 month- low back, neck, shoulder and wrist/hand pain—interval, severity, duration), BMI, and physical activity (aerobic and muscle strengthening) were collected using postal and online surveys. For MS, an aggregate pain index was created.

Of the participants (mean age 49.58 years, 91.2 % female, 65.2 % white, 79.5% currently working nurses), 46.5 % were overweight or obese (mean BMI 25.6 kg/m^2); 44% engaged in regular aerobic physical activity (≥150min/week); and 56% performed regular muscle strengthening activity (≥2 days /week). Low back pain was the most frequently reported (61.7%), followed by neck pain (48.5%), shoulder pain (41.9%), and wrist/hand pain (41.6%). In the bivariate analysis, none of MS variables were associated with physical activity. In the multiple logistic regression adjusting for age and pain index score, nurses who did not currently work were more likely to engage in more aerobic physical activity (≥150min/week) (OR= 2.12, 95% CI: 1.11-4.07) than currently working nurses. Nurses with lower BMI performed more aerobic physical activity (≥150min/week) (OR= 0.92, 95% CI: 0.88-0.97) and muscle strengthening physical activity (≥2 days /week) (OR= 0.92, 95% CI: 0.88-0.96).

Future physical activity promotion interventions should address employment-related barriers among currently working nurses, particularly, those who have high BMI.

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D211 10:00 AM-11:00 AM

REMOTE MONITORING AND COMMUNICATION TO SUPPORT PHYSICAL ACTIVITY AMONG CANCER SURVIVORS: FINDINGS FROM A MIXED METHODS STUDY

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Background Physical activity (PA) minimizes the side effects of cancer; yet, participation rates by cancer survivors are low. While technological innovations are often touted as efficient means for communication and remote monitoring, concern for privacy and access to personal data are cited as areas of concern. The purpose of this pilot study was to evaluate the efficacy and acceptability of an intervention using remote monitoring and communication to support PA maintenance in cancer survivors.

Methods Participants were 24 cancer survivors (83% female, mean age 57.5) recruited after completing exercise-based oncology rehabilitation. The four-week intervention consisted of three interactions with a health coach (1 in-person, 2 follow-up meetings by phone), text messages, and self-monitoring with a Fitbit. Text message content was based on participant PA goals and preferences and Fitbit recorded activity. Pre and post-intervention PA was assessed via accelerometer. Changes in outcomes were assessed through paired t-test analysis and repeated measures ANOVA. Post-intervention phone interviews were conducted using a semi-structured question guide. All interviews were audio-recorded, transcribed, and iteratively coded using thematic analysis.

Results Participants maintained weekly minutes spent in moderate-to-vigorous intensity PA from pre-intervention (317.5 ± 222.8) to post intervention (304.7 ± 211.5; $p= 0.57$). Fitbit weekly mean step counts did not change over 4 weeks ($F=1.31$, $p=0.28$). Participants reported acceptance and satisfaction with remote monitoring and communication. Emergent themes related to technology-based support for PA maintenance included 1) appreciation for accountability to a remote partner; 2) support to overcome barriers; 3) influence on maintaining habits; 4) convenience of technology; and 5) reclaiming ownership of health following a cancer diagnosis.

Conclusions Participants attributed PA maintenance to accountability enabled by technology. Communication based on remote monitoring was perceived as encouraging and not intrusive. Participants also valued the support via technology in the transition to a home program after

completing a facility-based program. This study highlights the importance of accountability and support for PA adherence, and the positive role that technology can provide for cancer survivors to regain control of health management.

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D212 10:00 AM-11:00 AM

SPIRITUAL WELL-BEING, MEANING, AND HEALTH AND FITNESS CONFIDENCE PREDICT PHYSICAL ACTIVITY

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Background: Prior work suggests spiritual well-being and meaning are important correlates of physical health. However, no studies have examined these relationships in the context of confidence (self-efficacy) to prevent chronic illness or improve physical fitness. The goal of the current research was to evaluate associations between spiritual well-being, meaning, confidence in improving physical fitness, and confidence in preventing chronic disease to predict physical activity.

Methods: Participants (*N* = 427; Mean age = 49; 67% female; 78% white, non-Hispanic) were recruited from an online survey research panel and completed self-report measures of spiritual well-being, meaning in life, confidence in improving physical fitness, confidence in preventing chronic disease, and physical activity (International Physical Activity Questionnaire). Controlling for age and gender, regression analyses were used to predict physical activity.

Results: Among participants that ranked improving physical fitness and preventing chronic disease among their top five well-being goals (*N* = 94), spiritual well-being and meaning were positively associated with confidence in improving physical fitness (r = .30, p < .001 and r = .33, p < .001, respectively) and confidence in preventing chronic disease (r = .26, p < .01 and r = .20, p = .03, respectively). In regressions, spiritual well-being (ß = .21, p < .05), meaning (ß = .20, p = .05), age (ß = -.20, p < .05), confidence in improving physical fitness (ß = .33, p < .001), and confidence in preventing chronic disease (ß = .20, p = .05) all significantly predicted physical activity.

Conclusions: Spiritual well-being and meaning are positively associated with confidence in improving physical fitness and confidence in preventing chronic disease. Further, all 4 variables were significantly associated with physical activity. Future research should evaluate the potential efficacy of spiritual well-being and meaning to change physical activity utilizing longitudinal and RCT methodologies. Future work should also examine potential mediation effects on changes in physical activity via confidence in improving physical fitness and confidence in preventing chronic disease.

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D213 10:00 AM-11:00 AM

SYSTEMATIC REVIEW OF YOUNG ATHLETES' PSYCHOSOCIAL EXPERIENCES ACROSS SPORT TYPES, SETTINGS, AND ACTIVITY PATTERNS

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Although youth sport is a powerful organized activity for promoting positive psychosocial outcomes and health behaviors, participation in and of itself does not guarantee positive outcomes (Coakley, 2011). Indeed, theories of youth development support the assumption that athletes' psychosocial experiences differ as a result of variations in the design of their sport activities. To examine this prediction, we conducted a systematic review of youth sport literature to explore variations in psychosocial constructs (e.g., self-esteem, quality of life, depression) when assessed in youth who participate in differing sport types, settings, and activities. The Preferred Reporting Items for Systematic reviews and Meta-Analyses guidelines (PRISMA: Moher et al., 2009) were applied throughout the search protocol, which involved a scan of academic databases (e.g., SPORTDiscus; MEDLINE; PsycINFO) and a manual search—ultimately resulting in 6938 records to review at the level of title. Search criteria were applied during screening at the level of title, abstract, and finally full-text review. A coding sheet was used to extract information from included articles and code for risk of bias. Thirty-five studies were located that assessed an array of psychosocial constructs, with the most prevalent investigations predicting outcomes such as youth development, self-esteem, and depression according to: (a) sport types (e.g., team or individual; contact or non-contact), (b) sport settings (e.g., school- or community-based; competitive or recreational), or (c) across differing individual patterns of involvement (e.g., weekly hours of involvement; self-reported practice). Across studies, the majority of findings were inconsistent, dependent on moderating factors (e.g., age or gender), or had only been examined in a limited number of studies. As such, one conclusion of this review was that it is vital for researchers to conduct more detailed assessments of sport types, settings, and activity patterns–and use analyses that are suited to understand how these factors influence youth outcomes. Despite these limitations, the body of evidence indicates that sport involvement can facilitate psychosocial outcomes when youth engage in certain forms of sport activities (e.g., greater individual engagement in sport; teams with greater degrees of interdependence). These results could guide efforts to shape sport policies and practices to support healthy development and youth sport adherence.

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D214 10:00 AM-11:00 AM

THE IMPACT OF PHYSICAL ACTIVITY EXPERIENCE ON PHYSICAL ACTIVITY LEVELS: DO GENDER AND SOCIOECONOMIC STATUS MATTER?

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The Impact of Physical Activity Experience on Physical Activity Levels: Do Gender and Socioeconomic Status Matter?

Introduction: Positive physical activity (PA) experience is associated with higher PA levels among youth. However, few studies explored the impact of negative PA experience on youth's PA levels. Further, little is known whether the impact of PA experience varies between males and females of different socioeconomic statuses (SES). Therefore, this study aims to examine the relationships of positive and negative PA experiences (POS and NEG) to leisure time PA levels (LTPA) using a sample of Black South African youth of different SES.

Methods: The sample consists of 2038 Black (48% females) 8th graders from 56 schools in South Africa. LTPA was measured by a question that asked participants to indicate their frequency of doing sports or physical activity after school and over weekends. POS and NEG were measured for participants who do LTPA. POS was measured by 3 items on a 4-point scale (e.g., *When you are playing sports or physical activity, how often do you feel good about yourself?*), while NEG was measured by 6 items (e.g., *When you are playing sports or physical activity*, *are you feeling stressed or anxious?*). SES was determined by the housing condition. Participants living in brick house, flat or apartment were grouped into high SES (58%), while those living in other types of housing (e.g., shack, tent) were grouped into low SES (42%). Multiple-group structural equation models were used to examine the effect of POS and NGE on LTPA for males and females of high and low SES (i.e., 4 groups).

Results: The measurement model had a good fit as indicated by RMSEA (.046) and was invariant across the 4 groups. Results showed significant differences in path coefficients between low SES males and the other 3 groups. POS did not have a significant effect on LTPA for low SES males but had a significant positive impact for the other 3 groups. NEG had a significant negative effect on LTPA for low SES males but did not had a significant impact for the other 3 groups.

Conclusions: The impact of PA experience on PA levels may vary between genders of different socioeconomic statuses. We will discuss possible reasons and implications for these findings.

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D215 10:00 AM-11:00 AM

A US POPULATION-BASED STUDY OF SES AND HEALTH-RELATED QUALITY OF LIFE IN CERVICAL CANCER SURVIVORS

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In the United States, it is well accepted that low socioeconomic status (SES) increases risk for cervical cancer (CC) incidence and mortality, but there is little information about the influence of SES on CC survivors' health-related quality of life (HRQOL). This study helps address this gap in the literature via analysis of data from the Behavioral Risk Factor Surveillance System, a population-based phone survey of adults in the United States. In 2014, six states included the cancer survivorship module, ultimately yielding a sample of 344 women who reported a CC history. In the sample (age *M*, *SD*=54, 16 years), 48% were in a relationship, 87% were White Non-Hispanic, 43% were employed, and 85% had health care coverage. Linear and logistic regressions were performed to identify the association between SES (as measured by education and income) and several indicators of HRQOL (i.e., overall health status, unhealthy days due to mental and physical functioning, and activity limitations due to poor health). To assess the unique influence of SES, it was entered into each regression model after these covariates: 1) total number of chronic diseases (e.g., heart disease, asthma, diabetes) and 2) past month tobacco use, alcohol use, and sedentary behavior. After controlling for chronic disease and health risk behaviors, lower income levels were significant predictors of worse overall health status (β=.23, $p < .01$), more unhealthy days due to mental functioning (β=.30, $p < .01$), more unhealthy days due to physical functioning (β=.14, $p < .05$), and greater activity limitations (β=.17, $p < .05$). The same pattern of significant findings arose in the logistic regression models where the aforementioned HRQOL outcomes were dichotomized using accepted cut-scores (ORs=1.39-2.06, all *p*s < .05). In contrast, lower education levels were only found to be a significant predictor in one (unhealthy days due to mental functioning; β=-.13, $p < .05$) of the 8 aforesaid regression models (βs=-.06-.02 & ORs=.62-1.30, all *p*s>.05). In sum, lower income – but not education – was associated with worse HRQOL in CC survivors, and its predictive utility was demonstrated above and beyond other well-established HRQOL correlates. Cancer is known to cause economic hardship, and for some CC survivors, the financial strain associated with lower income levels may reduce HRQOL. Future studies should explore the mechanisms by which low income impacts CC survivors' HRQOL, and ways to remediate its negative influence.

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D216 10:00 AM-11:00 AM

EFFECT OF ACCULTURATION ON OBESITY AND PREGNANCY IN HMONG-AMERICAN WOMEN FROM 1985 TO 2015: A CASE-CONTROL STUDY

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Effect of Acculturation on Obesity and Pregnancy in Hmong-American Women from 1985 to 2015: a Case-Control Study

Introduction: Obesity has risen significantly over the past several decades and is known to affect pregnancy outcomes. Asian Americans from Laos and Thailand (i.e., Hmong), have been immigrating to the United States since the mid-1970s. We explored the change in weight (BMI) at delivery and weight gained in pregnancy for Hmong compared to White women, and corresponding pregnancy complications and outcomes.

Methods: From 1985 to 2015, 4.3% of all deliveries at our facility were by Hmong women. A case-control study was conducted randomly selecting 10 Hmong deliveries each year and matching by year, age, gravida and parity to White deliveries. A medical record review gathered pre-pregnancy characteristics and delivery outcomes. Acculturation was loosely measured by subject's birth location and language spoken.

Results: 557 (282 Hmong, 275 White) subjects were reviewed. Each year, Hmong women's BMI was lower than White women's. BMI at delivery increased significantly for both Hmong and White women, however, the slope of this increase was steeper for Hmong women than for White women (p=0.001). Pregnancy weight gain was also higher among White women than Hmong women every year, and significantly increased over the 30-year span, however, it increased more for Hmong women (p=0.001). There was an increase in pregnancy and delivery complications overall, but a decrease in infant complications. White women were more likely to have pre-existing complications. Hmong women were more likely to have maternal complications including postpartum anemia and hemorrhage. Hmong women who were born in the US were more like their matched White women in BMI at delivery and weight gain. Hmong women not born in the US had lower BMI and pregnancy weight gain. Hmong women who were fluent in English were similar to White women in their weight gain and BMI at delivery. Hmong who were not fluent in English had lower BMI and smaller

pregnancy weight-gain.

Conclusions: Acculturation is impacting obesity and outcomes in Hmong-American women at pregnancy. There was a significant increase in obesity in Hmong-American women and increasing complications rates. This is particularly important to consider as we explore the health of other ethnic and racial groups and immigration continues to be examined world-wide.

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D217 10:00 AM-11:00 AM

FACTORS ASSOCIATED WITH SELF-REPORTED EATING PROBLEMS AND DESIRE FOR TREATMENT AMONG LATINAS WHO BINGE EAT

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Binge eating (BE) is a common disordered eating behavior among women, and is associated with negative health implications such as obesity, diabetes, and cardiovascular disease. Group differences are seen in BE; Latinas report equal if not greater rates of BE compared to women of other racial/ethnic backgrounds. Latinas who engage in disordered eating may report more frequent BE, higher levels of depression, and greater concerns about body shape and weight. Complicating the picture is the fact that Latinas are less likely to seek specialized treatment. When they do discuss weight and eating issues, Latinas are also less likely to be diagnosed and receive proper treatment from providers.

The current study examined factors associated with Latinas' perceptions of having an eating problem and their desire to receive treatment. Specifically, researchers assessed if BMI, insurance coverage, and ED symptomatology (frequency of BE and overvaluation of shape and weight) were associated with Latinas' perceptions of having an eating problem and desire for treatment. These factors are integral for increasing Latinas' access to treatment.

Latinas (N =167) were recruited from Charlotte, NC and Los Angeles, CA to participate in an interview related to BE and comorbid symptoms. The Eating Disorder Examination, 12th edition (Fairburn & Cooper, 1993) was used to assess eating disorder diagnoses and symptoms. Participant average age was 27.25 (*SD* = 8.4) and 67.7% were either overweight or obese. Average BE frequency was 6.2 (*SD* = 7.31) objective binge episodes in the past 28 days. Over half (54.3%) met DSM-5 criteria for an eating disorder, either binge eating disorder or bulimia nervosa. Over half of the participants (69.2%) said they felt they had a problem with eating, and 56% wanted help for an eating problem. Only 9% of the participants had received treatment for an eating problem. Correlation analyses revealed that BMI, BE frequency, and overvaluation of shape and weight were positively associated with participants' perception of having an eating problem and wanting help. Using logistic regression, BMI and BE were not associated with self-reported eating problems but overvaluation was. However, BMI and overvaluation were associated with wanting treatment. Surprisingly, frequency of BE was not associated with either outcome. An interesting finding was that many women who had a desire for treatment had insurance but still did engage in treatment.

Overall, the results suggest that there is a great deal of heterogeneity among Latinas who report binge eating and the way in which they view disordered eating. These results provide insight to health care providers and may encourage them to ask about binge eating symptoms and treatment needs for Latinas exhibiting various levels of symptomatology.

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FACTORS IMPACTING AFRICAN AMERICAN RENAL PATIENTS' COMPLETION OF THE MEDICAL EVALUATION PROCESS FOR KIDNEY TRANSPLANTATION

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African Americans are more susceptible to end-stage renal disease (ESRD) as a result of genetic characteristics and socioeconomic factors. Treatment options for patients with ESRD include dialysis therapy (i.e., hemodialysis, peritoneal dialysis) and transplantation, with the latter typically producing better outcomes. African Americans are less likely to seek kidney transplantation or complete the medical evaluation process to be placed on the waitlist for transplantation. The medical evaluation or pre-transplant work up, which requires patients to consult with doctors and undergo a series of tests and examinations, is a tedious process that may impede a patient’s ability to be placed on the waitlist. The current study sought to determine the factors that predict completion of the medical evaluation for African American ESRD patients using a mixed methods design. Participants consisted of transplant professionals (*N*=23) recruited from nine transplant centers in the Mid-Atlantic, Mid-Western and Southeastern parts of the United States, and kidney patients (*N*=30 patients) recruited from one transplant center in the Mid-Atlantic region. Semi-structured interviews and nominal focus groups were conducted to gather qualitative data enlisting barriers and motivators to patients’ completion of the medical evaluation process; quantitative survey data were also collected. The results revealed several barriers and motivators which were then classified as impacting patients at the individual-level and systemic level, and others classified as health-related and informational/educational. Participants ranked insurances issues, limited income, lack of a personal means of transportation, lack of patient motivation, the number of procedures required to complete the evaluation, scheduling difficulties and time constraints as top barriers to completing the medical evaluation process. Top motivators consisted of informational support, social support, religious beliefs, patients’ desire to get off dialysis, support from the transplant staff, center-based education, patient’s knowledge of the benefits of transplantation and patient navigators. These findings provide valuable information on the factors that impact African American renal patients’ completion of the medical evaluation process.

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FOOD ADVERTISING DURING CHILDREN’S TV PROGRAMMING IN NEPAL

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Television advertising of foods to children has been criticized in recent decades by health advocates because a) a high volume of the foods are unhealthful (Kelly et al., 2010), and b) children are less able to scrutinize advertising messages than adults (Kraak & Story, 2015). The World Health Organization has released a multi-pronged agenda directed at regulation agencies and food industry marketing with the aim of reducing children’s overall exposure to media messages that can lead to less healthful diet choices.

The purpose of this study is to describe the TV food marketing landscape that children experience in the southeast Asian country of Nepal. Sixty one hours of television were recorded over a 20-day span from three channels during hours that children’s programming was played. We conducted a content analysis on 12 hours of commercials, categorizing commercials based on existing coding schemes for food nutrition (Schermbeck & Powell, 2015) and marketing appeal type (Batada et al., 2008). Foods were categorized by the authors via inductive coding based on regional salience.

Principal findings of this study were that nearly 20% of airtime during children’s programming was dedicated to commercials, and 55% of that was dedicated to foods. Over 80% of the food commercials had excessive amounts of saturated fat, trans fat, sugar or sodium. High sugar levels were perhaps the most apparent trend, as over half of the commercials featured products that contained excess sugar. The most prevalent food types shown were ice cream and popsicles (20.7%), energy/nutritional supplements (20.2%), and candy (14.6%). Additionally, the three most commonly occurring marketing appeals were those featuring animated effects (82.6%), movie, cartoon, animated, or costumed characters (36.8%), and TV or movie tie-ins (16.5%).

Results from this study suggest that the media landscape in Nepal isn’t meeting WHO recommendations for advertising foods to children. As food markets and marketing practices become more and more global, nutrition transitions in developing nations may result. The food media trends targeting Nepal’s youth may already be foretelling a rise in less healthful diets among the new generation.

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D221 10:00 AM-11:00 AM

INDIVIDUALISM-COLLECTIVISM OF BLACK ETHNIC GROUPS AND PERCEIVED STRESS

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Social scientists have redefined the construct of culture to include such dimensions as individualism and collectivism. An individualistic culture (IC) promotes and supports individual needs over group needs. IC fosters autonomy compared to cultures promoting collectivism in which group needs are more relevant, and supportive of cooperation. A small body of work suggests IC is linked to varied psychological issues. Respectively, at the individual level IC is measured in terms of idiocentrism and allocentrism. With three different racial ethnic groups, the purpose of the study was to: 1) assess idiocentrism and allocentrism within each group, and 2) examine the relationship by group of idiocentrism, allocentrism and perceived stress. Using a descriptive design, participants completed a 20-item Allocentrism Inventory using a rating scale format (0-Not in the Least Agree to 10-Entirely Agree) and the 10-item Perceived Stress Scale with descriptive statistics employed for data analysis. Sample was comprised of 53 African (AF; n=10), African American (AA; n=27), and Afro Caribbean (AC; n=17) young adults. By group, the mean idiocentrism score was highest for AC young adult (56.9+ 17.7) followed by AA (54.5+ 8.0) and AF(53.9+8.1). The mean allocentrism score was highest among AF young adults (67.6+10.2) compared to both AA (60.1+11.2) and AC counterparts (60.1+15.2). An Allocentrism over idiocentrism mean relative balance score among AF young adults was 4 times higher than the score for AC. High scores on idiocentrism and high stress scores were found among 27% of AC young adults versus 25% AA and 22% AF counterparts. The findings suggest that Afro Caribbean young adults' scores reflect a more individualistic culture than African or African American counterparts. A need to implement stress management strategies specifically among Afro Caribbean young adults exists. Research is needed to better understand the relationship between individualism and collectivism dimensions of culture and stress among African, African American, and Afro Caribbean young adults.

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D222 10:00 AM-11:00 AM

LINGUISTIC ACCULTURATION AND SKIN CANCER PROGRAM PREFERENCES AMONG U.S. HISPANICS

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Introduction: Although the incidence of melanoma is lower among Hispanic individuals in the United States than non-Hispanic Whites, they are more likely to be diagnosed at an earlier age and with more advanced disease. Little research has focused on Hispanic individuals' preferences for information and programs related to skin cancer prevention. In this study, we examined the association between linguistic acculturation and preferences for information delivery and skin cancer prevention programs.

Methods: 788 Hispanic adults (49.6% female; *M* age 41.0 years; 70.9% Mexican) were recruited from KnowledgePanel Latino, a nationally representative web panel of U.S. Hispanic adults. Participants were eligible if they had no history of skin cancer and resided in Arizona, California, Florida, New Mexico, or Texas. Participants completed an online survey in Spanish or English that included measures of linguistic acculturation and preferences regarding skin cancer prevention programs.

Results: In terms of linguistic acculturation, just over a third (35.7%) of the participants were denoted as Spanish-acculturated, 19.6% were English-acculturated, and 44.7% were bicultural. Overall, reading information on the Internet (70.8%) and receiving newsletters (62.4%) were the most preferred methods of information delivery, while speaking on the phone with a health educator (33.9%) and meeting in person with a health educator (42.1%) were the least popular. Spanish-acculturated participants were more willing to meet with a health educator (57.6%) than those who were English-acculturated (23.9%; $p < 0.001$), with a similar trend for speaking by phone with a health educator (52.7% and 16.4% respectively, $p < 0.001$). Individuals who were Spanish-acculturated were also significantly more interested in programs related to skin cancer prevention, including programs to promote sun protection behaviors ($p < 0.001$), learning more abot sun protection and skin self-examination ($p < 0.001$), using sunscreenif it was available at public locations ($p < 0.001$), and having a free skin cancer examination at a public location ($p < 0.001$).

Conclusions: Preferences for skin cancer program delivery among Hispanic individuals differ according to linguistic acculturation. The results of this study provide insight on targeting skin cancer prevention programs for Hispanic individuals.

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D223 10:00 AM-11:00 AM

PATERNAL SOCIALIZATION AND HEALTH HELP-SEEKING AMONG BLACK MEN

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Black males are less likely to obtain routine health screenings and seek help for health problems than White men. Many barriers to health help-seeking among Black males are unrelated to lack of insurance or access to care. Yet, such factors are less understood. Health socialization, or the process by which individuals acquire health-specific attitudes, knowledge, and behaviors, is one potential early-life factor contributing to Black men's health help-seeking barriers. Most studies examining the role of heath socialization in health outcomes focus on maternal influences. Scarce attention is paid to the role fathers play in minimizing or exacerbating health help-seeking barriers. The current study addresses this gap by examining the relationship between early-life paternal health socialization and barriers to health help-seeking among Black men. Using data from the African American Men's Health and Social Life study, a community sample of 458 adult Black men (mean age = 32 years, SD: 10.9) were recruited primarily from barbershops from four regions of the United States. Participants completed previously validated measures assessing barriers to help-seeking, masculinity norms, and John Henryism. Paternal health socialization was measured with a 3-item scale designed to assess the frequency men received direct instruction from their fathers encouraging health help-seeking. Bivariate correlations and multivariate linear regression analyses were used to assess relationships between the study variables. After controlling for age, masculinity norms, insurance status, marital status, education, and John Henryism, paternal health socialization was significantly and positively associated with barriers to health help seeking (ß=0.10, $p< .05$). The regression model accounted for 24% of the variance in barriers to health help-seeking, F (8, 357)=15.20, $p < 0.001$, adjusted $r^2=0.24$. Behavioral interventions designed to improve health help-seeking among Black men should focus on enhancing paternal health socialization. Implications for research and policy will be discussed.

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D224 10:00 AM-11:00 AM

PERCEIVED RISK AND PROTECTIVE FACTORS FOR HPV ACROSS TIME AND ACROSS SEXUAL ORIENTATIONS

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The leading cause of cervical cancer is human papillomavirus (HPV), a sexually transmitted infection that can be spread between female sexual partners. Though data among women who have sex with women (WSW) are limited, there is evidence that WSW have a higher prevalence of cervical cancer than heterosexual women (Boehmer, 2011). In 2006, Eaton et al. (2008) surveyed 275 WSW at the Atlanta Gay Pride parade, of which 31% had received abnormal pap smear results and 6% had been diagnosed with HPV. Additionoally, receiving an abnormal pap result significantly predicted perceived HPV risk. Now, almost a decade since the HPV vaccine Gardasil® has been introduced, little is known in regards to HPV risk perceptions and protective factors among WSW, which is crucial for reducing HPV and cervical cancer rates.

We surveyed 161 women at 2015 Atlanta Gay Pride about risk perceptions, pap smear history, and HPV vaccine uptake. Interestingly, there was no significant difference in perceived risk between 2006 and 2015, t(442)=-.14, p=.96. Consistent with Eaton (2008), an abnormal pap result predicted perceived personal risk, t(158)=2.37, p=.02. For the current study, we also compared lesbian (n=78), bisexual (n=46), and heterosexual women (n=37) on risk perceptions and protective factors. Controlling for age, logistic regression showed no significant differences between sexual orientations for receiving pap smears, either lifetime or within the past 3 years (all ps>.6). However, there were differences in vaccine uptake across sexual orientations: less than 40% of lesbians received the HPV vaccine, compared to 67% of bisexual women and 57% of heterosexual women. Among participants sexually active in the past year, an ANOVA controlling for age showed lesbians perceive a significantly lower risk of getting HPV than bisexual and heterosexual women, F(2,128)=3.85, p=.02. Lastly, vaccine uptake was a significant predictor of perceived risk: those who had received the vaccine had significantly higher perceived personal risk than those who had not received the vaccine, F(1,126)=4.0, p=.05.

Pap smears and HPV vaccination are the primary focus for reducing rates of cervical cancer, and there is evidence that perceived HPV risk predicts these behaviors. Our results demonstrate the importance of considering differences across sexual orientations.

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D225 10:00 AM-11:00 AM

RELIGIOUS HEALTH FATALISM AND ELEVATED CHOLESTEROL AMONG CHURCH-GOING AFRICAN AMERICAN ADULTS

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Objective: In the U.S., 47% of African-American Adults (AAs) are affected by cardiovascular disease (CVD). Elevated cholesterol, which is the greatest risk factor of CVD, is highly prevalent among AAs, which has been linked to lifestyle and behavioral risk factors such as smoking, sedentary lifestyle, excessive alcohol use, and poor diet. Religiosity, or religious involvement, has been shown to have a beneficial effect on the health risk behaviors associated with CVD, but findings have been mixed depending on methods employed. Furthermore, religious health fatalism (RHF), defined as “the belief that health outcomes are inevitable and/or determined by God”, has received little research attention. Yet, domains of RHF (Divine Provision, Destined Plan, and Helpless Inevitability) are thought to be critical constructs underlying the relation between religiosity and health. The current study examines the association between RHF and elevated cholesterol among church-going AAs. **Methods:** Participants (*n*=135) were recruited from a large, predominately African American church. A multiple logistic regression model was used to test whether the three subscales of the Religious Health Fatalism Questionnaire (RHFQ) were significant predictors of self-reported lifetime history of elevated cholesterol. Sex, age, level of education, employment status and Lukwago Religiosity Scale (LRS) scores were entered as covariates in Block 1. The three RHFQ subscales were entered in Block 2. **Results:** After adjusting for covariates, likelihood of elevated cholesterol increased significantly ($p < .001$). **Conclusions:** We speculate that individuals with a greater degree of Helpless Inevitability may view their health behaviors as less impactful and are less likely to follow health recommendations for promoting healthy cholesterol levels. Future research is needed to understand the complex interplay of factors associated with religiosity and fatalism that contribute to an increased risk of elevated cholesterol among AAs.

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TESTING THE FEASIBILITY AND ACCEPTABILITY OF A CULTURALLY ADAPTED PHYSICAL ACTIVITY INTERVENTION WITH ADULT SOMALI WOMEN

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Changing lifestyles and disease profiles have been evident for Somali women living in countries such as the US, but there is little research on culturally appropriate and effective methods to promote healthy lifestyles within this population. This pilot study tested the feasibility and acceptability of a culturally adapted physical activity intervention for use with sedentary adult Somali women living in the US. Participants were randomly assigned to a 12-week physical activity (PA) intervention (n = 13) or a wait-list control group (n = 14). Self-report and objective PA measures were obtained at baseline, post-program, and at 3-months post-intervention. All intervention and assessment materials were available in both English and Somali and delivered by bilingual/bicultural research team members with the intervention groups facilitated in Somali.

The sample was on average 41-years-old and all women were born overseas, having lived in the US for an average of 14 years. The sample reported on average greater affiliation with Somali culture than US culture and limited access to environmental resources to engage in PA (M = 0.78 resources per person). Overall, the sample was highly sedentary at baseline, with no differences between the groups. Participants reported approximately 20 minutes per week of moderate-to-vigorous physical activity at baseline according to the 7-day Physical Activity Recall. Post-intervention there was a significant increase to approximately 100 minutes per week ($p < .01$). Significant increases were found in self-efficacy for PA, behavioral processes of change, and environmental access to PA resources (e.g. exercise or sports equipment, exercise videos or other resources) for the PA group (all $p < .05$). The control group showed significant increases for environmental access and behavioral processes of change ($p < .05$), and approached significance on the 7-day PAR ($p = .05$) at the end of the 3-month wait. Data on program delivery and measurement challenges and successes inform further adaptation and considerations for future trials.

A larger trial of the adapted intervention is needed to test the efficacy of the intervention. The results have implications for future outreach and intervention with other refugee, low-income, and Muslim populations. Further research is critical to ensure equitable access to evidence-based interventions for underserved communities.

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THE IMPACT OF SOCIAL CONTEXT ON RISK-RELATED ATTITUDES AND BEHAVIORS AMONG AFRICAN AMERICANS

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The impact of social context on risk-related attitudes and behaviors among African Americans

Background: Members of the African American community are disproportionately affected by adverse health outcomes, including HIV and STIs. Research suggests that effective health communication from a trusted source can help to mitigate risk behaviors and subsequent negative health consequences. This study investigates the extent to which social influences differ for African Americans compared to those of other racial backgrounds, and examines the potential impact social context has on individuals' preferred source of risk communication.

Methods: Data were collected from an online survey that was disseminated through academic institutions, community organizations, and social media platforms. The sample consisted of 1,011 respondents, of which 158 (15.6%) identified as Black or African American. Chi Square tests of independence were performed in SPSS 23 to investigate the relationship between social influences and racial background.

Results: Analyses show that African Americans were more likely to claim that their religious community (X^2=44.77, df=1, p < .001), and personal religious beliefs (X^2=22.80, df=1, p < .001), and less likely to claim that teachers (X^2=11.41, df=1, p=.001) and social media (X^2=6.51, df=1, p=.01), influence their viewpoints. Additionally, African American respondents were more likely to report that their religious community (X^2=35.80, df=1, p < .001) and personal religious beliefs (X^2=16.36, df=1, p < .001) influenced their behavior, while social media was found to have less of an influence (X^2=15.71, df=1, p < .001). African Americans were also more likely to prefer to learn about sex education from a church or other religious institution than were individuals of other racial backgrounds (X^2=36.38, df=1, p < .001) and to have their children

learn about sex from a church/religious institution (X^2=31.68, df=1, $p < .001$).

Conclusion: The findings of this study suggest that, compared to individuals of other racial backgrounds, African Americans place significant influence on religion, and subsequently prefer to get information from religious sources. This information can be used to inform future risk reduction interventions and programming to educate African American communities.

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D228 10:00 AM-11:00 AM

ADOLESCENT SUBSTANCE USE AND SENSATION-SEEKING ON SEXUAL BEHAVIORS AMONG YOUNG ADULTS FROM CONTINUATION HIGH SCHOOLS

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Background: Adolescents and young adults of color are disproportionately affected by HIV with sexual behaviors as the primary mode of transmission. Extant research on the relationships between substance use, sensation seeking and sexual risk-taking among adolescents in continuation high schools (CHS) is limited. CHS youth are at risk of dropping out of school and are exposed to a social environment where HIV-related risk behaviors are high. Substance use is higher among CHS youth than other high school (HS) youth. Sensation seeking may produce some disinhibition that impacts decision-making and impacts sexual risk-taking. CHS youth report an earlier age at sexual onset; a larger proportion report multiple sexual partners; and these behaviors vary by gender and race/ethnicity. Trend data show decreasing sexual risk-taking among HS youth, but trend data are not available for CHS youth. The long-term consequences of substance use and sensation-seeking on sexual behaviors are unknown. It was hypothesized that substance use, sensation-seeking and number of sexual partners would vary by gender and race/ethnicity and these relationships would be partially mediated by age at sexual onset.

Methods: Baseline and four-year follow-up data from 111 young adults (56.8% Latino; 51% female; mean age 20.6 years) originally recruited from 14 CHS in southern California to participate in an intervention aimed at altering substance use perceptions were analyzed. Inclusion criteria for the present study were a minimum age of 18 years and self-identification as Latino, White or Black. Baseline substance use and sensation seeking were treated as predictors. Sexual behavior information was collected at follow-up with age at sexual onset treated as the mediator and numbers of sexual partners as outcomes. Structural equation modeling was used to assess the effects of substance use and sensation-seeking on sexual behaviors.

Results: Latinos had lower sensation seeking and substance use and a later age at sexual onset than non-Latinos. Females were less likely to have multiple lifetime and recent sexual partners and use marijuana. The effects of adolescent substance use on the number of sexual partners was fully mediated by their age at sexual onset.

Discussion: Factors of and actual sexual risk behaviors among CHS youth vary by race/ethnicity and gender. CHS youth who reported greater substance use during adolescence were more likely to initiate sex at an earlier age. Early initiation of both activities was predictive of the number of lifetime and recent sexual partners by young adulthood. Sensation-seeking was not predictive of the number of sexual partners and may indirectly impact the number of sexual partners through other factors not previously assessed. Targeting specific variables by race/ethnicity and gender may improve prevention efforts.

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D229 10:00 AM-11:00 AM

ALCOHOL USE, SEXUAL RISK BEHAVIORS, AND HIV AMONG NIGERIANS: A SYSTEMATIC REVIEW AND META-ANALYSIS, 1997-2014

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Background: Nigeria has the second largest population of people living with HIV as well as one of the highest rates of alcohol consumption in Africa. Prior research shows that alcohol consumption influences sexual decision-making but the relation between alcohol and sexual risk behaviors in Nigeria has not been documented. Therefore, this study examined the (a) prevalence of and (b) association between alcohol use, sexual risk behavior, and HIV among Nigerians.

Methods: We searched electronic databases and reviewed reference sections of relevant papers to locate studies that (a) sampled populations in Nigeria (b) assessed both alcohol and sexual risk behavior. Of the 696 unique records identified, 35 manuscripts reporting on 42 separate studies met inclusion criteria. Effect sizes were calculated to determine both the prevalence of, and association between, alcohol use and sexual risk behaviors. Moderators were examined to determine if sample characteristics predicted behavioral or biological outcomes.

Results: Participants (N = 83,967; M age = 26; 49% women) reported high rates of heavy drinking (59%) and low rates of consistent condom use (22%). Many participants reported using alcohol before sex (40%). A positive HIV diagnosis was reported in 10% of the samples. We also found a significant association between alcohol use and sex such that participants who engaged in sex were more likely to drink alcohol, $d+ = 1.32$ (95% CI = 1.09, 1.54), $Q(2) = 0.20$, $p = .90$, $I^2 = 0$ (0, 84). Participants belonging to high-risk groups (e.g., commercial sex workers, patients from STI clinics, prisoners) were more likely to consume alcohol and less likely to use a condom compared to participants from low-risk groups.

Conclusion: Our findings indicate that Nigerians engage in high rates of heavy drinking and low rates of condom use. The results from this meta-analysis can be used to inform critically needed alcohol-related HIV interventions.

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COMFORT WITH SEXUALITY IN ORTHODOX JEWISH WOMEN

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Comfort with sexuality is an understudied component of sexual health. Encompassing attitudes and emotions about sex as well as communication competency, comfort with sexuality has been positively associated with sexual health outcomes, including delayed onset of sexual activity, contraceptive use, and relationship satisfaction. Comprehensive sex education, both from parents and in school, has been associated with higher levels of comfort, while religiosity has been associated with lower levels of comfort with sexuality.

The present study examined the association between comfort with sexuality, sex education, religiosity and sexual health in Orthodox Jewish young women. Because of conservative sexual values and a scarcity of comprehensive sex education in this community, Orthodox Jewish women are an important population for study. We predicted that women who had received comprehensive sex education and those who reported higher levels of religiosity would report higher comfort with sexuality.

A total of 76 students (mean age = 20.78) from a female religiously-affiliated college completed online surveys assessing school and parental sex education, religiosity (subjective religiosity, religious practice, and faith), and comfort with sexuality. 65.8% reported some sex education in high school, but only 44% of those received comprehensive sex education. 51.3% reported sex education from parents. Women who received comprehensive school sex education reported more comfort with sexuality than those who had abstinence-only education ($t(46) = -2.18$, $p < .05$). Likewise, women who had parental sex education reported more comfort with sexuality than those who did not ($t(74) = 2.61$, $p < .05$). Each of the three religiosity measures was negatively correlated with sexual comfort ($r = -.44$, $p < .001$; $r = -.56$, $p < .001$; $r = -.33$, $p = .003$, respectively).

Both hypotheses were supported. Despite the Orthodox Jewish community's unique culture surrounding sexuality, women in this sample reported results similar to women in the general population. In light of this population's high levels of religiosity and low rates of sex education, the results of this study point to the need for comprehensive sex education as a potential intervention to promote sexual comfort. Future research should explore culturally appropriate

educational interventions, and compare Orthodox Jewish women with other religious and secular populations.

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D231 10:00 AM-11:00 AM

DO CHANGES IN INFORMATION, MOTIVATION, AND BEHAVIORAL SKILLS PREDICT CHANGES IN CONDOMLESS SEX?: AN INTEGRATIVE DATA ANALYSIS

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Background. One basis for sexual risk reduction interventions is the Information-Motivation-Behavioral Skills (IMB) model, which posits that knowledge of STI/HIV, motivation to reduce risk, and behavioral skills contribute to reductions in risk behavior. However, few studies have investigated how *changes* in IMB constructs relate to *changes* in sexual risk behavior. Weused advanced statistical methods to determine which IMB constructs predict changes in condomless sex across 3 samples.

Methods. Patients participating in HIV prevention trials from urban clinics in the northeastern and midwestern U.S. (N = 3,150, 57% male, 70% Black) completed measures at 3mo intervals over 12mo. Composite measures of information (HIV knowledge), motivation (condom attitudes and subjective norms), and behavioral skills (condom use self-efficacy and skills) were created using integrative data analysis. Parallel process latent growth models (PPLGMs) tested whether IMB changes were correlated with changes in condomless sex, and cross-lagged models tested bidirectional relationships between IMB constructs and condomless sex

Results. PPLGMs showed that improvements in attitudes were associated with increases in skills, B = 0.38, p < .05. Improvements in norms were associated with increases in self-efficacy, Bs > 0.93, ps < .001. Improvements in norms and skills were associated with decreases in condomless sex, Bs < -0.28, ps < .001 and Bs < -0.42, ps < .001. However, increases in knowledge were associated with *decreases* in skills, Bs < 0.24, ps < .05, resulting in a *positive* indirect effect of changes in knowledge on changes in condomless sex, b = 0.25, p < .05. Cross-lagged models showed that more positive attitudes and norms and higher self-efficacy and skills were all associated with later decreases in condomless sex, Bs < 0.33, ps < .05. In contrast, higher knowledge was associated with *increases* in condomless sex, Bs > 0.03, ps < .001. More engagement in condomless sex predicted decreases in attitudes, norms, and skills, Bs < -0.03, ps < .01.

Conclusions. Results suggest knowledge may not be the best focus for interventions aiming to decrease condomless sex in at-risk populations. However, in line with the IMB model, motivation and behavioral skills seem useful targets for interventions. Bidirectionality in relationships suggests that those with the highest risk may be most resistant to changes in motivation and skills; interventionists should continue to refine programs to reach these individuals.

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D232 10:00 AM-11:00 AM

EXPLORING PREGNANCY-RELATED INTENTIONS AND BEHAVIORS AMONG PREGNANT YOUNG WOMEN IN KWAZULU-NATAL, SOUTH AFRICA

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Background: Unintended pregnancy in adolescence and young adulthood can negatively affect health care engagement and outcomes for mother and infant, interrupt life trajectories, and increase future risk for unintended pregnancies. In South Africa, unplanned pregnancies among young women reach as high as 79%, indicating that youth are engaging in unprotected sex at the risk of becoming pregnant and acquiring or transmitting HIV and other STIs. The goal of this analysis is to provide a comprehensive picture of pregnancy intentions and contraceptive use among young South African women.

Methods: Qualitative data from interviews with 35 women receiving antenatal care from a district hospital in KwaZulu-Natal, South Africa were analyzed. The recorded interviews were translated, transcribed, and qualitative content analyses were conducted using NVivo 10 software.

Results: Participants were Black South African women with a mean age of 19.3 years (SD = 1.1). 37% were HIV-infected, and 83% were currently in a relationship with their pregnancy partner. All reported that their current pregnancy was unintended. Participants described various reasons as to why they had not intended to become pregnant across several domains: personal (e.g., wanting to prioritize their education, wanting to enjoy their youth, not feeling ready to have a child), social (e.g., fear of disappointing family, stigma from their community),

health (e.g., fear of childbirth, fear of CD4 decline during pregnancy, fear of transmitting HIV to their baby), and economic (e.g., not being able to financially support a child). Despite these motivations to avoid pregnancy, women cited multiple factors that led to conception, including discordance between their intention and partner intention to use contraceptives, failed condom negotiation, inconsistent and unsuccessful contraceptive use, and logistical barriers to accessing contraceptives. Almost half of the participants were not using any contraceptive method at conception, but several women did not think they would get pregnant.

Discussion: Despite reasons for desiring to prevent pregnancy, women reported multiple risk factors for unintended pregnancy, including challenges with personal adherence to a contraceptive regimen and negotiating condom use with a partner. Findings point to the need for the development of multi-level interventions to minimize unintended pregnancy and sexual risk behavior, and support safe, wanted pregnancies among youth.

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D233 10:00 AM-11:00 AM

FACTORS INFLUENCING PREGNANCY INTENTIONS AMONG ADOLESCENT GIRLS IN SAN DIEGO COUNTY: A QUALITATIVE EXPLORATION

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Background: Adolescent motherhood increases neonatal health risks, including prematurity and low birth weight. Hispanics are disproportionately represented among adolescent mothers, and 57% of US Hispanic adolescent births occur at the US-Mexico border.

Objective: This study qualitatively examines factors that influence adolescent girls' perceptions of the costs and benefits of adolescent pregnancy in the context of the US-Mexico border.

Methods: Adolescent girls between the ages 15-19 were recruited from a health clinic in San Diego county near the US-Mexico border to participate in a survey study examining risk factors for pregnancy and STI risk. A subset of participants (n-21) were invited to complete qualitative interviews; interviews were coded and analyzed for themes related to pregnancy intentions.

Results: Almost half of participants were Latino (43%); 24% and 19% were White and Asian, respectively. Long-term contraception (e.g., the implant, shot, or patch) was reported most frequently (85%). Emergent themes highlighted girls' reasons to delay pregnancy, including: 1) greater time to achieve educational goals and financial stability and 2) recognition of the time commitment and financial and social costs associated with adolescent parenthood. Girls responsible for younger siblings were particularly cognizant of the challenges of childrearing. No girls reported benefits of adolescent pregnancy.

Conclusion: The current study highlights adolescent girls' reasons for intending to delay pregnancy. Given the high rates of adolescent pregnancy near the US-Mexico border, more work is needed to understand factors that may interfere with girls' intentions to delay pregnancy and that increase risk for adolescent pregnancy.

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D234 10:00 AM-11:00 AM

INTEROCEPTIVE AWARENESS MODERATES THE RELATIONSHIP BETWEEN PERCEIVED AND PHYSIOLOGICAL GENITAL AROUSAL

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Rationale: In general, laboratory studies have shown low correlations between mental (i.e., self-report) and physiological (i.e., vaginal pulse amplitude) measures of sexual arousal in women. One explanation for this presumed low concordance is that women may not be attending to their genital responses, and/or may be unable to accurately perceive their genital responses.

Aims: The current study had three aims:

1. To examine whether women are able to accurately perceive their level of genital arousal when specifically told to attend to genital sensations.

2. To examine whether a self-report measure of interoception can identify the women who are able to accurately perceive their genital responses.

3. To examine whether interoception can explain, in part, the low correlation between mental and physiological sexual arousal in women.

Methods: Sexually healthy women (N = 26) were presented with a neutral and erotic film sequence while their genital responses were measured using vaginal photoplethysmography. Perceptions of genital arousal were captured continuously throughout the films. Women then completed questionnaires on genital and bodily awareness (Multidimensional Assessment of Interoceptive Awareness). Hierarchical linear modeling was used to analyze the agreement between women's perceived and physiological genital arousal. Interoceptive awareness subscales were assessed as moderators of this effect.

Results: Women exhibited a significant degree of agreement between perceived and physiological genital arousal ($p < .001$). Interoception was found to significantly moderate this effect ($p = .015$), such that a greater degree of interoceptive awareness facilitated a stronger relationship between perceived and physiological genital arousal. Interoceptive awareness was also found to increase the relationship between mental and physiological sexual arousal ($p < .05$).

Conclusions: An overall tendency to focus on bodily sensations can partially explain women's awareness of their genital arousal, as well as the relationship between their subjective and genital arousal.

Implications: This study suggests that an overall tendency to focus on bodily sensations helps facilitate women's awareness of their genital arousal. This has important clinical implications such that assessing interoception can give clinicians insight regarding treatment matching. Women who are unable to perceive their genital sensations may benefit from treatments designed to increase awareness of bodily sensations such as mindfulness training or biofeedback.

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D235 10:00 AM-11:00 AM

SINGLE SESSION OF AUTOGENIC TRAINING INCREASES ACUTE SEXUAL AROUSAL IN WOMEN WITH SEXUAL AROUSAL PROBLEMS

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Rationale/Background: Below average heart rate variability (HRV) has been associated with sexual arousal dysfunction and overall sexual dysfunction in women (Stanton, Lorenz, Pulverman, & Meston, 2015). Autogenic training, a psychophysiological relaxation technique, has been shown to increase HRV (Miu, Heilman, & Miclea, 2009). In a recent study, sexually healthy women experienced acute increases in both physiological and subjective sexual arousal, as well as increases in resting HRV, after one brief session of autogenic training (Stanton & Meston, in press). The present study builds on these recent findings by testing the effects of a single session of autogenic training on sexual arousal in women with diminished or absent physiological (i.e., genital) sexual arousal and/or diminished or absent subjective (i.e., mental) sexual arousal.

Research Question(s): Will increasing HRV via autogenic training lead to significant increases in physiological and subjective sexual arousal in women with sexual arousal dysfunction?

Method: Vaginal pulse amplitude (VPA), an index of genital sexual arousal, and subjective sexual arousal were assessed in 24 premenopausal women, aged 20-47, before and after listening to an autogenic training recording. Heart rate variability was assessed with electrocardiography. Subjective sexual arousal was measured both discretely via the subjective sexual arousal subscale of Heiman and Rowland’s (1983) Film Scale and continuously with an Arousometer (Rellini, McCall, Randall, & Meston, 2005), a device that allows women to report their mental sexual arousal during an erotic stimulus. Data were analyzed with hierarchical linear modeling and paired samples t-tests.

Results: Participants exhibited a significant increase in resting HRV following the intervention ($t(23) = 2.50$, $p = .02$), as was expected. Post-autogenic training, significant increases in both

VPA (β = 0.23, t(4944) = 2.84, *p* = .005), continuous subjective arousal (β = 0.07, *t*(4944) = 9.84, *p* < .001), and perceived genital arousal (t(23) = 2.917, p = .008) were observed. When subjective sexual arousal was measured discretely, there was a trend toward a significant increase post-manipulation (t(23) = 1.872, p = .07).

Conclusions: This cost-effective intervention led to significant increases in acute physiological, subjective sexual arousal, and perceived genital arousal. If these gains are maintained, the results of this study suggest that autogenic training, and other interventions that aim to increase HRV, may be a useful addition to treatment protocols for sexual arousal problems in women.

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D236 10:00 AM-11:00 AM

THE ASSOCIATION BETWEEN SALIVARY CORTISOL AND FREQUENCY OF SEXUAL INTERCOURSE IN A 56-DAY DAILY DIARY STUDY OF MARRIED COUPLES

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There is extensive research suggesting that positive interactions with romantic partners might reduce hypothalamic-pituitary-adrenal (HPA axis) response. Specifically, physical intimacy and positive tactile contact have been associated with lower salivary cortisol. The aim of this study was to determine if frequency of sexual intercourse in married couples would significantly predict lower daily salivary cortisol levels. To test this, we used data from the UCLA families and health study, in which 43 couples completed at-home diaries reporting daily sexual intercourse for 56 days. In this study, salivary cortisol samples were collected four times per day for eight out of the 56 days of data collection. We analyzed cortisol using the area under the curve with respect to ground (AUCg) trapezoid formula. Regression analyses revealed that wives who reported a higher frequency of sexual intercourse during the study period had lower average AUC values of cortisol for the 8 days of measurement ($r = .341$, $B = -9.737$, $SE = 4.299$, $p = .029$). Analyses also revealed that there was no relationship between AUC measures of cortisol and sexual intercourse for the husbands in the sample. Our results are in line with previous studies on the protective effects of physical intimacy on cortisol stress responses and add to the literature on gender-specific health benefits from positive close relationships.

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D237 10:00 AM-11:00 AM

EFFECT OF THERAPY ADHERENCE ON QUALITY OF LIFE IN PATIENTS WITH OBSTRUCTIVE SLEEP APNEA

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Introduction:

Obstructive sleep apnea (OSA) results in impaired daytime alertness that impacts daily functioning. The gold standard treatment for OSA is positive airway pressure (PAP) therapy, but it is unknown whether extended use of PAP will provide greater symptom alleviation. The goal of this study was to evaluate the effect of adherence to PAP treatment on quality of life in OSA patients.

Methods:

One hundred twenty-nine predominately male (91%) OSA patients from an existing clinical trial on a positive airway pressure (PAP) therapy adherence were examined. Patients had a mean age of 52.7±14.5 (p=0.8), mean body mass index of 31.1±4.9 (p=0.6), and mean apnea-hypopnea index (AHI) = 26.4±13.3 (p=0.9). All were given identical PAP instruction and follow-up visits were held two and four months from start of treatment. Data from baseline AHI was obtained from diagnostic sleep testing. Follow-up AHI was an average of the residual AHI provided by the PAP device over the treatment period. The Calgary Sleep Apnea Quality of Life Index (SAQLI) was used for sleep apnea symptoms and was self-reported.

Results:

HRQOL as measured by the SAQLI was significantly correlated with PAP adherence at both the two-month timepoint (r=0.300; p=0.15) and the four-month timepoint (r = 0.212; p =.045).

Discussion:

This study suggests that higher levels of PAP adherence are associated with greater improvements in quality of life. The data supports the hypothesis that extended use of PAP provides greater symptom alleviation. Future research needs to examine the nature of this relationship to better inform the length of PAP use that best impacts key clinical outcomes.

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D238 10:00 AM-11:00 AM

SLEEP CHARACTERIZATION OF SELF-REPORTED INSOMNIA IN THE UNITED STATES

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Background: Insomnia is a frequent medical complaint resulting in over five million office visits per year in the United States (US). Less than half of patients with insomnia spontaneously report their sleep problem to their clinician.

Objectives: To evaluate sleep characteristics (difficulty initiating sleep [DIS], difficulty maintaining sleep [DMS], non-restorative sleep [NRS] and time slept on weekdays) in patients with self-reported insomnia.

Methods: Using data from the 2016 National Health Research Survey (NHRS), sleep characteristics, quality of life, emergency department visits and productivity loss were assessed in patients with insomnia. The NHRS surveyed a nationally representative sample of the US adult population in December 2016. Standardized sleep questionnaires were used to characterize sleep complaints. Descriptive and multivariable models with US population-based weighting was used to obtain adjusted odds ratios (ORs) and 95% confidence intervals (CIs) across patient groups.

Results: Insomnia was reported in 26.8% of the US adult population. The most frequent sleep complaints reported for those with insomnia were NRS alone (30.6%), DIS, DMS and NRS (27.8%) and DMS and NRS (10.9%). Comparing patients with DIS alone or DMS alone (4.6%) and NRS alone (30.6%) weekday hours slept were 7.5, and 6.6, respectively. Days with reduced productivity in the past week were higher for those with NRS alone compared to those reporting DIS alone or DMS alone (3.43 vs. 0.42; $p < 0.001$). Emergency department visits over the last 6 months were higher for those with DIS alone or DMS alone compared to those with NRS alone (0.91 vs. 0.38; $p < 0.001$). Scores on the Restorative Sleep Questionnaire (v2) were lower (worse) for those with NRS alone compared to those with DIS alone or DMS alone (50.23 vs. 53.41; $p < 0.001$).

CONCLUSION: Insomnia is common complaint expressed in several ways. How patients characterize insomnia symptoms is related to health related quality of life, productivity and resource utilization.

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D239 10:00 AM-11:00 AM

SUBJECTIVE-OBJECTIVE SLEEP DISCREPANCY IN OLDER ADULTS WITH INSOMNIA: A RANDOMIZED CONTROLLED TRIAL OF BEHAVIORAL THERAPY

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Objectives: The discrepancy between subjective and objective reports of sleep is a clinically meaningful feature of insomnia and might be predictive of the onset and maintenance of insomnia. Sleep discrepancy and the night-to-night variability of sleep discrepancy are especially elevated in older adults who have insomnia. This study examined (a) whether BBT-I was efficacious in reducing sleep discrepancy and the night-to-night variability of sleep discrepancy, and (b) whether baseline sleep discrepancy moderated treatment efficacy on primary sleep outcomes.

Methods: 62 older adults who had chronic insomnia (68% female; age: mean=69.45, SD=7.71) were randomly assigned to BBT-I (sleep hygiene, stimulus control, sleep restriction, and relaxation components), or waitlist control (WLC). Participants completed daily sleep diaries and wore an actigraph from baseline to post-treatment, and for two weeks at 3-month follow-up. Primary sleep outcomes were sleep onset latency (SOL), wake after sleep onset (WASO), and total sleep time (TST). Sleep discrepancy (D) was based on weekly averages of daily diary *minus* actigraphy values for SOL-D, WASO-D, and TST-D. Sleep discrepancy variability (DV) was defined as the weekly within-individual standard deviations of daily sleep discrepancy values (SOL-DV, WASO-DV, TST-DV). Mixed modeling was used to examine (a) the effects of BBT-I on the intra-individual changes of sleep discrepancy and night-to-night sleep discrepancy variability and (b) the moderation effect of baseline sleep discrepancy on the effects of BBT-I on primary sleep outcomes.

Results: TST-D and WASO-DV decreased significantly across treatment in BBT-I compared to WLC (pseudo R^2s=.14 and .11, *p*s < .05), controlling for time-varying changes of the diary- and

actigraphy-assessed TST and WASO. Higher baseline SOL-D was associated with stronger effects of BBT-I on the reduction of diary-assessed SOL (pseudo R^2=.77, $p < .001$).

Discussions: BBT-I is efficacious in reducing TST-D and WASO-DV in older adults. Older adults who had higher baseline SOL-D may receive greater benefit from BBT-I with respect to their improvement in primary sleep outcomes. Future research examining sleep discrepancy as an important clinical outcome in its own right and as a treatment efficiency moderator appears warranted.

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D240 10:00 AM-11:00 AM

ASSOCIATIONS BETWEEN ROMANTIC RELATIONSHIP COMMITMENT AND ALCOHOL USE AMONG YOUNG ADULTS

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It is well established that rewarding marriage and marriage-like relationships promote healthy lifestyles and buffer against negative physical health outcomes. However, methodological decisions to both evaluate romantic relationship stability according to structural commitments (marriage, cohabitation, etc.) and sample predominantly middle and older adults restrict the generalizability of the existing research to young adult couples, who often have few structural commitments. Accordingly, little is known about how *stable* romantic involvement influences physical health during young adulthood. Extending research with young adult couples remains critical given that many lifestyle habits and interdependent bonds form during this period. The current study addresses limitations in the literature by investigating if psychological commitment to the romantic relationship serves as a viable and parsimonious indicator of romantic relationship functioning for health research with young adults. Psychological commitment is a multi-dimensional construct that captures individual differences in numerous indicators of relationship quality (e.g., satisfaction; Rusbult, 1980; Sprecher, 1988), and we expected high commitment to generate healthier behavior.

We focused on drinking behavior as an outcome for this project because young adults are often at heightened risk for alcohol abuse (Johnson et al., 2015). Ninety-five heterosexual couples (*M* age = 19.85), who were dating less than one year, responded to surveys measuring alcohol use in the past week, alcohol-related problems in the previous month (White & Labouvie, 1989), and 3 commitment items (e.g., “I expect to be with my partner in 5 years”). Using a dyadic path analytic framework, we examined the associations between couple-level commitment and each partner’s scores on the alcohol variables. Controlling for relationship length, results showed that high commitment was associated with lower levels of alcohol use and problems, for men (β: -.37 for use; -.36 for problems) and women (β: -.32 for use; -.35 for problems). Drinking concordance within the partnership was also high. Results reflect that psychological commitment to the romantic relationship deters drinking, and may be an important construct for consideration in future studies with young adult couples. Results also show that drinking patterns form at a dyadic level, providing further evidence that individual level young adult alcohol interventions would benefit from including both partners.

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D241 10:00 AM-11:00 AM

ASSOCIATIONS OF STRESS AND TRAIT SELF-CONTROL WITH HEALTH RISK BEHAVIORS

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Self-control failure is a potent predictor of behaviors such as drinking, smoking, and overeating, which can increase risk for cancer and other diseases (de Ridder et al., 2012). Personal resources such as stress may affect the extent to which self-control influences such risk behaviors. According to the limited strength model, trait self-control may not protect well against risk behaviors during periods of high stress, as stress can exhaust an individual's personal resources essential for maintaining healthy goals (Hagger, 2009). Moreover, those who are highly stressed and poorly controlled may be particularly vulnerable to engaging in risk behaviors. In the current study, analyses tested the interaction of trait self-control with contextual stress (i.e. environmental demands over the past month) on risk behaviors occurring over the past 2 weeks, including smoking, drinking, overeating, and fatty food consumption (1 item each). 611 undergraduates completed well-validated measures of trait self-control and stress. Self-control was associated inversely with all four risk behaviors (all p's < .05). Stress was positively associated with all risk behaviors (all p's < .05) except for alcohol use. The interaction of self-control and stress was a significant predictor of overeating (p = .03). Post hoc analyses indicated that, for those reporting little stress, there was no association between self-control and overeating (r = .08, ns); for those with high stress, self-control was inversely associated with overeating (r = -.33, p < .05). Interactions of stress and self-control did not predict fatty food consumption, smoking, or drinking, despite moderate correlations among several of these risk behaviors. Findings suggest that individuals with lower self-control or higher stress are more likely to smoke, overeat, and consume fatty foods; and that under high stress, people with poor self-control are especially likely to overeat. Thus, during periods of high stress, people with fewer dispositional resources are less able to resist overeating, whereas during periods of low stress, these resources are less influential. Findings suggest that future interventions aimed towards stress-reduction may be helpful at improving eating behaviors among highly stressed, poorly self-controlled individuals.

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D242 10:00 AM-11:00 AM

CHARACTER STRENGTHS RELATED TO PREDICTING RESILIENCE IN HURRICANE KATRINA VOLUNTEERS: A STRUCTURAL EQUATION MODEL

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Using structural equation modeling (SEM), this study examined how *altruism* and *perceived spiritual support*, indicating two major character strengths,spirituality and Kindness*,* might enhance resilience (indicated by low depressive symptoms) of Black and White volunteers three months after Hurricane Katrina-Rita(H-KR). Based on the literature, we hypothesized that *altruism* and *perceived spiritual support* would contribute to H-KR resilience, mediated through positive attitudes, *Optimism* and *Hope,* as indicators of a third character strength. *Methods*: we recruited of 554 volunteers The majority of the combined sample was female(88%) (African American =54%). The mean age was 28.9 years(*SD*=9.6). Standardized instruments included CES-D, the *Hope Scale*, the LOT, the *Altruism Scale*, and the *Spiritual Support Scale*(SSS). *Results:* The results indicated that the SEM final model fit the data adequately. The chi-square value was within the acceptable range[c^2(23, *N*=527)=42.242]. The CFI(.987) and TLI(.972) exceeded the benchmark criteria of .95. RMSEA(.040, 90% CI .020 to 0.059) and SRMR(.027) were within the range of good fit. Squared multiple correlations suggested that this model accounted for 25% of the variance in resilience. All effects of two main pathways, spiritual support and altruism, on depression were indirect, mediated through positive attitudes. While faith contributed to both pathways, prayer was directly linked only with spiritual support. White race-identity was positively linked with altruism directly, whereas non-White-identity race was associated with both pathways indirectly, mediated through faith factors, with an additional effect on altruism through prayer and spiritual support. The finding implies the importance of character strength in behavioral and mental health.

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D243 10:00 AM-11:00 AM

COLORECTAL CANCER SCREENING DISPARITIES: SOCIAL DETERMINANTS IMPACTING RURAL RESIDING HISPANICS

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Background: Although CRC screening rates have improved, disparities persist among minority populations with screening rates lagging most in Hispanics (1). Moreover, Hispanics residing in rural areas are among those least likely to have been screened (2). We conducted a pilot study to explore social determinants of low screening rates among Hispanic residents of the Texas South Coastal Region.

Methods: A mixed-methods approach was utilized. A total of 58 participants agreed to participate in one of six focus groups conducted across three counties. Demographic information, self-reported medical history, screening history, risk perceptions, screening efficacy perceptions, and cancer attitudes were obtained by surveys. Also assessed were barriers and challenges in communication and completion of CRC screening within the rural community context.

Results: A majority of the participants were Hispanic (96.6%) and female (79.3%). A minority (38%) of participants self-reported having undergone CRC screening. Survey results revealed that participants with a high school education or less education were significantly more likely to believe that they were at high risk for developing CRC polyps ($p = 0.05$) and, yet, had a preference for remaining uninformed about a cancer diagnosis ($p = 0.02$). Emergent themes from qualitative analysis included concerns about maintaining personal privacy at small rural facilities and limited emotional and instrumental social support.

Conclusion: Decisions to obtain CRC screening are influenced by multiple factors beyond commonly identified barriers. Among Hispanics residing in rural areas, social determinants such as low levels of education, privacy at small town facilities, and lack of social support play a role in CRC screening decisions. Further examination of the influence of social determinants in CRC screening decisions and its impact on disparities in the Hispanic population is warranted.

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D244 10:00 AM-11:00 AM

COMPARISON OF SOCIOECONOMIC STATUS INDEXES IN PREDICTING HEALTH OUTCOMES IN ADOLESCENTS FROM LOW-INCOME FAMILIES IN TAIWAN

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Introduction

Social welfare policy for low-income families is often determined by the household monthly income, however, this index may not fully indentify children in need. An index determined by the available resources for children in poverty may better represent their poverty status and further predict their health status. The aim of this study is to compare asset-based socioeconomic status (SES) index derived from the principle component analysis (PCA) and the monetary-based SES index to investigate the effect of poverty on health among adolescents from low-income families. First, we described the distribution of material and societal resources in a sample of adolescents from low-income families in Taiwan. Second, we constructed both asset-based and monetary-based SES index. Third, we examined and compared associations between two SES indice and self- reported health conditions.

Method

We utilized data from Taiwan Database of Children and Youth in Poverty, a national representative longitudinal survey among children and adolescents from low- income families in Taiwan. A sample of 2,529 adolescents aged 12-18 in junior high school and above was analized. Monetary-based SES index was determined by household monthly income, while assess-based index was based on the weights derived from PCA using a set of self-reported household conditions and resources available. Multivariable logistic regression was conducted to examine the association between these two indices and mental health and physical health conditions among adolescents.

Result

The association between SES and health conditions exists when using the asset-based index, but not monetary-based index. The asset-based index showed social gradient in mental health, injuries and allergy, but not in visual and dental problems. For example, adolescents in the poorest quintile of asset-based index have 7.5 times of odds of reporting poorer mental health than their counterparts in the least poor quintile, followed by odds of 4.1, 3.6 and 1.7 along with the poverty quintile.

Conclusion

Our study demonstrated that asset-based SES index serves as a better index for social gradient in health among adolescents from low-income households than monetary-based index. Healthcare professionals and policy makers should consider including an assessment of household asset and resources as a supplementary index to identify population in need to receive appropriate care.

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D245 10:00 AM-11:00 AM

EXAMINING PSYCHOLOGICAL FLEXIBILITY AS A MEDIATOR OF THE ASSOCIATION BETWEEN CHILDHOOD TRAUMA AND ADULT SOMATIZATION

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Childhood trauma exposure has been shown to be associated with a variety of adverse mental and physical health outcomes. More specifically, trauma exposure is related to later somatic preoccupation and somatic syndromes and to chronic pain. While these associations have been demonstrated, less work has explored the mechanisms through which these relations may exist. Importantly, it is not uncommon for individuals who have experienced trauma to engage in avoidant coping strategies, which, while potentially effective in the short-term, tend to lead to worse outcomes in the long-term. Conversely, acceptance and mindfulness have been associated with greater resilience after trauma exposure. The present study utilized self-report measures of childhood trauma and current experiential avoidance, mindfulness, and somatic symptoms from a community sample of adults (n = 287) and conducted mediation analyses (with bootstrapping) to examine the mediating roles of psychological inflexibility and mindfulness in the association between childhood trauma exposure and somatic symptoms in adulthood. Results showed that both psychological inflexibility (indirect effect: coefficient: .184, CI: [.1185, .2637]), and the nonjudgment component of mindfulness (indirect effect: coefficient: .0907, CI: [.0484,.1533]), significantly mediated the association between childhood trauma and somatic symptoms. Given the significant percentage of individuals who experience trauma, as well as the substantial proportion of individuals who present to primary care with medically unexplained symptoms, the identification of process-based mechanisms is important for the development and implementation of preventive interventions. More specifically, using mindfulness or acceptance-based therapies, such as Acceptance and Commitment Therapy (ACT), may improve outcomes for individuals who have experienced childhood trauma.

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D246 10:00 AM-11:00 AM

EXPLORATION OF PHYSICAL ACTIVITY BEHAVIORS AMONG MEXICAN SENIORS IN THE US AND MEXICO: IMPLICATIONS FOR RESEARCH AND PRACTICE

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The benefits of physical activity (PA) are well documented and have been associated with improved health and wellbeing. In the US, Latinos are the fastest growing racial/ethnic group, and research indicates that US Latinos report less PA and higher rates of obesity and related chronic conditions relative to non-Hispanic Whites. Nearly two-thirds (64%) of Latinos in the US are of Mexican descent, yet little is known about the PA behaviors among older adults living in Mexico. The purpose of this pilot study was to: 1) explore and compare PA behaviors among Mexican older adults in the US relative to Mexico; 2) utilize a social ecological framework to examine factors that facilitate or hinder PA behaviors; and 3) develop recommendations for practice.

Older Latino adults aged 60+ years were recruited from two senior centers in San Jose, CA and two senior centers in Mexico City. Study staff administered a bilingual survey to eligible and consented participants. The survey assessed demographics, health status, participation in PA, attitudes and barriers and facilitators to PA, and perceptions about the neighborhood built environment. Descriptive statistics were analyzed with SPSS 22.0.

Participants (N=41, US, n=21; Mexico, n=20) were primarily female (75%) (Age, *M*=75, SD=8.3). Among US participants, 86% (n=18) “agreed or strongly agreed” that PA was a priority in their life, compared to 35% in Mexico (n=7). Forty-three percent of US participants engaged in >150 minutes of moderate or vigorous physical activity (MVPA) per week, relative to 25% of Mexico participants. Individual-level PA barriers were similar among both groups and included poor health (US, 38%; Mexico, 45%), perceived safety (US, 38%; Mexico, 50%), and a preference to engage in non-PA activities (US, 38%; Mexico, 30%). At the interpersonal level, participants from both countries generally felt that having encouragement and support from their doctor (US, 76%; Mexico, 50%) or family (US, 47%; Mexico, 30%) was important for their participation in PA. While not currently available to either population, at the environmental level, participants indicated that they would use neighborhood walking paths

(US, 71%; Mexico, 85%) or participate in neighborhood/mall walking programs (US, 76%; Mexico, 60%) if available. Relative to participants from Mexico, US participants reported that they would be more likely to increase PA if they received insurance incentives, had access to phone-based PA support, or were able to obtain low-cost gym memberships.

Initial results indicate that PA barriers and facilitators appear to be reasonably similar at the micro, meso, and macro levels for older Mexican adults residing in urban cities in the US and Mexico. A next step is to expand the sampling frame and further explore possible interventions that could reach both groups, given the regular travel habits of this population across the US-Mexican border.

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D247 10:00 AM-11:00 AM

HIGHER EDUCATION: TESTING THE EFFICACY OF HEIGHT ADJUSTABLE SIT-STAND DESKS IN COLLEGE CLASSROOMS

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Background: Sedentary behavior has been found to have independent and negative associations with several cardiometabolic risk factors while interrupting prolonged sedentary time may ameliorate these associations. College classrooms are a traditionally sedentary microenvironment and understudied setting for sedentary interventions. Introducing sit-stand desks into college classrooms may be an effective and sustainable approach to reduce classroom sedentary behaviors of college students.

Objective: To test the efficacy of replacing seated desks with sit-stand desks in a college classroom on student’s classroom sitting/standing behaviors. We hypothesize introducing sit-stand desks will significantly reduce classroom sitting time while increasing classroom standing time.

Methods: We recruited 240 undergraduate college students taking class in one of two small classrooms (25 seats per class) to participate. Using a cross-over design, each student’s classroom sitting and standing time will be measured by self-report and objectively (direct observation via video camera surveillance) after having access to only seated desks or only sit-stand desks for six continuous weeks. A process evaluation survey will be administered at the end of the study to explore student’s and instructor’s perceptions of the intervention and its impact on student engagement.

Results: Preliminary results of the baseline testing session indicate 145 students (60.4% response rate) self-reported spending 97.5% of class time sitting when having access to only seated desks. An ongoing analysis of a sub-sample of the direct observation video surveillance data (3 classes; 60 total students) suggests students actually spent 99.5% of class time sitting. These measures will be repeated after students have had access to the sit-stand desks for six weeks.

Conclusions: This is the first intervention trial to test the efficacy of introducing sit-stand desks on student's classroom sitting/standing time in a college classroom. If effective, this intervention could be a sustainable approach for reducing sedentary behaviors of college

students. We anticipate the findings of the study will be useful for informing future college classroom designs.

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INSURANCE COVERAGE & COMPLIANCE WITH BREAST & CERVICAL CANCER SCREENING GUIDELINES AMONG IMMIGRANT WOMEN IN TEXAS & CALIFORNIA

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Although documented immigrants are a large and growing population in the United States, gaps still exist in their access to health insurance and preventive care. Many factors contribute to these disparities, including immigration status, English proficiency, region of birth, socioeconomic status, and usual source of care. This study compared insurance coverage and access to breast and cervical cancer screening services between Harris County (HC), Texas (greater Houston) and Orange County (OC), California. While both counties are metropolitan and have large proportions of immigrant residents, there are important differences between the two areas, rendering a comparison interesting. These differences enable us to understand if location of residence affects access to health services for immigrants and to understand which factors may be mutable, based on geography.

Data collected on adult immigrant women in the 2010 Health of Houston Survey and the 2007 & 2009 California Health Interview Surveys were used. Logistic regression was used to determine the role of predictors for health insurance (n=514,361), and breast (n=277,278) and cervical (n=395,185) cancer screening compliance for the combined samples, and identified which factors differed between the two counties. For those with no health insurance or who had not recently been screened, cost and insurance issues were the most-identified reasons.

Female foreign-born OC residents were more likely than those in HC to have public insurance compared to private or no insurance. Longer residence in the U.S. or any type of permanent status predicted a higher likelihood of having insurance. Immigrant women in OC with any type of insurance were more likely than comparable women in HC to receive cancer screening services. Overall, immigrant women in OC were more likely than those in HC to be more recently screened for breast cancer; stronger county effects were identified for breast than for cervical cancer screening. For those with no health insurance or who had not recently been screened, cost and insurance issues were the most-identified reasons.

This study is the first to examine how geographic location of residence may affect access to health insurance and cancer screening rates for immigrant women in parts of Texas and California. Important differences exist between the two counties; these results can assist local public health organizations in identifying specific immigrant populations to which they can tailor outreach programs. Results provide support for increased funding and focus on community health centers, and have the potential to impact local and state-wide post-Affordable Care Act policy changes.

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D249 10:00 AM-11:00 AM

LONGITUDINAL ASSOCIATIONS BETWEEN SMOKING STATUS AND SOCIAL SUPPORT, SOCIAL NETWORK, AND SOCIAL COHESION

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Background: Previous studies have examined the effect of smoking cessation related social support on smoking cessation. However, how smoking status influence subsequent social relationship is largely unknown. We explored the prospective associations between smoking status and social support, social networks, and social cohesion in a cohort of adults.

Methods: Data came from the Coronary Artery Risk Development in Young Adults (CARDIA) study, which follows a cohort Black and White participants from four US cities aged 18-30 years in 1985-86. We included individuals who participated at Y10 and Y15 in current analyses (aged 28-45 years, N= 3378). We created 8 categories to reflect stable (non-user, experimenter, former smoker, current smoker) and changed (new experimenter, initiator, relapser, quitter) smoking status from Y10 to Y15. We used PROC MIXED to assess prospective associations between smoking status and on familial social support, social networks (e.g., number of friends and relatives), and perceived neighborhood social cohesion outcomes at Y15. We adjusted for fixed measures (i.e., age, gender, collection site, parent education) and Y10 factors (i.e., education, employment, marital status, and household income).

Results: One-fifth (16%) of cohort changed their smoking status in five years. Current smokers, new experimenters, and relapsers reported receiving less social support than non-users (*ps* < 0.05). In addition, former smokers reported more social support than current smokers ($p < 0.05$). Stable experimenters reported having fewer closer friends and relatives and non-users, but reported having more close friends and relatives than current smokers. Compared to non-users, current smokers reported fewer close friends and relatives (ps < 0.05).

Conclusion: Smoking is associated with less perceived social support, social networks, and social cohesion, all of which are essential for psychological well-being. Tobacco control efforts should highlight effects of smoking on social outcomes to deter smoking behavior.

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D250 10:00 AM-11:00 AM

LOW-INCOME COMMUNITIES' WORKSITE POLICIES INCREASE EMPLOYEE ACCESS TO PHYSICAL ACTIVITY MORE THAN HIGH-INCOME COMMUNITIES

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Background: WorkWell KS sought to encourage worksites across Kansas to implement comprehensive worksite wellness initiatives, with an emphasis on health topics, such as physical activity, and on policy strategies. Higher poverty rates are linked to poor health outcomes, less physical activity, and more sedentary behavior. Worksites can serve as an important conduit for employees in poor communities for access to healthier options.

Methods: These are data from 47 WorkWell KS workshops across Kansas, with approximately six to seven worksites present for each workshop, from 2012 through 2015. Each worksite completed a baseline assessment that featured items derived from other established worksite assessments and the academic literature, including whether or not worksites had policies that encourage physical activity at the worksite. One year after participating in the WorkWell KS workshop, participating worksites were asked to complete a similar follow-up assessment. To assess the impact of poverty on access to physical activity, worksites were divided into 'below average' and 'above average' based on the poverty rate in each county relative the average Kansas poverty rate of 13.5% in 2014.

Results: At baseline, in counties with 'below average' poverty levels and in counties with 'above average' poverty levels, 10% of worksites in both types of counties had written policies that supported physical activity at the worksite. At one-year follow-up, among worksites in more affluent counties, there was no difference in the percentage of worksites with physical activity policies than at baseline. Conversely, among worksites in poorer counties, there was a significant increase in the percentage of worksites implementing physical activity policies from 10% at baseline to 23% at follow-up, t(60)-2.398, p = 0.020.

Conclusions: WorkWell KS supports worksites in developing and implementing comprehensive initiatives, including policies, to support healthy behaviors, such as physical activity. The WorkWell KS intervention can be an effective model for improving access to physical activity, especially among employees in low-income communities.

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D251 10:00 AM-11:00 AM

MARITAL STATUS MODERATES THE ASSOCIATION OF VIGILANCE AND AMBULATORY BLOOD PRESSURE

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Marriage is associated with a range of health benefits, including lower cardiovascular mortality and morbidity, relative to being never married or divorced. One pathway through which these effects may occur is through differences in daily stress behaviors and physiological reactivity. This study aims to explore whether marital status moderates the association of vigilance of the social environment and daily blood pressure (BP).

Participants were a community sample of 300 healthy adults (150 men, 150 women) ages 21 to 70 years enrolled in the North Texas Heart Study (PI: Ruiz). The sample was stratified by age within gender and race/ethnicity, and the mean age at enrollment was 42.44 years (SD=12.76). All participants completed a physical, surveys, and two days and 1 night of EMA coupled with ABP. The EMA/ABPs were programmed to sample at random times within 45-min intervals to avoid anticipation effects. These analyses compared married (60.3%) to all unmarried participants, and examined social vigilance using three different approaches: a cross-sectional survey, end of day (EOD) questionnaires, and ecological momentary assessment (EMA). Person/day averages were calculated from the EMA and ABP.

No main effects of marital status or social vigilance were observed on mean ABP. However, marital status and social vigilance were interacted to predict measures of BP, all *B*s>6.53, *p*s.05. The association of vigilance and average daytime systolic BP was moderated by marital status, *B* = 11.52, p = .002; whereas married participants showed a positive association between vigilance with ABP, B = 5.93, p = .005, unmarried participants evidenced a negative association, *B* = -5.59, p = .016 (all Bs reported are for models using vigilance assessed by EMA). Matched effects were observed for DBP. In addition, the more proximal and frequent the assessment of vigilance, the stronger the statistical effect, average daily EMA R^2 = 0.030, EOD $R^2 = 0.019$, Survey $R^2 = 0.007$.

These results suggest that highly vigilant married participants showed the highest BP, whereas highly-vigilant, unmarried participants had the lowest daytime BP, which may represent differences in how married and unmarried people are able to select their social environments and face daytime stressors as a result. The study also demonstrates the benefits of more proximal measurement methodologies.

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D252 10:00 AM-11:00 AM

PATTERNS OF CONSULTATION LAISON REFERRALS IN AN URBAN ACADEMIC MEDICAL SETTING: FUTURE DIRECTIONS IN BEHAVIORAL MEDICINE

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As outlined in Mostofsky (2014), the field of Behavioral Medicine has evolved greatly since its inception. From a focus on issues more closely related to psychosomatic medicine and techniques such as biofeedback into a discipline pursuing the development of a science and set of interventions concerned with maintaining and restoring health through behavioral interventions targeting prevention, diagnosis, treatment, and rehabilitation (Birk, 1973; Schwartz & Weiss 1978). Using such interventions as cognitive therapy, mindfulness-based practices, and applied operant conditioning to improve the individual's health (Agras, 1982; Wilson, 2015), Behavioral Medicine has come to help medical patients manage chronic conditions having behavioral correlates including hypertension, smoking, pain, obesity, diabetes, eating disorders, and sleep disorders (Blanchard, 1992). Today, Behavioral Medicine has become a systems-oriented, public health, and preventative intervention-focused discipline. The present research examines how Behavioral Medicine is being utilized today to better understand how the field will continue to evolve going forward. Given the growing demand for such services, the focus of the present study was on an inpatient Consultation-Liaison Behavioral Medicine service. Descriptive statistics were applied to a database of all referrals to the service describing referral source, patient primary diagnosis, mental health diagnosis, numbers of sessions, and reason for referral as well as demographic variables related to the patient. Consultations come primarily from Trauma (27%) and Hospitalists (33%), diagnosis vary in range but are commonly related to pain and injury secondary to motor vehicle or other accidents (19%) as well as those directly related to cancer (16%). Unsurprisingly, the most common DSM 5 diagnosis in this population was some form of Adjustment Disorder (23%), a fact that may help shape ongoing research and training efforts. The resulting information highlights how Behavioral Medicine has and will continue to evolve by understanding how allied healthcare professionals are utilizing our services to better manage acute conditions (pain and injury) and chronic illness (cancer). The unique contributions of Behavioral Medicine in inpatient care is also discussed as well as the implications for refining our interventions to improve quality of care delivered to the patients we are called by our colleagues in medicine to serve.

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D253 10:00 AM-11:00 AM

PERCEIVED DISCRIMINATION IN RECEIPT OF HEALTH CARE IN SOUTH LOS ANGELES

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Background: Racial, gender, sexual orientation, and other forms of discrimination in health care delivery are barriers to cancer prevention, early detection, and high quality health care. This study examined perceived discrimination among adults who attended 2 community-based cancer awareness events in South Los Angeles, one of the most under-resourced neighborhoods in the United States.

Methods: A total of 143 adults completed a survey that assessed socio-demographic characteristics, unfair treatment while seeking health care, and receipt of and communication with a physician about colorectal cancer screening.

Results: The predominately African American (65%) and Latino sample (26%) reported high level of health insurance (99%), the majority had a regular physician (81%) and 34% had a college degree. Slightly more African American than Latino respondents reported unfair treatment when seeking healthcare at least once for self or somebody close to them (52% vs 46%, NS). In addition, women were significantly more likely than men to report unfair treatment (57% versus 35%, $p < .02$). Among African Americans and Latinos, reasons for unfair treatment for themselves included race (80%), ancestry/national origin (47%), gender (42%), skin color (40%), age (38%) and body size (22%). Among respondents 40 years and over, there was a significant relationship between discussion of colorectal cancer screening with a provider (65%) and receipt of a screening test (62%; $p < .001$), but both variables were unrelated to perceived discrimination.

Discussion: Although about half of our sample reported experiencing unfair treatment directly or vicariously at least once in their lifetime, this was unrelated to lifetime receipt of colorectal cancer screening in our predominantly insured convenience sample. Discrimination in healthcare is widely reported by African Americans and Latinos and should be explored more extensively using community-partnered strategies.

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D254 10:00 AM-11:00 AM

REAL WOMEN AND REAL BEAUTY

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Real Women and Real Beauty: Assessing the Internal Comparison Processes and Target Images in Body-Image Self-Discrepancies

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Research suggests that unfavorable comparisons with an internalized beauty ideal lead to negative emotional outcomes such as body shame and appearance anxiety. An important, as of yet unexamined assumption, in the body-image literature is the notion that women internalize one, possibly two ideals of beauty, that are utilized as standards when engaging in body-image comparison. To assess this assumption, the current study investigated 1) if levels of state body shame (SBS) and state appearance anxiety (SAA) differed between comparisons with a personal vs. a sociocultural ideal of beauty utilizing a novel experimental study design, and 2) the appearance of the images that women imagined when engaging in comparisons with their internalized ideals of beauty.

A weight-diverse sample of 139 college women attending a large southeastern U.S. public university participated in an imaginal-exposure experimental procedure and completed self-report instruments of the variables of interests. Regression analyses showed significant differences between the body-image neutral control condition and the two experimental conditions (**SBA:** B_{pers}=.36, $p < .05$; B_{socio}=.40, $p < .05$; **SAA:** B_{pers}=.35, $p < .05$, B_{socio}=.31, $p < .05$) while controlling for trait self-discrepancy and body mass index. However, no significant differences were detected between the two experimental conditions (**SBA:** 95% CI [-0.48, 1.24]; **SAA:** 95% CI [-0.35, 0.91]). Finally, analyses further indicated that the number and type of images used as an appearance comparison reference were similar between the two experimental conditions.

Findings from the current study suggest imagining and writing about comparing oneself to an internalized ideal of beauty elicits state appearance anxiety and state body shame regardless of whether these comparisons are made with a personal ideal or a sociocultural beauty ideal. Results also indicate that at least part of the reason for this lack of difference is that women think of both sociocultural and personal ideals of beauty when engaging in body-image comparisons with internalized ideals. Implications for advancing current theory, expanding methodological considerations, and fostering behavioral health outcomes are discussed.

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D255 10:00 AM-11:00 AM

MERITORIOUS AWARD WINNER

RESILIENCY, PSYCHOLOGICAL SYMPTOMS, AND ALCOHOL USE AMONG CYBERBULLIED YOUNG ADULTS

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The detrimental impact of cyberbullying on individuals' mental and physical health has been well documented. The ways in which victims react to and cope with the effects of cyberbullying are of interest to both researchers and clinicians, as this information may guide the development of effective treatment interventions. In particular, the ability to harness internal resiliency may serve as an important factor in coping with cyberbullying experiences. The purpose of this study was to examine resiliency among college students who reported a history of being cyberbullied. We recruited 180 undergraduate college students (mean age = 19.32; 52% female; 30% non-white) to complete an online survey assessing the mental and physical health impacts of cyberbullying, as well as their self-reported resiliency. Pearson's correlation coefficients were calculated to determine the relationships between resiliency, subjective impact/severity of cyberbullying, and mental health outcomes. We also conducted a series of hierarchical linear regression analyses predicting each of our mental health outcomes of interest. Resiliency scores were inversely correlated with severity of cyberbullying experience ratings ($r = -0.408$, $p < 0.001$), as well as depression scores ($r = -0.428$, $p < 0.001$), anxiety scores ($r = -0.403$, $p < 0.001$), and alcohol usage scores ($r = -0.168$, $p = 0.029$). Higher ratings of cyberbullying severity significantly predicted higher depression scores ($\beta = 0.158$, $p = 0.042$), anxiety ($\beta = 0.271$, $p = 0.001$), and alcohol usage ($\beta = 0.268$, $p = 0.002$), even after controlling for resiliency scores. These results indicate that the perceived severity of cyberbullying experiences is predictive of increased symptoms of depression and anxiety, and more problematic alcohol use, regardless of whether or not college students are psychologically resilient. These findings emphasize that the detrimental impact of cyberbullying is pervasive among college students who experience such online harassment. Although more resilient individuals may be partially shielded from the negative consequences of cyberbullying, the pervasiveness of cyberbullying's negative impact appears to necessitate additional resources beyond individuals' intrinsic fortitude.

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D256 10:00 AM-11:00 AM

THE ASSOCIATION BETWEEN HOUSEHOLD CHAOS AND SUBSTANCE USE AMONG CHILEAN YOUTH: THE MODERATING ROLE OF SCHOOL SATISFACTION

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Adolescence is an important period in development during which health behaviors are established. Previous studies suggest that risk- and protective factors for adolescent substance use are multi-contextual. In this study, we examine: (1) the relations between household chaos and adolescents' binge drinking, cigarette and marijuana use and (2) whether effects vary by school satisfaction.

Data are from 766 adolescents who participated in the Santiago Longitudinal Study and have been followed since infancy. At age 16 (SD=0.2), adolescents' mothers completed the Chaos, Hubbub, and Order Scale, designed to measure confusion, noise and lack of routine in the home. Adolescents self-reported school satisfaction and past month binge drinking, marijuana use and cigarette smoking. We utilized multivariable logistic regression to analyze associations between chaos tertiles (mild, moderate, severe) and each outcome. Then, we tested for interactions between chaos and school satisfaction. Analyses adjust for gender, maternal education, family socioeconomic status and age at assessment.

In this sample, 7% of respondents reported past month binge drinking, 23% reported cigarette use and 9% reported marijuana use. Participants living in moderately and severely chaotic households had over twice [OR=2.5(1.2-5.1)] and thrice [OR=3.2(1.5-6.7)] the odds of binge drinking compared to those in mildly or non-chaotic households. Similarly, increasing levels of chaos resulted in greater odds of cigarette [moderate: OR=2.7(1.1, 2.6); severe: OR=2.7(1.7, 4.2)] and marijuana [moderate: OR=2.3(1.2, 4.5); severe: OR=2.5(1.3, 5.0)] use. We found a significant interaction between chaos and school satisfaction for two outcomes: effects on cigarette and marijuana use were attenuated among individuals reporting higher levels of

school satisfaction.

Findings indicate that household chaos is associated with increased odds of substance use. The effects on marijuana and cigarette use varied by level of school satisfaction, indicating a synergistic relationship between school and home contextual factors. School-based interventions promoting satisfaction and belongingness may be effective in reducing adolescent substance use, especially for individuals living in chaotic home environments.

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D257 10:00 AM-11:00 AM

ASSOCIATIONS BETWEEN ANXIETY, DEPRESSION, & GENDER ON CORTISOL REACTIVITY AMONG COLLEGE STUDENTS

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Studies have shown that internalized mental disorders (e.g., anxiety and depression) and gender impact cortisol reactivity to social stress (Villada et al., 2014; Harkness, et al., 2011; Kudielka et al., 2009). Further, lower cortisol reactivity has been shown to lead to adverse health outcomes, such as reduced immune system responses and mood regulation (Lovallo, 2011). The purpose of the current study was to examine whether there were significant differences in cortisol patterns by level of anxiety (i.e., low vs. high; State-Trait Anxiety Inventory-Trait Scale), depression (i.e., low vs. high; Beck Depression Inventory), and gender group (men vs. women) among college students participating in in a laboratory stressor (i.e., Trier Social Stress Test; TSST). The participants' salivary cortisol was collected before the TSST, right after the TSST, and 15, 30, and 45 minutes after the TSST. Results from repeated-measures analyses of variance showed that, contrary to our hypothesis, there were no significant differences between low and high anxiety groups in their cortisol patterns. However, results did show that participants with high levels of depression had significantly lower cortisol levels throughout the TSST than those with low levels of depression, $F(1, 104) = 6.45$, $p < .05$, and that women had significantly lower cortisol levels than men, $F(1, 105) = 7.42$, $p < .05$. These results support the need for additional studies investigating mechanisms that help explain lower cortisol responses among those with high depression and women, as well as their impact on long-term health.

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D258 10:00 AM-11:00 AM

DEVELOPING A STRESS COPING APP FOR HIGH RISK HOSPITALIZED PREGNANT WOMEN: LESSONS LEARNED

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Background: In hospitalized high-risk pregnant women, stress is a significant problem affecting psychophysiological health. In the few studies examining interventions to address this problem, the traditional delivery systems have been outdated devices such as CD, mp3 and tape players which limit the complexity and hinder integration of an intervention into daily use. Such limitations may be addressed by mobile devices, unique means of administering health interventions. However, there is a paucity of research focused on developing and preliminary evaluating a mobile stress coping app intervention in this high-risk population.

Purpose/Method: The purpose of this presentation is to describe the design, development and iterative evaluation of a mobile device stress coping app to reduce stress in hospitalized high-risk pregnant women. Within an interdisciplinary team, the design and development process included literature review, theory based foundation, building app components, programming issues, as well as data collection and download methods. Iterative evaluation was obtained from a prospective mixed methods study using a one-group pre/posttest design. Participants recruited from a tertiary care hospital were instructed to complete study measures, review all components of the app, listen to an audio file incorporating relaxation, breathing, visualization exercise and positive affirmations once a day for 8 days and complete daily stress self-assessments using a programmed visual analogue of stress scale (VASS). Daily interviews were conducted by the research team.

Results: All app components had active users. Participants (n=15) reported positive components of the app as well as opportunities for improvement. 100 % reported they had benefited from using the app. There was a significant decrease between pre and post intervention VASS scores ($p = 0.0001$). The majority of participants requested to continue using the app after the study.

Conclusions: The mobile stress coping app was found to be beneficial in reducing stress and provided a respite from the psychophysiological stress response in this population. The feedback provided will assist in refining the current app for use in a clinical intervention trial.

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D259 10:00 AM-11:00 AM

EFFECTS OF DANCE MOVEMENT THERAPY ON SUBJECTIVE STRESS AND CORTISOL SLOPE AMONG BREAST CANCER PATIENTS UNDERGOING RADIOTHERAPY

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Background: Breast cancer patients are at risk for psychosocial distress, which may lead to neuroendocrine dysfunction. Dance Movement Therapy (DMT) is a movement-based psychosocial intervention that incorporates exercise, artistic, and recreational components. This study aimed to examine the effectiveness of DMT on perceived stress and diurnal cortisol slope.

Methods: This clinical trial randomized 121 Chinese breast cancer patients undergoing radiotherapy treatment into the DMT (n = 63) or control group (n = 58). The intervention comprised six 1.5-hour group sessions held twice a week over the course of radiotherapy. The participants completed self-report measures on perceived stress, health and sleep characteristics at baseline. Salivary cortisol samples were collected at five time points and perceived stress at the end of the intervention. Moderated mediation analysis was used to evaluate the DMT effect on the diurnal cortisol slope.

Results: Overall, DMT showed a marginal beneficial effect on diurnal cortisol slope (B = –0.66, 95% CI = –1.36 to 0.06, β = –0.17). Baseline perceived stress significantly and negatively moderated the effect of DMT on diurnal cortisol slope (B = –0.21, 95% CI = –0.36 to –0.05, β = –0.35). At one SD above the pss1 mean, the cortisol slope of the DMT group (M = -6.93) was significantly steeper than the control group (M = -5.35) with 95% CI for the difference of -1.58 = -2.59 to -0.61. The indirect effect of DMT on cortisol slope via Time 2 perceived stress was not statistically significant.

Discussions: The DMT program had a modest overall effect on diurnal cortisol slope in breast cancer patients but appeared to be effective in modulating the neuroendocrine response of those who were distressed. The present findings suggest that perceived stress may play a moderator but not mediator role in the DMT effect on diurnal cortisol slope.

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D260 10:00 AM-11:00 AM

EXPERIENCES OF ETHNIC MICROAGGRESSIONS AND CORTISOL REACTIVITY TO THE TRIER SOCIAL STRESS TEST IN COLLEGE STUDENTS

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Ethnic discrimination has been linked to stress. Although research regarding overt discrimination is plentiful, less is known about the impact of ethnic microaggressions. Microaggressions are subtle verbal or behavioral exchanges that communicate negative messages about a person's ethnicity. These experiences are particularly stressful and detrimental due to their ambiguous nature and the feelings of uncertainty that they arouse in those who experience them. The purpose of the current study was to examine how the frequency with which young adults experience ethnic microaggressions and their reactions to them relate to a biological marker of stress (i.e. salivary cortisol). Cortisol reactivity, cortisol recovery, and Area Under the Curve (AUC) were assessed. Participants were 109 ethnically diverse undergraduate students (74% females, M age= 18.7 years, SD= 1.3; 44% Hispanic, 23.9% Asian, 19.3% White, 12.9% other) who were exposed to the Trier Social Stress Test (TSST), a widely used paradigm to study stress reactivity. Participants provided 5 saliva samples before and after the TSST. They also answered 12 items about the frequency of ethnic microaggressions and their reaction to such experiences (e.g. getting upset; Ethnic Microaggressions Scale). Results of a repeated measures ANOVA showed that salivary cortisol increased significantly after exposure to the TSST, there was a main effect of time F(2.38, 242.75) =16.79, $p < .001$. Hierarchical linear regressions, which controlled for gender and generation status, showed that overall frequency of microaggressions and reactivity to microaggressions were not significantly associated to cortisol reactivity. A negative reactivity to microaggressions (i.e. getting upset) was associated with faster recovery after TSST exposure ($\beta = -.343$, SE = .033, $p < .001$) and marginally associated to a smaller AUC ($\beta = -.179$, SE = 2.102, $p = .056$, that is lower cortisol output. Finally, when comparing those with high frequency of microaggressions versus those with low frequency, a marginally significant difference was found with those in the low frequency group having a normal reactivity pattern after the TSST and those with high frequency having a blunted response F(2.36, 238.54)=2.42, p=.08. This pattern was also observed for reactivity to microaggressions F(2.30, 238.18)=3.09, $p < .05$. Blunted cortisol responses may have negative health implications, as they have been associated to substance use and obesity.

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D261 10:00 AM-11:00 AM

IMPAIRED BARORECEPTOR REFLEX FUNCTION IN CHRONICALLY STRESSED ELDERLY CAREGIVERS

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Abstract

OBJECTIVE

We examined the relationship between chronic caregiving stress and baroreceptor reflex function.

BACKGROUND

Caregiving stress is associated with an increased risk in cardiovascular disease (CVD). The inability to adequately control blood pressure homeostasis through the baroreceptor reflex is a possible mechanism underlying this increased CVD risk. Evidence suggests that caregiving stress may be linked to atherosclerotic processes, and atherosclerosis has been shown to blunt the baroreflex by reducing arterial compliance. A blunted baroreflex sensitivity (BRS) increases the risk of arrhythmias and sudden cardiac death. We investigated the relationship between chronic caregiving stress and BRS.

METHODS

Elderly individuals (>55 years old; N = 149) participated in this study. Of these, 50 were married to a non-demented spouse, 57 were short-term caregivers (provided care < 4 years), and 41 were long-term caregivers (provided care ≥ 4 years). Multiple linear regression was used to determine if short- and long-term caregivers demonstrated significantly worse BRS relative to non-caregivers, after controlling for relevant health and demographic characteristics.

RESULTS

Long-term caregivers had a significantly worse BRS (mean ±SE = 8.02 ± 0.77) than the non-caregiving controls (mean ±SE = 10.47 ± 0.69; p = 0.047). BRS for short-term caregivers (mean ±SE = 9.89 ± 0.66) was not significantly different from the non-caregiving controls (p = .389).

CONCLUSIONS

These results suggest that chronic caregiving stress may be associated with a blunted BRS, especially in those caring for a longer period of time. We theorize that the accumulated wear-and-tear from caregiving stress could promote physiological processes that worsen BRS function. This finding could provide an explanation for the observed increased in CVD risk in elderly caregivers.

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D262 10:00 AM-11:00 AM

INFLAMMATION AND POSITIVE AFFECT: EXAMINING THE STRESS-BUFFERING HYPOTHESIS WITH DATA FROM ADD HEALTH

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The present study examined the influence of positive affect (PA) on levels of inflammation within the context of Pressman and Cohen's (2005) stress-buffering model, which suggests that PA confers protective health benefits through its ability to mitigate the pathogenic influence of stress. We hypothesized that greater PA would buffer against the influence of perceived psychological stress (PPS) on systemic inflammation, operationalized as C-reactive protein (CRP, mg/L). Specifically, we predicted that PA would moderate the relationship between PPS and CRP. Cross-sectional data were drawn from Wave IV (2008-2009) of the National Longitudinal Study of Adolescent to Adult Health (Add Health). Participants (n = 3,093) ranged in age from 25-34 years old (M = 29.0 ± 1.79). Using a moderated hierarchical regression analysis, PPS and PA significantly interacted to predict levels of CRP ($p < .05$). Examination of the simple slopes revealed a disordinal interaction between PPS and PA, such that higher PA was protective against elevated CRP, but only when individuals also reported greater levels of PPS. Thus, the data partially support the stress-buffering model of PA and extend existing evidence regarding the complexity by which PPS and PA influence health. Findings also provide caution of future assumptions that the relationships among PA, PPS, and physical health markers, such as CRP, are always positive (*e.g.,* PA) or negative (*e.g.,* PPS) in nature.

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D263 10:00 AM-11:00 AM

PERFECTLY STRESSED: AN INTERACTION OF EVALUATIVE CONCERNS PERFECTIONISM AND PERSONAL STRIVINGS PERFECTIONISM ON STRESS

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Despite an ongoing debate regarding the positive versus negative aspects of perfectionism, research has indicated that perfectionism is a stable personality characteristic linked to stress and stress-related outcomes. This relationship is especially concerning from a health outcomes perspective, as stress has long been known to impact physiological and mental health, health behaviors, and overall wellbeing. While multiple studies have proposed a two-factor model that distinguishes between maladaptive and adaptive features of perfectionism (often referred to as evaluative concerns perfectionism (ECP) and personal strivings perfectionism (PSP)), the interaction of these two factors in the context of stress has not been adequately explored. Additionally, the majority of research on this two-domain model of perfectionism has utilized group-based comparisons as opposed to moderations that account for the continuous nature of the variables involved. Therefore, the purpose of the present study was to examine the interaction of ECP and PSP on perceived stress via moderation analysis.

A sample of 144 participants from a large southeastern university completed self-reported measures of perfectionism and perceived stress in an online survey. ECP was positively associated with perceived stress (r= .61, p < .001), while PSP and perceived stress were not correlated. Regression analyses indicated that the linear effects of ECP and PSP accounted for a large proportion of the variance (43%) in perceived stress (R^2 = .43, F(2, 141) = 52.54, p < .001). The interaction of ECP and PSP (β = -.08, p < .05) accounted for an additional 3% of the variance in perceived stress above and beyond the linear terms (ΔR^2 = .03, F(3, 140) = 38.56, p < .001). This suggests that the effect of ECP on perceived stress varies as a function of PSP. Interestingly, graphical representations of these findings indicate that ECP and PSP interact such that when ECP is high, differences in PSP do not affect perceived stress levels, but when ECP is low, differences in PSP have a strong buffering effect against stress.

Although the link between perfectionism and stress has been previously demonstrated, these findings suggest that PSP may result in a drastic buffering effect against the impact of ECP on perceived stress at lower levels ECP. Implications for theoretical advancements, methodological implications, and stress interventions in the context of personality characteristics are discussed.

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D264 10:00 AM-11:00 AM

PSYCHOLOGICAL RESOURCES PROTECT AGAINST HEIGHTENED INFLAMMATION RELATED TO SOCIAL STRAIN AND ADIPOSITY IN LATE ADOLESCENCE

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Social strain (i.e., difficulties from social relationships) increases risk for poor health outcomes (e.g., depression, heart disease), which may be partly driven by heightened inflammatory reactivity to stress. Notably, adolescence is marked by significant changes in social relationships and is when adult health trajectories begin to set. Yet, no study has examined how social strain impacts inflammatory reactivity to stress during adolescence. Thus, vulnerability and protective factors have not been identified. The current study examined whether risk (i.e., adiposity) and protective factors (i.e., psychological resources such as mastery, self-esteem, and optimism) moderated the relation between social strain and inflammatory reactivity to stress in late adolescents.

Participants (n = 91; M_{age} = 18.37 years, SD = .51; 57.14% female; 37.36% European and 62.64% Latino) completed measures of optimism, mastery, self-esteem (scores combined to create a composite score indexing psychological resources), and social strain, and had their height and weight measured for BMI. Next, participants completed the Trier Social Stress Task (TSST), a widely used lab stressor that increases inflammation. Blood samples were collected at baseline and 30, 60, and 90 minutes post-TSST, and assayed for proinflammatory cytokine interleukin (IL)-6. IL-6 reactivity was indexed by change scores between baseline and peak IL-6 (i.e., 90 minutes post-TSST).

Hierarchical regression analyses controlling for sociodemographic characteristics revealed that more social strain was marginally related to greater IL-6 responses. This link was moderated by BMI (*b(SE)* = .09(.04), *p* = .01), such that more social strain was related to greater IL-6 responses only among adolescents with high BMI *(b(SE)* = .09 (.04), *p* = .01), but not among those with low BMI (*b(SE)* = .01 (.04), *p* = .72). Psychological resources buffered the inflammatory effects of high social strain and adiposity (*b(SE)*=-.31(.10), *p*=.01). Among adolescents high in BMI, social strain was related to heightened IL6 reactivity for those low in psychological resources (*b(SE)* = .56 (.15), *p* < .001), but not for those high in psychological

resources (*b(SE)* = .05 (.10), *p* = .61). Among adolescents with low BMI, social strain was unrelated to IL-6 reactivity regardless of levels of psychosocial resources (*p*'s > .12). Results suggest that adolescents with greater adiposity are at higher risk for heightened inflammatory activity related to social strain. However, they may be protected if they also have high levels of psychological resources. Efforts to understand and improve adolescents' physical health and wellbeing related to stress should consider the roles of adiposity and psychological resources.

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D265 10:00 AM-11:00 AM

TRAIT HOSTILITY AND CORTISOL SENSITIVITY FOLLOWING A STRESSOR: THE MODERATING ROLE OF STRESS-INDUCED HEART RATE VARIABILITY

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Hostile individuals have greater physiological dysregulation than less hostile individuals. Neuroendocrine dysregulation may underlie these negative health outcomes. In the present investigation, we examined whether self-regulatory strength, as indicated by high stress-induced high-frequency heart rate variability (HF-HRV), moderated the effect of hostility on cortisol secretion. Participants (N = 213) completed a self-report measure of hostility. HF-HRV was assessed at two different time points (at rest and during a social stress task). Cortisol secretion was evaluated by saliva sample collection immediately before (one sample) and over a 50-minute period after (six samples) a stress task. Hostile participants showed less cortisol sensitivity (i.e. change of cortisol over a period of time) when they exhibited high stress-induced HF-HRV. Cortisol sensitivity increases the risk for metabolic and inflammatory diseases. Accordingly, interventions that potentially increase stress-induced HF-HRV could decrease the effect of hostility on health.

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D266 10:00 AM-11:00 AM

WHAT TO EAT, AND WHEN? AN EXPERIMENTAL TEST OF THE PSYCHOPHYSIOLOGICAL EFFECTS OF COMFORT EATING

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Objective: Studies in rodents have shown that consumption of high-calorie/fat/sugar comfort foods dampens stress responses, but must comfort foods be characteristically unhealthy foods to provide comfort? This is the first known human study to test the effects of both unhealthy (processed, high-calorie/fat/sugar) and healthy (fruits and vegetables) foods on psychophysiological stress responses, also manipulating the timing of eating. **Method:** Healthy young women (*N* = 150) completed the Trier Social Stress Test (TSST) in the lab, and were randomized to one of five conditions (*n* = 30/group): (1) consumed an *unhealthy* food *before* the TSST; (2) consumed a *healthy* food *before* the TSST; (3) consumed an *unhealthy* food *after* the TSST; (4) consumed a *healthy* food *after* the TSST; or (5) consumed *no food* at all (control). Those in food conditions received a food that they had rated highly as mood-improver. Participants completed repeated measures of mood and stress appraisal. Heart rate (HR) and heart rate variability (HRV) were measured continuously. Rumination was assessed after the TSST. Independent raters blind to experimental condition and study hypotheses rated participants' TSST performance. **Results:** Those who ate unhealthy food before the TSST showed lower perceived self-efficacy (p = .021) and lower secondary appraisal scores (p = .045) than those who ate no food, indicating lower perceived ability to cope with the stressor. Those who ate healthy food pre-TSST showed marginally lower HR during the speech task compared to those who ate no food (*p* = .088). Upon eating post-TSST (whether healthy or unhealthy food), participants showed higher HR compared to those who ate pre-TSST and controls (all *P*s < .002). In addition, those who ate unhealthy food post-TSST showed lower HRV than those who ate either healthy (*p* = .005) or unhealthy (*p* = .007) food pre-TSST. This group also exhibited higher positive affect than controls at 10-minutes post-TSST (p = .013); however, they also expressed higher guilt than all other groups (*P*s < .011) at this time. No other effects were observed for mood, rumination, evaluated performance, or participants' appraisals of how well the TSST went. **Conclusion:** Given the non-human animal literature, we expected unhealthy comfort eating to dampen stress across psychophysiological outcomes. Instead, it showed a transient positive mood boost during stress recovery, no observed benefits for cardiac stress processes, and negative consequences for stress appraisal and cardiac recovery. Alternatively, eating fruits or vegetables during anticipatory stress may buffer normal cardiac reactivity as well as promote enhanced cardiac recovery compared to

unhealthy comfort eating. In sum, healthy comfort eating before an acute stressor may provide an avenue for reducing physiological stress while avoiding potential pitfalls of unhealthy comfort eating.

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D267 10:00 AM-11:00 AM

ALTERED FRACTIONAL ANISOTROPY IN CEREBELLUM OF INDIVIDUALS WITH FETAL ALCOHOL SPECTRUM DISORDERS

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INTRODUCTION

Presently, fetal alcohol exposure is a leading cause of preventable birth defects and developmental disabilities within the United States. The umbrella term fetal alcohol spectrum disorders (FASD) refers to all children affected by prenatal alcohol exposure, including those with fetal alcohol syndrome, as well as those with mild impairment. Prenatal exposure to alcohol is associated with reductions in both overall brain volume and reductions in specific regions including the cerebellum, caudate nuclei, parietal lobe, and corpus callosum. In studies examining functional connectivity, there are significant reductions among the medial prefrontal cortex, posterior cingulate cortex and inferior parietal lobules in individuals with FASD. Other fMRI network efficiency studies have reported disrupted interhemispheric functional connectivity and reduced network capacity for parallel information processing. In this study we take three clinical referrals with FASD and compare them to controls using diffusion tensor imaging and tract-based spatial statistics in order to identify regions with altered fractional anisotropy (FA) values in the cerebellum of our subjects with FASD.

METHODS

The study comprises of three male FASD patients (mean age=49.33, sd±3.79) and two groups of normal controls: 16 age and gender matched controls (mean age= 40.75, sd± 8.44) and 42 controls with age and gender as covariates (28 males, mean age= 34.64, sd± 11.02). Diffusion tensor images for each subject were obtained and processed using the FSL library. Group comparison was performed in MATLAB using the SPM 8 software package. The FASD group images were compared to both control groups using a whole brain voxel-wise two sample T-test.

RESULTS

In the comparison between the FASD subjects and the 42 controls we found significantly increased FA in the middle cerebellar peduncle and the left inferior cerebellar peduncle, and significantly decreased FA in the right and left medial lemniscus and left cerebellar peduncle ($p < .01$, Voxel Threshold 30). In the comparison between the FASD subjects and the 16 controls we found significantly increased FA within the superior cerebellar peduncle and the middle cerebellar peduncle and significantly decreased FA in the superior cerebellar peduncle and the middle cerebellar peduncle ($p < .01$, Voxel Threshold 30).

CONCLUSION
It has been suggested that the corpus callosum and cerebellum are structures that are especially affected by fetal alcohol exposure. Given that alterations in FA within the corpus callosum are a common finding in many disorders, we focused on identifying changes in FA within the cerebellum. Our results show bilateral increases and decreases in FA in the cerebellum. A lack of robust bilateral cerebellar FA abnormalities among other disorders could indicate a hallmark for FASD.

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D268 10:00 AM-11:00 AM

CHILDCARE AS A BARRIER TO MEDICATION ASSISTED TREATMENT: A NEEDS ASSESSMENT AND FEASIBILITY STUDY

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The presence of young children on-site is often viewed as disruptive to the delivery of substance abuse treatment. The present descriptive study aims to determine 1) the degree to which childcare is perceived as a barrier to care in a medication assisted treatment (MAT) population, and 2) whether the absence of available childcare is perceived as a child safety issue. Participants were 25 parenting individuals who completed an investigator-designed 15-item questionnaire that examined the challenges of reconciling parenting and outpatient substance abuse treatment. Clinical staff (n=9) also completed a brief survey about their beliefs regarding the need for childcare and the degree to which its absence interferes with treatment. Patients reported an average of 1.86±1.15 children; the average age of the youngest child was 4.27± 3.11. Almost 70% of respondents reported having missed services during this treatment episode because of the demands of childcare. Three-quarters of respondents reported having needed to bring one or more of their children to the MAT site in the past. A high level of agreement with statements regarding childcare as a barrier to treatment (10=maximum agreement) was observed for patients (M=7.75±.56) and clinical staff, respectively (M=8.90±1.52). Not surprisingly, 100% of clinical staff viewed the presence of children in the environment of care as being problematic and interfering with the delivery of treatment. In an attempt to quantify the disruption, over a one-week period staff were asked to document and describe episodes of children on site. During this time, 22 different children presented at the clinic with their parent/guardian. Behaviors described included going up to the medication counter, going into group therapy for the duration of the session, and loitering in front of the facility. Almost two thirds (n=14) of the children were reported by staff as being disruptive. Results suggest that both patients and clinical staff perceive lack of childcare to be a barrier to treatment and a threat to potential child safety, and that a student-run effort to address this barrier may be a feasible response. While exploring the feasibility of a student-run effort, 36 medical students indicated interest in volunteering their time, both during the school year (85%, n=20) and over summer break (60%, n=20).

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D269 10:00 AM-11:00 AM

CHILDHOOD ABUSE, PTSD, AND LIFETIME SUBSTANCE ABUSE IN LATINO AMERICANS: WHOLE-NATION, US-BORN, AND FOREIGN-BORN MODELS

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Introduction: Childhood abuse (CA), posttraumatic stress disorder (PTSD) and lifetime substance abuse (LT-SA) are major behavioral health concerns, particularly among underrepresented populations; yet there is limited knowledge regarding their associations for Latino Americans. This study investigated the relationship of childhood physical abuse (CPA) and childhood sexual abuse (CSA) to PTSD and LA-SA among Latino Americans (*N*=2,554) using the National Latino and Asian American Study, including analyses of nativity differences (US-born and foreign-born Latinos). ***Methods:*** We used all Latino American (*N*=2,554) with a mean age at 38.02 years (*SD*=15.03; rage, 18-97). The weighted Latino sample was roughly proportional in terms of gender (48.5% female) and nativity (43% US-born Latinos). Three path models for the whole-nation, US-born, and foreign-born Latino groups were conducted to examine the direct and indirect effects of CPA and CSA on LT-SA, mediated by PTSD. ***Results:*** Results showed higher prevalence rates of CPA (35.3% vs. 24.4%), CSA (17.4% vs. 9.3), PTSD (6.5% vs. 4.6%), and LT-SA (17.1% vs. 5.3%) for US-born Latinos than for foreign-born Latinos. The findings of the three final models (whole-nation, US-born, and foreign-born models) fit the data adequately, with CFI (987-.980), TLI (.936-.984), RMSEA (.015-.063), and SRMR (.006-.015). Path models indicated a direct link between CPA (but not CSA) and LT-SA and an indirect link between CA and LT-SA through PTSD. ***Conclusion:*** The current study is important because it expands the knowledge base regarding the behavioral health impact of inadequate or harmful child-rearing practices in Latino families. Findings underscore the need for intervention research that evaluates culturally-relevant behavioral health assessment and intervention approaches specific to US-born and immigrant Latinos.

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FACTORS ASSOCIATED WITH MARIJUANA USE AND PROBLEMS AMONG COLLEGE STUDENTS IN COLORADO

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Background: Marijuana is commonly used and misused among young adults in the U.S. Of young adults in college full-time, approximately one-third report annual use of marijuana and 21% report use in the last month, with higher rates among male versus female students. Additionally, it has been estimated that up to one-fourth of university students using marijuana within the past year meet criteria for cannabis use disorder. Frequent use and misuse have been associated with a range of psychological (e.g., depression) and personality (e.g., impulsivity) factors in young adults, but there is limited research focused on the college environment. The aim of the current study was to examine whether marijuana use and problem marijuana use were associated with a range of demographic, personality, and psychological variables among college students in Colorado, a state with legalized use. **Methods:** Participants included 300 undergraduate students (60% female, 69% Caucasian) recruited from a psychology research pool. Participants submitted a urine screen and completed measures on marijuana use, problem marijuana use, anxiety, depression, impulsivity, and openness to experience in a lab setting. **Results:** Last year (65%) and recent marijuana use (29%) were high, as assessed through self-report and a urine screen. Two multiple logistic regression models were used to examine factors related to marijuana use. Impulsivity and openness to experience were associated with marijuana use within the last year (χ^2 (3) = 19.93, $p = .001$; $R^2 = .18$), while male gender and openness to experience were associated with recent use (χ^2 (3) = 31.21, $p = .000$; $R^2 = .14$). A hierarchical linear regression showed that gender (b =.22, $p < .01$), impulsivity (b =.15, $p < .05$) and depression (b =.22, $p < .05$), but not general anxiety or social anxiety, were significantly associated with problem marijuana use ($R^2 = .15$). **Conclusions:** Overall, the data suggests that certain personality factors, gender, and mood disruption are associated with marijuana use or misuse in college students. These findings have implications for future prevention and intervention studies with university students both at risk of and who may have problems with marijuana.

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D271 10:00 AM-11:00 AM

INTRAPERSONAL FACTORS, AFFECT, AND DRINKING MOTIVES AS PREDICTORS OF ALCOHOL USE IN COLLEGE STUDENTS

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The high rates of alcohol consumption among college students in the United States is associated with numerous negative consequences—including academic problems, unprotected sex, violence, motor vehicle accidents and other unintended injuries. As such, research is needed to examine the factors that influence alcohol use in this population so that effective prevention and intervention programs can be developed. The purpose of the present study was to examine the effects of intrapersonal variables (i.e., self-esteem, personal control, perceived social support), negative affect (i.e., symptoms of depression, anxiety, and stress), and drinking motives (i.e., coping, conformity, social, enhancement) in the prediction of hazardous and harmful alcohol use in a sample of 279 college students (114 males, 165 females). A self-report, cross-sectional format was used and participants completed previously-validated instruments designed to measure the aforementioned variables. The participants were predominately single (87%), freshman and sophomores (76%), between the ages of 18 and 23 (93%), white (79%), and enrolled as full-time students (94%). To test for group differences, a multivariate analysis of variance was conducted but no significant main effects nor interactions emerged ($p > .01$). Regression analyses revealed that sex ($\beta = -.16$, $p < .01$), symptoms of anxiety ($\beta = .16$, $p < .05$), drinking alcohol to cope with negative affect ($\beta = .31$, $p < .01$), and drinking alcohol to socialize with others ($\beta = .27$, $p < .01$) were significant predictors of alcohol use ($F[12,232] = 25.00$, $p < 0.01$). These findings indicate that campus intervention efforts that help students to manage symptoms of anxiety may result in decreases in drinking to cope motivation and alcohol consumption among college students. The sample was homogenous in terms of age and ethnicity (no minority group exceed 6% of participants) so the results may not generalize to other college student populations. Additional prospective research with varied student populations is needed to ascertain how drinking to cope motivation might exacerbate anxious affect and increase problematic alcohol use in college students.

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MULTIDISCIPLINARY PERSPECTIVES OF PROVIDING MEDICATION ASSISTED THERAPY IN A PRIMARY CARE CLINIC

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Rates of opioid overdose from prescription drugs and heroin have risen steadily over the past two decades, resulting in over half a million deaths between 2000-2014. Medication Assisted Therapy (MAT) is a form of opioid addiction treatment combining daily opioid agonist medication with behavioral health interventions. Literature suggests providing MAT in primary care can help combat this opioid crisis. However, timely incorporation of MAT in primary care can either be facilitated or hindered by practice members' preconceptions of addiction and the role of primary care in addiction treatment. This qualitative study explored clinical and support staff members' perspectives on expanding MAT services in their primary care clinic. Semi-structured interviews were conducted with 13 practice members, including MDs, nurses, medical assistants, front desk staff, and behavioral health providers. Interviews were transcribed and analyzed using an inductive, emergent coding process to identify themes related to participants' subjective experiences, perspectives, and preconceptions about providing addiction services. Our analysis revealed four themes: 1) a recognized need for MAT to treat patients with addiction; 2) uncertainty about whether primary care is the most appropriate setting to provide MAT; 3) a close association between the topic of substance use disorder and chronic pain management and related stigmas; and 4) a sensitivity to the overlap between socio-economic disparities and rates of addiction. Although most practice members expressed reservations, the majority (11 out of 13) supported the idea of providing MAT at their practice. Providing MAT in primary care can increase access to treatment and curb rates of opioid addiction and overdose. Our study identifies possible barriers to MAT service uptake among primary care clinics, and points to possible interventions to increase acceptance and effectiveness of MAT in primary care settings, including education to inform practice members on the value and feasibility of incorporating MAT into their practices.

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D273 10:00 AM-11:00 AM

PATIENT SATISFACTION AS A PREDICTOR OF QUALITY OF LIFE FOR INDIVIDUALS ON METHADONE MAINTENANCE

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Studies examining the relationship of patient satisfaction and treatment outcome in individuals with substance use disorders have yielded equivocal results ranging from no observed relationship between patient satisfaction and treatment outcome (McLellan et al., 1998) to high levels of satisfaction being predictive of engagement and positive outcome (Carlson et al., 2001). More recently, studies have examined the relationship of patient satisfaction with methadone treatment and retention/outcome (Kelly et al., 2010; de los Cobos, 2016). The purposes of the present study were to establish the psychometrics (factor structure, reliability, predictive validity) of a newly constructed patient satisfaction measure developed for individuals in methadone maintenance treatment (MMT) called the Jefferson Patient Satisfaction Survey (JPSS), and to examine the relationship between patient satisfaction and quality of life (QOL). Quality of life (QOL) has been identified by Laudet et al. (2009) as an often ignored, yet essential outcome of substance abuse treatment. Over a two-day period, the JPSS and the Scale to Assess Satisfaction with Medications for Addiction Treatment- SASMAT (de los Cobos, 2016) were administered to a convenience sample of 165 individuals enrolled in an outpatient MMT program. Complete data were provided by 145 respondents. Examination of demographics suggested that the respondents were representative of the treatment population in general as participants were 59% male, averaged 40.57 years of age, with a mean time in treatment of 4.39 years. Principal components analysis of the JPSS and the SASMAT revealed two-factor and four-factor solutions, respectively. Extracted factors related to satisfaction with medication and with clinical staff- JPSS, and general acceptance of MMT, perceived health effects, effect of MMT on cravings, and interference with work/school activities-SASMAT. A significant regression model linking patient satisfaction, age and QOL was noted, F(2,106)=18.25, p2 = .242. Specifically being older (b=.12, $p < .01$) and more accepting of MMT (b=.48, $p < .01$) were predictive of QOL. Given the finding that satisfaction with treatment is predictive of quality of life, future research should examine factors that are predictive of treatment satisfaction.

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D274 10:00 AM-11:00 AM

USING ECOLOGICAL MOMENTARY ASSESSMENT TO ASSESS SLEEP QUALITY AND CRAVINGS IN THOSE RECOVERING FROM ADDICTION

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Introduction: Poor sleep quality in people recovering from addiction has been positively correlated with duration of drug use, risk for relapse, and substance use in cross-sectional studies (Tang et al., 2015; Seere et al., 2015). However, it is unknown whether sleep disturbance prospectively predicts more frequent or more intense acute cravings for drugs in those in recovery, whether cravings result in disturbed sleep, or whether both occur simultaneously. The present study investigates the relationship between sleep quality/duration and daily reports of cravings for drugs.

Methods: 113 participants being treated for substance use disorders were included in the study. Participants responded to four brief phone surveys each day for a week, on which they indicated how much they were craving drugs or alcohol at the moment (0 = *not at all* - 4 = *it is all I can think about*). On the first survey of the day, participants were asked to report on their sleep quality from the previous night (0 = *terrible* - 4 = *great*) and the amount of hours slept the previous night.

Results: Multilevel models were used to assess the prospective effects of sleep quality and sleep time on subsequent cravings, and the prospective effects of level of craving on subsequent sleep quality and duration. Increased sleep quality ratings and increased duration of sleep significantly predicted lower craving levels (b = -.07, SE= .02, p b = -.04, SE = .01 p b = -.11, SE = .03, p < .001; b = -.14, SE = .04, p < .01, respectively).

Discussion: Sleep quality ratings and sleep duration significantly predicted reduced subsequent cravings for the average person in our sample, and increased levels of momentary cravings also predicted decreased subsequent sleep quality and numbers of hours slept. These results suggest a potential mechanism through which poor sleep quality may produce increased dysregulation, potentially triggering relapse. Subsequent analyses will consider a cross-lagged model, parse within-person and between-person effects, and will explore the role of caffeine intake and other environmental variables in these associations. These results will provide insight in to the extent to which sleep quality might be used as a marker of risk for relapse or as a target for behavioral interventions.

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D275 10:00 AM-11:00 AM

VOLUNTARY WHEEL RUNNING PROTECTS CORTICAL BLOOD-BRAIN-BARRIER TO PREVENT ALCOHOL RELAPSE

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Alcoholism is relapsing disorder with limited treatment options; identifying mechanisms underlying unregulated intake and relapse is essential. Disrupted oligodendroglial homeostasis in the medial prefrontal cortex (mPFC) was suggested to contribute to escalated ethanol intake in the chronic intermittent ethanol vapor (CIE) model of alcoholism; escalated ethanol seeking persisted following prolonged abstinence [1]. Voluntary wheel running (WR) during prolonged abstinence inhibited ethanol seeking and rescued mPFC oligodendroglial homeostasis [2]. Since oligodendroglial turnover and maturation depends cerebrovascular health [3-5], the current study tested the hypothesis that ***ethanol exposure and withdrawal persistently damages vasculature in mPFC, and access to running wheel during protracted abstinence will rescue cerebrovascular integrity.*** Adult male Wistar rats exhibiting escalated ethanol intake (with 7-weeks CIE exposure; CIE rats) and low ethanol intake (no CIE exposure; ED rats) were subject to four weeks of abstinence either in ordinary cages (CIE-Sed and ED-Sed), or in cages with ad libitum access to running wheel (CIE-WR and ED-WR; [2]). CIE-WR and ED-WR exhibited reduced reinstatement compared to CIE-Sed and ED-Sed [2]. mPFC tissue from the above groups as well as age-matched controls (Sed and WR) were probed for PECAM-1, a protein expressed on endothelial cells, and for SMI-71, a protein that indicates healthy blood-brain-barrier (BBB). PECAM-1 expression, via immunoblotting, was increased in both CIE-Sed and ED-Sed compared to Sed, and was decreased CIE-WR and ED-WR compared to CIE-Sed and ED-Sed, respectively. SMI-71 expression via immunohistochemistry (area immunopositive for SMI-71, expressed as %), was increased in CIE-WR and ED-WR compared to CIE-Sed and ED-Sed, respectively; SMI-71 was greater in CIE-WR than both ED-WR and WR. Thus, these results indicate that cerebrovascular health was compromised by ethanol experience and withdrawal. Wheel running reversed these maladaptive changes, particularly in rats with escalated ethanol intake. In conclusion, voluntary wheel running may protect against ethanol relapse, in part, via inhibition of ethanol-induced cerebrovascular damage.

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D276 10:00 AM-11:00 AM

ASSOCIATION OF RECEPTIVITY TO TOBACCO PRODUCT ADVERTISING AND RISK FOR TOBACCO USE IN 12-17 YEAR OLDS: WAVE 1 OF THE PATH STUDY

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Receptivity to cigarette advertisements (ads) among those as young as 12 years old has been identified as a causal influence leading to later cigarette smoking. We assess how the association between receptivity and risk of later use varies across age (12-17 years) for four separate tobacco products (cigarettes, e-cigarettes, cigars, smokeless tobacco) using Wave 1 (Sept. 2013-Dec. 2014) of the Population Assessment of Tobacco and Health (PATH) Study, a nationally-representative population study. Household interviews were completed with 13,651 youth aged 12-17 years. All were shown a stratified random sample of 20 recent tobacco ads. An adolescent was receptive to a product's ads if they recalled seeing any of its ads, liked any of its ads, or reported having a favorite tobacco ad. Those who had tried a product or were susceptible to use the product in the future were classified as "at risk". Multivariable logistic regression models tested whether the association between receptivity to each product's ads and risk for later use of the product varied with individual ages and whether there was an interaction effect across ages.

For each product, both age and receptivity were significantly associated with risk for later use. There was not a significant interaction between age and receptivity on risk for future product use for any of the products tested, suggesting a linear model was a good descriptor of the data. We plotted the 3 way association (receptivity x risk x individual ages for each product and identified a very strong, essentially parallel age effect for the receptivity by risk association, especially for cigarettes (slope= 2.7; R^2=0.96), e-cigarettes (slope = 2.6; R^2=0.89) and cigars (slope = 2.9; R^2=0.85). However, for each product, the receptivity x risk term for those aged 17 years was significantly off the 12-16 year linear line. Thus, although risk for future product use increased compared to 16 year olds, there was no evidence that receptivity increased at the same time.

These results suggest the hypothesis that tobacco ads may be most effective in increasing risk for future use with younger adolescents, those under the legal age for purchase. Longitudinal research to test this hypothesis will be available from the PATH study within the next year.

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D277 10:00 AM-11:00 AM

A SYSTEMS-APPROACH TO PROMOTE SMOKING CESSATION IN FOOD PANTRY RECIPIENTS

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A systems-approach to promote smoking cessation in food pantry recipients

Despite declines in national smoking rates, reports suggest that between 30-55% of food pantry recipients are current smokers. This subpopulation of smokers experience multiple health risks thus, systems-based efforts to increase smoking cessation behaviors and access to cessation resources are needed to promote abstinence. The current pilot-study used a pre and post design to test the impact of a brief, portable smoking cessation education intervention delivered to recipients of food assistance at five food pantries in the state of Delaware between January and May 2016. The 10-12 minute educational intervention was developed in collaboration with the Food Bank of Delaware and designed to increase smoking cessation knowledge, intention to quit, and utilization of the state Quitline. The food security status of the study sample was also examined. Of the total study sample (N=148), 69% were female, 78% were on disability or retired, 53% were African American, and the mean age was 62.8 years (SD=15.2). Half the sample (50%) were current smokers, and of those, 24% (N=18) were highly dependent as defined by having their first cigarette of the day within five minutes of waking. Seventy seven percent of the sample reported moderate or severe food insecurity. Current tobacco use was significantly more prevalent among food insecure (89.8%) than food secure (10.2%) participants (X^2= 10.72; p=.001). As compared to baseline, smoking cessation knowledge score (M_{BL}= 4.9, M_{FU}= 6.0; t=3.8, pBL= 4.2, M_{FU}= 5.1; t= 1.71, p=.1), increased significantly at the 6-week follow-up. At follow-up, 7% of the sample reported calling the Quitline. High smoking prevalence and nicotine dependence levels characterize this food insecure population as a high-priority group for smoking cessation efforts. More intensive programming may be needed to systematically increase quitting intentions and connect this high-risk subgroup to cessation resources.

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D278 10:00 AM-11:00 AM

COMPARING SMOKING BEHAVIORS BETWEEN HISPANIC/LATINO NATIONALITY GROUPS IN THE UNITED STATES

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Background/Aim. Hispanics/Latinos (H/L) are the largest and one of the most diverse ethnic groups in the United States (US), yet there is a dearth of research that examines smoking behaviors for specific H/L nationality groups. Disaggregate data on H/L may identify groups at highest risk for smoking and provide more precise data to guide intervention development. Using data from the 2001-2011 Current Population Survey Tobacco Use Supplements, this study estimated the prevalence of cigarette smoking and the association of H/L nationality with the outcomes current, light/intermittent, and heavy smoking among Mexican Americans, Puerto Ricans, Cubans, and Central/South Americans.

Methods. Data were weighted to estimate the prevalence of current, light/intermittent, and heavy smoking. Weighted logistic regression models were used to examine the association of H/L nationality with smoking outcomes while controlling for the covariates age, education, income, employment status, home smoking policy, acculturation, gender, and the interaction between gender and nationality.

Results. Among ever smokers, Puerto Ricans had the largest proportion of current smokers (58.9%). Although Mexican American current smokers had the largest proportion of light/intermittent smokers (LITS; 59.2%), Puerto Rican and Cuban current smokers had the largest proportions of moderate (37.7%) and heavy smokers (31.5%), respectively. Compared to Mexican Americans, Cubans and Puerto Ricans had significantly higher odds of being current smokers (Cubans: OR=1.80, CI=1.63, 1.98; Puerto Ricans: OR=1.27, CI=1.19, 1.35) and heavy smokers (Cubans: OR=3.67, CI=3.06, 4.40; Puerto Ricans: OR=2.16, CI=1.96, 2.38). Cubans (OR=0.31, CI=0.26, 0.36) and Puerto Ricans (OR=0.55, CI=0.52, 0.60) were also shown

to have significantly lower odds of being LITS compared to Mexican Americans. Central/South Americans were shown to have significantly lower odds of being heavy smokers compared to Mexican Americans (OR=0.80, CI=0.68, 0.95).

Conclusions. These results call for tailored intervention efforts that take into account the heterogeneity in smoking behaviors observed among H/L nationality groups. Reduction and cessation efforts should particularly focus on Puerto Ricans and Cubans, who are moderate and heavy smokers.

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D279 10:00 AM-11:00 AM

EFFECTS OF POTENTIAL PRICE CHANGES OF E-CIGS AND CIGARETTES ON SMOKING AND VAPING BEHAVIOR AMONG DUAL-USE SMOKERS

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In August 2016, the FDA’s expanded Tobacco Control Act went into effect, extending its regulatory authority to electronic cigarettes (e-cigs) with the goal of improving and protecting public health. One potential implication of this rule is an increase in the cost of e-cigs. This study sought to assess the effects of potential price changes on cigarettes and e-cigs on the behavior of individuals who use both combustible and electronic cigarettes (dual-use smokers). We recruited 118 dual-use smokers in the United States through Amazon Mechanical Turk. Of the 118 smokers, 54% were male, 83% white, 14% Hispanic, 47% had a college degree or higher, and 53% reported history of at least one psychiatric disorder. On average, participants had a mean age of 34.7 (SD=10.6) years, smoked 7.3 cigarettes per day (SD=6.6), vaped e-cigs 5.7 times per day (SD=13.1), and had a mean Penn State Cigarette/Electronic Cigarette Dependence Index of 8.7 (SD=4.6) and 6.2 (SD =4.2) respectively. E-cig types included disposable (19%), pre-filled cartridge (31%), refillable (45%), and two or more types (6%). We examined how smokers' expected behavior change (no change, reduce use, quit use) vary given price increases in e-cigs (while holding cigarette prices constant), vice-versa, and both. At e-cig price increases of 1.5x, 2x, and 3x alone, 7%, 11%, and 20% of participants would quit both cigarettes and e-cigs while 11%, 18%, and 20% would increase cigarette use. A similar rate of participants reported they would quit both cigarettes and e-cigs with cigarette price increases alone. If both e-cig and cigarette prices increase 1.5x, 2x, and 3x, 17%, 25%, and 39% would quit both while 29%, 43%, and 59% would quit smoking cigarettes (irrespective of e-cig use). At 1.5x (but not 2x or 3x) e-cig price, those with greater e-cig dependence were more likely to quit cigarettes (*OR* = 1.02, *95%CI* = 0.00-1.04, *p* = .03), controlling for cigarette dependence and monthly spending on cigarettes, while e-cig dependence did not predict quitting e-cigs. We also found that at 1.5x and 2x increases in both cigarette and e-cig prices, refillable users, compared to disposable and pre-filled cartridge users, are less likely to reduce or quit using e-cigs (*OR* = 1.35, 1.33, *95%CI* = 1.14-1.60, 1.14-1.56, *p*s = .001, respectively), controlling for covariates. These findings suggest that increases in either e-cig or cigarette prices may lead to increased cessation in all tobacco products, but price increases in e-cigs alone may also lead to more cigarette smoking. What is more, concurrent price increases in both e-cigs and cigarettes may double the rates of cessation in all tobacco products. In addition, the potential impact of price changes on

smoking or vaping behavior may differ across types of e-cigs. Larger studies examining the relations between cost, e-cig type, dependence, and smoking/vaping behavior is needed.

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FUNCTIONAL NEUROIMAGING OF BEHAVIORAL SMOKING CESSATION TREATMENT: PRELIMINARY FINDINGS

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The dual-systems model of addiction posits that addiction is the result of increased activity in reward-associated brain regions that overrides the decreased activity in cognitive control regions. It is possible that behavioral smoking cessation treatments work by affecting these regions. We hypothesized that cognitive control “practice” would increase activation in the cognitive control regions and decrease activation in the reward regions. 35 subjects were randomized to receive 4-week Cognitive-Behavioral Therapy (CBT) enhanced with scheduled smoking or a 4-week non-smoking-related behavior change intervention. During functional magnetic resonance imaging (fMRI) scans (performed both pre- and post-treatment), subjects passively viewed smoking and non-smoking cues. Analysis based on the 18 subjects (9 per group) who completed treatment and passed motion thresholding showed greater activation to smoking than to nonsmoking cues in dorsolateral and -medial prefrontal areas (typical cue reactivity effect). Comparison across groups and timepoints (pre- and post-treatment) yielded no significant activation differences in *a priori* regions of interest, suggesting that cognitive control practice did not cause detectable brain changes in these areas. Results from behavioral tasks indicated a decrease in impulsive errors in the CBT group but not the control group on a smoking Go/No-go task but no changes in delay discounting were detected in either group. Future research should utilize a stronger cognitive control practice regimen perhaps over a longer time frame.

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IMPLICIT THEORIES OF SMOKING AND ASSOCIATION WITH QUIT BEHAVIORS AND INTENTIONS AMONG CURRENT SMOKERS

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Background: Implicit theories of smoking (ITS) refer to people’s beliefs about whether smoking behavior is something that is changeable (incremental belief) or fixed (entity belief). A recent study found that current smokers are more likely to hold entity beliefs than former or never smokers. However, the role of ITS in quit behaviors and intentions remains unexplored. The three aims of this study of current smokers were to assess how ITS relates to 1) attempts to quit in the past 12 months, 2) having called a quit line, and 3) intentions to quit in the next 6 months. **Methods:** The Health Information National Trends Survey (HINTS) is a nationally representative, cross-sectional mail survey of all civilian, non- institutionalized adults aged 18 or older in the United States. It tracks trends in the American public’s need for, access to, and use of health-related information and health behaviors, perceptions, and knowledge. Analyses were conducted using data from three iterations of HINTS, collected between 2013-2015, with a total of 1,579 smokers. Data were submitted to logistic regression analyses with ITS regressed on 1) attempts to quit in the past 12 months, 2) having called a quit line, and 3) intentions to quit in the next 6 months. **Results:** Controlling for sociodemographic variables, analyses indicated that greater incremental beliefs were marginally significantly associated with higher likelihood of having tried quitting in the past 12 months than not having tried (β=.26, p=.06) and with higher likelihood of having called a quit line than not (β=.50, p=.09). Greater incremental beliefs were significantly associated with intending to quit in the next 6 months (β=-.27, p=.02). There was a significant interaction effect between ITS and past quit attempts; those with greater incremental beliefs who had not tried quitting in the 12 months were more likely to report that they intended to quit in the next 6 months than those who had tried (β=.51, p=.01). **Conclusions:** These findings suggest that for current smokers, greater incremental beliefs are associated with higher likelihood of having attempted to quit in the past 12 months, having called a quit line, and intending to quit in the next 6 months. For current smokers who have attempted unsuccessfully to quit in the past year, those with greater incremental theories have a lower likelihood of considering

quitting in the next 6 months while those who have not tried quitting in the past year have a greater likelihood of considering quitting in the next 6 months. Current findings may be used to inform campaigns to motivate and sustain smoking cessation among current smokers through cultivating incremental beliefs that their smoking behavior can change.

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LITTLE CIGAR AND CIGARILLO PERCEPTIONS AND USE AMONG AFRICAN AMERICAN YOUTH AND YOUNG ADULTS

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Background: African Americans disproportionately suffer from tobacco-related diseases. Little cigar and cigarillo (LCC) use has increased in African American youth populations and may play a role in observed health disparities.

Objectives: We examined the data for patterns of LCC use to identify reasons for use, health perceptions, and celebrity and advertisement social influences.

Methods: Individual in-person interviews were conducted among a community sample of continuation high school and vocational school students in southern California. Participation was limited to those who had ever tried at least one tobacco product, self-identified as African American, and were between the ages of 14-26 (n=28). We analyzed themes related to health perceptions, reasons for use, and social influences including marketing exposure.

Results: Specific LCC brands, like Swishers and Phillies, were associated with marijuana use. Reasons for use were embedded in the context of LCC use only and LCC use mixed with marijuana. Initiation of LCC use was commonly associated with significant life events, including coming of legal age, and social influences such as friends or family. Stress relief, relaxation, and escapism was frequently reported reasons for LCC use, both modified with marijuana and unmodified. Participants often reported their patterned/habitual LCC use, although addiction was not always recognized. Participants stated that LCCs saved costs because they are less expensive than cigarettes and last longer. Particularly with Black & Mild (B&M) cigars, participants described processes of rationing to be cost-effective and prolong the “head change” experience. Whether discussing LCCs as unmodified, modified with

marijuana, or the B&M brands, LCC use was not dependent on social settings. Cigarettes were perceived negatively, especially in comparison to LCCs. Truth Campaign advertisements influences their health beliefs related to cigarettes but not for LCCs. Other than point-of-sale, few other pro-tobacco advertisements for LCCs were reported. When asked about celebrity use, participants (n=18) specifically noted rappers, as social influences on LCC use.

Implications: Understanding reasons for use, how LCCs are used, the influence of social and physical environments, and the legalization of marijuana are important to address LCC use. Further understanding of how interventions and policies curtail the effect of socio-environmental influences on LCC use is warranted.

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REDUCING THE HARM OF SMOKING AMONG HOMELESS SMOKERS IN A RANDOMIZED CONTROLLED TRIAL TARGETING CESSATION

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Background: Despite reduction in cigarette smoking in the general US population, smoking rates and related morbidity remain high among poor and underserved individuals, especially homeless adults. An estimated 70% of homeless adults smoke cigarettes. Many factors may contribute to the high smoking rates among homeless adults, including quality of life and other psychosocial factors, such as depression, anxiety and stress. These factors influence poor adherence and lack of self-efficacy to adopt behaviors that lead to better health outcomes. We conducted a randomized controlled trial (RCT) to enhance smoking cessation in a community of homeless persons who smoke. Only 7% of participants quit smoking by 26-week follow-up but many reported smoking less even if they had not quit. The focus of this secondary analysis was to examine predictors of smoking reduction, which is an important intermediate step toward complete cessation.

Methods: Data are from a RCT comparing standard care (nicotine replacement therapy; NRT) with standard care plus motivational interviewing among homeless smokers interested in quitting smoking. Smoking reduction was defined as at least 50% reduction in self-reported number of cigarettes smoked (past week) at 26-week follow-up visit compared to baseline. Those who did not complete the follow-up visit were assumed to have not reduced smoking. Demographic, psychosocial, tobacco-related, substance abuse and treatment adherence measures were compared between those who did and did not reducing smoking by 50%.

Results: Participants (N=430) were homeless, current cigarette smokers, predominantly Black (56.3%), male (74.7%), and, on average, 44.4 years old (SD=9.9). Most were unemployed (90.5%) and completed at least a high school education or equivalent (76.7%). A total of 268 (62.3%) participants reduced smoking by ≥50%; this included 32 who quit smoking. In multivariate analysis, smokers randomized to the intervention group (OR=1.59, 95% CI, 1.04-2.42) and those who smoked menthol cigarettes (OR=1.88, 95% CI, 1.06-3.32) were more likely to report reduced smoking by 26 weeks. Participants adherent to NRT at the end of

treatment were more likely to reduce/quit smoking (OR=2.08, 95% CI, 1.35-3.22) as were older smokers (OR=1.02, 95% CI, 1.00-1.05, for each year of age) and those with increased baseline depressive symptoms (OR=1.05, 95% CI, 1.02-1.09, for PHQ9≥10 versus < 10).

Conclusions: In this study, more than 7 times the number of participants reduced as quit completely. The intervention helped participants reduce their smoking but further research is needed to understand additional factors that predict reduction in the goal towards achieving cessation among homeless smokers.

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RESPONSIVENESS OF YOUNG ADULTS TO STATE CIGARETTE EXCISE TAXES BY PSYCHOLOGICAL HEALTH

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Purpose: While smoking has significantly decreased among the general population in the past several decades, significant decreases in smoking have not been observed among those with poorer psychological health. One of the most effective tobacco control strategies to reduce smoking is raising cigarette prices through taxation to lower demand and consumption. However, we do not know whether this strategy is equally effective among young adults with poorer psychological health, a group with an especially high smoking rate of over 36%. The current research tests whether diagnosis of a psychiatric condition or amount of psychological distress affect the relationship between state cigarette tax rates and smoking over the period of young adulthood.

Methods: Repeated measures data of young adults' aged 18-30 smoking behavior and demographic information across years 2007, 2009, 2011, and 2013 were drawn from the Panel Study of Income Dynamics. Quarterly state tax data from the CDC's State System were linked to individual cases on state membership and interview date. Two outcomes were modeled: smoking status (current smoking: yes/no) using logistic regression and smoking amount among smokers (number of cigarettes per day) using linear regression. State-level fixed effects models were used to account for unobserved time-stable state characteristics that may affect taxes and smoking.

Results: Independent effects of psychological health were found such that poorer psychological health was associated with increased likelihood of being a current smoker and smoking greater numbers of cigarettes. However, few interaction effects of psychological health and taxes were found.

Conclusions: In many cases, psychological health did not affect the impact of taxes, suggesting that tax policies do not seem to be exacerbating a disparity in tobacco use. However, the effects of tax on smoking status and amount within individuals across young adulthood were small in general. These findings suggests that other intervention approaches should be explored to prevent and reduce smoking within individuals, in particular young adults with poorer psychological health, who are at increased risk of smoking at all and smoking more over time.

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SELF-EFFICACY IN SMOKING RESTRAINT, BUT NOT MOTIVATION, PREDICTS POSTPARTUM SMOKING RESUMPTION AMONG WOMEN

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Introduction: Women commonly quit smoking during pregnancy, but most resume smoking within the first year postpartum. Low motivation to remain quit from smoking and low self-efficacy in maintaining abstinence are two factors that may contribute to resumption of smoking behavior postpartum. The present study assessed motivation and self-efficacy to stay quit as predictors of initial smoking lapse and full-blown relapse through 1 year postpartum. **Methods:** Three hundred pregnant, recently quit smokers (*M* age = 24.99, *SD* = 5.64 years) participating in one of two postpartum relapse prevention interventions completed a prenatal baseline session and follow-up sessions 12, 24, and 52 weeks postpartum. Participants completed measures of motivation to remain quit (Reasons for Quitting Questionnaire), self-efficacy in refraining from smoking (Self-Efficacy Questionnaire), and a Timeline Follow-Back interview of any smoking since delivery. The primary outcomes, time to lapse and time to relapse, were determined by counting the number of days between delivery and (a) the first day at least 1 cigarette was smoked (lapse) and (b) the first day of 7 consecutive days of smoking (relapse). **Results:** Cox regression analyses, adjusted for treatment group, number of weeks quit at baseline, age, race, and education, indicated that women with higher self-efficacy in refraining from smoking were less likely to lapse than women with lower self-efficacy at each postpartum follow-up (e.g., Week 52: HR = 0.99, 95% CI = 0.97-1.00, p = .01). Self-efficacy, however, did not predict relapse, and motivation was not predictive of time to lapse or relapse at any point through 52 weeks postpartum (all *p*s between .23 and .98). **Conclusions:** Self-efficacy in refraining from smoking consistently predicted smoking lapse through 1 year postpartum. This finding suggests that the efficacy of postpartum smoking cessation efforts may be improved by focusing on increasing prenatal self-efficacy to remain quit, especially given the stress of raising a child. Motivation did not provide unique predictive value, and further work is needed to understand how prenatal self-efficacy and motivation may interact to influence postpartum smoking behavior.

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UNDERSTANDING ADOLESCENT E-CIGARETTE USERS: ATTITUDES, BELIEFS, AND SOCIAL NORMS

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Background: Despite the rapid rise in youth using e-cigarettes, few studies have assessed knowledge, attitudes, and beliefs among youth who are regular users of these products. This study qualitatively explored reasons for initiation and current use, understanding of health effects, and social norms among users.

Methods: Four focus groups with 42 adolescents ages 14-17 were held in 2 cities. Participants were split into younger (ages 14 and 15) and older (ages 16 and 17) age segments and self-identified as regular users of e-cigarette products by indicating that they used these product every day or some days in the past 30 days. Focus groups were transcribed, coded, and analyzed using NVivo10.

Results: Youth reported enjoyable first experiences with e-cigarettes. Younger groups said that they were most interested in trying e-cigarettes because of flavors and because friends were using them. Most of these younger users reported that their first use of an e-cigarette was their first experience with a nicotine-containing product. Older youth reported that they were most interested in trying e-cigarettes because of the ability to perform tricks and for social aspects. Most used e-cigarettes with friends for the first time and continued use most often in social settings. Flavors, tricks, and social influences were the three most frequently mentioned reasons for continued use. Younger users shared devices and e-liquid with friends, often using devices belonging to older siblings, family members, or friends. Older users are more likely to choose and own their own device and buy their own e-liquid. Users overwhelmingly preferred tank devices. Youth were well-educated on nicotine and the health effects of nicotine, but younger users in particular were unsure whether their e-cigarette contained nicotine. Using an e-cigarette has not changed how participants felt about cigarettes – they think cigarettes are “gross” and “dirty”. Additionally, using an e-cigarette has not made exclusive use participants more curious to try a combustible; participants mentioned the commercials and anti-tobacco messages they’ve seen and heard. Overwhelmingly, e-cigarettes were seen by participants as having fewer negative health effects than combustible cigarettes, even while participants agreed that health effects of e-cigarettes are not yet known. Participants reported very little peer stigma to using e-cigarettes and limited negative reaction from family members, who often viewed e-cigarette use by

participants as acceptable when in comparison to potential or existing combustible cigarette use.

Conclusion: While youth enjoy using e-cigarettes, especially the flavors and ability to perform tricks, they are also aware of the negative health effects of nicotine and have heard very little about negative health effects. Findings regarding parental reactions to youth e-cigarette use and youth social norms should be considered when designing behavioral and educational interventions to prevent use by youth.

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