Citation Award

Poster Session A **6:00 PM - 7:00 PM** **A-023**

COGNITIVE AND BEHAVIORAL CHANGE IN RESPONSE TO A CELEBRITY'S HEALTH DISCLOSURE

Julia H. Drizin, BA[1], Sarah D. Mills, M.S.[2], Laura E. Barnes, PhD[3], Elizabeth A. Klonoff, PhD[1], Vanessa L. Malcarne, PhD[4], Allison A. Vaughn, PhD[1], Kristen J. Wells, PhD, MPH[1]

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Celebrities can influence the public's health-related attitudes and behaviors, in particular through acts of disclosure about their own health decisions. In May 2013, Angelina Jolie, an internationally known actress, director, and author, disclosed in a *New York Times* (NYT) op-ed her decision to undergo a preventative double mastectomy after learning that she carries the BRCA1 gene mutation. When the op-ed was published online, readers had the opportunity to provide comments on the NYT website for 3 days. This study presents a comprehensive content analysis of comments responding to the op-ed to examine people's changes in health-related cognitions and behaviors in response to Ms. Jolie's disclosure. All comments and sub-comments (N = 1,353) were analyzed using conventional content analysis conducted with Nvivo 10. With this approach, coding themes were created based on the data. Thirty-eight comments were made reflecting a cognitive change in response to the NYT op-ed, and 30 comments were made reflecting a behavioral change. Five themes regarding cognitive change were identified: 1) view of self (n = 4), 2) opinion of Jolie (n = 5), 3) reassurance of past health decisions (n = 8), 4) increased awareness of medical options (n = 9), and 5) motivation to become more health-conscious (n = 14). Four themes regarding behavioral change were identified: 1) engaging in proactive behaviors (n = 13), 2) scheduling doctor appointments (n = 8), 3) discussing preventative healthcare with others (n = 3), and 4) undergoing a preventative surgery (n = 4). Only a small proportion (5%) of commenters experienced a cognitive or behavioral change as a result of reading Angelina Jolie's op-ed. However Ms. Jolie's op-ed was widely publicized and discussed in a vast array of media outlets. Thus, these findings suggest that celebrity health-related disclosures have the potential to change the health cognitions and behaviors of a large number of people.

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Meritorious Award

Poster Session A **6:00 PM - 7:00 PM** **A-121**

THE RELATIONSHIP BETWEEN GIRLS' PUBERTAL TIMING AND ADOLESCENT HEALTH RISK BEHAVIOR

C. Emily Hendrick, MPH, Jessica D. Cance, MPH, PhD

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Developmental readiness theory proposes that girls with early pubertal timing are not cognitively or emotionally mature enough to effectively cope with the social challenges associated with a more physically-developed body. This mismatch leads to difficulties with healthy decision-making and maladaptive coping behaviors in adolescence. Accordingly, girls with early pubertal development have demonstrated heightened risk for numerous health risk behaviors in adolescence, including substance use and sexual risk-taking. However, the majority of this research has focused on white girls and been regional in scope. In the current study, we use data from the ethnically-diverse National Longitudinal Survey of Youth 1997 female cohort (N=3,898) to investigate the relationships between early menarche (menarche before age 12) and the onset of substance use (age of first cigarette, age of first alcoholic drink) and reproductive and sexual health risk behaviors (age of sexual debut, teenage childbearing) in adolescence. We conducted a series of bivariate and multivariate linear and logistic regression models in STATA 13.1. In the multivariate models we controlled for race/ethnicity, mother's educational attainment, father absence during youth, and participant perception of peer participation in the risk behavior of interest.In the bivariate models, early menarche was associated with earlier ages of cigarette use, alcohol use, and sexual debut (all $p < .05$) and girls with early menarche had higher odds of becoming a parent before age 20 (OR=1.43, $p < .001$) compared with their on-time and later developing peers. In the multivariate models, early menarche was still associated with earlier ages of cigarette use, alcohol use, and sexual debut (all $p < .05$) but the relationship between early menarche and teen parenthood was no longer significant.Our findings suggest that girls in the U.S. with early pubertal development are commencing substance use and reproductive and sexual health risk behaviors earlier than their on-time and later-developing peers. Identifying early developing girls for targeted intervention efforts may help to delay or prevent the onset of risk behaviors in adolescence that lead to behavioral health problems later in life.

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Citation Award

Poster Session A **6:00 PM - 7:00 PM** **A-129**

EVALUATION OF THE GREAT AMERICAN SMOKEOUT BY DIGITAL SURVEILLANCE

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Background: For 36 years the "Great American Smokeout" (GASO), held annually on the the 3rd Thursday of November, has aimed to increase Americans' awareness of and interest in smoking cessation. Because cancer control surveillance generally relies on annual trends that may not be linked to a single day, it is difficult to evaluate GASO. Methods: We developed surveillance strategies to monitor daily rhythms in population cessation "information availability" (news media coverage of cessation), "information sharing" (Tweets), "information seeking" (Bing search queries), and eventual help seeking (Quitline calls) for smoking cessation for 2013 and previous years (per availability). These behavioral outcomes were compared between GASO day and selected reference periods (e.g., days prior to GASO). Results: Internet search queries for cessation information were higher on GASO day compared to the previous 6 Thursdays each year for the years 2009 to 2012 (range 9% - 46%), but were significantly higher for only 1 of 4 years. Using the same comparison, media stories about cessation increased 41% on GASO day in 2013 but not significantly. Calls to quitlines on GASO day increased on average 22% each year for the years 2008 to 2012, but differences were not significant. In comparing the 3 days up to and including GASO day to the same period the previous month, tweets encouraging or describing a quit attempt were significantly higher for each of the years 2008 to 2013. Conclusions: GASO appeared to have the strongest effects on tweets related to quitting smoking, and modest or no statistically significant effects on media coverage of cessation stories, public search queries for cessation information, or quitline calls for cessation assistance. Evaluations as we describe can serve as a guideline for the reevaluation of public health marketing campaigns, and provide data that can potentially inform strategy for promotional campaigns aimed at increasing public health.

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Meritorious Award

Paper Session 02 **1:00 PM-1:15 PM**

THE INFLUENCE OF SOCIAL AND EMOTIONAL REGULATION ON CHILD DIETARY OUTCOMES

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Introduction: Past research suggests that positive emotional regulation and management of social interactions may be associated to healthy dietary choices and BMI scores. This study investigated the longitudinal outcomes of emotional and psychosocial regulation on the eating behaviors and body mass index (BMI) of a relatively large sample of children in Northern Italy. Methods: Using a prospective longitudinal study with 3 time points, we investigated the outcomes of emotional instability, pro-social behaviors, and aggressive behaviors on the eating behaviors and BMI of 944 children (52% girls; mean age =9.38; SD=0.89) attending the second (30%), third (53%) and fourth (17%) grades of primary schools in urban and suburban areas of three cities in Northern Italy. The participants were representative of the population of children attending primary school in this part of Italy. Due to the clustering of students within grades and possible intra-school correlation between students, a general linear mixed model was applied in the analysis. Age, gender, parental education and BMI score at baseline were used as covariates in the analysis. Results: Our analyses indicated that the predictors explained 66% of the variance (R^2=.66, F (5,237) = 135.96, $p < .001$). Results indicated that greater emotional instability at baseline ($\beta = -.023$, $p < 0.05$) and greater amount of aggressive behaviors ($\beta = -.024$, $p < 0.01$) predicted higher BMI scores among our sample at two time points. No significant associations were found between pro-social behaviors and BMI. Conclusions: Aggression showed coherence with higher BMI. Negative emotions and unhealthy eating patterns could predict further obesity problems in children. Such findings could greatly assist in the development of universal prevention efforts of early obesity by targeting important factors that may lead to poor eating practices.

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Meritorious Award

Paper Session 04 **1:00 PM-1:15 PM**

A CLINIC-INTEGRATED BEHAVIORAL INTERVENTION REDUCES HYPOGLYCEMIA IN YOUTH WITH TYPE 1 DIABETES

Benjamin Gee, BA, Biology, Anthropology[1], Tonja R. Nansel, PhD[2], Aiyi Liu, PhD[3]

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INTRODUCTION: Adolescents with type 1 diabetes are at an increased risk for acute complications due to behavioral, developmental, and hormonal changes. OBJECTIVE: To determine the effect of a clinic-integrated behavioral intervention on the incidence of hypoglycemia in youth with type 1 diabetes. METHODS: This was a multi-center, parallel group study with equal randomization. Youth-parent dyads (N= 390) were enrolled in a 2-year, randomized clinical trial. Youth participants were 12.4±1.7 years of age, 49.2% female, with a mean A1c of 8.4±1.2; 33.8% utilized insulin pump therapy. The intervention, which was delivered at each routine clinic visit, was designed to improve diabetes management behaviors by targeting problem-solving skills, parent-child cooperation and communication, and self-regulation behaviors. Hypoglycemic events were classified as those treated by oral ingestion and those treated by parenteral therapy. At each clinic visit, which occurred approximately every 3-4 months, families self-reported events occurring since their previous clinic visit. Analyses included 2-sample t-tests and the cox proportional hazards model for recurrent events to compare the incidence between groups at 1-year intervals. RESULTS: Across the entire 2-year study period, no significant differences were observed between groups in either category of event. However, during the 2nd year of the study, the incidence of events treated by oral ingestion was 13.6 per 100 person-years in the intervention group compared with 27.3 per 100 patient-years in the control group (P=0.02). The hazards ratio of these events during the second year was 0.49 (95% CI: 0.27 –0.90; P=0.02), indicating that participants in the intervention group were 51% less likely to experience a hypoglycemic event relative to the control group. CONCLUSIONS: A clinic-integrated behavioral intervention targeting problem-solving skills reduced the incidence of hypoglycemia in youth with type 1 diabetes. Behavioral interventions targeting problem-solving skills, delivered over a sustained period (> 1 year), could be considered as practical, non-pharmacological strategies to reduce hypoglycemia in adolescents with type 1 diabetes.

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Citation Award

Paper Session 08 **3:33 PM-3:51 PM**

RANDOMIZED TRIAL OF A MEN-ONLY WEIGHT LOSS PROGRAM: THE RETHINKING EATING AND FITNESS TRIAL

Melissa M. Crane, MA[1], Dianne S. Ward, EdD[1], Lesley D. Lutes, PhD[2], J. Michael Bowling, PhD[1], Deborah F. Tate, PhD[1]

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Background: Despite the high prevalence of overweight and obesity among men, they represent only 27% of participants in behavioral weight loss research. Qualitative evidence suggests that existing programs are unappealing to men, and effective programs that are individualized, flexible and a better match for men's preferences are needed.Methods: A randomized trial tested the efficacy of the REFIT (Rethinking Eating and FITness) weight loss program compared to a waitlist control. The intervention was delivered via two face-to-face sessions followed by online sessions for 10 weeks and monthly sessions for 3 months. REFIT encouraged participants to create calorie deficits by making six 100-calorie changes to their eating each day, without detailed diet monitoring, while also increasing physical activity. To further increase the program's appeal, individualization and autonomy were promoted by allowing participants to customize lesson order and specific behaviors to focus on each week. Assessments included measurement of weight, waist circumference, and body composition. Autonomous motivation was measured using the Treatment Self-Regulation Questionnaire.Results: Participants (N=107, age 44.2±11.4 years, BMI 31.4±3.9 kg/m^2, 76.6% white) were randomized into the study and 94.4% of participants completed the 3-month assessment. There were no differences between the groups at baseline (p's>0.12). The REFIT group lost significantly more weight than the waitlist group (4.7±4.3 vs. 0.6 ±2.1 kg; p < 0.001). The REFIT group also had greater reductions in waist circumference (-3.8±3.3 vs. -0.7±2.1 cm) and percent body fat (-2.8±3.1 vs. -0.4±2.2 percent; p's < 0.001) and greater increases in autonomous motivation over time (p=0.02). All intervention participants completed the face-to-face sessions and an average of 8.9 (±1.9) of 10 of the online sessions during the first three months.Discussion: REFIT produced a 4.7 kg weight loss after 3-months with reductions in waist circumference and body fat, and increased autonomous motivation using a novel approach to caloric reduction and increased autonomy. This new treatment holds promise as an alternative to traditional behavioral therapy for men.

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Meritorious Award

Paper Session 09 **4:09 PM-4:27 PM**

IDENTIFYING LATENT CLASSES OF HISPANIC CHILDREN IN A SKIN CANCER PREVENTION INTERVENTION

Kimberly Miller, MPH[1], Jimi Huh, PhD[1], Jennifer B. Unger, PhD[1], Jean Richardson, DrPH[1], David H. Peng, MD, MPH[2], Myles Cockburn, PhD[1]

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Introduction: Invasive melanoma is increasing in U.S. Hispanics, especially in high UV regions. More information is needed regarding the sun protection patterns of Hispanics, particularly for children and adolescents who incur high UV exposures, to develop tailored skin cancer primary prevention interventions. Methods: We used latent class analysis to examine patterns of sun protective behaviors in a cross-sectional sample of Hispanic elementary students participating in a sun safety intervention in Los Angeles (N=972). Five indicators in two environments (school and home) representing multiple methods of sun protection were selected for the model. Covariates included gender, level of acculturation, family engagement with child's sun protection, skin phototype, and skin's sensitivity to sunburn. Results: Results suggested a four-class model best fit the data. Based on observed patterns, classes were labeled in approximate order of increasing risk as class 1: multiple protective behaviors (28%), class 2: clothing and shade (32%), class 3: pants only (15%) and class 4: low/inconsistent protective behaviors (25%). Children who reported high parental engagement with sun protection were significantly more likely to be classified in higher protecting classes (classes 1 and 2). Girls were more likely to be classified in the highest protecting class (class 1); however, they were also more likely to be classified in the pants only class (class 3), a lower protecting class. Skin sensitivity to sunburn was associated with membership in a lower protecting class (class 4). Skin phototype and level of acculturation were not associated with class membership. Conclusion: The differences amongst these classes reveal the variability of Hispanic children's sun protective behaviors as well as characteristics associated with their use patterns. These findings have implications for the design and delivery of future sun protections targeting Hispanic children, as interventions tailored to specific subgroups may be more useful in achieving meaningful behavior change in this at-risk population.

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Citation Award

Paper Session 10 **4:27PM-4:45 PM**

ENHANCING EXERCISE-BASED CARDIAC REHABILITATION WITH STRESS MANAGEMENT TRAINING

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Objective: To evaluate the potential benefits of stress management training (SMT) when combined with standard exercise-based cardiac rehabilitation (CR) in patients enrolled in CR.Methods: 151 patients referred to exercise-based cardiac rehabilitation (CR) underwent baseline evaluations including a battery of questionnaires to assess stress (i.e., Beck Depression Inventory, State-trait Anxiety Inventory, General Health Questionnaire, Perceived Stress Scale, and PROMIS Anger Scale), cardiovascular risk factors (i.e., blood pressure, lipids) and CVD biomarkers (e.g., C-reactive protein, heart rate variability, baroreflex sensitivity). Patients were then randomized to either exercise-based CR or CR+SMT for 12 weeks. At post-intervention, all assessments were repeated, and patients were followed for up to 4 years for clinical events.Results: Patients randomized to CR+SMT achieved greater reductions in a composite psychometric index of stress compared to standard CR ($p = .034$). Both groups achieved similar improvements in aerobic capacity and CVD risk factors, although CR+SMT exhibited greater leisure time activity following treatment ($p < 0.05$). There were 32 clinical events over a median follow-up of 2 years. Time-to-event analyses revealed that the CR+SMT group had fewer events during follow-up compared to the CR alone group (HR = 0.36 [95%CI 0.15, 0.90], $p = .029$). Mediation analyses revealed that post-treatment stress also was associated with clinical events ($p = .016$) and that controlling for post-treatment stress partially attenuated the relationship between treatment and clinical events (HR = 0.42 [95%CI 0.17, 1.06], $p = .067$).Conclusion: SMT provides added benefit to traditional exercise-based CR by improving quality of life and reducing the risk for adverse clinical events.

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Meritorious Award

Paper Session 13 **3:15 PM-3:33 PM**

PROSPECTIVE ASSOCIATIONS BETWEEN PHYSICIAN ADVICE AND SUBSTANCE USE IN A YOUTH COHORT

Benjamin Gee, BA, Biology, Anthropology[1], Kaigang Li, PhD[2], Denise Haynie, PhD, MPH[2], Ronald J. Iannotti, PhD[3], Bruce Simons-Morton, PhD[2]

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INTRODUCTION: The most salient threats to U.S. adolescents are unhealthful behaviors, including risk behaviors such as drinking alcohol and smoking tobacco. Although physician advice is widely regarded as a potent strategy for changing adult behavior, surprisingly little research exists supporting its role in reducing substance use in adolescents and young adults. PURPOSE: To examine the association between physician advice and use of alcohol and tobacco in youth. METHODS: Data were analyzed from three waves of the NEXT Generation Study, a nationally-representative cohort of US high school students. Included were assessments from 11th (W2) and 12th (W3) grade, and the following year (W4). Participants who had seen a physician within the past 3-12 months completed items on receiving physician advice (associated risks and behavior reduction) about alcohol and tobacco. Participants reported 30-day alcohol use, binge (5+ drinks/occasion), and tobacco use. Logistic regression was used, controlling for substance use in the previous wave, gender, race and family affluence. RESULTS: The weighted prevalence of risk advice across W2, W3, and W4 was: 42%, 47%, 52% for drinking and 44%, 49%, 54% for smoking, respectively. Participants receiving alcohol risk advice were significantly less likely to drink alcohol (OR=0.57; CI=0.40–0.79) at W3, or binge drink at W3 (OR=0.60; CI=0.38–0.95) and W4 (OR=0.48; CI=0.24–0.97). Participants receiving smoking risk advice were less likely to report smoking at W3 (OR=0.47; CI=0.29–0.77) and W4 (OR=0.24; CI=0.12–0.48). Prevalence of behavior reduction advice was 18%, 22%, 22% for drinking, and 19%, 23%, 24% for smoking, across W2, W3, and W4 respectively. At W2, participants receiving reduction advice were significantly less likely to binge drink (OR=0.45; CI=0.23–0.86) or smoke (OR=0.41; CI=0.22–0.77).CONCLUSIONS: In a nationally-representative cohort study, physician advice was significantly associated with lower rates of binge drinking and smoking in youth, suggesting potential clinical utility. Type of advice may matter. Further study on the utility of physician advice to address risk behaviors in youth is warranted.

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Meritorious Award

Paper Session 16 **3:15 PM-3:33 PM**

LUNG CANCER SCREENING: WHAT DO HIGH-RISK SMOKERS KNOW AND BELIEVE?

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Aims: Lung cancer is the leading cause of cancer-related deaths worldwide and is associated with very low survival rates. Tobacco smoking is the primary risk factor; long-term smokers are at greatest risk. Guidelines for screening high-risk smokers have recently been developed. With this new screening recommendation, understanding variables that may or may not influence screening participation is essential. Because decisions to participate in cancer screening are made by individuals, exploring high-risk smokers' knowledge and beliefs about screening is a necessary first step to increasing lung cancer screening participation in appropriate individuals. The purposes of this study were to: (1) describe high-risk smokers' perceptions of lung cancer, risk factors, and screening; and (2) obtain feedback from high-risk smokers about the relevance, clarity, comprehensiveness, and appropriateness of newly developed instruments to measure lung cancer screening beliefs (perceived risk, perceived benefits, perceived barriers, and self-efficacy).
Methods: Four focus groups were conducted (N=26); two groups of high-risk smokers who had recently had lung cancer screening with low dose computed tomography (LDCT) (n=12) and two groups of high-risk smokers who had never been screened (n=14). Data were collected via digital audio recordings and transcribed verbatim. Data were analyzed using content analysis.
Results: Regardless of prior screening, high-risk smokers described environmental and occupational exposure as the greatest risk factors for lung cancer, in addition to tobacco smoking. Unscreened participants were unsure what constituted lung cancer screening while those who had been screened identified chest radiograph, in addition to LDCT, as ways to screen for lung cancer. Regardless of prior lung cancer screening experience, knowledge levels about risk factors and screening were low. Participant reactions to draft instruments were generally positive and valuable feedback for revision of scale items was provided.
Conclusions: Lung cancer risk and current screening recommendations are not fully understood among high-risk smokers. Future research is needed to explore the impact of individual health beliefs about lung cancer and screening on lung cancer screening behavior.

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Meritorious Award

Paper Session 17 **4:09 PM-4:27 PM**

DYADIC HEALTH BELIEFS THAT INFLUENCE PARENTS' AND SONS' WILLINGNESS TO RECEIVE HPV VACCINE

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Background.Parents and adolescents make healthcare decisions together, including whether or not to seek the human papillomavirus (HPV) vaccine. However, little research has examined how they make these decisions, including the correlations and unique contribution of each dyad members' health beliefs. Given the suboptimal levels of HPV vaccine coverage among boys in the U.S., we examined parents' and sons' beliefs about HPV to understand how they form vaccination decisions. Methods.Data came from the 2010 HPV Immunization in Sons (HIS) Study of a national sample of 412 parents and their adolescent sons, ages 11-17. We conducted dyadic multivariate logistic regression to test the simultaneous effects of both parents' and sons' HPV beliefs on their willingness to have the son receive the vaccine.Results. Less than half of parents and sons were willing to have the son receive HPV vaccine (43% and 29%, respectively). Parents' and sons' HPV beliefs were highly correlated (range of *r*'s=.12-.52, all $p < .05$). Two HPV beliefs were associated with both parents' and sons' vaccination willingness: perceived importance of protecting the son's future partner from HPV-related illness (parent: OR=2.85, 95% CI=1.73, 4.70; son: OR=1.95, 95% CI=1.23, 3.07) and anticipated regret of the son contracting HPV without vaccination (parent: OR=1.72, 95% CI=1.24, 2.40; son: OR=1.51, 95% CI=1.04, 2.19). Other important correlates of vaccination willingness included parents' and sons' expected pain and parents' anticipated regret of fainting from vaccination.Conclusions.Parents' and sons' HPV vaccination willingness was higher if they valued vaccination as a way to prevent the son and the son's future partner from HPV. Other health beliefs had independent contributions to the decision-making process for each member of the dyad. In order to increase HPV vaccination willingness, promotional programs should emphasize the vaccine's ability to protect the son and his future partner from infection and assuage concerns about short-term side effects of vaccination.

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Citation and Meritorious Award

Paper Session 20 **3:33 PM-3:51 PM**

USING A SMARTPHONE APPLICATION TO CAPTURE SEDENTARY BEHAVIOR AND MULTITASKING AMONG ADOLESCENTS

Yue Liao, MPH, Eldin Dzubur, MS, Genevieve F. Dunton, PhD, MPH

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Introduction: Excessive time spent in sedentary behavior is emerging as an independent risk factor for chronic disease. However, most studies that examine the effects of sedentary behavior do not differentiate whether sedentary time is spent in one or multiple behaviors. It is important to better understand what adolescents do during their sedentary time in order to design interventions to reduce these activities. For example, interventions targeting TV time may not be effective at reducing overall sedentary behavior unless concurrent technology use (e.g., mobile device use) is also targeted. This study aimed to use Ecological Momentary Assessment data collected from a smartphone application to describe the patterns of sedentary behavior and multitasking among adolescents in their daily lives. Methods: Electronic surveys were randomly delivered by a smartphone app across 14 days among 51 adolescents (ages 14-19, 55% female, 57% Hispanic, and 39% overweight/obese). Each electronic survey assessed type, duration, and body position of all activities performed in the past 30 minutes. "Sitting" or "lying down" were defined as sedentary behavior. The smartphone app allowed participants to select multiple activities to indicate that they were multitasking. Analysis only included prompts with at least one self-reported sedentary activity. Multilevel analysis was conducted to test whether the probability of multitasking (yes/no) differs by demographic variables. Results: Ninety percent (range= 68%-100%) of these prompts had at least one sedentary activity reported. Participants reported being sedentary position most commonly while reading/doing homework (98%), followed by using technology (TV/phone; 95%), eating/drinking (92%), and hanging out (68%). Of all the sedentary prompts, 85% reported one activity, and 15% reported multiple activities. The probability of multitasking while using technology was greater for females than males (beta = .37, p = .03), and for obese than overweight participants (beta = 2.13, p = .02). Discussion: Smartphone app could be used as a self-report tool to assess multiple sedentary behaviors among adolescents. Future studies should explore the trends and potential health risks for multiple sedentary behaviors in a larger sample.

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Citation Award

Paper Session 20 **4:27 PM-4:45 PM**

DESCRIBING REAL-TIME SUBSTANCE-USE DETECTION FROM BIG BIOSENSOR DATA: A CASE STUDY OF COCAINE USERS

Hua Fang, Ph.D[1], Kelley Wittbold, MD[2], Shicheng Weng, M.S.[3], Carreiro Stephanie[4], Jianying Zhang[4], Rachel Mullins[5], Edward Boyer[6]

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Introduction: Biosensors are increasingly promoted for use in behavioral interventions. The vast amount of data generated from their applications in real-time event monitoring appears informative, but the primary values of such big data come from its processing and analysis. Our study attempts to assess real-time substance-use detection of biosensors using parameter trajectory pattern description.

Method: Our approach was demonstrated on a NIH-funded study (iMStrong) where data were assembled from fifteen cocaine-dependent patients under treatment. The bracelet biosensors collected data from three surrogates (electrodermal activity, skin temperature, and three motion dimensions) of sympathetic nervous system, generating five attributes for each patient. The data were large not in terms of the sample size but the number of attributes, which were repeatedly measured up to twenty times per second for 30-45 days. We computed the day-by-day parameters (e.g., mean, median, maximum and minimum) and generated the parameter trajectories to depict and capture bio-physiologic changes caused by SNS arousal for each patient. Sets of unusual peaks and valleys (e.g., skin temperature abruptly away from 37 °C) were filtered out and matched with patients' urine specimen values, and their self-reports on drug use.

Results: This parameter trajectory description method reserves and captures abrupt SNS changes even among millisecond data. Although the cocaine use detection is the primary purpose of this case study, these biosensors also detected other drug use events among these cocaine dependents. Fifty-eight substance-use events (e.g., cocaine, Tetrahydrocannabinol, Benzodiazepine, opiates, Methamphetamine use detected by the biosensors) were captured by our method and verified by the lab urine tests. Twelve cocaine-use events were matched with patients' self-reports. One patient's urine test indicated negative but self-reported his cocaine use about four days ago. Despite this inconsistency, our method verified his cocaine-use using the real-time biosensor data stream.

Conclusion: Our objective parameter trajectory description method can assist in real-time biosensor data analytics for detecting drug abuse episodes in behavioral science and drug abuse.

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Meritorious Award

Poster Session B **6:00 PM - 7:00 PM** **B-008**

DECISION TO PURSUE INTENSIVE TREATMENT IN ADVANCED CANCER PATIENTS

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Many advanced cancer patients receive intensive treatment near the end of life (EOL), which is associated with negative outcomes, including worse quality of life, greater distress and bereavement in caregivers, and greater health care costs. Moreover, intensive treatment does not meaningfully improve survival for many cancers. Patient and physician characteristics and prognostic understanding are known to be associated with treatment preferences, but these factors do not fully explain EOL care decisions. Personality traits associated with goal pursuits may explain decision-making in advanced cancer. The aim of this study was to examine the ability of goal-related personality traits to predict intensive treatment in advanced cancer patients near the EOL. Surveys were completed by 80 patients with incurable lung or gastrointestinal cancer, measuring hope, optimism, and goal flexibility. After their deaths, patient medical records were examined for evidence of intensive treatment near EOL. Time between initiation of last chemotherapy regimen and death correlated with optimism, $r(34)=-.53, p < .001$, agency, a component of hope, $r(34)=-.40, p < .05$; and goal reengagement, a component of goal flexibility, $r(34)=-.36, p < .05$. Time between last chemotherapy administration and death correlated with optimism, $r(48)=-.29, p < .05$; agency, $r(48)=-.39, p < .05$; and goal reengagement, $r(48)=-.43, p < .05$. In a regression analysis, optimism significantly predicted starting a new chemotherapy regimen closer to death ($\beta=-.53, t(31)=-3.56, p < .001$), and receiving chemotherapy closer to death ($\beta=-.29, t(48)=-2.16, p < .05$). A multiple regression with hope and goal reengagement predicting time from last chemotherapy administration to death was also significant, $R2 =.29$, adjusted $R2 =.25, F(3,46)=6.32, p < .001$. Although normally associated with adaptive functioning, higher levels of hope, optimism, and goal flexibility may lead advanced cancer patients to choose more intensive treatments near EOL.

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Meritorious Award

Poster Session B **6:00 PM - 7:00 PM** **B-063**

DEVELOPMENT AND TESTING OF PSYCHOSOCIAL FACTORS RELATED TO FOOD PREPARATION AMONG HISPANIC PARENTS

Teresa M. Smith, MS[1], Genevieve F. Dunton, PhD, MPH[2], Courtney A. Pinard, PhD[3], Amy Yaroch, PhD[4]

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Though preparing food at home has been recognized as an avenue for promoting healthier eating, currently no tool exists to measure psychosocial correlates of food preparation among Hispanic parents. The purpose of this study was to develop and psychometrically test a culturally relevant survey assessing psychosocial factors of food preparation among Hispanic parents. Literature review and focus group findings guided the selection and development of new and existing behavior and psychosocial survey items. The survey was cognitively tested in a sample (n = 25) of Hispanic adults in the Midwest United States and revised for better understanding and readability. The survey was then pilot tested in a convenience sample of Hispanic parents (n=248) in Southern California from July to August 2013. Factor analysis utilizing the Generalized Least Squares extraction and Varimax with Kaiser Normalization rotation methods was used to reduce psychosocial items and identify scales. Four scales related to food preparation had good internal consistency: self-efficacy (4 items; α = 0.8), perceived benefits (4 items; α = 0.8), perceived barriers (3 items; α = 0.8), and resources (3 items; α = 0.7). Scales demonstrated convergent validity: resources and perceived benefits(r = 0.6), resources and self-efficacy (r = 0.4), perceived benefits and self-efficacy(r = 0.4), perceived barriers and self-efficacy(r = -0.3). Scales also demonstrated concurrent validity with select healthy food preparation behaviors. Self-efficacy correlated with frequency of food preparation (r = 0.4), scratch preparation (r = 0.4), adjusting meals to be healthier (r = 0.2), and planning meals (r = 0.3). Perceived benefits correlated with frequency of food preparation (r = 0.4), scratch preparation (r = 0.3), adjusting meals to be healthier (r = 0.2), and planning meals (r = 0.2). Perceived barriers correlated with frequency of scratch preparation (r = -0.2), adjusting meals to be healthier (r = -0.2), and planning meals (r = -0.2). Resources correlated with frequency of food preparation (r = 0.3), and scratch preparation (r = 0.3). Emphasizing how food preparation in the home can support a healthy diet, this tool can enhance utility of dietary information for surveillance and inform intervention and evaluation among Hispanic American families.

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Meritorious Award

Poster Session B **6:00 PM - 7:00 PM** **B-094**

AN INVESTIGATION OF COMMITTED ACTION IN CHRONIC PAIN AND ITS RELATION TO PATIENT FUNCTIONING

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Decades of research indicates that pain avoidance strategies are problematic because they narrow response options and isolate individuals from meaningful activities. Psychosocial interventions have therefore historically emphasized minimizing pain avoidance, and more recent approaches, such as Acceptance and Commitment Therapy (ACT), have highlighted increasing engagement in activities consistent with valued living as a key treatment target. In terms of salient processes in ACT, committed action is considered essential to the pursuit of a meaningful life and is assumed to enhance flexible responding. To date, however, only one study has examined the specific contribution of committed action to flexibility and other measures of functioning. The purpose of the present study was to replicate the initial findings and explore the degree to which the results would translate from tertiary to primary care. Data were examined from 149 chronic pain patients in the U.K. who completed the Committed Action Questionnaire (CAQ) and other measures of functioning. Almost all participants were White European (99%) and the majority were female (63%), had a high school education or less (86%), and were married or cohabitating with a partner (67%). The most common primary diagnoses were arthritis (27%) and fibromyalgia (24%). The suitability of the CAQ was explored through several steps. The results of item analyses indicated a normal distribution of responses with acceptable item-total correlations. Using all 24 items, the scale demonstrated good internal consistency (Cronbach's α = .89). Correlation and regression analyses indicated that CAQ scores have significant relations with multiple facets of patient functioning, such as distress and disability. Our findings appear relevant to chronic pain treatment settings in several ways. For example, the CAQ appears to consistently capture committed action in multiple treatment settings. Furthermore, this study offers additional evidence indicating the importance of committed action in treating pain, particularly in the context of patient functioning. This final point is especially significant given the empirical support for ACT, where committed action is purported to be one of the central processes that contribute positive health outcomes.

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Meritorious Award

Poster Session B **6:00 PM - 7:00 PM** **B-097**

EFFECT OF PERCEIVED STRESS LEVELS ON TEMPORAL SUMMATION OF SECOND PAIN

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Prior studies suggest that chronic stress sensitizes nociceptive afferents. Yet, the effect of chronic stress on central pain processing remains to be elucidated. Exposure to chronic stress can contribute to the onset or exacerbation of chronic pain disorders such as fibromyalgia and rheumatoid arthritis. Temporal summation of second pain (TSSP) due to repeated stimulation results in increased pain perceptions. This homosynaptic facilitation occurs at spinal and supra-spinal levels. The current study examined whether higher perceived stress levels would predict enhanced TSSP and persistent pain after TSSP in healthy young adults. Before pain testing, the Perceived Stress Scale was administered to assess perceived stress levels during the past month. Seventy-nine young adults (54% female) underwent three TSSP tests. Sensitivity tests with four pulses identified the peak temperatures to individually induce moderate pain (defined by a rating of 45±10 in a 0-100 visual analogue scale) before TSSP testing with ten pulses (0.3 Hz). We also assessed aftersensation (pain intensity at 30s after the last pulse) to evaluate decay of TSSP. To calculate summed TSSP pain intensity, area under the curve (AUC) was computed with average pain intensity at each pulse. Multiple regression analyses were conducted to predict absolute windup (AUC - 10 x the first response) as well as aftersensation while controlling for individual differences in peak temperature and number of sensitivity tests. Results indicated perceived stress levels were not associated with peak temperature, but did predict greater absolute windup (B=0.9, R^2=.16, p=.001) and higher aftersensation (B=0.4, R^2=.14, p=.036). Consequently, perceived stress levels were associated with enhanced TSSP (absolute windup) and persistent pain after TSSP (higher aftersensation) without altered nociceptive responses to suprathreshold pain. These results suggest that higher perceived stress levels may enhance central pain processing and therefore may be a risk factor for chronic pain disorders.

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Meritorious Award

Poster Session B **6:00 PM - 7:00 PM** **B-108**

EXERCISE AND DEPRESSION IN ADULTS WITH NEUROLOGICAL DISORDERS: SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Depression and depressive symptoms are particularly common in adults with neurological disorders. Exercise has been an effective method of reducing depression and depressive symptoms in the general population. We undertook a meta-analysis to evaluate the overall effect of exercise interventions on depressive symptoms in adults with neurological disorders. Methods: We searched CINAHL, the Cochrane Register of Controlled Clinical Trials, EMBASE, ERIC, MEDLINE, PsycINFO, PubMed, and SPORTDiscus for randomized controlled trials conducted in adults diagnosed with a neurological disorder. We included studies which compared an exercise intervention group to a control group and used depression as an outcome measure. Twenty-six trials met our inclusion criteria. These trials represented 1,324 participants with 7 different neurological disorders. Depression measure data were extracted and effect sizes were computed for 23 trials. We estimated an overall effect size and conducted moderator analyses using Comprehensive Meta-Analysis, version 2.0. Results: The overall effect size was 0.28 (SE=0.07, CI=0.15-0.41, p=0.00) favoring a reduction in depression outcomes following an exercise intervention compared with control. We performed moderator analyses based on neurological disorder and meeting physical activity guidelines (PAGs). Studies completed with spinal cord injured participants had the greatest effect (ES=0.43) and those completed in participants suffering from traumatic brain injury had the smallest effect (ES=0.16). Of note, interventions that met PAGs yielded an overall effect of 0.38 compared with 0.19 for studies whose interventions did not meet PAGs. When relaxation control groups were excluded, the overall effect of exercise interventions that met PAGs increased to 0.49 compared with the interventions that did not meet PAGs (ES=0.20). Conclusions: This review provides evidence that exercise, particularly when meeting published PAGs, can improve depressive symptoms in adults with neurological disorders.

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Citation and Meritorious Award

Poster Session B **6:00 PM - 7:00 PM** **B-139**

THE INTERACTION OF NEIGHBORHOOD AND GENETIC RISK IN PREDICTING BLOOD PRESSURE AND STRESS-RELATED OUTCOMES IN THE PATH TRIAL

Sandra Coulon, PhD, Dawn K. Wilson, PhD

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African Americans are disproportionately affected by high blood pressure (BP), and both environmental stress and genetic risk may play a role in its development. The aim of this study was to test the impact of neighborhood socioeconomic status (SES) and genetic risk (glucocorticoid receptor sensitivity) on stress-related outcomes (BP, cortisol, perceived stress) in African-American adults. The study hypothesized a stress-diathesis/dual-risk interaction such that genetic risk would have a greater adverse impact on individuals with lower neighborhood SES. Cross-sectional data were collected from 245 African-American adults who participated in the PATH trial, a community-based program to increase walking. Waking saliva cortisol, BP, and perceived stress surveys were collected as markers of physiologic and mental stress. Polymorphisms (*Bcl1*, rs41423247; *FKBP5,* rs1360780) were genotyped from buccal swab samples and indexed to obtain genetic risk. Neighborhood SES was calculated from an established index using block-group data from the 2010 U.S. Census. The sample was predominantly female (65%) and overweight (M_{BMI}=32.44, *SD*=8.63), with an average age of 55.78 (*SD*=15.51). Lower neighborhood SES was related to higher waking cortisol (β=-.046, $p < .01$). The gene-by-neighborhood SES interaction was significant for both diastolic BP (β=-.538, $p < .05$) and perceived stress (β=-.041, $p < .01$). Simple slopes indicated significant relations of neighborhood SES with respective perceived stress and diastolic BP outcomes for those with high (β=-0.348; β=-6.566) but not low (β=-0.184; β=-4.434) risk. The patterns were consistent with a differential susceptibility model rather than the hypothesized dual-risk model, and indicated that those with high genetic sensitivity not only had poorer outcomes with lower SES but also had better outcomes with higher SES. This study is the first to assess the impact of neighborhood SES and genetic sensitivity on stress-related outcomes in African-American adults, and to show a differential susceptibility pattern in a physical outcome such as blood pressure. Findings may inform public policy efforts to decrease BP health disparity through greater attention to neighborhood factors, and they support a more malleable model of genetic "susceptibility" rather than "risk."

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Citation Award

Paper Session 22 **12:45 PM-1:00 PM**

LONGITUDINAL ASSOCIATION BETWEEN DEPRESSIVE SYMPTOMS AND WALKING IMPAIRMENT IN MULTIPLE SCLEROSIS

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Background: Worsening of depressive symptoms and walking impairment are significant burdens over the course of multiple sclerosis (MS). The reciprocal relationship between depressive symptoms and walking impairment has not been well characterized in this population.Purpose: We explored the possible reciprocal relationship between depressive symptoms and walking impairment over a period of 2 years in a cohort of people with relapsing-remitting MS (RRMS).Methods: Data were collected from 269 persons with RRMS on three occasions separated by 12 months over 2 years. Depressive symptoms were measured using the Hospital Anxiety and Depression Scale (HADS), whereas walking impairment was measured using the Multiple Sclerosis Walking Scale-12 (MSWS-12). The data were examined using longitudinal panel analysis in Mplus.Results: Baseline depressive symptoms predicted walking impairment at 1-year follow-up (path coefficient = .074), and walking impairment at 1-year follow-up predicted depressive symptoms at 2-year follow-up (path coefficient = .177), even after controlling for covariates.Conclusions: Our study provides the first evidence for initiation of a reciprocal relationship between depressive symptoms and walking impairment in people with RRMS. This should be considered in both research and treatment programs.

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Citation and Meritorious Award

Paper Session 22 **1:15 PM-1:30 PM**

INTERACTION BETWEEN SMOKING AND DEPRESSIVE SYMPTOMS ON SUBCLINICAL HEART DISEASE: THE CARDIA STUDY

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Cigarette smoking and depression are independent risk factors for heart disease, but whether the interaction between smoking and depression is associated with risk for heart disease remains unknown. The purpose of this study was to test the hypothesis that the association between smoking and coronary artery calcification (CAC) would be stronger among adults with a history of repeated elevated depressive symptoms versus those with no history of elevated depressive symptoms. Participants (at baseline: 54.5% female; 51.5% Black; age=18-30 years) were followed over 25 years in the Coronary Artery Risk Development in Young Adults (CARDIA) study. Smoking exposure was measured by cigarette packyears (Years 0, 2, 5, 7, 10, 15 and 20). Depressive symptoms were measured using the Center for Epidemiologic Studies Depression (CES-D) Scale (Years 5, 10, 15 and 20). Participants (N=2675) were classified with repeated (≥2 exams with elevated CES-D: scores ≥16; n=512), single episode (1 elevated score; n=543), or no elevated depressive symptoms (0 elevated scores; n=1620). Logistic regression was used to test the interaction of smoking exposure by elevated depressive symptom status in relation to CAC >0 at Year 25. Covariates included known sociodemographic (sex, race, age, education), behavioral (alcohol, physical activity) and clinical (hypertension, cholesterol, diabetes, body mass index) risk factors for heart disease. The smoking exposure by elevated depressive symptom group interaction was significant (p=.002) in that repeated depression in the presence of packyears was associated with higher odds of CAC. Within each depression group (≥2, 1, 0), each 10-packyear greater smoking exposure was associated with 81%, 51% and 18% higher odds of having CAC, respectively. Adults with a history of repeated elevated depressive symptoms may be at especially high risk for developing CAC with greater smoking exposure.

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Citation and Meritorious Award

Paper Session 24 **12:45 PM-1:00 PM**

ADOPTION OF SHARED DECISION MAKING USING DECISION AIDS AMONG UROLOGISTS

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Prostate Cancer (PCa) is the most commonly diagnosed cancer in American men. However, there is evidence of widespread over treatment of PCa. In this context, urologists need to deliver preference sensitive care to make effective clinical decisions with their newly diagnosed PCa patients. Shared decision making (SDM) using decision aids (DA) has shown evidence in influencing outcomes but widespread adoption and implementation of SDM using DAs remains limited and understudied.A mixed methods approach was taken to triangulate data from (1) a systematic review of 14 DAs designed to help newly diagnosed PCa patients make treatment decisions that studied 111 characteristics including implementation and (2) a qualitative study conducted with 12 urologists to assess perceptions, implementation requirements and contextual factors that may influence adoption of SDM using DAs in routine practice. Data were triangulated across methods to highlight the complexities in the implementation of DAs for urologists to engage in SDM and to help design strategies to facilitate their uptake.Based on data triangulation, some of the urologist's preferences matched with the existing DAs while others did not. They practiced several elements of SDM in routine practice but used easily accessible, non-evidence based educational materials to facilitate SDM. Urologists were not aware of DAs and perceived them to be useful when engaging in SDM. The content review of the available DAs was lacking in terms of comprehensive information about treatment options, outcome probabilities and application of health literacy principles which was important to the urologists in the study. Most DAs placed importance on ascertaining patient values and preferences and providing decisional guidance similar to the urologists. Limitations of the DAs were noted such as being too lengthy and their inability to provide individualized risk information relevant to the patient or incorporate treatment outcomes specific to urologists' own practice.Study findings can be helpful to DA researchers/developers to design and develop implementable DAs. For urologists, the study findings provide strategies to facilitate the adoption of DAs to engage in SDM in routine practice.

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Citation and Meritorious Award

Paper Session 24 **1:00 PM-1:15 PM**

NOT SO STRAIGHTFORWARD: THE COMPLEX RELATIONSHIP BETWEEN KNOWLEDGE AND PROSTATE CANCER TREATMENT DECISION-MAKING

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Introduction: Although it is assumed that prostate cancer (PCa) patients who are more informed about their diagnosis and treatment options will have less difficulty making a treatment decision, few studies have actually demonstrated this empirically. To address this gap, we explored the role of disease and treatment side-effect knowledge in decision-making among men with newly diagnosed clinically localized prostate cancer (PCa).Methods: Participants were 1174 PCa patients (82% white, 10% black, 8% Hispanic) who completed measures of their PCa knowledge and their decision-making experiences shortly after their treatment decision. We analyzed bivariate and multivariable associations between patients' PCa knowledge (expanded version of Diebert, 2007 knowledge assessment) and decisional conflict (O'Connor, 1995), satisfaction (adapted Holmes-Rovner, 1996), and an author-created decision-making difficulty scale. Multivariable linear regression models included education, perceived social status, employment status, race/ethnicity, marital status, age, self-reported Gleason score, and recruitment site.Results: In bivariate analyses, patients who had greater PCa knowledge experienced less decisional conflict and were more satisfied with the decision-making process, but reported greater difficult making the treatment decision (*p*s < 0.001). In multivariable analyses, greater knowledge remained significantly associated with lower decisional conflict (*p*s < 0.001); including all decisional conflict subscales except uncertainty. Those with more knowledge reported being more informed, greater value clarity, more supported, and perceived making effective decisions (*ps* < 0.05). Greater knowledge remained associated with more decision-making difficulty (*p* < .001), but not with satisfaction.Conclusion: There is a complex relationship between patient knowledge and treatment decision-making. While more knowledgeable patients appear to have made 'better' decisions; they also found the process more difficult, perhaps because of the inherent uncertainty of PCa treatment, information is overwhelming. Only providing information is likely insufficient for improving the treatment decision-making process; patients also need decisional support to navigate this challenging process.

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Meritorious Award

Paper Session 24 **1:15 PM-1:30 PM**

CANCER PATIENTS ENGAGING IN INFORMED TREATMENT DECISION-MAKING?

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Introduction: Collaborative treatment decision-making in which patients and physicians weigh cancer control against potential treatment side-effects is standard of care for prostate cancer (PCa). Patients, therefore, should be aware of treatment side-effects. As the most commonly diagnosed cancer in men, PCa provides a case study in which to evaluate success in shifting medicine toward a patient-centered model of care that promotes informed and shared decision-making in patients. The purpose of our study was to examine one element of this transformation–the extent to which PCa patients who had recently made their treatment decision were aware of treatment side-effects. Methods: Participants were 1174 patients (82% white, 10% black, 8% Hispanic) diagnosed with clinically localized PCa recruited from five clinical facilities between 2010 and 2014. They completed a measure of treatment side-effect knowledge shortly after making their treatment decision. We analyzed bivariate and multivariable predictors of knowledge. Multivariable models included education, perceived social status, employment status, race/ethnicity, age, self-reported Gleason score, recruitment site, and treatment choice. Results: Participants (51% chose surgery, 24% chose radiation therapy, 25% chose active surveillance) were less likely to be aware of side-effects of radiation than surgery. Men who chose radiation were the least aware of the side-effects of radiation (*p*s < .05); 39% did not know radiation therapy could cause frequent urination, 45% did not know it could cause rectal pain or discomfort, and 40% did not know it could cause erectile dysfunction. In multivariable analysis of overall side-effect knowledge (hormone, radiation therapy, and surgery side-effects), lower educational attainment, less aggressive disease, lower perceived social status, and older age were associated with lower knowledge (*p*s < .05). Conclusion: Findings indicate that the field of PCa care has yet to achieve truly informed treatment decision-making. Men choosing radiation therapy and those with low socioeconomic status have relatively greater treatment knowledge deficits. Our data are consistent with the argument in the literature that use of treatment decision-making aids has been insufficiently promoted in clinical settings.

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Citation and Meritorious Award

Paper Session 25 **1:00PM-1:15 PM**

SMOKING, INTERNALIZED HETEROSEXISM, AND HIV DISEASE MANAGEMENT AMONG MALE COUPLES

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Background: High rates of smoking have been observed among HIV-positive individuals. Smoking has been linked to HIV-related medical complications, non-AIDS defining cancers, and negatively impacts on immune function and virologic control. Although internalized heterosexism has been related to smoking behaviors, little is known about associations between partners' reports of smoking dependence, internalized heterosexism, and HIV medication management in male couples with HIV. Methods: A sample of 266 male couples completed assessments for a cohort study examining relationship factors and HIV treatment. A computer-based survey assessed self-reported smoking behaviors, alcohol use, internalized heterosexism, and antiretroviral therapy (ART) adherence. HIV-positive men also provided a blood sample to assess viral load. Models examining the association between internalized heterosexism, smoking, and HIV disease management were conceptualized using the Actor-Partner Interdependence Model. Results: Approximately 30% of the sample reported smoking dependence. After adjusting for demographic characteristics, men in a primary relationship with a partner who reported smoking dependence had more than five-fold greater odds of reporting smoking dependence (AOR = 5.56, 95% CI = 2.65, 11.69). Higher levels of internalized heterosexism were associated with greater odds of reporting smoking dependence. Among HIV-positive men on ART (n = 371), having a partner who reported smoking dependence was associated with almost a three-fold greater odds of having a detectable viral load (AOR = 2.97, 95%CI = 1.18, 3.30). Conclusions: Our findings add new support to evidence on romantic partners influencing each other's health behaviors, and demonstrate an association between smoking and HIV disease management within male couples. Future research is warranted to understand the interpersonal and social contexts of smoking to develop interventions that meet the unique needs of male couples.

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Meritorious Award

Paper Session 27 **3:15 PM-3:33 PM**

CALORIE MENU LABEL USERS MAY BE SAVING CALORIES BY ORDERING HEALTHIER SIDES AND BEVERAGES

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Background: Soon restaurants with 20 or more locations nation-wide will be required to post calorie information on menus. Menu labeling is part of the 2010 Affordable Care Act, and the FDA is in the final phase of releasing implementation guidelines. Previous results from our parent study show that those who reported using calorie information posted at a major fast-food chain purchased 146 fewer calories than those who did not use the information. Most of the sides and beverages offered at fast-food restaurants are energy dense and nutrient poor. The aim of the present study was to determine if patrons who used menu labeling were more likely to order healthier sides and beverages compared to those who did not report using calorie information.

Methods: Customer receipts and survey data was collected from 329 participants using street-intercept survey methodology at 29 restaurant locations of a major fast-food chain in low- and high-income neighborhoods throughout the Phoenix metropolitan area.Results: There were significant differences between users and non-users of menu labeling with regard to types of sides ordered ($p < 0.05$). Fewer (41.5%) patrons who reported using calorie menu labeling purchased an unhealthy side dish (ice cream, pastry or french fries), compared to those who did not use menu labeling when deciding what to order (57.4%). Among users, 7.5% ordered a healthy side dish (apples, a side salad, or yogurt) compared to 2.5% of non-users. Additionally, 50.9% of label users did not order a side dish compared to 40.1% of non-users. Significant differences were also observed in types of beverages ordered ($p < 0.01$). Calorie menu labeling users were more likely to order low- or no-calorie beverages than non-users (31.4% and 11.3%, respectively). Further, 31.3% of non-users ordered a soda whereas only 21.6% of users ordered a soda. Interestingly, 34.2% of non-users skipped ordering a beverage all together, whereas only 25.5% of users did. Conclusion: Calorie menu labeling use at fast-food restaurants was associated with healthier and fewer side and beverage orders. Sides and beverages ordered at fast-food restaurants can be major contributors to non-nutritive, energy-dense calories. Calorie menu labeling may be a useful tool to help patrons make more healthful decisions related to side and beverage orders.

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Meritorious Award

Paper Session 27 **3:33 PM-3:51 PM**

DOES REACTANCE TO GRAPHIC CIGARETTE PACK WARNINGS WEAKEN THEIR IMPACT?

Marissa G. Hall, MSPH[1], Paschal Sheeran, PhD[2], Seth M. Noar, PhD[3], Kurt M. Ribisl, PhD[4], Laura E. Bach, MPH[5], Noel Brewer, PhD[2]

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BACKGROUNDGraphic cigarette warnings may encourage people to stop smoking, but they may also elicit *reactance*, a motivation to resist the warning. We sought to examine experimentally whether reactance weakens the impact of exposure to graphic warnings. METHODSThe experiment randomized a national sample of adult smokers to view 1 of 5 graphic warnings (n=510) or 1 of 5 text-only warnings (n=87) on a mocked-up cigarette pack on a computer screen. We measured reactance to warnings using our newly-developed Reactance to Health Warnings Scale (RaHW) Scale. The 27-item scale has high internal consistency across its 9 subscales (mean α=0.81) and robust 3-week test-retest reliability (mean r=0.66). The outcome was perceived effectiveness, assessed using 3-items that asked smokers to evaluate how much having the warning on their cigarette packs would make them want to quit smoking, make them concerned about the health effects of smoking, and discourage non-smokers from starting smoking (α=0.83). RESULTSSmokers rated graphic warnings as more effective than text-only warnings (β=0.35, $p < .01$). However, graphic warnings elicited more reactance on 4 of the scale's 9 dimensions: anger, perceived exaggeration, government interference and manipulation (all $p < .05$). Furthermore, mediational analyses showed that these 4 dimensions of reactance each suppressed the overall positive relationship between graphic warning exposure and perceived effectiveness ($p < .05$). CONCLUSIONSmokers perceived graphic cigarette warnings as more effective than text-only warnings, but reactance to the warnings weakened this effect. Future research should confirm these findings in a study with longer-term behavioral outcomes and examine whether graphic warnings that elicit less reactance are more effective.

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Citation and Meritorious Award

Paper Session 29 **3:33 PM-3:51 PM**

HEALTH COMMUNICATION IN SOCIAL MEDIA: MESSAGE FEATURES PREDICTING USER ENGAGEMENT ON DIABETES-RELATED FACEBOOK PAGES

Holly Rus, B.A., Linda Cameron, Ph.D.

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Social media provides unprecedented opportunities for health communication. Identifying features of online health communications that predict user engagement can help leverage this global resource for enhancing health care, including self-management of chronic conditions such as diabetes. Health communications (*n* = 500) within the 10 most popular diabetes-related Facebook pages were analyzed to identify message features predictive of user engagement. Drawing on the Common-Sense Model of Illness Self-Regulation and health communication theory, we hypothesized that message features of imagery, social support and sharing, positive affect, positive self-identity as a person with diabetes, use of external website links, solicitation of user input, and illness representation attributes (symptoms, cause, consequences, control, and timeline) would predict higher levels of user engagement (number of likes, shares, and comments). Posts were identified as health communications based on criteria developed by the National Cancer Institute and coded for presence of message features. User response was measured using the total number of likes, shares, and comments within seven days of posting. Specific features predicted different forms of user engagement (i.e., liking, sharing, or commenting). Multi-level negative binomial regressions revealed that presence of imagery (B_{likes} = 1.45, B_{shares} = 2.43), social support ($B_{comments}$ = 0.97), positive identity (B_{shares} = 0.78), solicitation of user input ($B_{comments}$ = 0.77), negative affect ($B_{comments}$ = 1.07), and consequence attributes (B_{shares} = 0.88) predicted higher user engagement while use of external links (B_{likes} = -0.81, B_{shares} = -0.98), negative affect (B_{shares} = -0.91), solicitation of user input, (B_{shares} = -1.19), and positive identity ($B_{comments}$ = -0.78) predicted lower engagement (all *p*'s < .05). These findings hold promise for guiding targeted communication design in health-related social media.

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Citation Award

Paper Session 30 **3:15 PM-3:33 PM**

TEACHING MEDICAL STUDENTS TO HELP PATIENTS QUIT SMOKING: RESULTS OF A 10 MEDICAL SCHOOL RANDOMIZED CONTROLLED TRIAL

Judith K. Ockene, PhD[1], Rashelle B. Hayes, PhD[1], Sybil Crawford, PhD[2], Linda C. Churchill, MS[2], Denise Jolicoeur, MPH, CHES[1], Michael Adams, M.D., FACP[3], Sean P. David, M.D., S.M., D.Phil.[4], Robin Gross, MD[5], Kathryn N. Huggett, PhD[6], Catherine Okuliar, MD[7], Alan Geller, MPH, RN[8]

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Objective: Teaching future physicians how to treat tobacco dependence is vital. This study assessed the effect of a multi-year, multi-modal tobacco dependence treatment curriculum on 1) medical students' 5A counseling skills during an objective structured clinical encounter (OSCE), and on 2) self-reported self-efficacy of tobacco counseling skills.

Methods: 10 U.S. medical schools were randomized to receive the multi-modal tobacco dependence treatment educational intervention (MME) or traditional tobacco treatment education (TE). MME consisted of a web-course and interactive practice (i.e. role playing) as 1st year students and booster video-based education as 3rd year students. Preceptors from MME Family or Internal Medicine clerkships received an Academic Detailing module that focused on modeling, observing, and providing tobacco dependence treatment instruction to students as 3rd years.

Results: School OSCE scores were compared for students in schools randomized to MME with students in schools randomized to TE, adjusting for pre-intervention school-level means and accounting for within-school correlation. Self-efficacy skill score for each 5A skill was assessed among students prior to and after participating in the MME intervention. Compared to TE students, MME students on the OSCE were more likely to complete several 5A behaviors (ORs range from 1.7 to 7.8; *ps*< .05; N=1102), most of which were "Assist" or "Arrange" related behaviors. Total OSCE behaviors, however, did not differ. MME students compared with TE also showed greater change in self-efficacy for several 5A behaviors (i.e. "Assess", "Assist", & "Arrange"), including providing pharmacotherapy (*ps*< .05; N=1049). MME satisfaction ratings from students were high; 91% were "Somewhat/Very Satisfied" with the web-course, and 90.5% and 96.9% reported similarly for the role-play and video-booster sessions respectively.

Conclusions: This is the first randomized trial comparing a multi-year, multi-modal tobacco dependence treatment curriculum to traditional tobacco education in multiple US medical schools. Results show that it is beneficial in the short-term and appears to be acceptable to medical students. Future research should take into account lessons learned from implementing a medical school curriculum in the context of a research study.

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Citation Award

Paper Session 31 **4:09 PM-4:27 PM**

DAILY POSITIVE MOOD AND PAIN MEDIATE THE SLEEP QUALITY – ACTIVITY INTERFERENCE LINK IN FIBROMYALGIA

Dhwani J. Kothari, M.A.[1], Mary C. Davis, Ph.D[1], Ellen W. Yeung, Ph.D[1], Howard A. Tennen, Ph.D[2]

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Fibromyalgia (FM) is a chronic pain condition often resulting in functional impairments. Nonrestorative sleep is a prominent symptom of FM that is related to disability, but the day-to-day mechanisms relating the prior night's sleep quality to next day reports of disability have not been examined. The current study examined the within-day relations among early-morning reports of sleep quality last night, late-morning reports of pain and positive affect, and end-of-day reports of activity interference. Specifically, we tested whether pain and positive affect mediated the association between sleep quality and subsequent activity interference. Data were drawn from electronic diary reports, collected from 220 FM patients for 21 consecutive days. Multilevel Structural Equation Modeling was performed to estimate the direct and mediated effects at the within-person level. Results showed that pain and positive affect both mediated the relation between sleep quality and activity interference; that is, early-morning reports of poor sleep quality last night predicted higher levels of pain and lower levels of positive affect at late-morning. Increased late-morning pain and decreased positive affect, in turn, predicted higher end-of-day activity interference. Additionally, positive affect was a stronger mediator than pain. In summary, the findings identify two parallel mechanisms, pain and positive affect, through which the prior night's sleep predicts disability the next day in FM patients. Further, results highlight the potential utility of boosting positive affect following a poor night's sleep as one means of preserving daily function in FM.

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Citation Award

Paper Session 34 **3:51 PM-4:09 PM**

LATENT PROFILE ANALYSIS OF GIS-MEASURED ENVIRONMENTS FOR PHYSICAL ACTIVITY IN OLDER ADULTS

Michael Todd, PhD[1], Marc A. Adams, PhD[1], Jonathan Kurka, MS[1], Terry Conway, PhD[2], Kelli Cain, MA[3], Lawrence Frank, PhD[4], James Sallis, PhD[3], Abby King, PhD[5]

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Neighborhood correlates of physical activity (PA) are complex and interrelated. This study explored whether patterns of neighborhood features could be derived from GIS-measured walkability, transit, park, and private recreation factors via latent profile analysis (LPA) and how these patterns might relate to older adults' PA. Participants in the Senior Neighborhood Quality of Life Study (N=728, 66-97 years, 53.1% female, 29.3% ethnic minority) were sampled from the Seattle/King County, WA and Baltimore, MD/Washington, DC regions and geocoded to compute walkability (net residential density, land use mix, retail floor area ratio, intersection density), transit (combined bus and rail stop density), and recreation access (park and private facility density) variables using 1-km street network buffers around participants' homes. Multilevel regression models compared derived profiles on accelerometer-measured moderate-to-vigorous PA (MVPA); self-reported walking for errands and walking for leisure (CHAMPS); and BMI, adjusting for nesting and sociodemographics. The LPA yielded a 3-profile solution: low walkable/transit/recreation (LLL); moderately-high walkable/transit/recreation (MMM); and high walkable, high transit/high private recreation (HHH). All 3 PA variables were higher in the HHH profile than the LLL profile (4.6 min/d MVPA difference; 76 min/wk walking for errands difference; 36 min/wk leisure walking difference; ps < .05). BMI was marginally lower for HHH than for LLL (25.4 vs. 26.9, p=.07). Significant between-profile differences in PA in the current analysis compared favorably to those seen in parallel analyses based on walkability features only, and overall, the patterns of differences were consistent with our hypotheses. Combined impacts of walkability, transit, and recreation environments may explain greater differences in PA for older adults than walkability alone. Patterns of environmental attributes can suggest tailored intervention strategies.

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Citation Award

Paper Session 36 **4:27 PM-4:45 PM**

BEAT CANCER INTERVENTION EFFECTS ON PHYSICAL ACTIVITY AND QUALITY OF LIFE IN BREAST CANCER SURVIVORS

Laura Q. Rogers, MD, MPH[1], Kerry S. Courneya, PhD[2], Philip M. Anton, PhD[3], Patricia Hopkins-Price, PhD[4], Steven Verhulst, PhD[4], Sandra Vicari, PhD[4], Randall Robbs, MBA[4], Karen Hoelzer, MD[5], Robert Mocharnuk, MD[4], Edward McAuley, PhD[6]

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Physical activity can improve health, quality of life (QoL), and breast cancer outcomes, yet most breast cancer survivors do not participate in the recommended amount of physical activity. Therefore, our primary study aim was to determine the effects of the Better Exercise Adherence after Treatment for Cancer (BEAT Cancer) behavior change intervention to usual care (UC) on physical activity in breast cancer survivors. Secondary outcomes included aerobic fitness and QoL. This multicenter trial randomized 222 post-treatment breast cancer survivors to BEAT Cancer or UC. BEAT Cancer is a 3-month social cognitive theory-based intervention combining supervised exercise, individual counseling, and group discussion sessions with a transition to home-based exercise. Baseline, month 3 (M3), and month 6 (M6) assessments included accelerometer, self-report physical activity, submaximal treadmill test, and Functional Assessment of Cancer Therapy (FACT)-Breast QoL scale. Retention was 96%. Adherence was 98% for supervised exercise, 96% for individual counseling, and 91% for discussion groups. Adjusted linear mixed-model analyses demonstrated significant effects of BEAT Cancer compared to UC on weekly minutes of ≥ moderate intensity physical activity at M3 by accelerometer [Mean between group difference (M) = +41; 95% confidence interval (CI) = 10 - 73; $p = .010$] and self-report (M = +93; CI = 62 - 123; $p < .001$). Statistical significance remained at M6 for self-reported physical activity (M = +74; CI = 43 - 105; $p < .001$). BEAT Cancer participants were significantly more likely to meet physical activity recommendations at M3 [accelerometer odds ratio (OR) = 2.2; CI = 1.0 - 4.8 and self-report OR = 5.2; CI = 2.6 - 10.4]. Odds of meeting recommendations remained statistically significant at M6 (accelerometer OR = 2.4; CI = 1.1 - 5.3 and self-report OR = 4.8; CI = 2.3 - 10.0). BEAT Cancer significantly improved fitness at M6 (M = +1.8 ml/kg/min; CI = 0.8 - 2.8; $p = .001$) and FACT-Breast at M3 and M6 (M = +6.4; CI = 3.1 - 9.7; $p < .001$ and M = +3.8; CI = .5 - 7.2; $p = .025$, respectively). BEAT Cancer is an efficacious program for increasing physical activity, aerobic fitness, and QoL in breast cancer survivors. Important benefits continued 3 months after intervention completion. Funding: NCI R01CA136859; Registration: NCT00929617

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Citation Award

Poster Session C **6:00 PM - 7:00 PM** **C-026**

HOSTILITY IS ASSOCIATED WITH GREATER INFLAMMATORY ACTIVITY OVER A 3-YEAR PERIOD

Catherine Soucy, BSc.[1], Jany Peters[1], Bianca D'Antono, PhD[2]

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Hostility has been associated with various inflammatory markers (particularly, TNF-α, IL-6, or CRP). Most research has been cross-sectional, and has ignored potential sex and/or age differences in relations observed.Objectives: To evaluate the main and interactive effects of hostility with sex and/or age on inflammatory activity in healthy adults over a 3-year period, independently of risk factors and baseline inflammatory activity.Methods: 136 originally healthy men and women (M_{age} = 42 + 11) completed the Cook-Medley Hostility Inventory and provided blood, on two separate occasions, three years apart. Levels of inflammation (CRP, IL-6, TNF-α) and lipid oxidation (Myeloperoxidase; MPO) were obtained.Results: For IL-6, a significant interaction emerged between Hostility*Age (Beta = .148, p = .041) and Hostility*Sex (Beta= -.149, p = .040). Cynical hostility predicted increased levels of IL-6 over follow-up among older individuals (b=.017, p < .001) but not younger individuals, as well as in men (b=.012, p < .01) but not women. A significant Hostility*Sex interaction also emerged for MPO (Beta = -.045, p < .05). Specifically, hostility predicted increased levels of MPO in men (b=.453, p= .06), but not women.Conclusion: Cynical hostility predicts future elevations in certain markers of inflammation, though this effect was specifically observed among men and older individuals. The inflammatory effects of hostility may place these individuals at greater risk for heart disease.

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Meritorious Award

Poster Session C **6:00 PM - 7:00 PM** **C-028**

IS REACTIVITY TO ONE'S OWN QUARRELSOME BEHAVIOUR INFLUENCED BY ONE'S SEX, AGE, OR TRAIT HOSTILITY?

Cassandre Julien[1], Bianca D'Antono, PhD[2]

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Introduction: Hostile individuals have been shown to be more physiologically reactive to stress. This may be particularly true in situations where they are harassed. Little attention has been drawn to the physiological effects of one's own hostile vs. agreeable behaviour, nor to potential differences across individuals.Aim: To evaluate the differential impact of behaving in an agreeable vs. quarrelsome manner on reactivity, and to assess whether trait hostility, sex, and/or age moderate these effects.Methods: 199 healthy men and women (Mean = 41± 11 yrs) completed the Cook-Medley Hostility scale and underwent laboratory stress testing. Two of the tasks involved role-playing with a confederate from a script that manipulated agreeable vs. quarrelsome behaviour. Systolic and diastolic blood pressure (SBP, DBP), heart rate (HR) and heart rate variability (HRV) were measured throughout the protocol. Repeated measures ANOVAs examined differences between the two conditions. Hierarchical linear regressions examined whether differences were moderated by hostile trait, sex, and/or age.Results: Engaging in quarrelsome vs. more agreeable behaviour produced significant increases in SBP, HR, LF/HF-HRV and anger, while it decreased positive affect (p=.000). A three-way Sex X Age X Trait Hostility interaction emerged for the HR difference score (Quarrelsome-Agreeable) (b=-.190 p= .02). Among younger participants, more hostile women showed heightened HR reactivity while behaving in a quarrelsome manner (p=.02). Among younger men, it was the less hostile men who tended to show increased physiological arousal while behaving quarrelsomely. No significant interactions were found for the other physiological measures of reactivity.Conclusions: Consistent with data showing associations between hostility and increased stress reactivity, results indicated that behaving in a quarrelsome as opposed to agreeable manner is more physiologically and emotionally arousing. (In)Congruence between the hostile behaviour and the hostile trait of the individuals appeared important for the measure of HR. However, these effects were moderated by sex and age.Descriptors: hostility; anger; quarrelsomeness; interpersonal stress; reactivity; sex; age

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Citation Award

Poster Session C **6:00 PM - 7:00 PM** **C-044**

MIXED-METHODS ANALYSES OF AN IMPLEMENTATION STRATEGY OF BRIEF PSYCHOTHERAPY IN PRIMARY CARE

Joseph Mignogna, PhD[1], Lindsey Martin, PhD[2], Juliette Mott, PhD[3], Yumei Cao, M.S.[4], Elyse Thakur, M.A.[4], Michael Kauth, PhD[2], Mark Kunik, MD[2], Aanand Naik, MD[5], Jeffrey Cully, PhD[2]

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As part of a Veterans Health Administration (VA) patient randomized clinical trial utilizing a hybrid effectiveness-implementation design, mixed-methods analyses were used to describe outcomes of an implementation strategy of a flexible and brief cognitive-behavioral therapy (bCBT) for medically ill patients with clinically elevated symptoms of depression and/or anxiety in integrated primary care clinic at two VA medical centers. Primary Care-Mental Health Integration (PC-MHI) clinicians' (n=19) perspectives on intervention implementation were explored qualitatively using semi-structured exit interviews documenting their experiences using bCBT under real-world conditions. The Promoting Action on Research Implementation in Health Services (PARIHS) and RE-AIM (Reach, Effectiveness, Adoption, Implementation and Maintenance) frameworks guided the interviews and coding of the data. Qualitative findings were combined with descriptive treatment delivery data collected through patient chart review, and statistical tests were used to compare differences in treatment delivery outcomes between study sites. Implementation efforts resulted in 83.9% of patients assigned to the treatment condition completing at least one session, and 63.3% viewed as treatment completers (i.e., 4-6 sessions). Only one statistically significant difference emerged between study sites, specifically, method of delivering sessions 2-6 (i.e., telephone vs. in-person; 68.2% vs. 44.8%; p = .002). Among the elective bCBT skill modules delivered during sessions 3-5 (e.g., behavioral activation, cognitive restructuring, relaxation), the module on physical disease self-management was most commonly selected. Qualitative analysis revealed study clinicians 1) described varying degrees of flexibility adapting the intervention to fit therapeutic style and patient needs, 2) faced challenges balancing clinician-patient rapport with intervention fidelity, 3) held varied perceptions regarding the intervention audit/feedback mechanism, 4) experienced scheduling barriers, 5) had concerns over managing Veterans' other life issues that arose in the context of delivering the manualized bCBT, and 6) reported improved self-awareness regarding the connection between physical and mental health issues.

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Citation Award

Poster Session C **6:00 PM-7:00 PM** **C-061**

EFFECTS OF A SELF-DIRECTED NUTRITION INTERVENTION IN ADULTS WITH ARTHRITIS

Meghan Baruth, PhD[1], Sara Wilcox, PhD[2], Danielle E. Schoffman, BA[3], Rebecca Schlaff, PhD[4]

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Background: There is evidence suggesting certain dietary practices can reduce arthritis symptoms and reduce related comorbities. However, few studies have tested the effectiveness of dietary interventions in people with arthritis.
Purpose: To examine the effects of a self-directed nutrition intervention on dietary behaviors and to examine whether changes in dietary behaviors are associated with changes in arthritis symptoms.
Methods: Participants were randomized to a 12-week, self-directed, exercise or nutrition intervention. The nutrition intervention focused on improving four dietary behaviors: fruits, vegetables, grains, and meat and beans. Self-reported fruit and vegetable consumption (FV), fat- and fiber-related behaviors, pain, stiffness, and fatigue were obtained at baseline and 12 weeks. Repeated measures ANOVAs examined changes in dietary behaviors over time between intervention groups, controlling for age, gender, and education. Residualized change scores were calculated for all dietary behaviors and arthritis symptoms. Regression models examined whether changes in dietary behaviors were associated with changes in arthritis symptoms (groups were combined in these analyses). All analyses controlled for the same variables, with the addition of group assignment.
Results: Participants (n=400) averaged 56±11 years of age. Most were women (86%), white (64%), and had at least some college education (87%). Participants in the nutrition group had significantly greater increases in FV (p=.001), fat- (p=.001) and fiber-related (p < .0001) behaviors than those in the exercise group. Improvements in fat-related behaviors were associated with decreases in pain (p=.02) and stiffness (borderline; p=.05), while improvements in fiber-related behaviors were associated with decreases in pain (p=.04), stiffness (p=.03), and fatigue (p=.05). Changes in FV consumption were not associated with changes in any arthritis symptoms.
Conclusion: A self-directed nutrition program may be a low-cost, effective way to improve dietary behaviors among adults with arthritis. Improvements in dietary behaviors may lead to reductions in arthritis symptoms. This intervention approach has the potential to reach a large number of people, and may result in meaningful public health improvements.

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Citation Award

Poster Session C **6:00 PM-7:00 PM** **C-070**

IMPACTS OF A FAITH-BASED OBESITY PREVENTION PROGRAM ON CONGREGATIONAL HEALTH ENVIRONMENT AND POLICIES

Meizi He, PhD[1], Summer Wilmoth, MS[1], Erica Sosa, PhD[1], Zenong Yin, PhD[1], Lauren Correa, BSc[1], Luz-Myriam Neira, PhD[2], Ray Mundoza, BSc[1], Meixia Pan, PhD[1]

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Background: Latino children and adults are disproportionally affected by obesity and other obesity related complications. Building a Healthy Temple (BHT) program was a faith-based obesity prevention intervention aimed to promote healthy eating, active living, and healthy bodyweight among Latinos. Setting: Predominantly Hispanic churches in San Antonio, TX, USAIntervention: BHT was a 12-month multi-component intervention including a Health Ministry Committee, Health Sermons, Health Screening, Sunday School Curriculum, Bible Study Sessions, Nutrition Education/Cooking Demonstrations, Physical Activity and Nutrition Environmental and Policy Changes. Using a train the trainer model, intervention activities were delivered by trained lay leaders from participating churches.Evaluation: Institutional level outcomes were assessed using the Congregation Healthy Index (CHI), a tool measuring church nutrition and physical activity environment. Data were collected at baseline, six month and endpoint. Repeat measure ANOVA was used to determine intervention effect.Results: Eight participting churches have showed overall improvement in environment and policies for nutrition and physical activity. Churches made changes such as, no soda at church events, no doughnuts, unsweetened beverages and water, healthy snacks for children, nutrition billboards, community garden, physical activity room, new basketball and volleyball courts, walking trails on church property, gaining access to soccer fields, improving gym lighting, storage for physical activity equipment, BHT Facebook page for sharing healthy recipes and activity announcements, encouragement of healthy sides at church gatherings, closer food label readings for congregation, and declaring Sunday Health Time 6- 8 pm (nutrition lessons or PA). Church nutrition environment scores significantly improved since program start ($p < 0.05$). The endpoint nutrition scores were almost tripled of that at baseline. Physical environmental scores also showed significant improvement.Conclusion: BHT took a holistic approach by integrating and promoting spiritual and physical health that is more likely to result in lasting lifestyle changes. Environmental and policy changes in the faith communities can play a compelling role in encouraging and supporting congregation members in making the healthy lifestyle choices that will keep them well and whole.

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Meritorious Award

Poster Session C **6:00 PM - 7:00 PM** **C-102**

IMPROVING ACCELEROMETER ESTIMATES OF PHYSICAL ACTIVITY IN A SEDENTARY DIABETIC POPULATION

Daniel Schulman, PhD[1], DeAnna Mori, PhD[1], Barbara Niles, PhD[2], Rebecca L. Reese, PhD[1], Kelly Allsup, BS[1], Daniel Forman, MD[3], Amy Bachand, PhD[4]

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Although accelerometers are widely used as an objective measure of physical activity (PA), this assessment method potentially has important shortcomings, particularly in a sedentary, ill patient population. To estimate PA levels or energy expenditure, accelerometers activity counts must be calibrated to a measure of exertion. Most prior calibration work has three major limitations: (1) estimates are derived primarily from young and healthy participants; (2) individual variability is not taken into account; and (3) linear relationships between exertion and activity are assumed. Inappropriate cutpoints may yield poor estimates of PA intensity levels, diminishing our ability to draw accurate conclusions from accelerometer data. We address these issues and generate cutpoints for activity levels which are appropriate for a sedentary diabetic population. We develop methods that give group-based calibration estimates as well as individualized estimates, and model a nonlinear relationship between exertion and accelerometer measurements.Seventy sedentary diabetic participants in a trial of an automated PA intervention underwent treadmill-based cardiopulmonary stress tests at study intake. Actigraph GT1M accelerometers were worn at the waist, and oxygen consumption (VO_2) was assessed as a gold-standard measure of exertion. We applied nonlinear mixed-effect regression, in which the relationship between exertion and activity counts is a 3-parameter logistic curve, yielding: (1) a group-level calibration curve; (2) estimates of between-participant variability; and (3) individual calibration curves that are partially pooled with the group-level curve for improved estimates.The resulting group-level calibration curve gives lower activity counts than prior work for a given level of exertion: our lower cutpoint for moderate activity is 1385, versus 1952 in a widely-used reference (Freedson et al. 1998). Participant variability was high: individual cutpoints ranged 240-4344 (sd 819). These results have significant implications for the use of accelerometry in research, particularly with patient populations. We recommend that future work use cutpoints for the specific study population or a closely comparable population, and use individualized estimates when feasible.

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Meritorious Award

Paper Session 39 **9:57 AM-10:15 AM**

PREDICTORS OF ANTIRETROVIRAL ADHERENCE AMONG ACTIVE METHAMPHETAMINE USERS WITH HIV

Jessica L. Montoya, M.S.[1], Ben Gouaux, B.A.[2], Alexandra Rooney, B.A.[3], Kaitlin Casaletto, MS[1], Igor Grant, M.D.[2], David A. Moore, Psy.D.[4]

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Objective: HIV infection and methamphetamine use disorders (HIV/MA) are highly comorbid, and MA use is associated with worse adherence to antiretroviral (ARV) therapy. The individualized texting for adherence building (iTAB) intervention aimed to improve ARV adherence among HIV/MA individuals. The present study evaluates predictors of adherence separately for days with, and days without, self-reported MA use.

Participants and Methods: ARV medications of 59 HIV/MA participants were tracked for 30 days using the Medication Event Monitoring System (MEMS). Participants were randomized to iTAB (n=41) or an active comparison intervention (CTRL; n=18). Both groups received a daily text message assessing whether they had used MA in the last 24 hours; the iTAB group also received ARV medication reminder texts. Given that overall adherence did not differ by intervention arm (i.e., iTAB v. CTRL; $p < .05$), we collapsed the two study arms and examined predictors of adherence on days in which participants endorsed or denied MA use via text. For each participant, adherence was averaged separately for non-MA-using days and MA-using days and then a ≥90% cut-off point was used to classify each individual as adherent or non-adherent on non-MA-using (non-MA MEMS) and MA-using days (MA MEMS). Constructs of the Health Belief Model [e.g., intentions to adhere and subjective norms (belief about whether key people approve of adherence and motivation to gain their approval)], psychiatric and HIV disease characteristics were considered as covariates.

Results: We identified univariate predictors of adherence within the non-MA MEMS (nadir CD4 count) and MA MEMS groups (subjective norms, nadir CD4 count, depressed mood) ($p < .10$). These variables and intervention group were entered into logistic regression models predicting adherence among non-MA MEMS and MA MEMS. Within the non-MA MEMS model, lower nadir CD4 count and the CTRL-arm were associated with being adherent. Among the MA MEMS group, greater subjective norms and lower nadir CD4 count were uniquely associated with being adherent.

Conclusions: A stronger sense that family and friends support medication adherence and a history of more severe immunocompromise are strong predictors of ARV adherence among HIV/MA individuals in the context of active MA use. Future adherence interventions in HIV/MA may benefit from targeting modifiable health beliefs such as subjective norms.

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Meritorious Award

Paper Session 41 **8:45 AM-9:03 AM**

SURROGATE DIGITAL ACCESS: A FAMILY-SYSTEMS INVESTIGATION OF OLDER ADULT TECHNOLOGY ACCESS AND USE

Tana Luger, PhD[1], Lorilei M. Richardson, MS[2], Lisa Cioffari-Bailiff, BA[3], Timothy Hogan, PhD[1], Kimberly L.L. Harvey, MPH[3], Thomas Houston, MD, MPH[1]

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Older adult Veterans, with their complex profiles of chronic illness, stand to benefit from the support of eHealth technology for self-management, but certain factors limit older Veteran access to e-tools and "apps." Older adults are less likely to be computer literate, use the Internet, or own smartphones than other age groups[1]; such disparities are even more pronounced in the older Veteran population[2]. Yet, 39% of all online health information-seekers are "surrogate seekers," searching on behalf of someone else[3,4]. Thus, older adults may gain access to information and eHealth tools through their social relationships. To clarify disparities in access, we examined older Veterans' ability and preferences for technology use and surrogate digital access via adult children, extended family members and other informal caregivers. A purposeful sample of 750 Veterans over 65 years old was identified from a national repository of Veteran data. The mail survey quantified the number of members in older Veterans' social networks, the potential for surrogate access, as well as Veteran technology ownership, computer experience, and health information management. 115 older Veterans responded to the first wave of data collection (*Mage*=75.61, *SD*=7.64). Older Veterans reported a mean of 3.56 (*SE*=.94) family members with access to the Internet out of a total mean of 4.41 family members (*SE*=.97). Of these digitally connected family members, older Veterans reported that an average of 2.15 family members (*SE*=.65) would allow the older Veteran Internet access through the family member's device (e.g. computer or mobile phone). In fact, 15% (N=17) reported that they gain access to the Internet through a family member's computer. Older Veterans also reported that a mean of 2.23 family members (*SE*=.63) would be willing to access the Internet on their behalf. Older Veterans were surrounded by a modest network of family members who have Internet access, and perceived most of their family to be willing to assist them by lending access to a computer or accessing the Internet on their behalf. These initial findings suggest that leveraging family relationships may be a potential solution for reducing older Veteran disparities in Internet and eHealth access and enhance older Veterans' ability for eHealth-facilitated management of chronic disease.

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Citation Award

Paper Session 43 **9:08 AM-9:30 AM**

A HYBRID IN-PERSON AND MHEALTH PAIN COPING SKILLS INTERVENTION FOR STEM CELL TRANSPLANT PATIENTS

Sarah A. Kelleher, PhD, Hannah M. Fisher, B.S., Rebecca A. Shelby, PhD, Keith M. Sullivan, M.D., Amy P. Abernethy, M.D., Ph.D., Francis J. Keefe, PhD, Tamara J. Somers, Ph.D.

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Pain is a challenge for patients following hematopoietic stem cell transplantation (HSCT). We used focus groups to develop a feasible and acceptable mobile pain coping skills training (mPCST) protocol that addresses the unique needs of HSCT patients with pain. Following development, intervention user-testing was conducted. All participants reported pain following HSCT; 25 participants were in focus groups and 7 in user-testing. Qualitative data on experiences were collected along with demographics, medical data, and measures of pain, pain disability, fatigue, pain self-efficacy and satisfaction. Participants were 50% female, M=61 years old (SD=7), and M=21 months (SD=14) post-transplant. On the Brief Pain Inventory severity scale participants reported pain in the last week as M=3 (SD=2) and on the Pain Disability Inventory rated disability in the last week as M=19 (SD=14). We presented the focus groups and users with a preliminary description of a 6-session mPCST protocol for HSCT patients. Iterative qualitative data led to refinements of the mPCST protocol that increasingly tailored intervention content to meet patients' specific needs. For example, patients emphasized spending time in meaningful ways resulting in enhancing the traditional pain coping skill of pleasant activity planning to incorporate meaningful activities (e.g., volunteering, community involvement). All user-testers completed the mPCST protocol; ratings of pain, pain disability, fatigue, and pain self-efficacy showed improvement trends. User-testers reported high satisfaction on the Client Satisfaction Questionnaire (M=35/40; SD=4). Based on feedback obtained we produced a final version of the mPCST protocol that is tailored to meet the challenges patients reported. The protocol bridges hospitalization (1 session) and home (5 video-conference sessions), teaches relaxation techniques, cognitive-restructuring, activity pacing/planning, problem solving, and goal setting, and uses a website with personalized messages based on daily assessments. The results of this work demonstrate that a mPCST intervention tailored to meet the needs of HSCT patients is feasible and acceptable to patients and shows promise in decreasing pain. We are currently using a small, randomized trial to test the developed intervention.

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Citation Award

Paper Session 43 **9:52 AM-10:15 AM**

TWO PHASES OF PILOTING A MHEALTH BEHAVIORAL INTERVENTION FOR CANCER PAIN

Tamara J. Somers, Ph.D.[1], Sarah A. Kelleher, PhD[1], Sara N. Edmond, M.A.[2], Anava A. Wren, M.A.[1], Hannah M. Fisher, B.S.[1], Amy P. Abernethy, M.D., Ph.D.[1], Francis J. Keefe, PhD[1]

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Pain is common in cancer patients and related to poor outcomes. Behavioral cancer pain interventions are efficacious, but have limited reach. Mobile Health (mHealth) technology provides new opportunities to improve intervention reach. Here we describe 2 phases of a mHealth pain coping skills training intervention (mPCST). The mPCST protocol included 4 sessions delivered in the participants' home via video-conferencing (i.e., Skype+iPad). Both phases recruited participants who had a primary diagnosis of breast, lung, prostate, or colorectal cancer, a life expectancy of >6 months, and 2 clinical pain ratings of >3. Participants provided demographic and medical data, and measures of pain, physical symptoms, pain catastrophizing, psychological distress, and pain self-efficacy pre- and post-intervention. Phase 1 participants (N=25) were M=54(13) years old, female (76%), and white (76%). Cancer diagnoses were breast (48%), lung (16%), prostate (16%), or colorectal (20%). Phase 2 participants (N=30) were M=61(11) years old, female (50%), and white (97%). Cancer diagnoses were prostate (46%), breast (23%), lung (23%), or colorectal (11%). Phase 1 participants received mPCST; feasibility, acceptability, and initial efficacy were evaluated. 21 of 25 participants completed the study. Participants completed M=3.4 (SD=1) sessions. All participants rated the quality of the program as good or excellent. Pre- to post-intervention reductions in pain, physical symptoms, psychological distress, and pain catastrophizing were found (p's < .01). Phase 2 recruited 30 participants who were randomized to mPCST or PCST-trad, with a focus on access. PCST-trad was conducted in-person at the medical center. mPCST participants completed M=3.6 (SD=.8) sessions and PCST-trad participants completed M=3.8 (SD=.9). Average time to intervention completion was 62 days for PCST-trad compared to 30 days for mPCST. All phase 2 participants reported high satisfaction. Pre- to post-intervention changes in pain, pain self-efficacy, and pain catastrophizing (p's < .05) were found. mHealth technology is a feasible, acceptable, and potentially efficacious way to deliver behavioral cancer pain interventions. We are currently running a larger trial (N=160) examining a broader range of outcomes.

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Citation Award

Paper Session 44 **9:39 AM-9:57 AM**

QUALITY OF LIFE IMPROVED IN INDIVIDUALS WITH DIABETES AND CHRONIC PAIN IN A CBT-BASED PROGRAM DELIVERED BY CHWS

Susan J. Andreae, MPH[1], Christopher Gamboa, MPH[2], Joshua S. Richman, MD, PhD[2], Monika M. Safford, MD[1]

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As many as 75% of people with diabetes report chronic pain. While cognitive behavioral therapy (CBT) improves pain and functioning in individuals with chronic pain, many rural and underserved communities lack resources for such programs. We tested the hypothesis that a CBT-based program delivered by community health workers (CHW) can improve quality of life in individuals with diabetes and chronic pain.Living Healthy was a community-based, clustered randomized controlled trial engaging adults with diabetes, chronic pain, and a primary care doctor. The intervention (INT) group received an 8-session telephonic diabetes self-management program administered by CHW over 12 weeks and incorporating adaptive coping skills, setting diabetes self-management behavioral goals, practicing stress reduction techniques, and cognitive restructuring. Controls (C) received general health advice with equal number of CHW contacts. Coping behaviors were assessed using the Coping Strategies Questionnaire-24 (range 0-46). Pain was assessed using the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC, range 0-1), A Measure of Intermittent and Constant Osteoarthritis Pain (ICOAP, range 0-100), and the McGill Pain Questionnaire (MPQ, range 0-45). Physical activity (PA) was measured by assessing the number of days in the past week with intense PA enough to work up a sweat, number of days walked, and participating in PA despite pain.Of the 153 individuals with complete data, mean age was 59.4 ±10.6 years, 95% (n=146) were African Americans, and 80% (n=122) were women. Coping scores improved in INT by 5.1 points more than in C, $p < 0.001$. Compared to C, ICOAP, WOMAC, and MPQ scores improved more in INT from baseline to follow-up by 8.2 ($p=0.01$), 0.05 ($p=0.05$), and 2.1 points ($p=0.09$), respectively. Intense PA levels did not significantly differ at follow-up (0.24 days, $p=0.47$), but INT participants walked 1.2 more days ($p < 0.001$) and walked or participated in other forms of PA despite pain for 1.5 more days ($p < 0.001$) compared to C.The program improved coping, pain, physical functioning, and PA in individuals with diabetes and chronic pain. Such interventions hold promise to improve health of residents of rural and under-resourced communities.

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Meritorious Award

Paper Session 45 **8:45 AM-9:03 AM**

ASSOCIATION OF FOOD INSECURITY AND OVERWEIGHT AND OBESITY ACROSS LOW-INCOME HISPANIC SUBGROUPS

Teresa M. Smith, MS[1], Uriyoán Colón-Ramos, PhD[2], Courtney A. Pinard, PhD[3], Amy Yaroch, PhD[4]

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An estimated 78% of Hispanics in the United States (US) are overweight or obese. Household food insecurity, a condition of limited or uncertain access to adequate food, has been associated with obesity rates among Hispanic adults in the US. However, the Hispanic group is multiethnic and therefore the associations between obesity and food insecurity may not be constant across country of origin subgroups. This study sought to determine if household food insecurity was associated with overweight or obesity rates across low-income (≤200% poverty level) Hispanic country of origin subgroups (Mexican, Central American, South American, Spanish-American, and Puerto Rican) living in California. Data are from the cross-sectional 2011-12 California Health Interview Survey (n = 5498). Rates of overweight or obesity (BMI ≥ 25), select dietary behaviors (fruit, vegetable, soda, and fast food intake), neighborhood food environment, Calfresh receipt (California's Supplemental Nutrition Assistance Program), acculturation, and stress were examined for differences across subgroups. Weighted multiple logistic regressions examined if household food insecurity was significantly associated with overweight or obesity after controlling for age, sex, education, marital status, acculturation, and Calfresh receipt ($P < .05$). Significant differences across subgroups existed for prevalence of overweight or obesity, food security, select dietary behaviors, perceived availability of fresh fruit and vegetables in neighborhood, Calfresh receipt, acculturation, and stress. Household food insecurity was significantly associated with overweight or obesity for the overall sample while controlling for age, sex, education, marital status, acculturation, and Calfresh receipt (OR 1.6, 95% CI 1.3-1.9). When stratified by subgroup, household food insecurity was significantly associated with overweight or obesity only among Mexican Americans (OR 1.4, 95% CI 1.2-1.8). These results suggest Hispanic subgroups behave differently in their association between food insecurity and obesity. By highlighting these factors among Hispanic subgroups, we can promote targeted obesity prevention interventions, which may contribute to more effective behavior change and reduced chronic disease risk in this population.

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Citation Award

Paper Session 48 8:45 AM-9:03 AM

RACE, SOCIOECONOMIC CONTEXT, AND POST-TREATMENT MAMMOGRAPHY AMONG BREAST CANCER SURVIVORS

Hayley S. Thompson, Ph.D.[1], Julie J. Ruterbusch, M.P.H.[2], Lois Lamerato, Ph.D.[3], Richard Krajenta, B.S.[3], Michael Simon, M.D.[4], Kendra Schwartz, M.D., M.S.P.H.[5], Jason Booza, Ph.D.[6]

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There is a growing literature on disparities in breast cancer survivorship. Previous studies have reported lower adherence to mammography surveillance guidelines among African American (AfAm) survivors compared to whites but none have examined the relationship between socioeconomic context and adherence. The current study investigated the association between race, socioeconomic context, and post-treatment mammography in the patient population of the Henry Ford Health System (HFHS), an integrated health system with multiple sites serving the tri-county metropolitan Detroit area. The study population included 947 AfAm and 1835 white women diagnosed with breast cancer and treated between 1996-2005. Clinical, demographic, and treatment data from HFHS administrative databases were supplemented with data from the Metropolitan Detroit Cancer Surveillance System and US Census Bureau. Post-treatment mammography was examined over a 5-year study period and full adherence was defined as consecutive, annual mammograms across all years. Socioeconomic context was assessed with a deprivation index (DI) based on a composite of census variables associated with health outcomes including neighborhood-level unemployment, poverty, overcrowding, telephone and car availability. Unadjusted logistic regression analyses showed that AfAms were less likely to be fully adherent (OR=0.68, 95%CI: 0.57-0.82). However, in analyses controlling for the primary socioeconomic factors, DI and health insurance status, race was no longer significant (OR = 0.84, 95% CI:0.65-1.09). It should be noted, however, that 85% of AfAms fell within the highest two quintiles of DI compared to only 19% of whites (that is, the levels indicating greatest deprivation). Additional analyses were conducted in a subgroup with private, employment-based insurance that limited all healthcare to HFHS, thereby ensuring complete data on mammogram receipt. In this subgroup, AfAms were less likely to be fully adherent, even when controlling for socioeconomic context (OR=0.64, 95%CI: 0.45-0.92). Findings suggest that among the more socioeconomically advantaged, racial differences exist independent of other factors, thus warranting further investigation of post-treatment mammography adherence among AfAm survivors across socioeconomic strata.

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Citation and Meritorious Award

Paper Session 48 **9:39 AM-9:57 AM**

PHYSICIAN-LYMPHOMA SURVIVOR DISCUSSIONS OF HEALTH PROMOTION: A QUALITATIVE ANALYSIS

Danielle Blanch-Hartigan, PhD, MPH[1], Danielle Blanch-Hartigan, PhD, MPH[1], Elyse Shuk, MA[2], Kara McLarney, MPH[3], Errol J. Philip, PhD[4], Steven Horwitz, MD[2], Carma Bylund, PHD[5]

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BackgroundMany cancer survivors feel "lost in transition" as they complete active treatment and attempt to improve their health. Most survivorship care plans lack specific recommendations for health promotion and physicians often fail to provide detailed follow-up care guidance. Beyond measurement of frequency, we must assess quality and content of communication between physicians and survivors to understand how best to encourage healthy behaviors in survivorship. MethodsData consisted of audio-recorded discussions during survivorship visits between 21 physicians and their patients who were survivors of Hodgkins or Diffuse Large B Cell lymphoma and 0-3 years post-treatment. Physicians were located at two sites (Memorial Sloan Kettering Cancer Center and MD Anderson Cancer Center), 57% male, and in practice an average of 17.8 yrs. Transcribed discussions were evaluated using a thematic content analysis approach that consisted of coding and interpretation of the transcripts by coding team consensus. ResultsHealth promotion topics, such as weight loss, exercise, and diet, arose frequently, often during the physical examination. However, these topics were not systematically discussed. Some survivors volunteered information regarding engagement in physical activity or diets without prompting by their physicians. Physicians frequently discussed health behaviors after commenting generally on the survivor appearing "good." Physicians rarely provided specific recommendations, instead imparting more general advice or encouragement regarding health promotion. Discussions of health promotion had a positive emotional tone, with physicians congratulating survivors for recent efforts and successes. Interestingly, the physician often seemed more positive about health promotion efforts than the survivor, who expressed modesty over health behavior changes and a desire to accomplish more. ConclusionsFor many survivors, cancer represents a teachable moment for health promotion. Our results suggest that although health promotion is often brought up in survivorship visits and physicians are encouraging of survivors' efforts, physicians may be missing opportunities to have in-depth and goal-directed health promotion discussions.

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Citation Award

Poster Session D **10:15 AM - 11:15 AM** **D-022**

WHAT I WISH I HAD KNOWN: ADVICE FROM YOUNG ADULT BLOOD CANCER PATIENTS

Andres F. Salazar[1], Geneva Berra[2], Ruth Mizrahi[3], Guadalupe Morales[4], Amanda M. Marin-Chollom, M.A.[5], Tracey A. Revenson, PhD[6]

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Aim: The young adult cancer population is understudied in behavioral medicine and more likely to have unmet psychosocial needs than their older or younger counterparts. Living with cancer during this developmental stage is "off-time", bringing unique stresses and challenges as young adults are creating identities, beginning careers, becoming independent, and developing intimate relationships. We describe what young adults with hematologic cancer wish they had known at the time of diagnosis and before starting treatment. Method: Data were from semi-structured interviews with 50 young adults aged 19-37 (32 women, 18 men) diagnosed with leukemia or lymphoma within the past 2 years. Responses to the question: "What advice would you give to a [*woman/man*] of your age who has just found out that they have [*leukemia/lymphoma*]?" were transcribed verbatim. A coding scheme was developed with 10% of the interviews, tested, and refined. Using Dedoose software, each interview was coded for the number of excerpts within each category, which was adjusted for the number of participants providing excerpts within that category. Results: 105 unique abstracts were coded. The most cited advice (24% of all excerpts) was obtaining adequate information about treatment from one's doctor and nurses about pain and pain management, prognosis, side effects and fertility. The next largest category (18% of excerpts) was to develop and maintain current relationships with family and friends hat provide emotional support *without obligation.* At the same time, they encouraged "new" patients to seek out cancer-related networks (13% of excerpts) including support groups and social media, in order to make connections with other young people who have cancer, obtain information on how to cope with treatment, and find emotional support from others in their situation. Another frequent piece of advice was to maintain hope and optimism (18% of excerpts), although their words reflected expectations that this was the appropriate attitude more than true advice; in contrast, very few participants (3) suggested maintaining a realistic attitude. These data suggest a need for both emotional and social support for young cancer patients *from* young cancer patients. The poster will report the quantitative data and also "illustrate" the data with their own words.

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Citation Award

Poster Session D **10:15 AM - 11:15 AM** **D-056**

SYMTRAK: MONITORING PATIENT AND CAREGIVER REPORTS OF SYMPTOMS IN PRIMARY CARE

Patrick O. Monahan, PhD[1], Christopher M. Callahan, CenterDirector[2], Kurt Kroenke, MD[1], Tamilyn Bakas, PhD, RN, FAHA, FAAN[3], Amanda Harrawood, BS[4], Philip Lofton, B.A.[5], Debra Saliba, MD, MPH[6], James E. Galvin, MD, MPH[7], Timothy Stump, MA[8], Amanda L. Keegan, BachelorofArtsinPsychology[9], Mary Guerriero. Austrom, PhD[8], Malaz Boustani, MD, MPH[1], Danielle Frye, Bachelor'sofScienceinPublicHealth[10]

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Background: Health care systems routinely collect physical vital signs such as blood pressure but not patient-reported symptoms. The aim was to develop a new clinically practical, multi-domain assessment tool for measuring and monitoring symptoms of older patients. Existing tools are either too lengthy, disease specific, or cover a single domain. SymTrak was developed to be clinically actionable, sensitive to change, broadly applicable to multiple chronic conditions, culturally sensitive, and easily understood. Methods: Expert panels, existing data, extant instruments, and focus groups were used. Both Self-Report and Caregiver-Report versions were developed. Multidisciplinary experts prioritized the following 7 symptom domains: cognitive, functional, psychological, pain, sleep, fatigue, and other physical symptoms. Potential items were drawn from extant tools. Results: Physician and nurse practitioner focus groups valued instrument performance characteristics: use in practice (administrable within 5 minutes, easily retrievable from electronic medical record systems, graphically reportable, and viewable at item, domain or total score level); purpose (more useful for tracking than screening); and preference for a single brief (10 not 17 items) physical symptom domain instead of multi-item pain, sleep, and fatigue domains. There was no preference for item response format of frequency vs. severity. Preference for number of item response options ranged from 3 to 5 for clinicians, nurses, patients and caregivers. We chose 4 options (never, sometimes, often, always) to balance clinical brevity with sensitivity to change. Patient and caregiver focus groups valued item wording (simple language, and applicability regardless of roles), and were enthusiastic about using SymTrak as a communication aid with providers. "Think aloud" interviewing, held subsequent to focus group sessions for patients and caregivers, was helpful for revising items. SymTrak was rated as highly useful on an 8-item usability scale administered during think aloud interviewing. Version 1.0 (25 items) was finalized and is currently being psychometrically tested. Conclusions: SymTrak has been shown by focus groups of clinicians, patients, and caregivers, to be potentially useful for tracking symptoms in primary care.

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Citation Award

Poster Session D **10:15 AM - 11:15 AM** **D-099**

TEMPORAL SEQUENCING OF BEHAVIOR CHANGE CONSTRUCTS IN THE TRANSTHEORETICAL MODEL

Brook Harmon, PhD, RD[1], Claudio Nigg, PhD[2], Kathleen Martin Ginis, PhD[3], Robert Motl, PhD[4], Rod Dishman, PhD[5]

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Efforts to increase physical activity are ongoing, but most adults do not currently meet guidelines. The Transtheoretical Model (TTM) is a framework used to understand the initiation and maintenance of health behaviors. Studies support the model's ability to describe the behavior change process and to develop interventions, especially through defining participants' readiness to change. However, the unknown temporal sequencing of TTM constructs undermines our understanding of behavior change. Several sequences have been proposed with differing implications for intervention design. This study aimed to identify the naturalistic sequence of TTM construct changes for physical activity. Five sequences were outlined *a priori* and tested using data collected every six months for two years. A random sample of 689 adults living in Hawaii provided baseline data (63% female; mean age=47 [SD=17]; 35% white) with 401 providing data at the last evaluation. Participants completed measures of physical activity stage of change, self-efficacy, temptations, pros and cons, and processes. Change scores were computed for each variable and linear regression was used to test each sequence. The first construct(s)' change score from baseline to 6-months and the constructs' baseline values, to account for starting point before change, were entered as independent variables. The 6-month to 12-month change score was entered for the next construct in the sequence as the dependent variable. Modeling continued in this fashion until all components of the sequence had been analyzed. At each step, R^2 and F-ratios were evaluated along with standardized beta coefficients for each predictive variable. Examination of the significant standardized beta coefficients overlaid on the tested sequences supported a cyclical model in which changes in processes lead to changes in stage, then lead to changes in self-efficacy, temptations, and pros/cons, and then back to changes in processes. These findings suggest interventions should focus on processes to help participants progress through the stages of physical activity change and, as cognitions change favorably, renewed efforts are needed to alter processes. Next steps include examining what mix of strategies is optimal for moving adults towards the maintenance stage.

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Meritorious Award

Poster Session D **10:15 AM - 11:15 AM** **D-121**

THE EFFECT OF PHYSICAL ACTIVITY ON DEPRESSION DURING A SMOKING CESSATION INTERVENTION

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Depression is associated with failure to quit smoking (Agrawal, et al. 2008). As such, interventions that address symptoms of depression may be important to improve smoking cessation rates. While acute physical activity (PA) has been shown to lessen the severity of symptoms of depression in abstinent smokers (Roberts, 2012), little research exists on the effect of PA on depression when added to standard smoking interventions (Ussher, et al., 2012). Further, no study has examined the association of PA on depressive symptoms during a smoking cessation trial using a repeated measures regression analyses. It was hypothesized that increased PA would be associated with decreased severity of depression. Participants (N = 56) enrolled in a 10-week smoking cessation intervention who attended at least 4 sessions were included in this analysis. Depression scores were regressed on PA scores using a Bayesian repeated measures regression with uninformed priors. Bayesian analyses provide the predicted probabilities of parameters given the data and provide a *highest probability density interval* (HDI), which is similar to a *confidence interval*. Severity of depression was measured using the CES-D (Radloff, 1977) and PA was measured using the IPAQ-short form, measured in METs (Booth, 2000). Data were log transformed to account for non-normality. Missing data were imputed, using multiple imputation methods. The analyses yielded a group level slope of $\beta = .03$, 95% HDI[-.03, .09], with an 85% probability that the slope was positive. These findings were not statistically significant at the 95% credibility level, however, a trend in the opposite direction than hypothesized was observed. Results from this study suggest that exercise during a smoking cessation intervention may not decrease symptoms of depression, and may increase them. This finding is in contrast to the positive effect PA has been shown to have among individuals in the general population. Future research should examine other ways to reduce depression during a smoking cessation attempt.

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