

SOCIETY *of* BEHAVIORAL MEDICINE

*Better Health Through Behavior Change*



# Rapid Communications

**32<sup>nd</sup> Annual  
Meeting & Scientific Sessions**

**Behavioral Medicine: Accelerating our Impact on the Public's Health**

**Washington, D.C.**

**Washington Hilton | April 27-30, 2011**

SOCIETY *of* BEHAVIORAL MEDICINE

*Better Health Through Behavior Change*

[www.sbm.org](http://www.sbm.org)

# **Rapid Communications Poster Session A**

Wednesday, April 27, 2011

6:30 PM - 8:00 PM

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

## A-034a

### UTILITY OF GENOMIC RECURRENCE RISK ESTIMATES IN THE TREATMENT OF PATIENTS WITH EARLY STAGE BREAST CANCER: PHYSICIAN PERSPECTIVES

Elizabeth Spellman, BA,<sup>1</sup> Nadiyah Sulayman, BA,<sup>1</sup> Susan Eggly, PhD,<sup>2</sup> Beth N. Peshkin, MS, CGC,<sup>1</sup> Claudine Isaacs, MD,<sup>1</sup> Marc D. Schwartz, PhD<sup>1</sup> and Suzanne O'Neill, PhD<sup>1</sup>

<sup>1</sup>Georgetown University, Washington, DC and <sup>2</sup>Karmanos Cancer Institute, Detroit, MI.

As the clinical utility and potential cost effectiveness of genomic tests are demonstrated, physicians will be on the front lines of integrating these tests into routine care. One early example is the incorporation of tests such as the Oncotype DX® Recurrence Score into oncology practice guidelines to refine recurrence estimates and guide shared treatment decisions for early-stage, ER+ breast cancer. Despite wide usage, we know little about how breast cancer specialists communicate with patients about testing and use results to make shared treatment decisions. We conducted 15 semi-structured qualitative interviews (10 medical, 5 surgical oncologists) to assess test use, attitudes towards testing, and doctor-patient communication. Interviews were audiotaped, transcribed, coded, and analyzed using a content analysis technique of identifying categories and applying codes to patterns of data. Participants followed clinical practice guidelines for test use. All but one physician indicated that patients' attitudes towards chemotherapy impact their decision to test, though the impact of these attitudes varies. Most would not order testing if a patient was certain of her decision to have or not have chemotherapy; a smaller group (n=3) would order testing to demonstrate risk of recurrence to patients despite these attitudes, using results as a risk communication tool. 67% noted the use of intermediate risk results as clinically challenging due to the moderate magnitude of risk and lacking data to support treatment decisions. Finally, many noted difficulties with multidisciplinary care coordination. 70% of medical oncologists prefer that surgeons not order testing. Although surgeons were aware of this concern, the remaining medical oncologists and all surgeons believed that surgeons' ordering of tests facilitated care. These data provide important insights into how physicians use genomic tests and have significant implications for care coordination and intervention planning.

CORRESPONDING AUTHOR: Suzanne O'Neill, PhD, Georgetown University, Washington, DC, 20007; sco4@georgetown.edu

## A-034b

### PHYSICAL ACTIVITY WEBSITE INTERVENTION FOR YOUNG ADULT CANCER SURVIVORS

Carolyn Rabin, PhD, Shira Dunsiger, PhD and Bess Marcus, PhD  
Centers for Behavioral & Preventive Medicine, Miriam Hospital, Providence, RI.

Young adult cancer survivors face a number of health risks, including an increased risk of cardiovascular disease and emotional distress. Although physical activity (PA) may decrease many of these risks, PA interventions have not yet been developed for this population. To address this need, we developed a theoretically-based PA website intervention for cancer survivors between the ages of 18 and 39. The website contains features designed to help young survivors increase PA, including: goal setting, exercise tracking, information on a range of relevant topics (e.g., finding good exercise shoes), an online forum, and information specific to young adult cancer survivors (e.g., benefits to young survivors who increase PA). The website prompts users to complete theoretically-based measures (e.g., PA self-efficacy)

monthly and then generates individually tailored feedback reports. The website also encourages users to log on regularly by sending weekly emails with links to the site. This intervention is currently being tested in the Survivors Step into Motion study. In this randomized, controlled pilot study, young adult cancer survivors are randomized to receive 12 weeks of access to the PA website or information about publicly available websites for young survivors that do not specifically promote PA. Participants are assessed at baseline and 12-weeks. The primary outcome is minutes of at least moderate-intensity activity reported on the Seven Day Physical Activity Recall. Preliminary findings, based on the first 15 participants enrolled, indicate that those receiving access to the PA website performed a mean of 63.33 min (+ 43.21) of at least moderate-intensity activity at baseline, and 103.33 minutes (+ 88.75) at 12 weeks. Participants assigned to the comparison condition performed a mean of 33.13 minutes (+ 37.89) of at least moderate-intensity activity at baseline and 46.88 minutes (+ 83.88) at 12 weeks. A web-based PA intervention may be an effective way to help sedentary young adult cancer survivors increase their PA.

Supported by NCI (CA134197)

CORRESPONDING AUTHOR: Carolyn Rabin, PhD, Miriam Hospital, Providence, RI, 02903; CRabin@lifespan.org

## A-034c

### PEELING THE LAYERS: A PROCESS EVALUATION ANALYSIS TO UNDERSTAND THE IMPLEMENTATION OF A STORE-BASED INTERVENTION FOR LATINO CUSTOMERS

Barbara Baquero, PhD, MPH,<sup>1,2</sup> Laura Linnan, ScD, CHES<sup>1</sup> and Guadalupe X. Ayala, PhD, MPH<sup>2</sup>

<sup>1</sup>Health Behavior and Health Education, University of North Carolina at Chapel Hill, Chapel Hill, NC and <sup>2</sup>Health Promotion, San Diego State University Graduate School of Public Health, San Diego, CA.

To reduce health inequalities, innovative interventions targeting Latinos to promote health should be explored. Vida Sana Hoy y Mañana was a RCT that demonstrated the efficacy of a tienda intervention to promote sales and consumption of fruits and vegetables among Latino customers. Process evaluation measures were conducted at the individual and store levels. The study measured dose delivered and received, fidelity and implementation. Recruitment logs, implementation logs, immediate post-intervention surveys were conducted. The intervention was delivered over an 8-week period, including staff training, structural changes and a food marketing campaign. Three training sessions were designed for tienda staff. Managers completed all trainings, accumulating on average 367.5 minutes of training. Employees completed 2 of the 3 trainings, accumulating on average 138.5 minutes of training time. Tiendas invested their allocated \$1000 to buy equipment to display and sell fresh fruits and vegetables. As part of the food marketing campaign, each food demonstration lasted on average 6 hours, and approximately 84±34 tienda customers received a food sample of the recipe highlighted that day. On average, 68 recipe cards were distributed weekly during the food marketing campaign. Customers reported observing that the store was cleaner and there was more variety of fresh fruits and vegetables. They recalled 2 (0-6) food demonstrations at the tienda. Implementation fidelity was moderate to high. All intervention activities were implemented as designed. The successful implementation of intervention is demonstrated by the high dose of delivery and dose received among tienda customers. By describing the process evaluation measures designed and utilized in this study, the authors' aim to provide a practical and rigorous framework that other store-based

interventions can apply to their efforts.

CORRESPONDING AUTHOR: Barbara Baquero, PhD, MPH, University of North Carolina at Chapel Hill, Chapel Hill, NC, 27599; bbaquero@email.unc.edu

**A-034d**  
**UNDERSTANDING NEEDS OF BRCA-POSITIVE WOMEN**  
**CONSIDERING RISK REDUCING OOPHORECTOMY**

Mary Ropka, PhD,<sup>1,2</sup> Carol Cherry, MS<sup>2</sup> and Mary B. Daly, MD, PhD<sup>2</sup>

<sup>1</sup>UVA, Charlottesville, VA and <sup>2</sup>Fox Chase, Philadelphia, PA.

OBJECTIVES: Risk of ovarian cancer (OC) is greatly increased in women who carry a BRCA1/2 mutation. To lower OC risk, risk-reducing salpingo-oophorectomy (RRSO) is recommended at age 35 or once child-bearing is completed. The surgery decision is complex and involves uncertainty. To guide development of personalized decision support, we conducted a qualitative study of female BRCA1/2 carriers to explore their: (1) perceptions of OC risk; (2) understanding of OC risk-reduction options; (3) decision-making needs for risk reduction options; and (4) uncertainties about cancer risk estimates and effectiveness of RRSO.

METHODS: Qualitative interviews were conducted with twelve women who had a positive BRCA1/2 test within 24 months, and were purposefully sampled to represent a range in age and breast cancer history. Qualitative content analysis identified Themes and Categories to code interviews.

RESULTS: Three major Themes were identified and Categories within each. THEME 1: Perception of OC Risk; CATEGORIES: (1A) Risk associated with genetic test result, (1B) Risk associated with personal or family history, (1C) Information gaps, (1D) Areas of fear and uncertainty. THEME 2: Understanding Risk-reduction Options; CATEGORIES: (2A) Prophylactic surgery type, (2B) Surgery timing, (2C), Other factors. THEME 3: Decision-making Needs and Resources; CATEGORIES: (3A) Access to information, (3B) Access to other women who faced similar decisions. Information gaps in level of risk, other factors associated with OC, and details of RRSO were identified. Family cancer experience influenced risk perception. Fear of side effects of surgical menopause was common. Women wanted to hear from other women who had faced the same decision.

CONCLUSIONS: Based on our findings, strategies to provide personalized decision support are provided.

CORRESPONDING AUTHOR: Mary Ropka, PhD, Public Health Sciences, UVA School of Medicine, Charlottesville, VA, 22901; mropka@virginia.edu

**A-034e**  
**RELATIONSHIP OF DEPRESSION AND MANAGEMENT**  
**STRATEGIES TO FATIGUE LEVELS IN AFRICAN AMERICAN**  
**CANCER SURVIVORS**

Kadie M. Harry, BA,<sup>1</sup> Maggie Syme, PhD,<sup>1,2</sup> Vanessa L. Malcarne, PhD,<sup>1,2</sup> Marc Emerson, BA<sup>1</sup> and Georgia R. Sadler, BSN, MBA, PhD<sup>2</sup>

<sup>1</sup>Psychology, San Diego State University, San Diego, CA and <sup>2</sup>Moore's UCSD Cancer Center, La Jolla, CA.

African Americans are at highest risk for developing more advanced cancers, thereby increasing their risk of cancer related fatigue (CRF). Furthermore, CRF is often accompanied by other physical and psychological complications such as depression. Due to the prevalence of depression in cancer survivors that experience fatigue, efforts have

been made to study strategies survivors use to cope with the effects of fatigue on daily functioning. The present study examined the relationship of depression and management strategies to levels of fatigue in African American cancer survivors. Participants (N = 57) in this observational study were mostly female (59.6%) and highly educated with a mean age of 58.8 years. They were administered several measures, including the outcome measure, the Multi-dimensional Fatigue Symptom Inventory-Short Form (total score). Additionally, predictor variables were measured by the Center for Epidemiological Studies-Depression Scale and semi-structured interviews were conducted to assess fatigue-management strategies. The regression model included age, depression score, and number of management strategies reported, which accounted for 55% of the variance in fatigue scores (R<sup>2</sup> = .74, F(3,41) = 43.16, p < .001). Analyses indicated that depression scores accounted for a significant amount of the explained variance in fatigue levels, (R<sup>2</sup> change = .65, Beta = 1.47, t = 9.41, p < .001), with fatigue scores increasing as depression scores increased. Also, the number of management strategies utilized added significant predictive value, demonstrating that the more strategies used the lower the fatigue score (R<sup>2</sup> change = .04, Beta = -2.50, t = -2.50, p = .02). The interaction of depression and management strategies was not significant. Employing management strategies may add a protective element, though the impact of depression on fatigue is great. Research exploring the frequency and magnitude of management strategies may help elucidate their role as a protective factor against fatigue.

CORRESPONDING AUTHOR: Kadie M. Harry, BA, Psychology, San Diego State University, Cardiff, CA, 92007; kadieharry@gmail.com

**A-034f**  
**PRE- HSCT (HEMATOPOIETIC STEM CELL TRANSPLANT)**  
**MENTAL HEALTH ASSOCIATED WITH MORTALITY TWO**  
**YEARS POST ALLOGENEIC HSCT**

Seema M. Patidar, MS,<sup>1</sup> Deidre B. Pereira, PhD,<sup>1</sup> Lisa Christian, PhD,<sup>2</sup> Michelle Bishop, PhD,<sup>3</sup> John Wingard, MD<sup>3</sup> and Vijay Reddy, MD<sup>4</sup>

<sup>1</sup>Clinical and Health Psychology, University of Florida, Gainesville, FL; <sup>2</sup>Psychiatry, OSU, Columbus, OH; <sup>3</sup>Medicine, UF Shands, Gainesville, FL and <sup>4</sup>Hematology/Oncology, FL Hospital, Orlando, FL.

HSCT recipients undergo extensive medical treatment prior to transplant which may impact physical and mental quality of life. Physical and psychosocial factors have been identified as predictors of post-HSCT outcomes, such as quality of life and survival. However, few studies have examined the relationship between pre-HSCT mental and physical health and post-HSCT mortality. The current study examined whether poorer mental and physical health prior to HSCT were associated with greater hazard of death by 2 years post-HSCT. Subjects (Ss) were 18 women and 31 men (M<sub>age</sub>=45.29 yrs, SD=12.08 yrs) undergoing allogeneic HSCT. Prior to HSCT Ss completed the Short Form (SF)-36, a measure of general health, generating physical (PCS) and mental composite (MCS) T scores. Cox regression analyses were performed predicting death at 2 years post-HSCT with MCS and PCS scores, separately, while covarying for risk of treatment failure (high vs. low). MCS (M=43.08, SD=5.94) and PCS (M=38.90, SD=12.00) scores were lower, although not significantly, than those of the general population (M=50, SD=10). Cox regression analyses revealed that subjects with high risk disease had nearly 8 times the hazard of death at 2 yrs than those with low risk disease, Hazard Ratio [HR]=7.83, p=0.05. In addition, Ss

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

with higher MCS scores ("better" mental health) had an 8% smaller hazard of death at 2 years than those with lower MCS scores,  $HR=0.92$ ,  $p=0.03$ . PCS scores were not associated with death at 2 years,  $HR=1.01$ ,  $p=0.77$ . While based on a small number of Ss, these results suggest that pre-HSCT mental health may be associated with post-HSCT mortality, above and beyond risk for treatment failure. Further research should (a) replicate these findings in a larger, more diverse sample and (b) determine whether improvements in mental health across treatment are associated with improved survival in this population.

CORRESPONDING AUTHOR: Seema M. Patidar, MS, Clinical and Health Psychology, University of Florida, Gainesville, FL, FL, 32610; patidar@ufl.edu

## **A-034g** **HELPING THOSE WHO HELP THE CANCER PATIENT: A FOCUS ON CAREGIVERS AND THEIR QUALITY OF LIFE**

Elizabeth A. Waldron, BS, Colleen F. Bechtel, BS and E. Amy Janke, PhD

Behavioral and Social Sciences, University of the Sciences, Philadelphia, PA.

Background: Caregivers face challenges coping with the complex tasks necessary to care for a loved one with cancer. They frequently experience increased anxiety, depression, perceived burden, and decreased quality of life (QoL). Effectiveness of psychosocial treatments to address the mental health needs of cancer caregivers has not been well established, and rigorously examined psychosocial interventions are lacking.

Methods: We conducted a systematic review of randomized controlled studies (RCTs) examining the effects of psychosocial treatments to improve cancer caregivers QoL. Rigorous inclusion criteria included randomization of caregivers, use of a control group and one active psychosocial intervention where caregiver QoL was measured. Searches were performed in PsychINFO, EMBASE, and the Cochrane Central Register of Controlled Trials. Hand searches of reference sections of included studies and table of contents of relevant journals were performed to minimize bias.

Results: Of the 1983 identified articles, 6 RCTs met inclusion criteria and were independently reviewed by 2 reviewers. Data was extracted and study quality measured using the PEDro Scale. The majority of studies were rejected due to methodological flaws and failure to specifically and systematically measure caregiver QoL. Of the small sample of identified studies, data was synthesized using a narrative approach. Findings suggest interventions improving caregivers problem-solving and communication skills may ease the burdens related to patient care and life changes, while also improving caregivers' overall QoL.

Discussion: Caregivers wish to be empowered in their role with access to reliable and appropriate information. However, there is limited evidence to guide providers' support of cancer caregivers. Few studies utilize rigorous methodology and appropriate assessment instruments to measure relevant QoL variables, hence limiting the generalizability of results. Further research is needed to determine interventions that are useful during all stages of the cancer caregiving experience.

CORRESPONDING AUTHOR: Elizabeth A. Waldron, BS, Behavioral and Social Sciences, University of the Sciences, Philadelphia, PA, 19104; liz.waldron@yahoo.com

## **A-034h** **AN EXAMINATION OF INFORMATION SEEKING BEHAVIOR AND COMMUNICATION WITH PROVIDERS ON COLORECTAL CANCER SCREENING AMONG HISPANICS AND NON-HISPANICS**

Linda K. Ko, PhD, Daniel Reuland, MD, MPH, Monica Jolles, MS and Michael Pignone, MD, MPH  
University of North Carolina, Chapel Hill, NC.

Background: Hispanics with limited English proficiency (LEP) have lower colorectal cancer (CRC) screening rates compared to both non-Hispanic whites (NHW) and non-LEP Hispanics. Differences in seeking cancer information and communication with clinical providers may contribute to disparity. We examined the relationships between language, cancer information seeking behavior, communication with providers, and CRC screening among 2007 Health Information National Trends Survey participants.

Methods: We performed unadjusted and SES-adjusted comparisons of CRC screening rates of LEP-Hispanics ( $n=61$ ), non-Hispanic whites (NHW;  $n=2453$ ) and non-LEP-Hispanics ( $n=83$ ) among participants aged  $\geq 45$ . We then constructed path models to determine whether cancer information seeking behavior and communication with providers mediated differences in screening rates.

Results: LEP-Hispanics were less likely to be up-to-date with CRC screening compared to NHW (25 vs. 52%,  $p<.05$ ) and non-LEP-Hispanics (25 vs. 47%,  $p<.05$ ). Adjusting for insurance status and income, LEP-Hispanics remained less likely to be screened than NHW (OR:0.46, 95%CI: 0.23-0.95) and non-LEP-Hispanics (OR:0.38, 95%CI: 0.16-0.90). In path models, both information seeking and communication with providers mediated differences in CRC screening rates between LEP-Hispanics and NHW. LEP-Hispanics reported lower levels of seeking information compared to NHW ( $B=0.84$ ,  $p<.05$ ). Lower reports of seeking cancer information were related to less communication with providers ( $B=0.17$ ,  $p<.05$ ), which in turn, was associated with less CRC screening ( $B=0.52$ ,  $p<.05$ ). However, these variables did not mediate screening differences between LEP-Hispanics and non-LEP-Hispanics.

Conclusions: Efforts to better understand information seeking behavior and to improve providers' communication for LEP Hispanics may improve CRC screening in this population.

CORRESPONDING AUTHOR: Linda K. Ko, PhD, Lineberger Comprehensive Cancer Center, University of North Carolina, Chapel Hill, NC, 27599; lindako@email.unc.edu

## **A-034i** **TESTING FEASIBILITY OF AN ONLINE SOCIAL NETWORK TO MAINTAIN EXERCISE IN ENDOMETRIAL CANCER SURVIVORS**

Stacie Scruggs, MPH and Karen Basen-Engquist, PhD  
Behavioral Science, The University of Texas M. D. Anderson Cancer Center, Houston, TX.

BACKGROUND: Social networking sites facilitating healthy lifestyle behaviors such as diet, exercise, and weight loss are becoming increasingly popular. These sites utilize methods such as self-monitoring and social support to increase conformance with healthy behaviors. However, little is known about their efficacy or the receptivity of older populations, or those with less computer experience. The purpose of this pilot study was to test the feasibility of utilizing an online social network to encourage exercise maintenance among endometrial cancer survivors who had recently completed an exercise intervention

study.

**METHODS:** Endometrial cancer survivors who consented to participate in the social network feasibility test were given access to the site for a nine month period. Site features included blogs at least once a week posted by study staff, a discussion forum, the ability to send messages to other members or staff, photo posting, exercise monitoring, and live “ask the expert” chats scheduled by study staff. Periodic emails were sent by study staff to the entire network to announce blog postings and challenges. Participants were asked to complete an evaluation questionnaire after 3 and 6 months of participation.

**RESULTS:** Seventeen participants consented, and 12 actually enrolled in the social network. Of the 12, eight participants posted content at least once. Participants rated the site on the following: helpfulness in continuing exercise, enjoyment, and ease of use of the website from 1 (not at all) to 4 (extremely). The site’s average ratings were 3.6 for helpfulness, 3.4 for enjoyment, and 3.4 for ease of use. Three of the participants reported problems in using/accessing the site.

**CONCLUSION:** An online social network to support exercise maintenance in cancer survivors may be feasible, but participants need adequate technical support and encouragement to engage in the site.

**CORRESPONDING AUTHOR:** Karen Basen-Engquist, PhD, Behavioral Science, The University of Texas M. D. Anderson Cancer Center, Houston, TX, 77230-1439; kbasenen@mdanderson.org

## **A-042a**

### **IMPROVING PSYCHOSOCIAL OUTCOMES OF CARDIAC PATIENTS: TWO REAL WORLD IMPLEMENTATION TRIALS**

Adrienne E. O’Neil, BA Hons,<sup>1</sup> Anna L. Hawkes, B Sc, MPH, PhD,<sup>2,3</sup> Bianca Chan, BA MPH,<sup>1</sup> Kristy Sanderson, BSc (Hons) MA PhD<sup>4</sup> and Brian Oldenburg, BSc (Hons) MA PhD<sup>1</sup>

<sup>1</sup>Epidemiology and Preventive Medicine, Monash University, Prahran, VIC, Australia; <sup>2</sup>Viertel Centre for Research in Cancer Control, Cancer Council, Brisbane, QLD, Australia; <sup>3</sup>School of Public Health, Queensland University of Technology, Brisbane, QLD, Australia and <sup>4</sup>Menzies Research Institute, University of Tasmania, Hobart, TAS, Australia.

**Background:** Uptake and adherence to secondary prevention programs is often poor after a cardiac event. Barriers to participation may be logistic but can include depressive symptoms. Co-morbid depression leads to poorer psychosocial, functioning and health outcomes. Contemporary, tele-medicine approaches could be employed to deliver secondary prevention programs which incorporate psychosocial management. We assessed the feasibility of using this approach in Acute Coronary Syndrome (ACS) patients with varying levels of depression in the real-world setting.

**Methods:** Data from two real-world implementation trials were used. ‘Proactive Heart’ includes n=550 ACS patients recruited from 3 hospitals who are randomly assigned to a 6-month, telephone-delivered, health coaching intervention for patients with predominantly sub-clinical depression or Usual Care (UC). ‘Moodcare’ includes n=82 ACS patients with clinical depression recruited from 6 hospitals, who are randomly assigned to a 6-month, telephone-delivered Cognitive Behavioural Therapy and coronary heart disease risk factor management program or UC.

**Results:** Despite using similar recruitment settings and strategies, the recruitment rate for the Proactive Heart trial was superior to that of the Moodcare Trial. However, both interventions demonstrated high feasibility in the real-world setting; sound therapeutic alliance, low

attrition rates and high compliance for enrolled participants. Barriers and enablers to recruitment of clinically depressed ACS patients will be discussed.

**Conclusion:** It is feasible to implement and deliver tele-based, secondary prevention programs to ACS populations experiencing varying levels of depression. Further evaluation could reveal important improvements in psychosocial outcomes and provide insight into best practice for this patient population.

**CORRESPONDING AUTHOR:** Adrienne E. O’Neil, BA Hons, Epidemiology and Preventive Medicine, Monash University, Prahran, VIC, 3004; AdrienneEO@yahoo.com

## **A-042b**

### **DEPRESSIVE SYMPTOMS AND INFLAMMATION AMONG HISPANICS WITH METABOLIC SYNDROME**

Diana A. Chirinos, BS, Ronald Goldberg, MD, Jose Pico, MD, Elias Querales-Mago, MD, Miriam Gutt, PhD, Judith McCalla, PhD, Maria Llabre, PhD, Marc Gellman, PhD and Neil Schneiderman, PhD  
Department of Psychology, University of Miami, Miami, FL.

**Background:** Growing literature indicates depressive symptoms are common among patients with metabolic syndrome (MetS). Recent findings have suggested that inflammatory processes activated in MetS might be an underlying link. However, limited data are available on specific depressive symptoms associated with high levels of inflammation among patients with the MetS, particularly among Hispanics.

**Purpose:** This study aimed to determine the relationship between inflammation and depressive symptoms among Hispanic with MetS and to elucidate specific symptom dimensions associated with elevated levels of inflammation biomarkers.

**Methods:** The participants were 103 Hispanics, 56 females and 47 males, recruited for the Community Health and Risk-reduction for the Metabolic Syndrome (CHARMS) study. Depression was measured using the Beck Depression Inventory (BDI). Both cognitive and somatic subscores were calculated. Inflammation was assessed using C-reactive protein (CRP) measured with a high-sensitivity assay. Participants with CRP levels greater than 10 mg/L were excluded from analysis.

**Results:** Mean depression scores were 10.97 (SD = 9.61). CRP levels were associated with elevated BDI total score ( $\beta = 0.26$ ;  $p < 0.05$ ), elevated BDI somatic score ( $\beta = 0.26$ ;  $p < 0.05$ ) and elevated BDI cognitive score ( $\beta = 0.23$ ;  $p < 0.05$ ). After adjusting for age, education, body mass index and insulin resistance, CRP levels remained significantly associated with both the BDI total score ( $\beta = 0.27$ ;  $p < 0.05$ ) and BDI somatic score ( $\beta = 0.32$ ;  $p < 0.05$ ), but not the BDI cognitive score.

**Conclusions:** Depressive symptomatology and, more specifically, somatic symptoms, were associated with elevated levels of inflammation among Hispanics with MetS. This association was independent of important confounding factors.

**Keywords:** depression, inflammation, metabolic syndrome, Hispanics.

**CORRESPONDING AUTHOR:** Diana A. Chirinos, BS, University of Miami, Miami, FL, 33127; dchirinos-medina@psy.miami.edu

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

## A-042c

### THE IMPACT OF PERCEIVED MEDICAL DISCRIMINATION AND AGE ON AFRICAN AMERICAN ADULTS' HEART DISEASE COGNITIONS

Lee Katherine Ayer, BA, Laura A. Walsh, BA, Jennifer Perry, BA and Michelle L. Stock, PhD

Department of Psychology, The George Washington University, Washington, DC.

African Americans' rates of high blood pressure, obesity, and mortality from heart disease are notably higher than those of Whites (Office of Minority Health, 2010). Perceived discrimination from doctors and perceived racial bias in the medical system may contribute to these disparities. Perceived medical discrimination is associated with delaying medical care (Van Houtven et al., 2005) and worse health status (Hausmann et al., 2008). Some have also suggested that medical standards for heart disease prevention (i.e. healthy weight standards) may be racially biased (Jackson, 2009). However, the impact of perceptions of this bias on heart disease cognitions does not appear to have been studied. This study examined the influence of perceived medical discrimination and perceptions of bias on African Americans' cognitions related to heart disease, and whether age moderated this effect. African American adults (N = 118; M age = 38.62) completed a survey of gender, income, perceptions of medical discrimination and bias, and heart disease cognitions. Controlling for income and gender, multiple regressions showed that those who perceived higher levels of bias had lower health-related worry ( $\beta = -.20, p = .03$ ), lower perceived risk of both obesity ( $\beta = -.19, p = .03$ ) and high blood pressure ( $\beta = -.20, p = .04$ ), and were less willing to diet and exercise ( $\beta = -.20, p = .04$ ). Higher perceptions of medical discrimination were associated with lower willingness to engage in healthy behaviors ( $\beta = -.18, p = .05$ ) and greater perceptions of these behaviors as White and middle-class ( $\beta = .23, p = .01$ ). None of these effects were moderated by age ( $ps > .19$ ). The results suggest that perceiving medical bias is detrimental for African Americans, regardless of age. Future research is needed to determine ways to mitigate this effect. Potential approaches include gaining a more detailed understanding of African Americans' perceptions of the health care system and investigating how providers can be sensitive to these perceptions.

CORRESPONDING AUTHOR: Lee Katherine Ayer, BA, The George Washington University, Richmond, VA, 23235; ayerlke@gwmail.gwu.edu

## A-042d

### TRAIT-HOSTILITY AND GENDER ARE ASSOCIATED WITH DIURNAL CORTISOL SLOPE IN POST-MYOCARDIAL INFARCTION PATIENTS

Carrie E. Brintz, BA, William Arguelles, MA, PhD candidate, Frank Penedo, PhD, Miriam Gutt, PhD, Marc Gellman, PhD and Neil Schneiderman, PhD

Psychology, University of Miami, Coral Gables, FL.

Studies have shown that hostility is a potential risk factor for Coronary Heart Disease (CHD). Hostility has been linked to cortisol dysregulation in response to acute laboratory stressors in both healthy and CHD populations. Some suggest cortisol as one possible pathophysiological mechanism linking hostility to the progression of CHD and risk for cardiac events. This cross-sectional analysis examined the relationship between trait-hostility as measured by the Cook-Medley Hostility Scale (Ho) and diurnal salivary cortisol in a sample of 156 (71% male) post-myocardial infarction (MI) patients (Age: M=53,

SD=8.87; 1.2% Asian, 2.9% Caucasian, 12.8% Black, 83.1% Hispanic). Results indicated that after controlling for gender, age, ethnicity, BMI, and smoking, Ho ( $\beta = .164, p < .05$ ) significantly predicted the change in salivary cortisol from 30 minutes post-awakening to afternoon sampling. Higher hostility was associated with less decline in cortisol, indicating a flatter diurnal slope. Given recent work suggesting that Ho was more strongly associated with CHD events in men than in women, the role of gender was further examined. While gender did not significantly moderate the relationship between Ho and cortisol, between-gender analyses showed that the association remained significant for men ( $\beta = .199, p < .05$ ), but not for women ( $\beta = .098, p > .05$ ). Examining Ho scores across tertiles, results showed that both men (M=.14, SD=.20) and women (M=.06, SD=.39) in the high Ho groups had the least diurnal cortisol drops, but that women with the lowest Ho (M=.18, SD=.39) also showed lesser, although nonsignificant, drops in cortisol. These results suggest that post-MI patients with high Ho may have diurnal cortisol dysregulation, and that this relationship may differ between men and women. Larger sample prospective studies should examine cortisol as one of several potential mechanisms for the effects of Ho on CHD and future cardiac events in post-MI patients, paying particular attention to possible gender differences.

CORRESPONDING AUTHOR: Carrie E. Brintz, BA, Psychology, University of Miami, Coral Gables, FL, 33146; cbrintz@psy.miami.edu

## A-053a

### CARDIOMETABOLIC RISK AND DEPRESSION IN TYPE 2 DIABETES AND METABOLIC SYNDROME

Felix Hernandez, MD, Barry Hurwitz, PhD, Marc Gellman, PhD, Ronald Goldberg, MD and Neil Schneiderman, PhD  
Behavioral Medicine Research Center, Psychology, University of Miami, Miami, FL.

Type 2 diabetes mellitus, metabolic syndrome and depression are established risk factors for cardiometabolic disease. However, it is not clear whether certain cardiometabolic factors are more strongly linked with depressive symptomatology than others. Differences in the relationship of cardiometabolic measures with self-reported measures of depression were evaluated in independent studies of a Type 2 diabetic cohort and a metabolic syndrome cohort. The diabetic cohort included 89 men and women, aged  $55 \pm 7$  years, whereas the metabolic syndrome subjects included 78 men and women, aged  $51 \pm 8$  years. Cardiometabolic measures included waist circumference, blood pressure, lipid profiles, C-reactive protein, fasting glucose and insulin, insulin secretion (HOMA-B), insulin sensitivity (HOMA-IR) and responses to oral glucose tolerance test, and carotid intima-media thickness (IMT). Symptoms of depression were indexed using the Beck Depression Inventory (BDI). Mean (SD) total BDI scores for the cohorts were  $20 \pm 7$  and  $11 \pm 11$ , respectively. Regression analyses examined the predictive relationship of BDI by the cardiometabolic indices, independent of gender, age, education, smoking history, use of blood pressure and/or lipid medications for each cohort independently. The analysis of the diabetes data indicated a significant model ( $r = .461, p < .03$ ), wherein only lower HOMA-B was a predictor of greater BDI score ( $B = -.034, p = .007$ ). In contrast, the analysis of the metabolic syndrome data indicated a significant model ( $r = .459, p < .04$ ), wherein only greater IMT was a predictor of greater BDI score ( $B = .243, p = .047$ ). Therefore, Type 2 diabetics with poorer insulin secretion function reported greater depression; whereas, in persons with metabolic syndrome, greater carotid IMT was linked with greater depression. Future analyses will evaluate whether an

intervention including diet, physical activity and coping skills training will diminish depressive symptoms as a function of changes in these or other cardiometabolic factors.

CORRESPONDING AUTHOR: Felix Hernandez, MD, Psychology, University of Miami Miller School of Medicine, Miami, FL, 33136; FHernandez@psy.miami.edu

### **A-053b FAMILY PREDICTORS OF PARENT-YOUTH DISCREPANCIES IN PERCEPTIONS OF RESPONSIBILITY FOR TYPE 1 DIABETES MANAGEMENT**

Stefan Schneider, PhD,<sup>1</sup> Ronald J. Iannotti, PhD,<sup>2</sup> Tonja R. Nansel, PhD,<sup>2</sup> Denise L. Haynie, PhD, MPH,<sup>2</sup> Bruce Simons-Morton, EdD, MPH<sup>2</sup> and Douglas O. Sobel, MD<sup>3</sup>

<sup>1</sup>Psychiatry, Stony Brook University, Stony Brook, NY; <sup>2</sup>Eunice Kennedy Shriver National Institute of Child Health and Human Development, Bethesda, MD and <sup>3</sup>Georgetown University Medical Center, Washington, DC.

Type 1 diabetes requires complex daily management, for which parents and youth share responsibility during adolescence. Parent-youth agreement on the division of responsibility has been shown to promote optimal diabetes care, but which factors predict agreement or discrepancies is poorly understood. This longitudinal study examined family variables associated with trajectories of parent-youth discrepancies in perceptions of responsibility. At four times over two years, 87 youths with type 1 diabetes (10 to 16 years old at study entry) and their parents reported who was responsible for performing each of 34 diabetes management tasks. Multilevel modeling was used to estimate trajectories of parent-youth differences in reports of responsibility. Family characteristics (parenting style, family support, openness in parent-youth communication, problems with communication, home chaos) were assessed at study entry, and served as predictor variables in the multilevel models. Greater openness in communication predicted initially lower discrepancies in reports of responsibility ( $b = -6.49$ ,  $SE = 2.26$ ,  $p = .006$ ), accounting for 10.3% of the variance in discrepancies; this effect was maintained longitudinally over the period of 2 years ( $b = -5.33$ ,  $SE = 2.55$ ,  $p = .041$ ). Similarly, fewer problems in parent-youth communication ( $b = 4.00$ ,  $SE = 2.00$ ,  $p = .048$ ) and less home chaos ( $b = 6.39$ ,  $SE = 3.97$ ,  $p = .013$ ) were associated with initially lower discrepancies, accounting for 4.5% and 7.8% of the variance, respectively; these effects were not maintained over time. The results of this study suggest that the general home environment and the quality of communication between parent and youth may play an important role in parent-youth agreement about the division of responsibility for diabetes management during adolescence.

CORRESPONDING AUTHOR: Stefan Schneider, PhD, Psychiatry, Stony Brook University, Stony Brook, NY, 11794-8790; steschnneider@notes.cc.sunysb.edu

### **A-053c PARENTAL REWARD FOR ADOLESCENT GOAL ACHIEVEMENT AND SELF-EFFICACY FOR DIABETES MANAGEMENT**

Jorie M. Butler, PhD,<sup>1,2</sup> Katherine Fortenberry, PhD,<sup>3</sup> Pamela S. King, PhD,<sup>1</sup> Cynthia A. Berg, PhD<sup>1</sup> and Deborah J. Wiebe, PhD<sup>4</sup>

<sup>1</sup>University of Utah, Salt Lake City, UT; <sup>2</sup>VA Salt Lake City Health Care System, Salt Lake City, UT; <sup>3</sup>University of Mississippi Medical Center, Jackson, MS and <sup>4</sup>University of Texas Dallas Southwestern Medical Center, Dallas, TX.

Personal goals are a key component of self-regulation in adolescent development. They reflect planning behavior in areas of personal importance and are critical in understanding future-oriented behavior. However, little is understood about parental influence on goals and associated outcomes. Parents may contribute to adolescent self-regulatory processes by helping foster goal achievement, particularly when goals are considered mutually important. This support may assist chronically ill adolescents in developing confidence in illness management, which may also be associated with teens' positive affect related to goal pursuit. In the current study we examined parental reward for goal striving and self-efficacy for diabetes management. 197 adolescents (54% female and 46% male, mean age = 15.1) with Type 1 diabetes reported a series of personal goals. For the goal the adolescent deemed most important, adolescents reported whether parents rewarded them for pursuing the goal. Results from a regression analyses indicated that parental reward for goal striving was associated with increased self-efficacy for diabetes management ( $B = .21$ ), as was adolescent report of positive affect during goal pursuit ( $B = .15$ ), above and beyond the effect of adolescent age. These results suggest that, in the context of self-regulation, parental encouragement of these goals, as well as the adolescent's enjoyment of these goals, may be important in the development of self-efficacy for diabetes management.

CORRESPONDING AUTHOR: Katherine Fortenberry, PhD, University of Mississippi Medical Center, Brandon, MS, 39047; kfortenberry@umc.edu

### **A-065a CHANGE IN SELF MASTERY PREDICTS CHANGE IN POST-TRAUMATIC STRESS DISORDER (PTSD) SYMPTOMS THROUGH AN EXPRESSIVE WRITING INTERVENTION IN A GROUP OF HIV-POSITIVE INDIVIDUALS**

Courtney B. Kelsch, BS,<sup>1</sup> Gail H. Ironson, MD, PhD,<sup>1</sup> Jane Leserman, PhD,<sup>2</sup> Conall M. O'Leirigh, PhD,<sup>3</sup> Joanne M. Fordiani, PhD,<sup>4</sup> Elizabeth Balbin, MA<sup>1</sup> and Neil Schneiderman, PhD<sup>1</sup>

<sup>1</sup>University of Miami, Coral Gables, FL; <sup>2</sup>Psychiatry and Medicine, University of North Carolina, Chapel Hill, NC; <sup>3</sup>Psychiatry, Massachusetts General Hospital, Boston, MA and <sup>4</sup>Department of Veterans Affairs, Boston, MA.

Experiencing a trauma can decrease one's sense of control and agency. Self mastery, or the degree to which one feels in control of one's life, may influence the ability to recover from PTSD. This study examined change in self mastery as a predictor of change in PTSD symptoms within the context of a randomized trial of expressive writing.

A diverse group of 184 HIV-positive men ( $n=103$ ) and women ( $n=81$ ) were randomized into either an experimental (4 sessions of writing about their worst trauma, with additional prompts to increase processing) or control (4 sessions of writing about daily events) group. The groups were equal on baseline measures of age, education, race, viral load, CD4 count, use of highly active antiretroviral therapy (HAART), PTSD symptoms, and self mastery. Individuals with other active systemic diseases and/or with current alcohol or substance dependence were excluded. PTSD symptoms were measured at Baseline and 6 month follow-up by the Davidson PTSD Scale. Self mastery was measured at the first writing session and 1 month follow-up by the Pearlin Mastery Scale.

A linear regression analysis indicated that change in self mastery (from the first writing session to 1 month follow-up) predicted change

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

in PTSD symptoms (Baseline to 6 month follow-up) [ $\beta=0.145$ ,  $t(182)=1.98$ ,  $p=.049$ ]. Participants whose self mastery increased had twice as large a decrease in PTSD symptoms ( $12.4\pm 21.7$ ) as those whose self mastery decreased or did not change ( $5.89\pm 19.4$ ).

These findings suggest that, through a written emotional expression intervention, increased self mastery predicts greater decreases in PTSD symptoms, whereas a decrease or lack of change in self mastery is associated with a smaller decrease in PTSD symptoms.

CORRESPONDING AUTHOR: Courtney B. Kelsch, BS, Psychology, University of Miami, Coral Gables, FL, 33146; cbkelsch@miami.edu

## A-074a

### BRIEF, INTENSIVE BEHAVIORAL INTERVENTION OF MIGRAINE AND DEPRESSION

Lilian Dindo, PhD,<sup>1</sup> James Marchman, PhD,<sup>3</sup> Ana Recober, MD<sup>2</sup> and Michael O'Hara, PhD<sup>3</sup>

<sup>1</sup>Psychiatry, University of Iowa College of Medicine, Iowa City, IA;

<sup>2</sup>Neurology, University of Iowa College of Medicine, Iowa City, IA

and <sup>3</sup>Psychology, University of Iowa, Iowa City, IA.

Psychiatric disorders are highly prevalent in patients with migraine. Depression is at least three times more common among migraineurs than in the general population. The depression-migraine relationship is bidirectional, with each disorder increasing the risk for the onset of the other. Depression-Migraine comorbidity is a major health concern as it results in poorer prognosis, remission rate, and response to treatment. Acceptance and Commitment Therapy (ACT) is an empirically based behavioral therapy that incorporates acceptance and mindfulness strategies with behavioral change strategies. ACT is effective in treating psychiatric disorders like depression and anxiety and in improving outcomes of chronic medical conditions. Importantly, ACT has resulted in positive outcomes even when presented in brief form.

Method: Patients with migraine completed an assessment of psychiatric symptoms and functioning. Those meeting criteria for depression were randomly assigned to a 1-day ACT + illness management (ACTIM) group intervention (N=19) or to a Wait List Control (N=7). Each ACTIM group included 4-10 patients and lasted 5-6 hours. Three broad areas of Behavioral Change Training, Mindfulness and Acceptance, and Illness Management were covered. Assessment of psychiatric symptoms, functioning, and migraine frequency were completed at 2-, 6-, and 12 weeks post-intervention. Results: Patients in the treatment group showed greater reduction in depressive symptoms and greater improvement in migraine-related quality of life than patients in the waitlist group. These preliminary results are discussed broadly in terms of developing brief interventions with patients exhibiting comorbid psychiatric and medical difficulties.

CORRESPONDING AUTHOR: Lilian Dindo, PhD, Psychiatry, University of Iowa College of Medicine, Iowa City, IA, 52246; lilian.dindo@uiowa.edu

## A-074b

### A MOBILE PHONE PROGRAM TO PREVENT DEPRESSION IN ADOLESCENTS

Robyn Whittaker, MBChB MPH,<sup>1</sup> Sally Merry, MBChB,<sup>2</sup> McDowell Heather, DCLinPsy,<sup>2</sup> Karolina Stasiak, PhD,<sup>2</sup> Ian Doherty, PhD,<sup>3</sup> Matthew Shepherd, DCLinPsy,<sup>2</sup> Shanithi Ameratunga, MBChB MPH PhD<sup>4</sup> and Anthony Rodgers, MBChB PhD<sup>5</sup>

<sup>1</sup>Clinical Trials Research Unit, University of Auckland, Auckland, New Zealand; <sup>2</sup>Dept Psychological Medicine, University of Auckland, Auckland, New Zealand; <sup>3</sup>Learning Technology Unit, University of Auckland, Auckland, New Zealand; <sup>4</sup>Injury Prevention Research

Centre, University of Auckland, Auckland, New Zealand and <sup>5</sup>The George Institute, Sydney, NSW, Australia.

Depression is a major health issue amongst adolescents and is associated with substance abuse, suicide, poor academic achievement and social dysfunction. A mobile phone intervention (MEMO) was developed by experts in adolescent psychiatry, clinical psychology, learning technology, and marketing. It was based on key messages from cognitive behavioral therapy (CBT) and delivered by text messages, video messages and cartoons. Participants received 2 messages/day for 9 weeks, with a summary of the key messages available on a mobile website. Aim: To prevent an increase in depressive symptoms in adolescents in comparison with a control mobile phone program. Study Design: A double-blind randomized controlled trial recruited students at high schools in Auckland, New Zealand. Participants were randomized following an active run-in phase to receive MEMO or an attention control program (a mobile phone program with the same number and intensity of messages). Participants were followed up post-program and at 12 months, with self-reported and clinician-assessed scales of depression symptoms. Results: The study randomized 855 participants from 1348 registering their interest. At post-program follow-up participants said the program was helpful (84.1% intervention and 81.3% control). There were significant differences between groups in those who would refer the program to a friend (90.9% intervention v. 83.1% control), those who said it helped them be more positive (66.7% v. 49.6%), and get rid of negative thoughts (50.2% v. 32.4%). Over three-quarters of participants viewed at least half of the messages and 11% opted to discontinue the messages. Approximately 39% shared messages with others, but most shared less than 10 messages. Conclusions: Delivery of a mobile health CBT intervention is feasible and was acceptable to adolescents.

CORRESPONDING AUTHOR: Robyn Whittaker, MBChB MPH, Clinical Trials Research Unit, University of Auckland, Auckland, 1142; rwhittaker@hrsa.gov

## A-074c

### HEALTH-RELATED SOCIAL CONTROL AMONG VETERANS WITH DEPRESSION

Shahzad Mavandadi, PhD,<sup>1,2</sup> Natacha Jacques, MS,<sup>1</sup> Steven Sayers, PhD<sup>1,2</sup> and David Oslin, MD<sup>1,2</sup>

<sup>1</sup>Mental Illness Research, Education, and Clinical Center, Philadelphia VA Medical Center, Philadelphia, PA and <sup>2</sup>Dept of Psychiatry, University of Pennsylvania, Philadelphia, PA.

Social control attempts, or attempts by social network members to influence and regulate a target person's behavior, significantly predict health behaviors and psychological wellbeing. However, despite the fact that depression is associated with compromised interpersonal functioning and poor health behaviors, social control processes have not been studied within the context of depression. Thus, the objectives of this study are to: a) explore differential vulnerability to social control attempts among veterans with varying levels of depression symptom severity, and b) examine the degree to which social control attempts predict behavioral and affective responses among patients with depression. Methods: Participants included 89 veterans referred by their primary care providers for a behavioral health assessment. Data on sociodemographic characteristics, depressive symptomatology, health behaviors, positive/negative social control attempts, and behavioral and affective responses were collected by telephone. Results: The sample was primarily male and Caucasian (mean age=65.3 (SD=8.1) years). Although unrelated to frequency

of social control attempts or behavioral responses, higher depressive symptoms were significantly associated with positive ( $r=-.29$ ,  $p=.004$ ) and negative ( $r=0.49$ ,  $p<.001$ ) affective responses. Multiple regression models revealed that while both positive ( $b=.43$ ,  $p=.02$ ) and negative ( $b=.31$ ,  $p=.05$ ) control attempts predicted positive behavioral responses, more frequent negative attempts predicted negative behavioral responses (e.g., ignoring spouses' attempts ( $p=.02$ ), hiding the unhealthy behavior ( $p=.01$ )). Moreover, negative social control attempts predicted greater negative affective responses (e.g., resentment, sadness) ( $p=.04$ ). Conclusions: Findings highlight the value in identifying effective social control strategies that maximize positive behavioral change, emotional responses, and health outcomes among patients with depression.

CORRESPONDING AUTHOR: Shahrzad Mavandadi, PhD, Philadelphia VA Medical Center, Philadelphia, PA, 19104; shahrzad.mavandadi@va.gov

#### **A-074d** **RELATIONSHIPS OF RACE AND SOCIOECONOMIC STATUS TO POSTPARTUM DEPRESSION IN RURAL AFRICAN AMERICAN AND CAUCASIAN WOMEN**

Taylor Rush, MA,<sup>1,4</sup> Christyn Dolbier, PhD,<sup>1,4</sup> Latoya Sahadeo, MPH<sup>2,4</sup> and Richard Woolard, AA<sup>3,4</sup>

<sup>1</sup>East Carolina University, Greenville, NC; <sup>2</sup>University of North Carolina at Chapel Hill, Chapel Hill, NC; <sup>3</sup>Eastern Baby Love Plus Consortium, Greenville, NC and <sup>4</sup>North Carolina Community Child Health Network, Greenville, NC.

Postpartum depression (PPD) affects ~15% of childbearing women, which can negatively affect maternal and infant health. Research is inconclusive regarding if racial PPD disparities exist, partially due to race and socioeconomic status (SES) entanglement. This study examines if a racial PPD disparity exists and disentangles race and SES influences on PPD in a sample of rural African American women (AAW) and Caucasian women (CW). Participants (N=208) were recruited from maternity clinics, with oversampling of low SES and AAW. Sample demographics include: 69.2% AA, 62% not employed, 47% household income <\$20,000, 19.7% < high school education, and mean age of 25. The Edinburgh Postnatal Depression Inventory (EPDS) and subjective SES ladder scale were administered 6-months postpartum. Moderate/severe PPD (EPDS>12) occurred in 11.8% of AAW and 9.4% of CW. Mild PPD (EPDS 10-12) occurred in 10.4% of AAW and 14.1% of CW. Mean EPDS scores were 5.2 for AAW and 4.6 for CW. No racial differences were significant. A hierarchical linear regression with EPDS score as the criterion and race in the first block of predictors was not significant [ $F(1,206)=.6$ ,  $p=.44$ ,  $R^2=.003$ ]. It became significant when objective SES predictors (education, employment, income) were added [ $F(4,203)=3.3$ ,  $p=.01$ ,  $R^2=.06$ ], with education the only significant predictor ( $t=2.3$ ,  $p=.02$ ,  $B=.17$ ). It was significant when subjective SES was added [ $F(5,202)=4.4$ ,  $p=.001$ ,  $R^2=.10$ ], with subjective SES the only significant predictor ( $t=2.9$ ,  $p=.005$ ,  $B=-.20$ ), and education approaching significance ( $t=1.9$ ,  $p=.06$ ,  $B=-.14$ ). No racial PPD differences were found in this rural sample. Subjective SES may be more influential in relation to PPD than objective SES, and should be assessed in future research. These findings highlight the need for long-term PPD screening, which may especially be needed for low SES women given their limited resources.

CORRESPONDING AUTHOR: Taylor Rush, MA, Psychology, East Carolina University, Greenville, NC, 27834; rusht08@students.ecu.edu

#### **A-078a** **A COMPARISON OF STATISTICAL METHODS TO ADJUST FOR DIFFERENCES IN MEASURED CHARACTERISTICS**

Scott Kelly, MS, Kathryn L. Taylor, PhD and George Luta, PhD  
LCCC, Georgetown University, Washington, DC.

We assessed the quality of life (QOL) impact of treatment type among long-term prostate cancer (PCa) survivors from the Prostate, Lung, Colorectal and Ovarian (PLCO) Cancer Screening Trial. PCa patients (N=518) were randomly selected from the PLCO trial and completed the QOL telephone interview. The QOL outcome was the FACT-G score; the primary predictor was treatment: Surgery (N=213), Radiation (N=151), Treatment Combination (N=154). In step 1 we conducted the usual linear model with adjustment for covariates. In step 2 we estimated the propensity scores (PS), i.e. the probabilities of receiving each of the 3 treatments given the measured characteristics, using multinomial logistic regression. In step 3 we performed 2 PS-based methods (quintiles stratification and PS adjustment). We conducted linear models with and without the significant covariates, and with and without interactions between the PS-related variables. All analyses were weighted to account for subject selection. Results: Initially the 3 treatments differed significantly on age, trial arm, site, Gleason, PSA, stage, recurrence, marital status, and employment. Both PS-based methods achieved balance between the 3 groups on these characteristics ( $p=0.47$  to  $0.99$  for the PS adjustment, and  $p=0.57$  to  $0.99$  for stratification). All 3 approaches produced similar estimates and 95% CIs for the adjusted mean FACT-G differences between treatments (e.g., the adjusted mean difference between Surgery and Treatment Combination ranged from 2.9 to 3.0 across methods). However, the usual approach resulted in a statistically significant overall association between treatment type and FACT-G ( $p=0.04$ ), whereas the PS-based methods did not ( $p=0.06$  to  $0.10$ ). Achieving balance between the 3 treatments using the PS methods, rather than simple covariate adjustment in the usual analysis, did not support the conclusion that QOL differed between the 3 groups. Although the statistical methods produced similar estimates for the effects of interest, the overall conclusion differed. To evaluate robustness of the results, PS methods should be used to adjust for confounding.

CORRESPONDING AUTHOR: Scott Kelly, MS, LCCC, Georgetown University, Washington, DC, 20003; spk23@georgetown.edu

#### **A-083a** **EFFECTIVENESS AND FEASIBILITY OF FRESH TO YOU: AN INNOVATIVE, PUBLIC-PRIVATE PARTNERSHIP TO INCREASE FRUIT AND VEGETABLE (F&V) CONSUMPTION**

Kim Gans, PhD, MPH and Gemma Gorham, MPH  
Institute for Community Health Promotion, Brown University, Providence, RI.

Purpose: FTY, a public-private partnership between F&V distributors, farmers, Brown University and RI Department of Health was created to address barriers of low income consumers to eating F&V (cost, limited availability and limited time to shop). A F&V distributor/farmer provides high-quality F&V directly to community-based organizations (CBO) at discounted prices. FTY was implemented in 6 CBOs serving low-income families to evaluate feasibility and effectiveness.

Methods: F&V Markets are held regularly at each CBO. Market participants with children aged 3-13 ( $n=487$ ) were enrolled in a cohort effectiveness study. Five-month follow-ups will be completed by March 2011 ( $n=344$  to date). Change scores of F&V intake

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

were calculated and tested for significance applying paired t-tests for adults and children. Process evaluation is assessing feasibility (n=168 markets so far).

Results: Participants are 91.5% female, 59% Hispanic; 52% born outside the US; 49% on food stamps; 34% employed full-time; 45% household income < \$20K per year. The greatest barrier to eating more F&V is cost. Market participation varied by site, but averaged 38 people. F&V prices average 15-25% below supermarket prices. Most popular items include bananas, mangoes, grapes, tomatoes, broccoli, asparagus and tomatoes. FV intake of 3-13 year old children increased by 0.51 cups, (P = 0.0001) but parents' intake did not change over time. Children's vegetable intake improved more than fruit intake.

Conclusions: The FTY program was successful in increasing children's but not parents F&V intake. We will also discuss other outcome results as well as implementation challenges, lessons learned and plans for future sustainability.

CORRESPONDING AUTHOR: Kim Gans, PhD, MPH, ICHP, Brown University, Providence, RI, 02912; Kim\_Gans@Brown.edu

## A-083b

### STAGE OF CHANGE FOR DIETARY FAT REDUCTION, HEALTHY EATING SELF-EFFICACY, AND REPORTED FOOD CONSUMPTION IN ADOLESCENTS

Judith R. McCalla, PhD,<sup>1</sup> Katie Chipungu, MS,<sup>1</sup> Patrice G. Saab, PhD,<sup>1</sup> Amanda J. Countryman, MS,<sup>1</sup> Stephanie Fitzpatrick, MS,<sup>1</sup> Erin Etzel, BA<sup>1</sup> and Judy Brown, EdD<sup>2</sup>

<sup>1</sup>Psychology, University of Miami, Coral Gables, FL and <sup>2</sup>Miami Science Museum, Miami, FL.

The habit of consuming high fat foods in adolescence is likely to persist into adulthood resulting in increased cardiovascular risk due to excess weight. This study examined the relationship of stage of change for dietary fat reduction (SOC) on healthy eating self-efficacy, body mass index (BMI), and reported food consumption. The participants were 541 tenth graders (54% girls, 89.7% Hispanic, M = 15.6 yrs) in personal fitness or physical education classes. They completed questionnaires on SOC, healthy eating self-efficacy, and daily fatty meat and snack consumption. Their BMI (kg/m<sup>2</sup>) was calculated using self-reported height and weight. Participants were grouped by their SOC: pre-contemplation (n = 77), contemplation (n = 65), preparation (n = 142), action (n = 160), and maintenance (n = 97).

Results showed that BMI varied by SOC (F (4, 511) = 4.86, p < .001) with students in the action and preparation stages being heavier than those in pre-contemplation (all ps < .05). There was a relationship between SOC and healthy eating self-efficacy (F (4, 536) = 21.88, p < .001) with maintainers reporting higher self-efficacy than the other groups and pre-contemplators lower self-efficacy than other groups except contemplators (all ps < .05). The number of fatty snacks and meats eaten daily (F (4, 532) = 7.61 & 7.37, respectively, ps < .001) differed by SOC. Those in action or maintenance ate less fatty meats and snacks than those in preparation and pre-contemplation (all ps < .05).

Students' SOC was consistent with their reported fatty food consumption and healthy eating self-efficacy suggesting that SOC reflects their beliefs and behavior. Students with higher BMI may see healthy eating behavior as more relevant to them. Interventions that focus on moving adolescents to action/maintenance may be more effective in reducing dietary fat consumption by focusing on increasing the relevance of making healthy food choices.

Supported by SEPA NCRR NIH grant 5 R25 RR023279

CORRESPONDING AUTHOR: Judith R. McCalla, PhD, Psychology, University of Miami, Coral Gables, FL, 33124-0751; jmccalla@miami.edu

## A-100a

### DOES PATIENT-DOCTOR RACE CONCORDANCE IMPROVE RATES OF WEIGHT-RELATED COUNSELING IN VISITS BY BLACK AND WHITE OBESE INDIVIDUALS?

Sara N. Bleich, PhD,<sup>1</sup> Alan E. Simon, MD<sup>2</sup> and Lisa A. Cooper, MD<sup>3</sup>

<sup>1</sup>Health Policy and Management, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD; <sup>2</sup>Office of Analysis, Epidemiology, and Health Policy, National Center for Health Statistics, Centers for Disease Control and Prevention, Rockville, MD and <sup>3</sup>Welch Center for Prevention, Epidemiology, and Clinical Research, Johns Hopkins Medical Institutions, Baltimore, MD.

Objective. Assess the impact of patient-provider race concordance on weight-related counseling among visits by obese patients. We hypothesized that race concordance would be positively associated with weight-related counseling.

Methods. We used clinical encounter data obtained from the 2005-2007 National Ambulatory Medical Care Surveys. The sample size included 2,231 visits of black and white obese individuals (ages 20 and older) to their black and white physicians from the specialties of general/family practice and general internal medicine. Three outcome measures of weight-related counseling were explored: weight reduction, diet/nutrition, and exercise. Logistic regression was used to model the outcome variables of interest. Wald tests were used to statistically compare whether physicians of each race provided counseling at different rates for obese patients of different races.

Results. We did not observe a positive association between patient-physician race concordance and weight-related counseling. We found that visits by black obese patients to white doctors had a lower odds of exercise counseling as compared to visits by white obese patients to white doctors (OR = 0.54; 95% CI: 0.31, 0.95), and visits by black obese patients to black physicians had lower odds of receiving weight-reduction counseling than visits among white obese patients seeing black physicians (OR = 0.34; 95% CI: 0.13, 0.90).

Conclusions. Black obese patients receive less exercise counseling than white obese patients in visits to white physicians and may be less likely than white obese patients to receive weight-reduction counseling in visits to black physicians.

CORRESPONDING AUTHOR: Sara N. Bleich, PhD, Health Policy and Management, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, 21205; sbleich@jhsph.edu

## A-100b

### FOOD AND PHYSICAL ACTIVITY ENVIRONMENTS SURROUNDING WV SCHOOLS: CHARACTERIZING ENVIRONMENTS AND EXPLORING ASSOCIATIONS WITH SCHOOL-LEVEL OBESITY

Stephanie S. Frost, MAOM and Carole V. Harris, PhD  
Health Research Center, West Virginia University, Morgantown, WV.

Ecological frameworks have been used increasingly to help researchers understand the community characteristics that contribute to the childhood obesity epidemic. Despite the increased risk observed in rural areas, few ecological studies have focused on rural youth or investigated the community environment around schools. Thus, the current study characterized the social and physical environments in

the communities surrounding 34 West Virginia elementary schools and examined associations between environments and school-level obesity by gender. Descriptive statistics were calculated and correlations were conducted using PASV-18. Results demonstrated fast food (FFD) establishments and convenience stores (CS) were generally accessible, as the majority of schools had at least one within a 1km distance. At 5km, all schools had at least one CS and FFD establishment, while 25% of schools lacked the presence of a grocery store. Initially, the most prevalent PA resources at 1- and 5km distances were recreational facilities but, when school facilities open to the public were included, the percentage of schools with parks or trails at 1 and 5km dramatically increased. Correlations revealed the proportion of obese male students was negatively associated with density of FFD establishments ( $r=-.39$ ), grocery stores ( $r=-.50$ ), and CSs ( $r=-.39$ ) as well as parks ( $r=-.40$ ) and recreation facilities ( $r=-.46$ ) with all  $p$ 's  $<.05$ . No significant associations between environmental variables and obesity were found for female students. These results identify ease of access to unhealthy food outlets and limited support for healthy behaviors (grocery stores or physical activity resources) in these elementary school communities. Our findings also highlight the role schools provide in increasing access to PA resources and the potential importance of pursuing of joint use agreements. Finally, the associations observed among male students suggest future work is needed to study the impact of the rural environment on health behaviors by gender.

CORRESPONDING AUTHOR: Stephanie S. Frost, MAOM, Health Research Center, West Virginia University, Morgantown, WV, 26506; sfrost@hsc.wvu.edu

#### **A-100c PSYCHOMETRIC PROPERTIES OF THE EMOTIONAL EATING SCALE IN OBESE TREATMENT-SEEKERS**

Edie Goldbacher, PhD,<sup>1</sup> C. LaGrotte, MS,<sup>2</sup> A. Klotz, BS,<sup>2</sup> T. Oliver, PhD,<sup>2</sup> K. Musliner, BA,<sup>2</sup> S. VanderVeur, MS<sup>2</sup> and G. Foster, PhD<sup>2</sup>  
<sup>1</sup>LaSalle U, Philadelphia, PA and <sup>2</sup>Temple U, Philadelphia, PA.

The Emotional Eating Scale (EES; Arnow et al, 1995) has three subscales measuring eating in response to anger, anxiety, and depression; it was developed in overweight individuals with binge eating disorder (BED). Despite its utility, there is limited information about the psychometric properties of the EES in treatment-seeking obese individuals without BED. Our purpose was to examine the psychometric properties and anthropometric correlates of the EES in obese individuals not selected for BED. Participants were 217 individuals (79.2% female, 44.7% African-American) with a mean (SD) age of 43.1 (11.0) yrs., BMI of 33.1 (3.4) kg/m<sup>2</sup> and waist circumference (WC) of 105.0 (10.3) cm. Participants completed the EES prior to entry in a weight loss trial at Temple University. Principal components analysis (PCA) with a varimax rotation was used to examine the factor structure of the EES. Cronbach's alpha was calculated to evaluate the internal consistency of the total scale and original and revised factors. Results showed that mean scores on the 3 original subscales were lower (i.e., less emotional eating) than those previously reported among obese binge eaters (Arnow et al., Ricca et al., 2009). Alphas for the total score and original subscales were: Total (.94), Anger (.90), Anxiety (.85), and Depression (.79), demonstrating adequate internal consistency. Results of the PCA did not replicate the original factors and suggested the presence of 4 revised factors: Anger (6 items), Anxiety (4 items), Depression (9 items), and Somatic sensations (6 items). The composition of these revised subscales was different from the original 3 subscales. Alphas for the revised

subscales were: Anger (.85), Anxiety (.78), Depression (.89), and Somatic sensations (.79). Pearson correlation coefficients showed no significant association of the old or new factor scores with age, BMI, or WC ( $p$ 's  $>.10$ ). These findings suggest that the items on the EES may cluster into different subscales when administered to more heterogeneous samples of obese individuals not selected for BED.

CORRESPONDING AUTHOR: Edie Goldbacher, PhD, Psychology, La Salle University, Philadelphia, PA, 19141; ediemg@gmail.com

#### **A-100d INTERNAL VERSUS EXTERNAL MOTIVATIONS FOR WEIGHT LOSS, OBESITY, AND WEIGHT LOSS STRATEGIES**

Amy J. Ganuelas, BS,<sup>1</sup> Tyler Mason, BS<sup>2</sup> and Eric Benotsch, PhD<sup>1</sup>  
<sup>1</sup>Psychology, Virginia Commonwealth University, Richmond, VA and <sup>2</sup>Psychology, Old Dominion University, Norfolk, VA.

Obesity is increasing in the United States and other developed nations. Obesity is a risk factor for diabetes, cardiovascular disease, metabolic syndrome, and some cancers. Accompanying the rise in obesity is an increase in dieting and other weight loss behaviors. However, not all weight loss behaviors are healthy. It is important to understand the strategies for weight loss, motivations for weight loss efforts, and psychosocial factors related to both healthy and unhealthy weight loss behaviors. Some individuals are motivated to maintain a healthy weight for internal reasons (whether for health or appearance) and others are motivated due to external pressures (for example, to look "good" for someone else). The present study examined internal versus external motivations for weight loss, self-esteem, eating self-efficacy, and the use of healthy and unhealthy weight loss strategies in young adults (N=191). The use of unhealthy dieting strategies was relatively common: 75% skipped meals; 33% utilized a fad diet; 27% smoked cigarettes to lose weight; 21% used diet pills; and 13% had taken laxatives or vomited. External motivations were associated with these unhealthy weight loss strategies,  $r=0.23$ ,  $p<.01$ . External motivations were also negatively correlated with self-esteem,  $r=-0.21$ ,  $p<.01$  and eating self-efficacy,  $r=-0.29$ ,  $p<.01$ . Internal motivations were unrelated to these constructs. To assess the independent contribution of external motivations to unhealthy weight loss behaviors, we conducted a hierarchical linear regression analysis. Results showed that external motivations significantly added to the prediction of unhealthy weight loss strategies, after accounting for the influence of age, race, gender, social support, and self-esteem, (F to test the R<sup>2</sup> change [6,165]=3.25,  $p<.01$ ). Weight loss programs or related interventions may benefit from building on internal motivations and helping those who are externally motivated to focus on healthful strategies.

CORRESPONDING AUTHOR: Amy J. Ganuelas, BS, Psychology, Virginia Commonwealth University, Richmond, VA, 23284; ganuelasaj@mymail.vcu.edu

#### **A-100e EFFECT OF USING FOOD TO COPE ON BMI AMONG A NATIONAL SAMPLE OF AFRICAN AMERICAN ADULTS**

Lori K. Bui, MPH and Gary G. Bennett, PhD  
Psychology & Neuroscience, Duke University, Durham, NC.

Obesity among US African American (AA) adults is particularly alarming and represents a significant public health disparity. Gaps and mixed findings exist in the literature regarding psychological predictors of obesity among AA adults. The purpose of this study was to investigate the use of food to cope with stressful events to predict body mass index (BMI) among a sample of AA adults, after control-

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

ling for gender, income, education, and depression. We also sought to identify psychological predictors of the use of food to cope. Data come from the Midlife Development in the US (MIDUS II): Milwaukee AA Sample, 2005-2006 (N=592). Overall, our model explained a significant proportion of variation in BMI,  $F(5,396)=8.36$ ,  $p<.0001$ , Adj.  $R^2=0.084$ . To examine the effect of using food to cope on BMI, a hierarchical multiple regression model was fit to the observed data with gender, income, education, and depression entered in Step 1 and using food to cope entered in Step 2. At Step 1, gender, income, education, and depression together predicted a significant proportion of variation in BMI,  $F(4,568)=4.92$ ,  $p<.001$ , Adj.  $R^2=0.027$ . At Step 2, the addition of using food to cope was associated with a significant increment in the proportion of variation in BMI explained,  $R^2=0.062$  ( $F(1,396)=18.90$ ,  $p<.001$ ). Results indicate that using food to cope explains a significant proportion of variation in BMI above and beyond that explained by gender, income, education, and depression. Finally, a simultaneous regression model examined a set of psychological constructs (i.e., behavioral disengagement, focus on and venting of emotion, and negative emotionality, specifically stress reactivity) in the joint prediction of using food to cope. The model explained a significant proportion of variation in using food to cope ( $F(3,404)=44.48$ ,  $p<.001$ , Adj.  $R^2=0.24$ ). The most important predictors were stress reactivity ( $sr^2=0.043$ ,  $t(404)=4.83$ ,  $p<.001$ ) and behavioral disengagement ( $sr^2=0.039$ ,  $t(404)=4.56$ ,  $p<.001$ ), all else held constant. Such results have important implications for obesity treatment among AA adults.

CORRESPONDING AUTHOR: Lori K. Buhi, MPH, Psychology & Neuroscience, Duke University, Durham, NC, 27705; lori.buhi@duke.edu

## **A-100f** **GENETIC AND LIFESTYLE CAUSAL BELIEFS ABOUT OBESITY AMONG ETHNICALLY DIVERSE PATIENTS**

Samantha A. Streicher, MPH,<sup>1</sup> Lynne D. Richardson, MD,<sup>2</sup> Ethylin W. Jabs, MD,<sup>1</sup> Michael A. Diefenbach, PhD<sup>3</sup> and Saskia C. Sanderson, PhD<sup>1</sup>

<sup>1</sup>Genetics and Genomic Sciences, Mount Sinai School of Medicine, New York, NY; <sup>2</sup>Emergency Medicine, Mount Sinai School of Medicine, New York, NY and <sup>3</sup>Urology, Mount Sinai School of Medicine, New York, NY.

Common obesity-associated genetic variants have been identified, but little is known about how the public views the role of genetics in obesity. Causal beliefs about health-related conditions such as obesity are important because they influence the choices people make to reduce the threat of those conditions: e.g. if people believe obesity is genetic, then they may be less likely to believe it is caused by or can be controlled by lifestyle. We therefore examined genetic and lifestyle causal beliefs about obesity among patients attending Mount Sinai Medical Center, NY. A structured interview including questions on genetic and lifestyle (not exercising, overeating, eating certain types of foods, chemicals in foods) causal beliefs about obesity was administered to patients (n=205) in a clinic setting. 48% of participants were Black/African American, 29% Hispanic/Latino, 10% White, 13% Other. Mean age was 50 (range 22-85) yrs, 69% were female, 42% had a family history of obesity. Overall, 84% of participants believed that not exercising, 81% that overeating, 72% that eating certain types of food, 39% that chemicals in food, and 33% that a person's genes had 'a lot' to do with causing obesity. Genetic causal belief was positively correlated with chemicals in food, and

not exercising, causal beliefs (both  $p < 0.05$ ). No sociodemographic factors were associated with genetic, overeating, or eating certain types of food causal beliefs, but gender ( $p = 0.001$ ) and self-reported weight status ( $p = 0.002$ ) were associated with not exercising causal belief, and ethnicity ( $p = 0.017$ ) with chemicals in food causal belief. Our findings suggest that people who hold genetic causal beliefs are more, not less, likely than others to hold lifestyle causal beliefs about obesity. Given this was a cross-sectional survey, the implications of providing people with new information about the role of genetics in obesity should be explored.

CORRESPONDING AUTHOR: Samantha A. Streicher, MPH, Genetics and Genomic Sciences, Mount Sinai School of Medicine, New York, NY, 10029; samantha.streicher@mssm.edu

## **A-100g** **THE EFFECT OF CALORIC PRESCRIPTION AND GROUP SIZE ON THE COST-EFFECTIVENESS OF A LIFESTYLE INTERVENTION FOR OBESITY**

Pamela J. Dubyak, MS, Lisa M. Nackers, MS, Michael G. Perri, PhD and Stephen D. Anton, PhD  
University of Florida, Gainesville, FL.

Lifestyle weight-loss interventions are typically delivered in small groups of 10 to 15 participants with caloric prescriptions ranging from 1000 to 1500 kcal per day. For this study, we examined whether group size ("large" vs. "small," i.e., approximately 30 vs. 10 participants per group) and/or caloric prescription (1000 vs. 1500 kcal per day) affected the cost-effectiveness of a 6-month, lifestyle weight-loss intervention. Participants were 123 obese women (body mass index [mean  $\pm$ SD] =  $37.8 \pm 3.9$  kg/m<sup>2</sup>; age =  $52.0 \pm 10.9$  years) who were assigned to one of four conditions: (1) large group, 1500 kcal/day; (2) large group, 1000 kcal/day; (3) small group, 1500 kcal/day; (4) or small group, 1000 kcal/day. Weight changes (mean  $\pm$ SD) for the four conditions were as follows: (1)  $-6.7 \pm 5.6$  kg, (2)  $-11.46 \pm 7.3$  kg, (3)  $-7.1 \pm 5.1$  kg, and (4)  $-9.5 \pm 7.5$  kg. The intervention costs included session materials, room rental fees, and time for leader and co-leader to conduct group and individual make-up sessions. Cost-effectiveness was defined as program costs per participant divided by kilograms lost per participant. A 2 X 2 ANOVA was used to examine the effects of caloric prescription and group size on cost effectiveness. Results of the ANOVA revealed a non-significant interaction for group size X caloric prescription ( $p = 0.34$ ). There was, however, a significant main effect for group size ( $p < 0.01$ ); the large group format was more cost-effective than the small group format (means = \$40.00 vs. \$92.95 per kg lost, respectively). Although not statistically significant, the cost per kg lost was lower in the 1000 kcal condition than in the 1500 kcal condition (means = \$56.92 vs. \$78.18 per kg lost, respectively;  $p = 0.14$ ). These findings suggest that delivering a lifestyle intervention through a large group format may be a useful strategy to improve cost-effectiveness. Given the growing need for disseminating treatment to obese individuals, these findings are important because they suggest a potential strategy for reaching a larger number of individuals at a lower cost.

CORRESPONDING AUTHOR: Pamela J. Dubyak, MS, Clinical and Health Psychology, University of Florida, Gainesville, FL, 32610-0165; pameladubyak@gmail.com

**A-102a****LINKING AUTONOMY SUPPORT AND WORK RELATED AUTONOMY TO SOMATIZATION AND ABSENTEEISM**

Geoffrey C. Williams, MD, PhD,<sup>1,3</sup> Hallgeir Halvari, PhD,<sup>2</sup> Oystein Soreboe, PhD<sup>2</sup> and Christopher Niemiec, PhD<sup>3</sup>

<sup>1</sup>Medicine, University of Rochester, Rochester, NY; <sup>2</sup>School of Business and Social Sciences, Buskerud University College, Oslo, Norway and <sup>3</sup>Clinical and Social Sciences in Psychology, University of Rochester, Rochester, NY.

Somatization is the tendency to experience psychosocial distress as physical symptoms that are unexplained by physical illness, and accounts for more than 50% of all outpatient medical encounters as well as \$256 billion in health care costs and lost job productivity in the United States. Possible mechanisms underlying the development of somatic symptoms are not well understood.

Using Self-Determination Theory, we hypothesized that somatic symptoms arise, in part, when autonomy is not supported from the social surround, including from the workplace. A lack of autonomy support from the work place, in turn undermines autonomous self-regulation at work, leads to burnout, absenteeism and worker intention to leave their job. In this cross-sectional study, 287 employees in four Nordic companies were asked about their perceptions of autonomy support in the workplace, autonomous self-regulation at work, somatic symptoms, level of burnout, and absenteeism due to sickness over the previous three months. Results supported the SDT Model that workplace autonomy support predicts autonomous self-regulation ( $r=0.38$ ,  $p<.05$ ), lower levels of somatic symptoms ( $r=0.26$ ,  $p<.05$ ), emotional exhaustion ( $r=-.37$ ,  $p<.05$ ), and absenteeism ( $r=-.14$ ,  $p<.05$ ). Autonomous self-regulation partially mediated the effect of autonomy support on somatic symptoms. These results suggest that when the work place supports employees' need for autonomy, employees are less likely to experience somatic distress, miss work, or want to leave their job. Workplace policies may be developed and tested to determine if increase in worker autonomy leads to less somatization and days missed in a randomized controlled trial.

CORRESPONDING AUTHOR: Geoffrey C. Williams, MD, PhD, University of Rochester, Rochester, NY, 14607; geoffrey\_williams@urmc.rochester.edu

**A-117a****DEPRESSION AND MALNUTRITION IN PATIENTS BEING TREATED WITH HEMODIALYSIS**

Nisha Ver Halen, PhD, Deepan Singh, MD, Yvette Fruchter, BA and Daniel Cukor, PhD  
Psychiatry, SUNY Downstate, Brooklyn, NY.

There is increasing evidence for a relationship between higher levels of depression and negative health outcomes in patients with end stage renal disease (ESRD), however, the underlying mechanism for these relationships is unclear. It has been postulated that there may be three pathways through which depression can lead to worsening renal health including (1) an immunologic pathway, that highlights the role of dysregulation of the HPA axis and the role of cytokines (2) compliance, in which depressed patients are less compliant with medical recommendations and medical appointments or (3) malnutrition, in which depressed patients are less adherent to the restricted renal diet. This study presents novel data on 35 depressed patients with ESRD and examines the relationship with laboratory markers of dietary adherence. In this sample ESRD patients were given a clinical diagnosis of depression based upon the clinician administered Hamil-

ton Rating Scale of Depression (HAM-D). The sample averaged  $15.3 \pm 6.1$  on the HAM-D, indicating a moderate level of depression. Depression value was correlated with standard dialysis lab values at baseline and 3 month follow up. There was no association between baseline depression and the Urea Reduction Ratio (a measure of dialysis adequacy) or Serum Albumin (a measure of protein in the blood, which serves as a proxy for dietary adherence). However when baseline depression scores were compared to the follow up laboratory data, an interesting pattern emerged, in which subjects with more depression had significantly lower serum albumin ( $r=-.44$ ,  $p<.05$ ). Additionally, when subjects with higher levels of depression ( $>14$  on the Ham-D) were compared to those with lower levels of depression, the follow-up albumin differences were significantly different ( $t=-2.5$ ,  $p<.05$ ) with the increased depression group mean (albumin 3.7) falling below the target albumin value of 4 and the less depressed group remaining above (albumin 4.1). There is preliminary support for malnutrition serving as the mechanism associating depression and negative health outcomes in patients with ESRD.

CORRESPONDING AUTHOR: Daniel Cukor, PhD, Psychiatry, SUNY Downstate, Brooklyn, NY, 01203; daniel.cukor@downstate.edu

**A-117b****THE ROLE OF MOTIVATION AND EXPECTANCY IN THE PLACEBO EFFECT**

Carrie J. Aigner, MS, Psychology  
Psychology, IUPUI, Indianapolis, IN.

Placebo has been found to be an important component of treatments including psychological and pharmacological treatment of depression, transplant surgery for Parkinson's, acupuncture, smoking cessation interventions, and analgesic treatment of pain. Although the placebo effect has been observed across a wide range of disciplines, the effect sizes vary widely and it is not well understood how placebo effects are produced. The current study draws upon research in perception and motivation to propose a more comprehensive model of the placebo effect. Specifically, the model proposes that more motivated persons pay greater attention to bodily sensations and other stimuli, which are then interpreted according to expectations, producing placebo response. In the current study, both motivation and outcome expectancy were manipulated, creating a 2x2 study design. College students ( $N=154$ ) were asked to evaluate a series of placebo pheromone substances (water) and attention/task diligence was assessed as the amount of time spent on the rating task and the number of evaluations made. The placebo response was assessed as the attractiveness rating of the sample and the variability in ratings, with greater variability and higher attractiveness ratings indicating greater placebo response. It was predicted that those in the high motivation group would have greater diligence on the rating task, which would, in turn, lead to greater placebo response. It was further predicted that there would be a main effect for expectancy on placebo response. Consistent with hypothesized effects, more highly motivated students had greater placebo responses, and the relationship was mediated by task diligence. Thus, as students spent greater time on the evaluation task, they found the scent of their chosen sample to be more pleasing and perceived greater differences among samples. No effect was found for expectancy. These findings are important because they suggest possible mechanisms for maximizing treatment effects in medical and psychological settings, where factors such as nonspecific treatment effects and placebo are believed to influence outcomes.

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

CORRESPONDING AUTHOR: Carrie J. Aigner, MS, Psychology, Psychology, IUPUI, Albuquerque, NM, 87104; cjaigner@iupui.edu

## **A-117c FATALISM AND HEALTH BEHAVIOR: A META-ANALYTIC REVIEW**

Lawrence D. Cohn, PhD<sup>1</sup> and Oscar A. Esparza Del Villar, PhD<sup>2</sup>  
<sup>1</sup>Psychology, University of Texas at El Paso, El Paso, TX and  
<sup>2</sup>Psychology, Universidad Autónoma de Ciudad Juárez, Juarez, Mexico.

We investigated the association between fatalistic beliefs and participation in health threatening behavior. A meta-analysis was conducted of 46 studies encompassing 51 independent samples and 25,167 participants. Effect sizes (Hedges  $g$ ) ranged from -0.54 to 1.49; positive values indicated that higher levels of fatalism were associated with higher levels of health threatening behavior and non-compliance with health promoting activities. A random effects analysis yielded a weighted average  $g$  of 0.26 (95% CI: 0.14 to 0.38), indicating that participants who did not engage in health promoting behaviors held significantly more fatalistic beliefs than participants who engaged in health promoting behaviors. The strongest relationship between fatalism and health behavior was found in studies of preventive screening, such as breast cancer screening (Hedges weighted average  $g$  = 0.28, 95% CI: 0.01 to 0.55). The most frequently employed fatalism measure was the Powe Fatalism Inventory (PFI). Seventeen studies, yielding 19 effect sizes, examined the association between PFI scores and frequency of mammography screening and related activities. A random effects analysis revealed that adults who did not engage in screening activities had higher PFI scores than did adults who engaged in health promoting behaviors (weighted average Hedges  $g$  = 0.30, 95% CI: 0.02 to 0.59). In general individuals who endorsed fatalistic statements were more likely than their peers to report lower rates of medical screening, lower rates of health promoting behavior, and lower scores on measures of health related knowledge. The association between fatalism and health behavior was not restricted to studies investigating a specific type of behavior (e.g., cancer screening); nor was the relationship restricted to studies using a specific fatalism scale. Notably, the average population effect size was smaller than expected although similar in magnitude to previously reported correlations between health behavior and general self-efficacy, perceived risk, and self-reported level of worry.

CORRESPONDING AUTHOR: Lawrence D. Cohn, PhD, Psychology, University of Texas at El Paso, El Paso, TX, 79968-0553; lcohn@utep.edu

## **A-117d THYROID STIMULATING HORMONE PREDICTS PSYCHOLOGICAL FUNCTION IN HEALTHY YOUNG MEN AND WOMEN**

Kimberly N. Walter, MS,<sup>1</sup> Elizabeth J. Corwin, PhD,<sup>2</sup> Jan Ullbrecht, MBBS,<sup>1</sup> Laurence M. Demers, PhD<sup>3</sup> and Laura C. Klein, PhD<sup>1</sup>  
<sup>1</sup>Biobehavioral Health, Penn State University, University Park, PA;  
<sup>2</sup>College of Nursing, University of Colorado Denver, Aurora, CO and  
<sup>3</sup>College of Medicine, Penn State University, Hershey, PA.

Thyroid hormones affect nearly all cells and organs in the body, and specifically play an important role in metabolic, cardiovascular, and neurological functioning (Boelaert & Franklyn 2005; Weatherman 2007). Elevated thyroid stimulating hormone (TSH) levels are used as the primary and most sensitive screening test for uncovering the presence of primary hypothyroidism (Surks et al 2004). Although

overt hypothyroidism (TSH >10 mIU/L) and subclinical hypothyroidism (TSH >4.5 mIU/L) have been linked to psychological dysfunction, little is known about the relationship between TSH levels and psychological function in individuals without known thyroid disorder who are otherwise healthy. The objective of the present study was to examine this relationship in a carefully screened cohort of 54 (35 women, 19 men) healthy, young (mean 20.89 ± 0.73 years) volunteers. We hypothesized that serum TSH levels would positively predict self-reported depression, anxiety, and general psychological distress. To test this hypothesis, we measured serum TSH, free T3, and free T4 levels. Additionally, participants completed the Centers for Epidemiologic Studies Scale of Depression (CES-D), Spielberger State-Trait Anxiety Inventory (STAI), and the Symptom Checklist 90 (SCL-90). Three participants were excluded from analyses because they had serum TSH levels > 10 uIU/L (overt hypothyroidism), and we were only interested in the effects of TSH levels among healthy individuals. TSH levels significantly predicted depression [ $\beta$ =0.39,  $t(46)$ =2.83,  $p$ <0.05], trait anxiety [ $\beta$ =0.28,  $t(49)$ =2.02,  $p$ <0.05], and general psychological distress [ $\beta$ =0.35,  $t(50)$ =2.58,  $p$ <0.05]. Free T3/T4 levels did not significantly predict psychological function. These data suggest a relationship between TSH and psychological function in apparently healthy young individuals, though whether this relationship is causal and important for human psychological well-being remains to be elucidated.

CORRESPONDING AUTHOR: Laura C. Klein, PhD, Biobehavioral Health, Penn State University, University Park, PA, 16802; lcklein@psu.edu

## **A-124a PAIN AS A MODERATOR FOR DEPRESSION TREATMENT IN PRIMARY CARE VETERANS**

Johanna R. Klaus, PhD,<sup>1,2</sup> Shahrzad Mavandadi, PhD,<sup>1,2</sup> Sara Kornfield, PhD,<sup>1,2</sup> Rebecca Helms, PsyD<sup>1</sup> and Dave Oslin, MD<sup>1,2</sup>  
<sup>1</sup>Philadelphia VA Medical Center, Philadelphia, PA and <sup>2</sup>University of Pennsylvania, Philadelphia, PA.

Care management models have been shown to improve outcomes for primary care depression treatment, yet the efficacy of treatment is mitigated by numerous factors. Pain has a complex and mutually exacerbating relationship with depression symptoms. The impact of pain on functioning, i.e. pain interference, is a frequent clinical measure of pain. Thus, the current study investigated whether the effectiveness of depression treatment in primary care was moderated by self-reported pain interference.

Veterans newly prescribed an antidepressant by a primary care provider between 2004 and 2010 were contacted over the phone and evaluated at baseline and at 2, 6, and 9 weeks post treatment initiation (N=1490). Pain interference with work activity (including housework) was assessed at baseline using the pain item from the SF-12, and was categorized as high (extremely, quite a bit; n=519) or low (moderately, a little bit, not at all; n=971). Depression symptoms were evaluated at each contact. A GLM repeated measures model was used to evaluate the impact of pain on depression scores over time controlling for baseline score, age, and race.

The sample of veterans was primarily male (91.2%) and ranged in age from 21 to 97 years (M=61.4, SD=15.0). 70% of the sample was non-Hispanic White and 24% African American. Depression symptoms, as assessed by the PHQ-9, improved over time [M(SD): baseline=11.8(6.8); week9=7.7(6.4)]. This effect was moderated by pain interference, such that veterans who reported low pain inter-

ference at baseline had significantly greater reductions in depression symptoms over the course of monitoring than veterans who reported high pain interference ( $F(3) = 18.2, p < .001$ ).

The findings highlight the importance of addressing pain within the context of treating depression. For primary care veterans with both significant pain and symptoms of depression, interventions that aim to reduce pain disability prior to, or simultaneously with, depression treatment may result in better clinical outcomes.

CORRESPONDING AUTHOR: Johanna R. Klaus, PhD, Philadelphia VA Medical Center, Philadelphia, PA, 19104; Johanna.Klaus@va.gov

**A-124b**  
**RACE AND SEX DIFFERENCES IN PAIN RESPONSIVITY**

Julie Cunningham, MA,<sup>1</sup> Anna Smitherman, BA,<sup>1</sup> Laura Pence Forsythe, PhD<sup>2</sup> and Beverly E. Thorn, PhD<sup>1</sup>

<sup>1</sup>Psychology, University of Alabama, Tuscaloosa, AL and <sup>2</sup>Center for Cancer Training, National Cancer Institute, Bethesda, MD.

Racial minorities and women are more likely to be affected- and more deeply disabled- by acute and chronic pain conditions. A better understanding of race and sex differences that emerge in experimental contexts can facilitate the development of chronic pain treatments that address these individual differences. The aims of the current study are to 1) test for a possible race by sex interaction and 2) to replicate race and sex differences in pain responsivity and in other pain-related constructs, including catastrophizing and pain appraisals. While numerous investigations have demonstrated these race and sex differences, only one study (Woodrow, 1972) has documented a race by sex interaction for pain responsivity. Recently, Pence et al. (in press) determined that a race by sex interaction approached significance ( $p = .08$ ) for tolerance. In the current investigation, one hundred and fifty-one students at the University of Alabama completed a cold pressor task followed by several questionnaires. Of these participants, 57% were female and 23% were African American. T tests and regression models were calculated. Previous race findings were replicated: African Americans have lower pain tolerance than Caucasian Americans but comparable pain unpleasantness and intensity ratings. Furthermore, females had significantly lower tolerance and challenge ratings, and higher catastrophizing, threat appraisal, and intensity ratings. No race by sex interactions approached significance for any of the dependent variables: pain tolerance, pain intensity, pain unpleasantness, catastrophizing, and pain appraisals. The results from this investigation, taking into account previous studies, suggest that that race and sex effects for pain responsivity are independent and a clinically meaningful interaction is unlikely. Furthermore, it appears that sex is a stronger determinant of pain experience (at least in experimental pain) than is race,

CORRESPONDING AUTHOR: Julie Cunningham, MA, Psychology, University of Alabama, Tuscaloosa, AL, 35406; jcunningham@crimson.ua.edu

**A-124c**  
**STRATEGIC SELF-PRESENTATION BOOSTS EFFICACY OF MULTIDISCIPLINARY CHRONIC PAIN TREATMENT**

Wesley P. Gilliam, MS,<sup>1</sup> John Burns, PhD,<sup>2</sup> Christine Gagnon, PhD,<sup>3</sup> Steve Stanos, DO,<sup>3</sup> Justin Matsuura, MA<sup>1</sup> and Nancy Beckman, MA<sup>1</sup>

<sup>1</sup>Rosalind Franklin University of Medicine and Science, North Chicago, IL; <sup>2</sup>Rush University, Chicago, IL and <sup>3</sup>Rehabilitation Institute of Chicago, Chicago, IL.

Multidisciplinary chronic pain programs are effective in improving patient adjustment, yet effect sizes tend to be moderate. CBT and PT/OT are core elements of these programs, yet researchers still seek to identify new mechanisms and techniques by which to boost efficacy. Strategic self-presentation (SSP) is rooted in self-perception theory, and holds that when a person presents him/herself in a particular fashion, and then publicly commits to being that type of person, he/she may then begin to behave consistently with that identity. 89 chronic pain patients were randomly assigned to either claim that they are coping well with pain or that they are having problems coping with pain. This condition was crossed with public (patient was told that future patients would view their videotaped testimonial) or private (they were told that only they and a therapist would view the tape) commitments. Thus a 2 Self-Presentation (positive, negative) x 2 Commitment (public, private) design. Testimonials were videotaped after the first week of a 4-wk pain program. Within-subject ANOVAs showed significant pre-post treatment gains across all indexes  $F's > 16.0$ ;  $p's < .01$ . 2 Presentation x 2 Commitment ANOVAs for pre-post residualized change scores revealed significant interactions for pain interference, depression, self-efficacy and positive coping  $F's > 4.4$ ;  $p's < .04$ . Simple effects showed that patients in the Positive Testimonial/Public Commitment condition showed greater improvements than Negative Testimonial/Public Commitment patients  $F's > 7.9$ ;  $p's < .01$ , whereas Positive and Negative Testimonial patients in Private Commitment conditions did not differ. Results imply that publicly committing to being someone who copes well with chronic pain enhances adjustment to pain beyond the already substantial effects of multidisciplinary treatment.

CORRESPONDING AUTHOR: Wesley P. Gilliam, MS, Rosalind Franklin University of Medicine and Science, West Haven, CT, 06516; wesley.gilliam@my.rfums.org

**A-124d**  
**THE EFFECT OF ATTENTION/COPING STRATEGY AND PAIN-RELATED FEAR ON COLD PRESSOR PAIN**

Zina Trost, PhD,<sup>1</sup> Anthony Austin, MS,<sup>2</sup> John Fox, BS<sup>2</sup> and Stephen Patterson, PhD<sup>2</sup>

<sup>1</sup>Psychology, McGill University, Montreal, QC, Canada and

<sup>2</sup>Psychology, Ohio University, Athens, OH.

We present initial findings from a pilot study examining the relationship between attention/coping strategy, pain-related fear, and pain experience during an experimental pain task. Forty-seven healthy participants (26 male, 21 female) were randomly assigned to engage in Sensory Focus, Suppression, Distraction or Acceptance while immersing their hand in a cold pressor (CP) apparatus for as long as tolerable. Pain-related fear (Pain Catastrophizing Scale, Pain Anxiety Symptoms Scale) and vigilance (Pain Vigilance Questionnaires) were assessed prior to testing, and visual analog ratings of pain intensity and distress were collected at baseline and immediately after CP immersion. Cold pressor immersion led to a significant increase in pain intensity relative to baseline ( $p < .05$ ). Greater pain catastrophizing, anxiety, and vigilance were associated with lessened CP tolerance ( $r = -.32$  to  $-.53, p < .05$ ) and greater distress ( $r = .40$  to  $.52, p < .01$ ) following CP immersion. Pain catastrophizing and anxiety were associated with greater pain intensity following CP immersion ( $r = .30$  to  $.31, p < .05$ ). Surprisingly, neither pain intensity nor distress was associated with CP tolerance ( $r = .00$  to  $.11, p > .10$ ). Although examination of raw data suggested that the Sensory Focus and Suppression conditions were related to greater pain intensity and less pain tolerance than Distraction and Acceptance, attention strategy

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

did not significantly moderate pain intensity, tolerance, or distress ( $p$ 's  $> .24$ ), possibly due to low power. Analyses of covariance indicated that pain anxiety and vigilance, but not catastrophizing, accounted for a significant portion of the increase in pain intensity and distress from baseline to CP immersion ( $p$ 's  $< .05$ ). Results suggest that pain-related fear and vigilance should be considered when examining acute pain responses. Further implications of current findings and future directions are discussed.

CORRESPONDING AUTHOR: Zina Trost, PhD, Psychology, McGill University, Montreal, QC, H2J 3N4; zinaidat@gmail.com

## A-146a

### PHYSICAL ACTIVITY LITERACY AMONG FOSTER PARENTS: AN EXPLORATORY STUDY

Gregory M. Dominick, PhD,<sup>1</sup> Daniela B. Friedman, PhD<sup>2</sup> and Ruth P. Saunders, PhD<sup>2</sup>

<sup>1</sup>Centers for Behavioral and Preventive Medicine, The Miriam Hospital, Providence, RI and <sup>2</sup>Health Promotion, Education and Behavior, University of South Carolina, Columbia, SC.

Background: Health literacy (HL) involves access to and comprehension of health information for participation in disease-preventive behaviors. Few studies have explored HL in the context of physical activity (PA). Parental PA literacy may be associated with providing greater support for children's PA behavior. Foster children, in particular, are at-risk for negative health behaviors and require support from their foster parents to avoid poor health outcomes. Purpose: To explore associations between foster parent PA literacy and psychosocial variables for providing instrumental social support (ISS) for youth PA. Methods: 91 foster parents completed measures assessing PA literacy, perceptions of youth PA, PA coordination, PA enjoyment, and psychosocial variables: positive and negative beliefs; normative beliefs; perceived behavioral control (PBC) and self-efficacy to provide ISS for PA. Overall PA literacy (reading comprehension + PA knowledge) and Specific PA literacy (knowledge of PA guidelines) were assessed using a modified Cloze procedure and analyzed by foster parent demographics using chi-squares. Multiple regression analyses determined associations between Specific PA literacy and psychosocial constructs. Results: African-Americans and those with less education demonstrated lower Overall PA literacy. Specific PA literacy was positively associated with Caucasian race, PBC, and frequency of parent sport involvement. Conclusions: HL is a complex function of comprehension and knowledge regarding PA information. HL is associated with control beliefs about providing ISS for PA, indicating a greater perceived ability to perform the behavior. These results suggest HL measures should be developed to assess for context-specific health behaviors including PA. Race and education should be considered as co-variables when assessing PA literacy. Furthermore, PA guidelines should be clearly written and culturally appropriate to ensure adequate comprehension.

CORRESPONDING AUTHOR: Gregory M. Dominick, PhD, Centers for Behavioral and Preventive Medicine, The Miriam Hospital, Providence, RI, 02903; gdominick@lifespan.org

## A-146b

### VIRTUAL VS. REAL SOCIAL FACILITATION: EFFECTS ON EXERCISE BEHAVIOR

Amanda L. Snyder, BS,<sup>1</sup> Cay Anderson-Hanley, PhD<sup>1</sup> and Paul Arciero, PhD<sup>2</sup>

<sup>1</sup>Union College, Schenectady, NY and <sup>2</sup>Skidmore College, Saratoga Springs, NY.

This study aimed to evaluate the effects of virtual and real social facilitation on exercise behavior using a cybercycle, a virtual reality-enhanced stationary bike, with 3D scenery and interactive races. A variety of theories hold that the social presence of others causes individuals to evaluate and adjust their exercise performance in response to those individuals within their social environment. Studies have suggested that competitive environments fostered by social facilitation enhance performance on motor tasks (Zajonc, 1965). Prior research with the cybercycle have shown that the introduction of an on-screen rider led to an increase in the intensity of exercise (Snyder et al., 2010). The current study aimed to expand upon these results by comparing virtual social presence with real social presence. College students were assigned to ride the cybercycle in each of three randomly presented conditions: riding alone, riding in the presence of an on-screen rider, and riding in the presence of an actual rider. The actual rider was a gender-matched confederate rider who serves both as the on-screen and real-time competitor, and adjusts performance to keep the level of challenge in both conditions consistent. The intensity (watts, HR, mph and kcals) with which participant rides in each condition was tracked. Competitiveness, mood and exercise attitudes were also measured. Preliminary results from two participants indicate greater exercise intensity riding in the real vs. virtual social facilitation conditions. The average outcomes per ride in real vs. the virtual conditions: 105 vs 91 ave watts, 13.4 vs 12.5 ave mph, 17.2 vs 15.3 peak mph. Enrollment will continue and the final sample is expected to be 30 participants. Inferential statistics comparing exercise effort in the two conditions will be presented and the role of competitiveness will also be evaluated in the final sample. If these preliminary results are confirmed, the implication is that exercising with a real competitor yields greater exercise effort and may be recommended for maximizing the benefit of workouts.

CORRESPONDING AUTHOR: Amanda L. Snyder, BS, Union College, Schenectady, NY, 12308; amanda.snyder20@gmail.com

## A-146c

### UNDERSTANDING VARIATIONS IN THE STRENGTH OF THE EXERCISE IDENTITY: AN IDENTITY THEORY AND SELF-DETERMINATION THEORY PERSPECTIVE

Melanie G. Perras, PhD candidate, Shaelyn M. Strachan, PhD, Michelle S. Fortier, PhD and Carrie Lugg, BA  
University of Ottawa, Ottawa, ON, Canada.

Given that strength of exercise identity has been linked to greater exercise participation, understanding why individuals differ in terms of their strength of identification with exercise is a logical research need in the exercise identity literature. The aim of this study was to employ Identity Theory and Self-Determination Theory to increase our understanding of why individuals differ in the strength of exercise identity. Specifically, we examined whether exercise identity strength (Identity Theory) was associated with more self-determined forms of exercise regulation (Self-Determination Theory). Further, we assessed whether exercise identity and exercise regulation interacted in their relationship with the self-regulation of exercise. Community exercisers ( $N = 100$ ; mean age = 32.71 years) completed online measures of exercise identity strength, exercise regulations, and self-regulation of exercise. Exercise identity was significantly correlated ( $p < .01$ ) with integrated ( $r = .82$ ), identified ( $r = .76$ ), intrinsic ( $r = .59$ ), and introjected regulation ( $r = .32$ ,  $p < .01$ ). Exercise identity was negatively correlated with amotivation ( $r = -.23$ ,  $p = .02$ ) and external regulation ( $r = -.19$ , ns). These findings suggest that strength of identification with exercise is positively associated with more self-determined

reasons for exercise. Further, our investigation found that identified regulation moderated the relationship between exercise identity and self-regulation ( $p = .01$ ). It appears that the positive relation between identity and self-regulation increased in strength as identified regulation increased. Overall, this study allowed for the complementary use of self theories and suggests that identification with exercise may be strengthened and associated with enhanced exercise self-regulation when exercise is more self-determined. Ideas to advance this line of inquiry are discussed.

CORRESPONDING AUTHOR: Melanie G. Perras, PhD candidate, University of Ottawa, Ottawa, ON, K1N 6N5; mperr005@uot-tawa.ca

**A-146d**  
**TESTING A SELF-DETERMINATION THEORY MODEL TO PREDICT PHYSICAL ACTIVITY IN PRIMARY CARE PATIENTS**

Shane N. Sweet, BA and Michelle S. Fortier, PhD  
 University of Ottawa, Ottawa, ON, Canada.

Theories are currently underutilized in health behaviour research and therefore are highly recommended (Painter et al., 2008). Self-Determination Theory has recently received increased attention and is now encouraged for physical activity research. However, most Self-Determination Theory based studies in the physical activity literature have only focused on specific variables rather than examining the entire theoretical sequence. Therefore, the purpose of this study was to test the entire Self-Determination Theory sequence to predict physical activity. Primary care patients ( $n = 108$ ; mean age:  $55.72 \pm 10.92$  years, 58.70% female) responded to a paper-pencil questionnaire package following health education group sessions provided by a local medical clinic. The questionnaire package consisted of measures assessing autonomy support (Important Other Climate Questionnaire), psychological needs (Psychological Need Satisfaction in Exercise Scale), types of motivation (Behavioural Regulation in Exercise Questionnaire), and physical activity (Godin Leisure Time Exercise Questionnaire). Path analysis in AMOS was used to test the model. The Self-Determination Theory model had excellent fit (chi-square = 8.82,  $df = 9$ ,  $p = .36$ ). Autonomy support was positively related to the psychological needs of competence and relatedness which in turn were positively associated with self-determined motivation. Self-determined motivation then predicted physical activity (standardized beta = .44;  $R^2 = 19\%$ ). These results therefore supported the Self-Determination Theory sequence for physical activity. This sequence could inform future physical activity interventions. Specifically, a health care provider/health educator that acts in a non-controlling fashion, supports the patient's choice and provides positive feedback can help foster more self-determined motivation and subsequently increase physical activity levels.

CORRESPONDING AUTHOR: Shane N. Sweet, BA, University of Ottawa, Ottawa, ON, K1V7V6; ssweet@uottawa.ca

**A-146e**  
**PHYSICAL ACTIVITY AND NON-MOTOR SYMPTOMS OF PARKINSON'S DISEASE**

Ana M. Abrantes, PhD,<sup>1</sup> Joseph H. Friedman, MD,<sup>1</sup> Richard A. Brown, PhD,<sup>1</sup> David R. Strong, PhD,<sup>1</sup> Julie Gutierrez, MS,<sup>1</sup> Eileen Ing, BA,<sup>1</sup> Jennifer Rogers, BA<sup>1</sup> and Deborah Riebe, PhD<sup>2</sup>  
<sup>1</sup>Butler Hospital/Brown Medical School, Providence, RI and  
<sup>2</sup>University of Rhode Island, Kingston, RI.

Non-motor symptoms of Parkinson's Disease (PD) such as fatigue,

depression, and apathy are common and negatively impact quality of life. There is little research on the impact of physical activity on the non-motor symptoms of PD. The purpose of this study was to: 1) examine the relationship between physical activity and non-motor symptoms in PD patients and 2) determine patients' exercise preferences. A convenience sample of 45 PD patients (mean age = 66.1 yrs; 33% female) completed a series of questionnaires. Slightly more than half of participants (57.8%) were engaged in an exercise program (i.e., at least 30 min/day, 3 days/week). Linear regression models (co-varying for age, gender, and engaging in current exercise program) were conducted to examine the relationship between physical activity minutes per week and non-motor PD symptoms. Higher weekly minutes of moderate-intensity physical activity were significantly associated with lower levels of fatigue ( $t = 2.7$ ;  $df = 37$ ,  $p < .01$ ) a positive future outlook (quality of life subscale,  $t = 2.1$ ,  $df = 39$ ,  $p < .05$ ) and a trend toward lower levels of depression ( $t = 1.96$ ;  $df = 39$ ;  $p = .06$ ), and higher levels of positive affect ( $t = 1.77$ ,  $df = 39$ ,  $p = .08$ ). Most participants (91%) expressed an interest in engaging in an exercise program for patients with PD. Exercise preferences included: moderate-intensity (73%), at home (56%), in the morning (73%), scheduled (69%), options for varied activities (73%), and preference for both structured/supervised (50%) and unsupervised/self-paced (50%) programs. Preferred activities included the use of aerobic equipment, resistance training, and yoga. The results of this study suggest that higher levels of physical activity among patients with PD are related to lower levels of non-motor symptoms. Further, patients with PD are interested in incorporating an exercise program into their daily lives. Developing and tailoring exercise programs for this population that incorporates their specific preferences may result in more effective interventions.

CORRESPONDING AUTHOR: Ana M. Abrantes, PhD, Butler Hospital/Brown Medical School, Providence, RI, 02906; Ana\_Abrantes@Brown.edu

**A-156a**  
**ASSESSING THE INFLUENCE OF DELAY DISCOUNTING OF FUTURE HEALTH AND PERCEPTION OF PERSONAL RISK OF CORONARY HEART DISEASE ON DIET AND PHYSICAL ACTIVITY BEHAVIORS**

Kimberly B. Blake, PharmD, MBA, PhD and Carole V. Harris, PhD  
 Health Research Center, West Virginia University, Morgantown, WV.

Previous research has demonstrated a positive association between degree of delay discounting and addictive behaviors, but research in the area of preventive behaviors is limited and has shown conflicting results. The objective of this study was to determine whether degree of delay discounting influences coronary heart disease (CHD) preventive behaviors, specifically healthful diet and physical activity (PA), and whether perceived risk of CHD modifies the association. Computer-administered surveys were conducted in adults with no prior history of CHD ( $n = 172$ ). Items included diet and PA behaviors, perceived risk of CHD, height, weight and demographic variables, including age, gender, household income, education and marital status. Degree of delay discounting for both health and monetary rewards was assessed using a binary choice, decreasing adjustment algorithm, and was measured using normalized area under the delay discounting curve (AUC). Degree of discounting of health rewards did not significantly differ from that of monetary rewards [ $t(171) = .289$ ,  $p = .773$ ]. Healthfulness of diet was significantly positively correlated with level of PA and age, and was negatively correlated with perceived risk and body mass index (BMI) (all  $ps < .05$ ).

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

Level of PA was significantly negatively correlated with perceived risk, age and BMI (all  $p < .05$ ). Degree of discounting was not significantly correlated with preventive behaviors for either health or monetary rewards. In a hierarchical regression including demographic factors, AUC and perceived risk as independent variables, female gender, increased age, > high school education, and decreased perceived risk were significant predictors of healthfulness of diet, while decreased perceived risk was the only significant predictor of PA level. Perceived risk remained a significant predictor of both diet and PA levels after adjusting for other variables in the model, while degree of discounting did not significantly influence behaviors.

CORRESPONDING AUTHOR: Kimberly B. Blake, PharmD, MBA, PhD, Pharmacy Care Systems, Auburn University School of Pharmacy, Auburn, AL, 36830; kdbozau@hotmail.com

## **A-161a GROWING UP IN VIOLENT NEIGHBORHOODS: FAMILIAL ADAPTATIONS, PERCEPTIONS OF NEIGHBORHOOD SAFETY AND SEXUAL HEALTH AMONG AFRICAN AMERICAN FEMALES**

Alexandra A. Choby, PhD,<sup>1</sup> M. M. Dolcini, PhD,<sup>2</sup> J. A. Catania, PhD,<sup>2</sup> K. Richards, PhD,<sup>2</sup> G. Harper, PhD<sup>3</sup> and C. Boyer, PhD<sup>4</sup>  
<sup>1</sup>University of Alberta, Edmonton, AB, Canada; <sup>2</sup>Oregon State University, Corvallis, OR; <sup>3</sup>De Paul University, Chicago, IL and <sup>4</sup>University of California, San Francisco, San Francisco, CA.

Systemic neighborhood violence results from structural inequalities and has psychological and developmental consequences which may impact sexual behavior for adolescent females. The family is a key institution that may make adaptations to mitigate exposure of youth to neighborhood violence. We assess familial adaptations to violence and how adaptations relate to: 1.) sexual debut and 2.) attitudes towards neighborhoods and sexuality among African American female adolescents. We collected a purposeful sample of sexually experienced and inexperienced African American females (N=40, ages 15-17) through recruitment at community based organizations in 2 cities. Trained interviewers conducted semi-structured, tape-recorded interviews; data were transcribed and coded to elicit potential familial adaptations to violence, and attitudes towards neighborhoods and sexuality. We identified the following familial adaptations: living in multiple residences, attending school outside the neighborhood; moving to a new neighborhood, spending time outside the neighborhood, staying indoors, and parental involvement. We found notable differences between sexually inexperienced and experienced youth in the number and types of familial adaptations reported. Sexually inexperienced females were more likely to have at least one familial adaptation (14/20) than sexually experienced girls (7/20). Evaluations of neighborhoods (positive, mixed, negative) did not vary by sexual experience. However, some sexually experienced girls indirectly referenced neighborhood violence as a reason for having sex. A variety of adaptations are made by families in response to living in a violent neighborhood; families that structure the environment of their teen may contribute to a delay in sexual debut.

CORRESPONDING AUTHOR: Alexandra A. Choby, PhD, Interdisciplinary Studies, University of Alberta, Edmonton, AB, T6G 1H7; choby@ualberta.ca

## **A-161b PRIMING EFFECT OF SEXUAL CONTENT ON CONDOM ATTITUDES**

Amy Starosta, MA, Mitch Earleywine, PhD and Sharon Danoff-Burg, PhD  
Clinical Psychology, SUNY Albany, Albany, NY.

Sexually transmitted infections (STIs) are a public health priority, and the proper use of condoms is one of the most effective ways to prevent the spread of STIs. Despite serious potential consequences of unprotected sexual intercourse, many young adults report that they often do not use condoms. Attitudes about condoms have been previously shown to predict condom use. One scale developed to assess attitudes about condoms is the Multidimensional Condom Attitudes Scale (MCAS). This scale was developed to assess multiple components of condom attitudes and has shown reliable differences between condom users and nonusers. Considering that condom attitudes are most relevant during sexual encounters, it is critical to understand the influence of sexual stimuli on condom attitudes. The present study examined if attitudes towards condoms in young adults, as measured by the MCAS, can be influenced by sexually arousing photographs. Participants were from introductory psychology classes at SUNY Albany and received class credit for their study participation. There were 217 participants included in the final analysis (83 men, 134 women, Mage = 18.88 years, age range: 18-40). Five participants self-identified as primarily homosexual, 210 identified as primarily heterosexual, and two declined to answer. Results showed that sexual photographs did not affect total or factor scores on the condom attitudes scale. As the priming effect may only be present in the first few items of the scale, further analyses examined the first ten items. When examining the first ten items, those participants who self-identified as not having used a condom during their last act of sexual intercourse showed significantly lower condom attitudes after viewing sexual photographs ( $p \leq .05$ ). These findings suggest that sexual stimuli can decrease positive attitudes toward condoms, especially in populations that reported previous condom non-use. These findings may help target existing interventions for the promotion of more responsible sexual behavior even in the presence of sexual stimuli.

CORRESPONDING AUTHOR: Amy Starosta, MA, Clinical Psychology, SUNY Albany, Albany, NY, 12222; as182232@albany.edu

## **A-161c EXPLORING THE HISTORY OF INCARCERATION AMONG BOTH MAIN AND NON-MAIN PARTNERS IN CONCURRENT SEXUAL RELATIONSHIPS**

Keri J. Griffin, MPH, MPA, Natalie G. De La Cruz, PhD and Diane M. Grimley, PhD  
Health Behavior, University of Alabama at Birmingham School of Public Health, Birmingham, AL.

Background: Previous research regarding risk factors for sexually transmitted infections (STIs) indicates that having a partner who has been incarcerated puts an individual at increased risk for STIs/HIV. Partner concurrency among women is an increasing trend that may further enhance their risk of becoming infected. When both the main sexual partner and at least one non-main partner have a history of incarceration, there may be an increased likelihood of contracting STIs among this group.

Objective: To examine the trend of main and non-main sexual partner past incarceration among a population of low SES, primarily African-American females recruited from urban public health clinics in the Southeast.

Methods: Women between the ages of 14 and 25 (N=308) were recruited from public health clinics in the Southeast. Study participants were assessed as part of a larger survey related to sexual risk behavior and the use of feminine hygiene products. Participants were assessed via the use of an ACASI, internet-delivered questionnaire.

Results: Among the study sample, 49% reported having a main sex partner who had ever been in jail; 35% reported having a main partner who had ever been on probation; 16% had a main partner who had been in juvenile detention; and 13% had a main partner who had served time in prison. Among those indicating concurrent sexual relationships, 44% of respondents' non-main sex partners had also been in jail; 32% had ever been on probation; 10% had ever been in juvenile detention; and 14% had ever spent time in prison.

CORRESPONDING AUTHOR: Keri J. Griffin, MPH, MPA, Health Behavior, University of Alabama at Birmingham School of Public Health, Birmingham, AL, 35294; keri@uab.edu

### **A-163a DYSFUNCTIONAL BELIEFS AND ATTITUDES TOWARD SLEEP AMONG BLACK MEN**

Abhishek Pandey, MD,<sup>1</sup> Jeriann Collymore, Bachelor's candidate,<sup>1</sup> Nur Afsar, Bachelor's candidate,<sup>1</sup> Shari Wallace, Bachelor's candidate,<sup>1</sup> Ferdinand Zizi, MBA,<sup>1</sup> Gbenga Ogedegbe, MD<sup>2</sup> and Girardin Jean-Louis, PhD<sup>1</sup>

<sup>1</sup>BHDC, SUNY Downstate Med. Ctr, Brooklyn, NY and <sup>2</sup>CHBC, Inter. Med., NYU Med. Ctr., New York, NY.

Background: Barbershops are an ideal location for health screening and wellness promotion among black men. The present study assessed associations of short sleep with dysfunctional beliefs and attitudes toward sleep among black men in the barbershop.

Method: Respondents were black customers (n=120; mean age=42±15 years) attending several barbershops in Brooklyn, NY. They provided sociodemographic data and estimated habitual sleep time. The Apnea Risk Evaluation System (ARES) was used to identify men at high OSA risk; this is recommended for populations with a large pretest probability for OSA. The Dysfunctional Beliefs and Attitudes about Sleep Scale (DBAS) was used to quantify strength of endorsed attitudes/beliefs toward sleep. DBAS is a Likert-type scale requiring men to circle a number from 0 (strongly disagree) to 10 (strongly agree); higher average score indicated more dysfunctional attitudes/beliefs about sleep.

Results: Of the sample, 25% reported hypertension, 11%, diabetes, and 3%, heart disease; 68% were overweight/obese. They also reported caffeine intake (22%) and alcohol consumption (29%). Estimated rates of sleep-related problems were: nap=36%, DIS=23%, DMS=24%, and sleep medicine=6.2%. Rate of short sleep (≤6h) was 57%; 34% were satisfied with their sleep. ARES data showed 29% were at high OSA risk (cut-off: >5). The mean DBAS score was 4.26±1.99; log-transformed values were used in ANCOVA, adjusting for effects of age, BMI, HTN, DM, mood, and sleep variables. Short sleepers did not have greater DBAS scores than average sleepers (7-8h) [F1,92=0.89, NS]. Rather, men at high OSA risk had greater DBAS scores [F1,92=13.68, p<0.001] and tended to report greater rate of sleep dissatisfaction [36% vs. 21%, X<sup>2</sup>=2.59, NS].

Conclusion: Findings suggest that ARES can be used to screen black men in a non-traditional setting, the barbershop. That black men at high risk for OSA have dysfunctional beliefs about sleep might explain low adherence rates to physician-recommended sleep assess-

ment in that population.

CORRESPONDING AUTHOR: Girardin Jean-Louis, PhD, SUNY Downstate Medical Center, Brooklyn, NY, 11203; gjean-louis@downstate.edu

### **A-174a MINDFULNESS AND TOBACCO DEPENDENCE: EXAMINING IMPLICIT COGNITION AS A MEDIATOR**

Aimee C. Ruscio, BS,<sup>1</sup> Andrew J. Waters, PhD,<sup>1</sup> Lorraine R. Reitzel, PhD,<sup>2</sup> Paul M. Cinciripini, PhD,<sup>3</sup> Yisheng Li, PhD,<sup>4</sup> Marianne T. Marcus, EdD, RN,<sup>5</sup> Jennifer I. Vidrine, PhD<sup>2</sup> and David W. Wetter, PhD MS<sup>2</sup>

<sup>1</sup>Medical and Clinical Psychology, Uniformed Services University of the Health Sciences, Bethesda, MD; <sup>2</sup>Department of Health Disparities Research, The University of Texas M. D. Anderson Cancer Center, Houston, TX; <sup>3</sup>Department of Behavioral Science, The University of Texas M. D. Anderson Cancer Center, Houston, TX; <sup>4</sup>Department of Biostatistics, The University of Texas M. D. Anderson Cancer Center, Houston, TX and <sup>5</sup>Center for Substance Abuse Prevention, Education and Research, School of Nursing, University of Texas Health Science Center, Houston, TX.

Theory suggests that mindfulness changes cognition. Specifically, mindfulness practice may result in a more detached perspective toward emotional or problematic stimuli. Empirical research has revealed that more mindful individuals report lower levels of tobacco dependence. Research also revealed a relationship between mindfulness and the depression Implicit Attitude Test (D-IAT) such that more mindful individuals exhibit less implicit depression. In this study, we examined: 1) the association between the D-IAT and dependence, and 2) whether the D-IAT mediated the association between mindfulness and dependence. We used data collected from a mindfulness-based smoking cessation trial (N=158). The Mindful Attention Awareness Scale (MAAS) and the D-IAT were administered at baseline and quit day. Tobacco dependence was assessed using the Wisconsin Inventory of Smoking Dependence Motives (WISDM) at baseline. Analyses revealed a correlation between the D-IAT and WISDM (r = .24, p < .005), such that individuals with higher D-IAT scores reported higher scores on the WISDM. Using Generalized Estimating Equations (GEE) the D-IAT approached significance as a partial mediator of the association between MAAS scores and WISDM scores (Sobel test=-1.77, p=.08). Greater mindfulness may reduce dependence by reducing implicit depression or alternatively, by fostering a detached perspective to emotional stimuli. Mindfulness likely impacts implicit processes underlying tobacco dependence not specifically targeted by current conventional clinical practice guidelines.

CORRESPONDING AUTHOR: Aimee C. Ruscio, BS, Medical and Clinical Psychology, Uniformed Services University of the Health Sciences, Washington, DC, 20016; aruscio@usuhs.mil

### **A-174b FACULTATIVE MELANIN AND TOBACCO USE FACTORS AMONG HOMELESS SMOKERS**

Guy-Lucien Whembolua, PhD, Kate Goldade, PhD, Hongfei Guo, PhD and Kolawole Okuyemi, MD, MPH  
Family Medicine and Community Health, University of Minnesota Medical School, Minneapolis, MN.

Melanin, the major determinant of skin pigmentation or color has been recently found to be associated with nicotine but factors influencing this association have yet to be fully explained. Homeless smokers due to their specific conditions are at risk of high exposure

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

to ultraviolet radiations which directly influences facultative melanin. Data were obtained from the baseline survey conducted as part of an ongoing smoking cessation clinical trial among 428 homeless smokers. Skin reflectance measures and saliva cotinine (a primary proximate metabolite of nicotine) were obtained from each participant. Information on demographic and smoking-related behavioral measures was collected at baseline. Spearman correlations and regressions were performed to assess the relationship between biomarkers and melanin levels. Respondents on average smoked 19.3 Cigarettes per day (CPD), had a mean FTND of 5.6, a cotinine concentration of 224.9 ng/ml, and a 3-hydroxycotinine of 76.4 ng/ml. The mean melanin readings were 56.7 and 63.1 for constitutive and facultative melanin respectively. Among homeless smokers residing in emergency shelters or transitional homes, facultative melanin level was found to be positively associated with cotinine concentration level ( $p < 0.05$ ) and marginally associated with 3-hydroxycotinine ( $p = 0.09$ ), a relationship moderated by homelessness type (sheltered versus all others) ( $p < 0.05$ ). The results of this analysis support the hypothesis of a positive association between facultative melanin levels and tobacco use among homeless smokers and highlight the role played by the type of homelessness. Further interventions for homeless smokers should address the unique vulnerabilities of this population.

CORRESPONDING AUTHOR: Guy-Lucien Whembolua, PhD, Family Medicine and Community Health, University of Minnesota Medical School, Minneapolis, MN, 55414; wgl@umn.edu

## A-174c MEASURING INDOOR AIR QUALITY TO ADVOCATE FOR SMOKE-FREE ORDINANCES

Ronald D. Williams, PhD, CHES,<sup>1</sup> Jeremy T. Barnes, PhD,<sup>2</sup> Stan Cowan, MPA<sup>3</sup> and Barry P. Hunt, EdD<sup>1</sup>

<sup>1</sup>Food Science, Nutrition, & Health Promotion, Mississippi State University, Mississippi State, MS; <sup>2</sup>Health, Human Performance, & Recreation, Southeast Missouri State University, Cape Girardeau, MO and <sup>3</sup>Campus-Community Alliances for Smoke-free Environments, Columbia, MO.

**PURPOSE:** Public policy efforts to mandate restrictions on smoking have remained controversial despite evidence that there is no safe level of secondhand smoke exposure. Although research indicates that smoke-free ordinances have led to the reduction of cardiovascular and respiratory diseases, many opponents still argue that exposure to secondhand smoke is not harmful. The purpose of this study was to compare indoor air quality within smoking and non-smoking facilities.

**METHODS:** A total of 14 facilities were sampled including two restaurants, seven restaurant/bar combinations, three bars, one bowling alley, and one bingo hall. Air quality was measured using a SIDEPAK AM510 Personal Aerosol Monitor which measures fine particulate matter pollution (PM<sub>2.5</sub>). Air quality risk was determined by the standards used in the U.S. Environmental Protection Agency's Air Quality Index.

**RESULTS:** Results indicated a significant difference in PM<sub>2.5</sub> levels between smoking facilities (142.2; "Unhealthy" EPA index) and smoke-free facilities (8.4; "Good" EPA index). This yields a risk 17 times greater in smoking facilities than in smoke-free facilities. Under these air quality conditions, a fulltime employee would be exposed to 250% the EPA's average annual daily limit for PM<sub>2.5</sub>. The increased PM<sub>2.5</sub> in smoking facilities was a result of an average of less than three cigarettes burning at one time. The ratio of burning cigarettes to

number of people in the facility was 7.3 representing less than half of the 19.0% smoking prevalence in the study area.

**CONCLUSIONS:** The results of this study indicate that air quality risk in smoking facilities is significantly higher than in smoke-free facilities. Community coalitions and public health agencies should seek to measure air quality to strengthen smoke-free advocacy efforts and better educate local policy makers.

CORRESPONDING AUTHOR: Ronald D. Williams, PhD, CHES, Food Science, Nutrition, & Health Promotion, Mississippi State University, Mississippi State, MS, 39762; rwilliams@fshnp.msstate.edu

## A-174d SEXUAL MINORITY-SPECIFIC TRAUMATIC EXPERIENCES ARE ASSOCIATED WITH INCREASED RISK FOR SMOKING AMONG HIV-INFECTED GAY AND BISEXUAL MEN

Conall O'Cleirigh, PhD,<sup>1,2</sup> Steven Elsesser, BA,<sup>1</sup> David W. Pantalone, PhD,<sup>1,3</sup> and Judith B. Bradford, PhD<sup>1</sup>

<sup>1</sup>The Fenway Institute, Boston, MA; <sup>2</sup>Harvard Medical School, Boston, MA and <sup>3</sup>Suffolk University, Boston, MA.

**Background.** Cigarette smoking is the leading cause of death and disability in the United States (U.S.), contributing to over 440,000 deaths each year. Multiple studies indicate that sexual minorities and people living with HIV have an increased risk for smoking. However, this vulnerability to smoking remains unexplained. In this study, we examine the hypothesis that sexual minority-specific stress may explain some increased risk for smoking among gay and bisexual men living with HIV. **Method.** Patients at a community health center catering to the needs of sexual minorities were invited to complete a brief (25-item) questionnaire assessing demographics, general health, trauma history including victimization based on sexual orientation, and substance use including smoking status. **Results.** Of 3103 respondents, 279 identified as male, gay or bisexual, and HIV-infected. The sample was predominantly Caucasian (79.6%) with a mean age of 42 (sd = 8.11). Additionally, 31% reported being current smokers and 65% reported one or more traumas (partner violence 25%, childhood sexual abuse 20.4%, anti-gay verbal attack 58.5%, and anti-gay physical attack 22.6%). Logistic regression analyses (adjusted for age, education, & race) revealed that men who endorsed more traumatic experiences were more likely to identify as smokers (OR = 1.53,  $p < .05$ , 95% CI: 1.03-2.25). Experiencing either an anti-gay verbal attack (OR = 1.75,  $p < .05$ , 95% CI: 1.01-3.04) or partner violence (OR = 1.92,  $p < .05$ , 95% CI: 1.09-3.38) were each associated with increased risk of smoking. **Conclusion.** The relationship between sexual minority-specific trauma and tobacco use suggests a vulnerability for smoking that may account, in part, for the observed smoking disparity among HIV-infected gay and bisexual men. Trauma history, and possibly posttraumatic stress reactions, may place gay and bisexual men with HIV at a disadvantage for adaptive disease management through the negative health consequences of smoking.

CORRESPONDING AUTHOR: Conall O'Cleirigh, PhD, The Fenway Institute, Boston, MA, 02215; cocleirigh@partners.org

## A-174e ASSOCIATIONS BETWEEN NICOTINE DEPENDENCE AND PTSD SYMPTOM CLUSTERS AMONG IRAQ WAR VETERANS RECRUITED FROM VA PRIMARY CARE CLINICS

Shannon M. McKenzie, BA,<sup>1</sup> Emily Kaier, BA,<sup>1</sup> Clare Campbell, BA,<sup>1</sup> Kyle Possemato, PhD,<sup>1,2</sup> Larry Lantinga, PhD,<sup>1,2</sup> Stephen Maisto, PhD<sup>1,2</sup> and Paige Ouimette, PhD<sup>1,2</sup>

<sup>1</sup>Center for Integrated Healthcare, Syracuse VA Medical Center,

Syracuse, NY and <sup>2</sup>Psychology, Syracuse University, Syracuse, NY.

Despite the continuous decline in smoking rates among the general population rates among individuals with post-traumatic stress disorder (PTSD) remain high (Fu et al., 2007). Existing literature shows that smokers with PTSD face unique challenges when quitting smoking, largely due to nicotine's short term alleviation of PTSD symptoms (Cook et al., 2009). Additionally during periods of nicotine deprivation, smokers with PTSD experience more severe nicotine withdrawal compared to smokers without PTSD (Feldner et al., 2008). However, little work has examined PTSD symptom clusters among those with and without nicotine dependence. This study examined the association between PTSD symptom clusters and nicotine dependence among Iraq War veterans enrolled in Veteran Affairs primary care. A total of 52 veterans with significant PTSD symptoms and hazardous alcohol use completed the Clinician-Administered PTSD Scale (CAPS; Blake et al., 1995), the Structured Clinical Interview for DSM-IV (SCID-I; Spitzer et al., 1994), and the Fagerstrom Test for Nicotine Dependence, a measure of physical dependence to nicotine severity (FTND; Heatherton et al., 1991). Those who met criteria for a SCID based diagnosis of current nicotine dependence reported lower hyperarousal symptom severity  $t(50) = 8.38, p < .01$ , but higher overall PTSD severity  $t(50) = 10.47, p < .01$ . Groups did not significantly differ on re-experiencing or numbing/avoidance symptom severity. Among participants who currently smoke ( $n=26$ ), regression analyses revealed that severity of nicotine dependence was found to uniquely predict re-experiencing symptom severity,  $\beta = .53, t(25) = 3.08, p < .01$ . As expected, those with nicotine dependence had greater overall PTSD symptoms; however smoking severity may have differential effects on separate PTSD symptom clusters. Future work should examine the significance of nicotine use on specific PTSD symptom clusters among veterans with PTSD.

CORRESPONDING AUTHOR: Shannon M. McKenzie, BA, Center for Integrated Healthcare, Syracuse VA Medical Center, Syracuse, NY, 13210; Shannon.McKenzie@va.gov

#### **A-174f PERSONAL AND CURRICULUM PREDICTORS OF TOBACCO DEPENDENCE COUNSELING PRACTICE AMONG US 3RD YEAR MEDICAL STUDENTS**

Rashelle Hayes, PhD,<sup>1</sup> Michael Adams, MD, FACP,<sup>2</sup> Pat F. Bass, MD,<sup>2</sup> Linda Churchill, MS,<sup>1</sup> Sean David, MD, DPhil,<sup>2</sup> Randy Fauver, BS,<sup>2</sup> Alan Geller, MPH, RN,<sup>2</sup> Robin Gross, MD,<sup>2</sup> Denise Jolicœur, MPH, CHES,<sup>1</sup> Frank Leone, MD,<sup>2</sup> Qin Liu, PhD,<sup>1</sup> Kola S. Okuyemi, MD, MPH,<sup>2</sup> Jonathan B. Waugh, PhD<sup>2</sup> and Judith K. Ockene, PhD, MED<sup>1</sup>

<sup>1</sup>Department of Medicine, University of Massachusetts Medical School, Worcester, MA and <sup>2</sup>MSQUIT Study Team Authors, Worcester, MA.

Background: Training opportunities in tobacco dependence counseling (e.g. 5As) during medical school could improve modest physician performance in tobacco counseling. Objective: The current study examined the association between 3rd year medical students' personal characteristics as well as medical school curricular variables with frequency of 5A practice when treating smokers. Methods: 3rd year medical students ( $N=1180, 51.6\%$  male,  $M$  age = 26.0 ( $SD = 2.8$ )) from 10 US medical schools completed surveys. Personal variables included demographics, attitudes, knowledge, and self-reported tobacco counseling skills. Medical school curricular variables included classroom instruction time, instruction methods (e.g. simulated patient encounters, etc.), frequency of observing preceptors

counsel smokers, frequency of preceptor instruction, student perception of preceptors as role models, and use of reminders in clinics. Analyses: Multivariable regression models with personal or medical school curricular variables explored associations. Results: Greater practice of the 5As is associated with intentions to practice 5As routinely ( $B=.505, p<.001$ ), greater self-reported skill level ( $B = .513, p<.001$ ), younger age ( $B = -.069, p<.05$ ), and career interests in primary care ( $B = .634, p<.005$ ). Curricular variables associated with greater practice of 5As include the use of more reminders in clinic ( $B=.275, p<.005$ ), use of a web-based course ( $B=.330, p<.05$ ), more one-on-one instruction ( $B = .116, p<.001$ ), and more observation of preceptors with smokers ( $B= .396, p<.001$ ). Conclusions: Continued emphasis on teaching tobacco control strategies during medical school, particularly around the clerkship, was associated with increased student tobacco counseling practices.

CORRESPONDING AUTHOR: Rashelle Hayes, PhD, Department of Medicine, University of Massachusetts Medical School, Worcester, MA, 01655; rashelle.hayes@umassmed.edu

#### **A-182a HURRICANE KATRINA-ASSOCIATED STRESS, TRAUMA, AND COPING PREDICT SUBJECTIVE HEALTH RATINGS IN SURVIVORS OVER 4 YEARS AFTER HURRICANE KATRINA**

Nataria T. Joseph, MA, CPhil and Hector Myers, PhD  
Psychology, UCLA, Los Angeles, CA.

Research has consistently shown that subjective health ratings predict mortality, and researchers have begun to postulate about the mechanisms that underlie this relationship (Jylhä, 2009). Given the demonstrated usefulness of subjective health rating as an indicator of health risk, it is important to identify factors that predict subjective health ratings in highly vulnerable populations, such as African-American Hurricane Katrina survivors. Using a sample of 215 African-American female and male individuals who lived in New Orleans at the time of Hurricane Katrina, we examined the effects of hurricane-related trauma, hurricane-related stress, and active coping behavior on subjective ratings of health status over 4 years after Hurricane Katrina. Approximately half (52.0%) of the participants reported good health and the rest reported excellent (26.3%), fair (18.4%), and poor or very poor health (3.3%). Using ordinal regression, we found that the model significantly improved prediction of subjective health ratings,  $2(9, N = 152) = 28.18, p < .01$ , and accounted for approximately 24% of the variance. Of the main effects and interactions included in the model, number of hurricane-related stressors and the interaction between number of hurricane-related traumas and active coping significantly predicted subjective health rating at the  $p < .05$  level. Specifically, those who experienced more hurricane-related stressors when Hurricane Katrina occurred tended to perceive that they were in poorer health over 4 years later. Additionally, those who experienced more hurricane-related traumas and engaged in less active coping perceived themselves as being in the poorest health. The validity of subjective health ratings was demonstrated through the association between subjective health ratings and actual number of important health events experienced. These results demonstrate that experiencing disasters like Hurricane Katrina may lead to long-term health difficulties, which has implications for intervention and policy.

CORRESPONDING AUTHOR: Nataria T. Joseph, MA, CPhil, UCLA, Los Angeles, CA, 90024; njoseph@ucla.edu

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

## A-190a

### **METHAMPHETAMINE RECOVERY: AVAILABILITY OF RECOVERY CAPITAL IN RURAL COMMUNITIES**

Anne M. Bowen, PhD and Glenna E. Hopper, DVM Nursing, U. Wyoming, Laramie, WY.

Drug treatment has typically been structured as an acute care model and short-term recovery. High relapse rates have led to a call for a reconceptualization of using a long-term wellness-centered model that focuses on long-term recovery. Recovery Capital provides a framework for identifying resources the people in recovery need in order to maintain long-term abstinence and includes social capital, physical capital, human capital, and cultural capital. When reintegrating into a rural community, the individual is rarely anonymous in terms of his/her drug use and legal problems, requiring the individual to overcome stigma in order to access positive capital. Little research has examined rural people's attitudes toward providing people in recovery with housing, jobs, and non-drug related social activities. We surveyed 720 (318 males) adults (18-91) living in rural and frontier areas of the Rocky Mountain west regarding their willingness to rent, hire and aid people in recovery and factors that might influence that willingness. Meth use was described as a "medium" (35%) to "very big" community problem by 35% and 49% of the sample, yet 54% reported knowing 'no one' in recovery. Men and women were similar and generally more positive about hiring than renting to people in recovery, with 52% being "somewhat" or "very willing" to rent and 76% to hire. Most respondents, except those who were 'very unwilling' to rent to or hire a person in recovery, reported being "more willing" if they knew the person was in outpatient treatment, had a partner and/or children, attended school, had family support, and was willing to provide drug test results. In terms of Social Capital, over 60% of the sample said "yes" or "maybe" to being willing to help with transportation, mentoring life skills, and providing free admission to community events and athletic centers. Overall, people reintegrating into rural communities may have greater access to positive cultural, social, and human capital than anticipated.

CORRESPONDING AUTHOR: Anne M. Bowen, PhD, Nursing, U. Wyoming, Laramie, WY, 82071; abowen@uwyo.edu

## A-190b

### **SELECTIVE ATTENTION TO HEALTH COMMUNICATIONS PREDICTS CHANGES IN BEHAVIORAL WILLINGNESS AND INTENTIONS**

Marc T. Kiviniemi, PhD,<sup>1</sup> April L. Seifert, PhD,<sup>2</sup> Carolyn R. Brown Kramer, PhD,<sup>3</sup> Frederick X. Glbbons, PhD<sup>4</sup> and Meg Gerrard, PhD<sup>5</sup>  
<sup>1</sup>University at Buffalo, Buffalo, NY; <sup>2</sup>unaffiliated, Minneapolis, MN; <sup>3</sup>Illinois Wesleyan University, Bloomington, IL; <sup>4</sup>Dartmouth College, Hanover, NH and <sup>5</sup>Dartmouth Medical School, Lebanon, NH.

Background: Public health media campaigns frequently target adolescents to provide information about the dangers of substance use. Evidence for message effectiveness is limited and in some cases they may actually have iatrogenic effects. This study examines how adolescents attend to information and images presented in substance use-related health communications and how attention influences subsequent substance use intentions and willingness. Method: Participants (N=128) completed baseline measures of behavioral intentions, willingness, and attitudes about use. One to three weeks later, participants completed a laboratory-based task in which they were presented with messages containing both drug use risk information and party-related imagery. Attention to each piece of information was measured. Intentions and willingness were reassessed after the message presentation. Results: Attitudes predicted selective atten-

tion to information;  $F(1, 127) = 3.96, p < .05$ . For party imagery, more positive attitudes were associated with decreasing attention; for drug information more positive attitudes were associated with increasing attention. Moreover, selective attention predicted changes in both intentions and willingness from baseline levels;  $R^2 \text{ CHANGE} = 0.125$  and  $0.047$ , respectively  $F \text{ CHANGE}(2, 115) = 50.66$  and  $3.52, ps < .05$ . As participants increased their attention to drug related information and as they decreased their attention to party information, intentions and willingness to use marijuana at the party increased. Discussion: These findings have important implications for our understanding of responses to public health messages about substance use and, potentially, for the design and implementation of messaging campaigns designed to prevent adolescent substance use. These findings may account for the null results or even iatrogenic effects observed in many tests of the efficacy of anti-drug messages.

CORRESPONDING AUTHOR: Marc T. Kiviniemi, PhD, Community Health and Health Behavior, University at Buffalo, Buffalo, NY, 14222; mtk8@buffalo.edu

## A-192a

### **PROBLEM SOLVING EDUCATION: A REPORT ON CHANGE IN SELF-EFFICACY IN CAREGIVERS (CGS) OF ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANT (HSCT) PATIENTS (PTS)**

Margaret Bevans, PhD,<sup>1</sup> Leslie Wehrlen, BSN,<sup>1</sup> Olena Prachenko, MA,<sup>1</sup> Karen Soeken, PhD,<sup>2</sup> Patricia Prince, MEd, LICSW,<sup>1</sup> Gwentyth Wallen, PhD<sup>1</sup> and James Zabora, ScD<sup>3</sup>

<sup>1</sup>NIH Clinical Center, Bethesda, MD; <sup>2</sup>Independent Statistical Consultant, Ellicott City, MD and <sup>3</sup>The Catholic University of America, Washington, DC.

Allogeneic HSCT generates complex problems placing PTs and their informal CGs at risk for significant distress. The purpose of this study was to determine the effect of Problem Solving Education (PSE) on self-efficacy and distress in HSCT CGs. Methods: Three PSE sessions (hospital discharge, <sup>1</sup> and <sup>3</sup> weeks post discharge) were provided to strengthen PT/CG(s) teams to manage HSCT related problems. Cancer Self-Efficacy (SE) scores were compared pre- and post-intervention using a paired t-test. Caregivers with a large positive (responders) or negative (non-responders) change in SE were compared on Brief Symptom Inventory-18 (distress), Multidimensional Fatigue Symptom Inventory-SF, Health Promoting Lifestyle Profile-II, demographic (CG) and clinical (PT) variables. Results: Adult (M=53.3+12.6 years) CGs (N=72) were predominantly female (67.5%) and spouses (44.2%) of HSCT PTs. Thirty-six (50%) were a member of a CG 'team' rather than sole CG. Self-efficacy scores did not differ ( $p=.16$ ) from pre- to post-intervention although higher post-intervention SE was associated with less distress. The difference in SE scores ranged from -80 to +39. Responders (n=31) as compared with non-responders (n=22) reported improvements in Interpersonal Relations ( $p=.046$ ), Spiritual Growth ( $p=.01$ ), Stress Management ( $p=.04$ ) and less fatigue ( $p<0.01$ ). HSCT PTs of responders had a shorter initial hospitalization (23.9 vs 33.7 days) and were more likely to be outpatient post-intervention (77% vs 50%). Conclusion: Findings indicate caregivers with improved SE report improved healthy behaviors, less fatigue and distress. However the variability in responses suggest PT factors such as acuity might increase CG distress and prevent benefit from educational interventions. Intervention timing and dose relative to PT factors should be considered in future studies. Funding: The Intramural Research Program of the NIH, Clinical Center.

CORRESPONDING AUTHOR: Margaret Bevans, PhD, NIH Clinical Center, Bethesda, MD, 20892; mbevans@cc.nih.gov

# **Rapid Communications Poster Session B**

Thursday, April 28, 2011

7:00 PM - 8:30 PM

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

## B-034a

### MEDICAL ONCOLOGISTS AND PRIMARY CARE PROVIDERS DISAGREE ABOUT PSYCHOSOCIAL FOLLOW-UP CARE FOR CANCER SURVIVORS

Laura Forsythe, PhD, MPH, Catherine Alfano, PhD, Julia Rowland, PhD and Corinne Leach, PhD, MPH  
OCS, NCI, Rockville, MD.

**Introduction:** A 2006 Institute of Medicine report identified addressing psychosocial needs and health promotion as vital components of cancer follow-up care, but little is known about the delivery of these aspects of survivorship care. This study examines physician beliefs about who is better able to provide psychosocial support to cancer survivors and physician self-reported practices for promoting healthy behavior (diet/physical activity, smoking cessation) with this population. **Methods:** The Survey of Physician Attitudes Regarding the Care of Cancer Survivors (SPARCCS) assessed physician attitudes and practices for follow-up care of breast and colon cancer survivors in 2009 using a nationally representative sample of medical oncologists (N=1130) and primary care physicians (PCPs, N=1021). **Results:** 8% of oncologists and 50% of PCPs agree that PCPs are better able than oncologists to provide psychosocial support for cancer survivors ( $p < .001$ ). There were also significant differences in reports of usual practice for counseling on diet/physical activity ( $p < .001$ ) and smoking cessation ( $p < .001$ ). 43% of oncologists report they provide counseling on diet/physical activity, 43% indicate they share this responsibility with PCPs, and 10% report that PCPs provide this service. Meanwhile, 54% of PCPs report they provide this service, 29% indicate they share this responsibility with oncologists, and 5% report that oncologists provide this care. A similar pattern of differences was observed for smoking cessation counseling. **Discussion:** PCPs and oncologists disagree about who is better able to provide psychosocial care to survivors. Health promotion counseling appears to be delivered by both providers and may indicate duplication of services. Other research shows that patients report unmet follow-up care needs and confusion about which provider should deliver this care. Together, these findings highlight the fragmented nature of existing survivorship care. Increased coordination among physicians may improve the continuity and quality of follow-up care.

**CORRESPONDING AUTHOR:** Laura Forsythe, PhD, MPH, Office of Cancer Survivorship, National Cancer Institute, Rockville, MD, 20892; laura.forsythe@nih.gov

## B-034b

### SUN PROTECTION PRACTICES AND SKIN SELF EXAMINATION AMONG MELANOMA SURVIVORS

Beth A. Glenn, PhD, Roshan Bastani, PhD, Cindy L. Chang, MS, Rachna Khanna, BS, BA and Katherine Chen, BS  
UCLA School of Public Health & Jonsson Comprehensive Cancer Center, Los Angeles, CA.

Among melanoma survivors, sun protection practices and skin self examinations may be particularly important to reduce future melanoma risk and aid in early detection of new or recurrent skin malignancies. However, relatively little research has examined secondary prevention behaviors in this group. Therefore, the purpose of this research was to study sun protection and skin self examination (SSE) habits and identify correlates of these behaviors among melanoma survivors. Data were collected as part of a study primarily aimed at assessing sun protection practices of children of melanoma survivors. Melanoma cases were identified through the LA County Cancer Surveillance Program, and cases with children (<18 yrs) were invited to

participate by mail or phone in a survey soliciting information about their sun protection practices, SSE, and potential correlates (e.g., demographics, family history, sun sensitivity, psychosocial factors) in addition to similar information about their children. Among the 65 respondents who completed the survey, mean age was 44, and most cases were diagnosed with early stage disease (90% stage 1 or 2) an average of 6 years prior to the survey. Survivors in our sample reported frequent use of certain sun protection behaviors (>85% reported "always/often" using sunscreen, shirts with sleeves, and sunglasses) with less adherence to other recommended behaviors (54% "always/often" use hats; 60% seek shade). Only 9% of participants reported performing SSE monthly, as recommended by professional organizations, while 38% indicated that they had examined their skin only once or not at all in the past year. Survivors who denied intentionally tanning, perceived social norms to be more supportive of sun protection, and reported more frequent SSE adhered to a higher level of sun protection than other survivors. No factors we examined predicted SSE in our sample. Results suggest that interventions to improve frequency of SSE and certain important sun protection practices in melanoma survivors may be warranted.

**CORRESPONDING AUTHOR:** Beth A. Glenn, PhD, UCLA School of Public Health, Los Angeles, CA, 90095; bglenn@ucla.edu

## B-034c

### PREDICTORS OF RISK REDUCING SURGICAL INTENTIONS AMONG PROBANDS AND UNAFFECTED RELATIVES PURSUING BRCA 1/2 GENETIC TESTING

A. G. Tong, BS,<sup>1</sup> P. Vegella, MA,<sup>1</sup> R. Nusbaum, MS, CGC,<sup>1</sup> K. Graves, PhD,<sup>1</sup> S. Kelly, MS,<sup>1</sup> T. DeMarco, MS,<sup>1</sup> B. Peshkin, MS, CGC,<sup>1</sup> H. Valdimarsdottir, PhD<sup>2</sup> and M. D. Schwartz, PhD<sup>1</sup>  
<sup>1</sup>Georgetown University, Washington, DC and <sup>2</sup>Mount Sinai School of Medicine, New York, NY.

The purpose of this study was to examine psychosocial predictors of intentions to undergo risk reducing mastectomy (RRM) or oophorectomy (RRO) among women seeking BRCA1/BRCA2 (BRCA1/2) genetic counseling. Participants (n=640) were self- or physician-referred women with a minimum 10% risk for carrying a BRCA1/2 mutation. Prior to genetic counseling, participants completed a baseline telephone assessment which collected information on demographics, perceived cancer risk, distress, decision conflict, and cancer genetic knowledge. Data analyses were split to look at RRM intentions and RRO intentions. Women with prior bilateral mastectomy (n=70) were deleted from RRM analyses. Within this sample of 570 women, 131 (23%) were considering RRM. In bivariate analyses, knowledge, cancer-related distress, breast cancer risk perceptions, objective risk for BRCA1/2 mutation, prior use of Tamoxifen, religion, and age were associated with RRM intentions. To identify independent predictors of RRM intentions, we included significant bivariate predictors in a backward logistic regression. In the final logistic model, higher cancer-related distress (OR=1.2, 95% CI=1.1-1.3), higher breast cancer risk perceptions (OR=1.1, 95% CI=1.0-1.2), and older age (OR=2.6, 95% CI=1.7-4.0) were associated with intentions for RRM. Among the 562 women with intact ovaries, 242 (43%) were considering RRO. In bivariate analyses, ovarian cancer risk perception, marital status, income and age were associated with intentions. All of these predictors were included in a backward logistic regression model. In the final model, higher ovarian cancer risk perception (OR=1.3, 95% CI=1.2-1.4), being married (OR=1.8, 95% CI=1.3-2.7), and younger age (OR=0.5, 95% CI=0.3-0.8) were independently associated with RRO intentions. These results highlight the important role

that psychosocial factors such as distress and perceived risk may play in decision making related to risk reducing surgery.

CORRESPONDING AUTHOR: A. G. Tong, BS, Georgetown University, Washington, DC, 20007; agt32@georgetown.edu

**B-034d**  
**PREDICTORS OF BRCA1/2 TESTING IN NEWLY DIAGNOSED BREAST CANCER PATIENTS**

L. E. King, BS,<sup>1</sup> P. Vegella, MA,<sup>1</sup> B. Peshkin, MS, CGC,<sup>1</sup> R. Nusbaum, MS, CGC,<sup>1</sup> K. G. Leventhal, BA,<sup>1</sup> S. Willey, MD, FACS,<sup>1</sup> S. Kelly, MS,<sup>1</sup> M. Pennanen, MD, FACS,<sup>1</sup> C. Cocilovo, MD,<sup>1</sup> R. Evangelista, MD,<sup>1</sup> J. Rowse, MS, CGC,<sup>2</sup> H. Valdimarsdottir, PhD,<sup>2</sup> C. Isaacs, MD<sup>1</sup> and M. D. Schwartz, PhD<sup>1</sup>

<sup>1</sup>Georgetown University, Washington, DC and <sup>2</sup>Mount Sinai School of Medicine, New York, NY.

Breast cancer patients who carry a BRCA1/2 mutation are at significantly increased risk for developing a second breast cancer. As a result, genetic testing for BRCA1/2 mutations can provide an important surgical decision making tool for women who have recently been diagnosed. The purpose of this study was to identify predictors associated with the receipt of BRCA1/2 testing at the time of initial diagnosis of breast cancer. Participants (n=112) were women within six weeks of a new breast cancer diagnosis who were at increased risk for carrying a BRCA1/2 mutation. Eligible women completed a baseline telephone interview assessing personal and familial cancer history, surgical history and intentions, distress, demographics, and perceived risk of developing a second primary breast cancer. Of the 112 women who completed the baseline interview, 51% (n=57) opted to receive BRCA1/2 testing and 49% (n=55) did not undergo testing. In bivariate analyses, variables associated with completing testing were: age less than 40, higher perceived risk for a second cancer, surgical recommendation for unilateral or bilateral mastectomy (compared to lumpectomy or no recommendation), Caucasian race/ethnicity, and not having reached a final treatment decision. To identify independent predictors of the receipt of testing, we conducted a backward logistic regression including all significant bivariate predictors. In the final model, independent predictors of the receipt of testing were: age less than 40 (OR=4.4, 95% CI=1.5-13.4), Caucasian race (OR=3.9, 95% CI=1.5-9.8). Having reached a final decision about breast cancer surgical treatment was associated with a decreased likelihood of undergoing testing (OR=0.20, 95% CI=0.08-0.50). These results may have important implications for health care providers in identifying women at high risk for BRCA1/2 gene mutations who are less likely to self-refer for genetic counseling and testing and may benefit from physician referral.

CORRESPONDING AUTHOR: L. E. King, BS, Georgetown University, Alexandria, VA, 22304; lk283@georgetown.edu

**B-034e**  
**FACTORS ASSOCIATED WITH PSYCHOLOGICAL DISTRESS AMONG AFRICAN AMERICAN WOMEN AT HIGH RISK FOR BRCA MUTATIONS**

Yael Cukier, BS,<sup>1</sup> Hayley S. Thompson, PhD,<sup>2</sup> Katarina Sussner, PhD,<sup>3</sup> Andrea Forman, MS,<sup>4</sup> Lina Jandorf, MA,<sup>3</sup> Tiffany Edwards, PhD<sup>3</sup> and Heiddis B. Valdimarsdottir, PhD<sup>3</sup>

<sup>1</sup>Ferkauf Graduate School of Psychology, Albert Einstein College of Medicine of Yeshiva University, Bronx, NY; <sup>2</sup>Epidemiology and Population Health, Albert Einstein College of Medicine of Yeshiva University, Bronx, NY; <sup>3</sup>Oncological Sciences, Mount Sinai School of Medicine, New York, NY and <sup>4</sup>Clinical Genetics, Fox Chase Cancer

Center, Philadelphia, PA.

Previous research suggests that psychological distress may be a barrier to participation in BRCA counseling and testing among African American (AA) women at high risk for a BRCA mutation, a group for whom breast cancer risk reduction is critical due to their high rates of breast cancer mortality. To our knowledge, no study has examined both cancer-specific as well as global distress in this group. Thus, the goal of the current study was to examine both types of distress among AA women at high risk for a BRCA mutation and to identify demographic characteristics associated with distress. Participants were 180 AA women (mean age = 45 years) who were part of a larger longitudinal study examining BRCA1/2 decision-making. All participants were considered to be at high risk for a BRCA mutation based on commonly used risk estimation models. Participants completed the Impact of Events Scale, which assessed breast cancer-specific distress (BCSD), the Center of Epidemiological Studies Depression scale, and the anxiety subscale of the Brief Symptom Inventory. Results of analyses using data obtained prior to any BRCA counseling or testing revealed that almost half of the sample (46.7%) achieved scores indicating high and clinically significant BCSD, while 32.8% and 14.4% had clinically significant depression and anxiety scores, respectively. Results of setwise multiple regression analyses further showed that having a personal history of breast cancer was the strongest independent predictor of BCSD and anxiety. These results underscore the need for targeted psychological support throughout the genetic risk assessment process for this particular high-risk group, especially among AA women with a breast cancer diagnosis.

CORRESPONDING AUTHOR: Hayley S. Thompson, PhD, Epidemiology and Population Health, Albert Einstein College of Medicine of Yeshiva University, Bronx, NY, 10467; hayley.thompson@einstein.yu.edu

**B-034f**  
**POSTTRAUMATIC GROWTH FOR BREAST CANCER: LONGITUDINAL FINDINGS FOR PERSONALITY, PERCEIVED STRESS, MOOD, AND COPING**

Valerie A. Bussell, PhD and Nirmeen Valiani, BA  
Houston Baptist University, Houston, TX.

Early findings are described for mailed survey data from breast cancer (BC) survivors five years after receiving chemotherapy (T3: N=21). Analyses found that posttraumatic growth (PTGI) five years after chemotherapy related to posttraumatic growth two years after chemotherapy (T2: N=24),  $r=.803$ ,  $p<.001$ . Posttraumatic growth at T2 also related with each of three original statements created for T3 to measure global perceptions of growth "now" compared to "before your BC diagnosis" on a 4 point likert-type scale: "I am different",  $r=.557$ ,  $p=.039$ ; "I am better",  $r=.779$ ,  $p=.001$ ; and "I am happier",  $r=.679$ ,  $p=.008$ . Posttraumatic growth five years after chemotherapy (T3) related with two perceptions: "I am better",  $r=.795$ ,  $p<.001$ ; and "I am happier",  $r=.793$ ,  $p<.001$ . Personality (BFI) was also measured for the first time at this time point (T3). Posttraumatic growth five years after chemotherapy negatively related to Neuroticism,  $r=-.463$ ,  $p=.035$ , and positively related to Conscientiousness,  $r=.427$ ,  $p=.054$ . Perceived stress (PSS) five years after chemotherapy (T3) negatively related to Extraversion,  $r=-.476$ ,  $p=.034$ . In addition to adding personality variables, the Time 3 survey was further designed to measure changes in mood (PNAS) when processing BC survey information five-years after treatment. As expected, there was a difference when comparing pre-survey positive affect (PA:  $M=28.90$ ) with post-survey PA ( $M=20.35$ ),  $t(19)=8.18$ ,

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

$p < .001$ . Pre-survey negative affect (NA:  $M = 12.30$ ) also differed from post-survey NA ( $M = 46.45$ ),  $t(19) = 10.31$ ,  $p < .001$ . Pre-survey PA negatively related to Neuroticism ( $p = .003$ ); pre-survey NA positively related to Neuroticism ( $p < .001$ ); and pre-survey NA negatively related to Conscientiousness ( $p = .004$ ). For coping (BCOPE), using positive reframing five years after chemotherapy (T3) positively related with posttraumatic growth two years after chemotherapy (T2),  $r = .582$ ,  $p = .029$  ( $N = 21$ ), and posttraumatic growth five years after chemotherapy (T3),  $r = .550$ ,  $p = .010$  ( $N = 21$ ). Additional findings, limitations, and implications are discussed.

CORRESPONDING AUTHOR: Valerie A. Bussell, PhD, Psychology Dept., HBU, Houston, TX, 77074-3298; vbussell@hbu.edu

## **B-034g** **SELF-REPORTED PHYSICAL SYMPTOMS AS PREDICTORS OF DEPRESSION IN HEAD AND NECK CANCER SURVIVORS**

Kristen A. Rasmussen, BA,<sup>1</sup> Allison Costenaro, MA,<sup>1</sup> Shannon Madore, BA,<sup>1</sup> Jeff Kendall, PsyD,<sup>2</sup> Jennifer Allen, BA,<sup>1</sup> David Raben, MD<sup>1</sup> and Kristin Kilbourn, PhD, MPH<sup>1</sup>  
<sup>1</sup>Psychology, University of Colorado Denver, Denver, CO and <sup>2</sup>St. Joseph's Cancer Center, Denver, CO.

Depression has been found to be common in Head and Neck Cancer Survivors (HNCS). Research suggests a strong relationship between depression and physical symptoms, however there is a lack of literature examining this relationship in HNCS. This study examines the relationship between commonly reported physical symptoms and self-reported depression (SRD) in HNCS. Data is taken from the HANDSS Study (Head and Neck Descriptive Survivorship Survey), a self-report survey examining risk factors and common physical, psychosocial and practical symptoms/concerns in HNCS returning for their 3 and 12-month post-treatment visit. This study will focus on results from the 3 month post-treatment visit ( $n = 81$ ). Multiple regression equations were used to determine which of the physical symptoms predicted SRD. The mean age of the participants is 58.2; 81% identify as white, and 78% are male. Over half (55%) of HNC survivors report some depression. Out of the 16 physical symptoms on the survey, HNCS report an average of 8.43 symptoms, the most common being fatigue (79%). Five of the six most commonly reported physical symptoms, fatigue ( $R = .47$ ,  $p < .01$ ), smell and taste problems ( $R = .354$ ,  $p < .01$ ), problems swallowing ( $R = .242$ ,  $p < .05$ ), sleep problems ( $R = .338$ ,  $p < .01$ ), and pain/numbness ( $R = .357$ ,  $p < .01$ ) significantly correlated with SRD. Of these five side effects, only fatigue significantly predicted SRD when controlling for the other physical symptoms ( $\beta = .23$ ,  $p < .05$ ). Depression is frequently reported among HNCS in the early course of survivorship. In this study, commonly reported physical symptoms were found to be strongly related to SRD, and fatigue was found to predict SRD above and beyond other physical symptoms. Determining the relationship between physical symptoms and depression is important for identification of HNCS who have a proclivity for developing depression as well as development of interventions to counteract this risk. Acknowledgement of Funding: National Institute of Cancer, R-21; CA115354-01

CORRESPONDING AUTHOR: Kristen A. Rasmussen, BA, Psychology, University of Colorado Denver, Denver, CO, 80205; Kristen.Rasmussen@email.ucdenver.edu

## **B-034h**

### **A SURVEY OF PHYSICAL ACTIVITY PROGRAMMING AND COUNSELING PREFERENCES IN YOUNG ADULT CANCER SURVIVORS**

Lisa J. Belanger, PhD candidate,<sup>1</sup> Ronald C. Plotnikoff, PhD,<sup>2,1</sup> Alexander Clark, PhD<sup>1</sup> and Kerry S. Courneya, PhD<sup>1</sup>  
<sup>1</sup>University of Alberta, Edmonton, AB, Canada and <sup>2</sup>University of Newcastle, Newcastle, New Zealand.

Background: Few research studies have focused on physical activity in young adult cancer survivors despite the potential long term health consequences of inactivity in this population. Objective: Understanding the unique physical activity programming and counseling preferences of young adult cancer survivors may inform future research and medical practice. Methods: Participants were 588 young adult cancer survivors (20-44 years) who completed a mailed survey in the province of Alberta, Canada that assessed physical activity preferences and standard demographic and medical variables. Results: The majority of young adult cancer survivors indicated that they were interested (78%) and able (88%) to participate in an activity program. Young adult cancer survivors also preferred receiving activity counseling from a fitness expert at the cancer centre (49.6%), information by brochure (64%), starting activity after treatment (64%), walking (51%), doing activity with others (49%), and doing activity at a community fitness center (46%). Chi-square analyses indicated that younger cancer survivors (20-29 versus 30-39 versus 40-44 years) were less likely to prefer walking ( $p < 0.001$ ), more interested in receiving information ( $p = 0.002$ ), and more likely to prefer receiving information by email ( $p = 0.044$ ) or internet ( $p = 0.006$ ). Conclusions: Young adult cancer survivors show interest in receiving physical activity counseling. There were some consistent programming preferences although other preferences varied by demographic and medical factors. Implications for Practice: Nurses and other health professionals may play a key role in promoting physical activity in young adult cancer survivors. Understanding the physical activity preferences of young adult cancer survivors may help health care professionals make practical recommendations and referrals.

CORRESPONDING AUTHOR: Lisa J. Belanger, PhD candidate, University of Alberta, Edmonton, AB, T6G 2H9; lisa.belanger@ualberta.ca

## **B-034i**

### **PREDICTORS OF MENTAL AND PHYSICAL HEALTH FUNCTIONING AMONG MEN TREATED FOR LOCALIZED PROSTATE CANCER**

Dean G. Cruess, PhD,<sup>1,2</sup> Michael H. Antoni, PhD,<sup>3,4</sup> Frank J. Penedo, PhD,<sup>3,4</sup> Catherine Benedict, PhD,<sup>3</sup> Ivan Molton, PhD,<sup>5</sup> David Kinsinger, PhD,<sup>6</sup> Bruce Kava, MD<sup>7</sup> and Mark Soloway, MD<sup>7</sup>

<sup>1</sup>Department of Psychology, University of Connecticut, Storrs, CT; <sup>2</sup>Department of Medicine, University of Connecticut Health Center, Farmington, CT; <sup>3</sup>Department of Psychology, University of Miami, Coral Gables, FL; <sup>4</sup>Sylvester Comprehensive Cancer Center and Department of Medicine, University of Miami School of Medicine, Miami, FL; <sup>5</sup>Department of Rehabilitation Medicine, University of Washington, Seattle, WA; <sup>6</sup>Psychology Service, Hines VA Hospital, Hines, IL and <sup>7</sup>Department of Urology, University of Miami School of Medicine, Miami, FL.

Background: Psychosocial factors can influence health-related quality of life (HRQoL) outcomes after cancer treatment. We examined the utility of a comprehensive psychosocial screening tool in predicting HRQoL among men treated for localized prostate cancer.

Methods: The Millon Behavioral Medicine Diagnostic (MBMD) was administered to 89 men (mean age 68 years, 59% Caucasian) treated by either radical prostatectomy or radiotherapy along with measures of general and prostate-specific quality of life across a 12-month study period. Multivariate linear regression was utilized to examine the associations under investigation.

Results: Higher scores on both summary MBMD Management Guides (Adjustment Difficulties and Psych Referral) significantly predicted numerous indicators of lower HRQoL ( $\beta$  range: -.22 to -.61) and reports of poorer urinary and sexual functioning ( $\beta$  range: -.22 to -.42) at follow-up. Higher scores on the MBMD Utilization Excess scale also consistently predicted poorer general and prostate-specific mental and physical health functioning over time ( $\beta$  range: -.21 to -.46).

Conclusions: Summary scores on the MBMD significantly predicted a number of general and prostate-specific indicators across a one-year follow-up. Those men with tendencies to over-utilize healthcare services also reported poorer HRQoL over time. These results point to the utility of the MBMD to help screen for potential HRQoL impairments in this population.

CORRESPONDING AUTHOR: Dean G. Cruess, PhD, Department of Psychology, University of Connecticut, Storrs, CT, 06269-1020; Dean.Cruess@uconn.edu

## **B-034j** **COGNITIVE PROCESSES, ACTIVATING EVENTS AND SPECIFIC EMOTIONS IN BREAST CANCER RADIOTHERAPY PATIENTS**

Madalina L. Sucala, MA,<sup>1,2</sup> Paul Greene, PhD,<sup>1</sup> Joel Erlich, PhD,<sup>1</sup> Julie Schnur, PhD,<sup>1</sup> Daniel David, PhD<sup>2,1</sup> and Guy H. Montgomery, PhD<sup>1</sup>

<sup>1</sup>Department of Oncological Sciences, Mount Sinai School of Medicine, New York, NY and <sup>2</sup>Department of Clinical Psychology and Psychotherapy, Babes-Bolyai University, Cluj, Romania.

Most of the cognitive behavioral interventions applied in health settings are focused on dysfunctional cognitive processes (e.g., catastrophizing), while ignoring the cognitive contents derived from activating events (e.g., physical discomfort) of these processes (e.g., catastrophizing about physical discomfort). This study investigated the interrelations among cognitive processes, cognitive contents derived from activating events and emotions in breast cancer patients undergoing radiotherapy. The data were collected during a randomized clinical trial investigating a 6 week psychotherapeutic intervention including cognitive behavioral therapy plus hypnosis for breast cancer women undergoing radiotherapy. Intervention group participants (n=34) completed 2 worksheets (describing activating events, thoughts and emotions) per week. The content of the worksheets was coded into 3 categories: cognitive processes, cognitive contents (coded from the activating events) and emotions. Coding was based on Rational-Emotive Behavior Theory. The cognitive processes most frequently exhibited were low frustration tolerance (82.3% of the patients), demandingness (79.4%), and catastrophizing (76.5%). The cognitive contents most frequently exhibited were comfort (88.2% of the patients) and fairness (67.6%). The most commonly experienced negative emotions were anxiety (73.5%) and anger (70.6%). Self-downing was a predictor for depression (OR=2.33, p<.01), while other-downing was a predictor for anger (OR=7.27, p<.00). A significant interaction was found between process and content such that catastrophizing (p<.01), low frustration tolerance (p<.01) and self-downing (p<.00) predicted anger only in the context of activating

events related to fairness. Cognitive processes may not function in the same way for different contents and knowing the elements of the content-process-emotion equation can be informative in tailoring short-term, effective interventions.

CORRESPONDING AUTHOR: Madalina L. Sucala, MA, Department of Oncological Sciences, Mount Sinai School of Medicine, New York, NY, 10029-6574; madalinasucala@psychology.ro

## **B-042a** **SOCIAL SUPPORT AND CARDIOVASCULAR STRESS RECOVERY: DOES A HELPING HAND HELP HIS HEART, TOO?**

Britta Larsen, MA, Nicholas Christenfeld, PhD and Ryan Darby, MA Psychology, UC San Diego, La Jolla, CA.

BACKGROUND: Social support has been shown to protect against cardiovascular disease and promote survival among those who suffer a cardiac incident. Despite these benefits, men use social support less than women. It is not clear whether this is due to a disinclination to seek it, or whether men do not experience the same immediate psychological and physiological benefits from support as women. It is also possible that men and women benefit from different types of support, such as emotional support vs. distraction. To examine these questions, participants underwent a stressful exercise, after which they received different types of support (or none). PROCEDURE: Participants (N = 231) underwent a stressful arithmetic task with harassment, after which they were randomly assigned to 1) ruminate on the math task alone, 2) be distracted alone, 3) discuss the math task with an emotionally supportive confederate, or 4) be distracted by a confederate. After a recovery period, subjects filled out affect measures. Blood pressure was monitored continuously using a cuff. RESULTS: For women, those in the social conditions showed the greatest amount of blood pressure recovery, regardless of their topic of conversation (p < .05). For men, the greatest recovery was seen in those receiving social support, while social distraction showed the worst recovery (p < .01). This was true regardless of the gender of the support-giver. For both men and women, those who received social support felt the least amount of anger at the end of the study, while those who ruminated felt the angriest (p < .01). CONCLUSIONS: The results suggest that men do receive similar immediate benefits from social support as women, both psychologically and physiologically, when support is given without having to ask for it. While distraction is a common coping strategy for males, this suggests that it is not as effective for men as emotional support in facilitating recovery from stress. Emphasizing greater social support use could thus be an important factor in behavioral health interventions for men with cardiovascular disease.

CORRESPONDING AUTHOR: Britta Larsen, MA, Psychology, UC San Diego, La Jolla, CA, 92093-0109; blarsen@ucsd.edu

## **B-042b** **LONGITUDINAL ANALYSIS OF ALZHEIMER CAREGIVING, LEISURE SATISFACTION, AND ENDOTHELIAL FUNCTION**

Elizabeth A. Chattillion, BA,<sup>1</sup> Brent T. Mausbach, PhD,<sup>2</sup> Susan K. Roepke, MS,<sup>1</sup> Michael G. Ziegler, MD,<sup>2</sup> Milos Milic, MD, PhD,<sup>2</sup> Roland von Känel, MD,<sup>2</sup> Joel E. Dimsdale, MD,<sup>2</sup> Paul J. Mills, PhD,<sup>2</sup> Matthew Allison, MD,<sup>2</sup> Thomas L. Patterson, PhD,<sup>2</sup> Sonia Ancoli-Israel, PhD<sup>2</sup> and Igor Grant, MD<sup>2</sup>

<sup>1</sup>SDSU/UCSD Joint Doctoral Program in Clinical Psychology, San Diego, CA and <sup>2</sup>University of California, San Diego, La Jolla, CA.

Background: The chronic stress of caring for a spouse with Al-

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

Alzheimer's disease has been associated with the development of atherosclerotic disease. A relevant example is the potential association between endothelial function and caregiving stress. Notably, evidence suggests that increased engagement in leisure activities may be associated with improved physical well-being, including improved blood pressure levels.

**Purpose:** To investigate the prospective association between years of caregiving, satisfaction from leisure activities, and endothelial function, as measured by postocclusive reactive hyperemia flow-mediated dilation (FMD).

**Methods:** 116 elderly caregivers (mean age 74.3 +/- 8.1) underwent annual in-home ultrasound assessment of brachial artery FMD. Reactive hyperemia was induced by 5 minutes of hypoxia created by complete upper arm occlusion. Endothelial function was quantified as the maximal postocclusion artery diameter expressed in cm and as percent change from the preocclusion baseline value. Leisure satisfaction was assessed using the Pleasant Events Schedule-AD. Most participants completed multiple assessments, yielding a total of 295 observations. Data were analyzed using multilevel modeling.

**Results & Conclusions:** Mean % FMD across all time points was 14.1 +/- 6.7. FMD decreased over time by 1.8% per year ( $p < .001$ ). FMD decreased an additional .37% for each additional year of caregiving at baseline assessment ( $p = .021$ ). There was no significant interaction between time and baseline years of caregiving. FMD increased .07% with every 1-point increase in leisure satisfaction score ( $p = .020$ ). Age at baseline, gender, body mass index, and years smoking were not significantly associated with FMD. These results suggest that caregivers display impaired endothelial functioning over time and satisfying leisure activities may have a protective effect on endothelial functioning.

**CORRESPONDING AUTHOR:** Elizabeth A. Chattillion, BA, UCSD Psychiatry, SDSU/UCSD Joint Doctoral Program in Clinical Psychology, La Jolla, CA, 92108; echattillion@gmail.com

## B-042c

### MEDICAL ADHERENCE IMMEDIATELY FOLLOWING CARDIAC EVENT PREDICTS LATER PATIENT EXPECTATIONS ABOUT SURVIVAL

Lisa Howell, PhD, Kristin Vickers Douglas, PhD, Julie Hathaway, MS, Ross Dierkhising, MS and Randy Thomas, MD  
Psychiatry and Psychology, Mayo Clinic, Rochester, MN.

Behavioral interventions delivered soon after a cardiac event should emphasize the modifiable cognitive and behavioral factors associated with later health behavior and attitudes for recovery. In this study we assessed potentially modifiable cognitive and behavioral factors following cardiac event to assist in prioritizing intervention components. Participants were 250 adults (71% male; mean age = 68 years) hospitalized following a cardiac event (e.g., myocardial infarction, coronary artery bypass graft surgery). Surveys were completed following hospital discharge and repeated 3 months later. Self-report measures assessed depressive symptoms, health distress, health behavior (physical activity and diet), behavior change variables (goal setting, relapse prevention), medical adherence, and a scale assessing patient expectations about recovered physical functioning, impact of medical treatment and survival. In univariate analysis, baseline depression, health distress, behavior change, and medical adherence were significantly associated with more positive expectations for recovery and survival at 3 month follow-up. Gender, age, diet, and exercise at baseline were not significantly associated

with later expectations for recovery and survival. In a multivariate regression model (Adj.  $R^2 = 0.43$ ), baseline expectations ( $p > .001$ ) and baseline adherence to medical recommendations ( $p > .01$ ) were significant predictors of expectations for recovery and survival at follow-up. Patient perception of their adherence to medical recommendation following cardiac event is a more potent predictor of later expectations for recovery and survival than depression, distress, specific health behavior (diet, exercise), or processes of behavior change (e.g., goal-setting). Adherence interventions should occur as soon as possible following cardiac event, and future research is required to differentiate the importance of perceived adherence versus actual adherence in predicting later expectations about recovery and survival.

**CORRESPONDING AUTHOR:** Lisa Howell, PhD, Psychiatry and Psychology, Mayo Clinic, Rochester, MN, 55901; howell.lisa@mayo.edu

## B-053a

### PREDICTORS OF NON-ADHERENCE TO SELF-MONITORING OF BLOOD GLUCOSE AMONG ADULTS WITH SERIOUS MENTAL ILLNESS AND TYPE 2 DIABETES

Thomas L. Wykes, BA and Christine L. McKibbin, PhD  
Psychology, University of Wyoming, Laramie, WY.

People with serious mental illness (SMI) are twice as likely as the general population to have type 2 diabetes. Management of diabetes requires a complex self-care regimen, typically including self-monitoring of blood glucose (SMBG). Studies have shown that SMBG is associated with improved long-term blood sugar control, and therefore reduced risk for complications. Studies have identified several predictors non-adherence to SMBG among the general population. However, little work has been done regarding SMBG adherence in the SMI population. The purpose of this retrospective study was to explore predictors of non-adherence to SMBG among patients with SMI.

A total of 79 subjects (mean age 52.8,  $SD = 9.0$ ) were selected from the baseline data of a diabetes self-management program. All subjects had type 2 diabetes and provider recommendation to perform SMBG. A majority of patients were Caucasian (66%), male (51%), had a diagnosis of schizophrenia (65%; 18% schizoaffective, 18% bipolar), and were not prescribed insulin (70%). We analyzed diabetes and mental illness characteristics, including: diabetes duration, mental illness duration, psychiatric diagnosis (schizophrenia vs. other), insulin status, cognitive functioning, psychotic symptom severity, and depression symptom severity. Non-adherence was defined as no SMBG over the last seven days ( $n = 19$  non-monitoring,  $n = 60$  monitoring).

Bivariate analyses indicated that those who did not monitor were more likely to have schizophrenia diagnosis, more severe negative symptoms, lower memory scores, and less likely to be prescribed insulin. These variables were entered into a stepwise multiple logistic regression that yielded a three-predictor model: schizophrenia diagnosis ( $OR = 5.38$ ,  $p = .04$ ), insulin status ( $OR = 1.05$ ,  $p < .01$ ), and memory functioning ( $OR = 10.64$ ,  $p = .02$ ).

Our results indicate that key illness characteristics may be useful in predicting non-adherence to SMBG among people with SMI.

**CORRESPONDING AUTHOR:** Thomas L. Wykes, BA, Psychology, 3415, University of Wyoming, Laramie, WY, 82071; twykes@uwyo.edu

### **B-053b HYPOGLYCEMIA EXPERIENCE AND BARRIER ASSOCIATIONS WITH PHYSICAL ACTIVITY IN TYPE 1 DIABETES**

Joe Carhart, MEd, Barbara Stetson, PhD and SriPrakash Mokshagundam, MD  
University of Louisville, Louisville, KY.

In community and Type (T) 2 diabetes (DM) samples, perceived benefits and barriers (ExBen/Bar) to physical activity (PAct) are associated with initiation and maintenance. However, PAct experiences, particularly hypoglycemia (Hypo), may differ in T1DM. This study examined T1DMs History (Hx) of Hypo and Hypo cognitions and associations with PAct relative to a community validated ExBen/Bar measure. Subjects [Ss; 65 adults with T1 DM, M age=41.18, SD=14.99; 51% male; M HbA1=8.33 (SD=2.16)] completed surveys (DM and Hypo Hx, ExBen/Bar Scale) while waiting for appointments. Structured phone interviews assessed PAct [BRFSS, Stanford Usual Activity Q (SUAQ)]. Most Ss had low-moderate PAct levels; 17% reported PAct avoidance due to Hypo risks. Moderate Hypo was common- 37% reported >3 episodes in the past 6 mos. 30% of Ss reported that PAct sensations were unpleasant/reminded them of Hypo and reported difficulty distinguishing between PAct sensations and Hypo. Only 30% of Ss reported receiving specific PAct directions from their provider; 43% recalled receiving general instructions to get PAct, 14% reported no PAct instructions. ExBen/Bar scores did not differ by Hypo frequency. Ss with > frequent Hypo had less vigorous PAct (p=.08). Hierarchical regression examined association of general Ex ben/bar with PAct level and the utility of adding additional items that specifically address Hypo cognitions. Global Exben score showed no association with moderate or vigorous PAct. Exbar score was associated with SUAQ moderate PAct (R2=.087, F=3.99, df 1,42 p=.052). Entry of a 2nd block with the item "disliking sensations of PAct" yielded no significant R2 change. Entry of a 2nd block item "difficulty distinguishing sensations of PAct from low BG" significantly increased R2 for both SUAQ vigorous and moderate activity and approached significance for BRFSS score. Findings highlight ModHypo and related cognitions in T1DM and associations with PAct. Limited health provider instruction regarding T1DM PAct is also notable. Consideration of these specific barriers may improve efforts to promote regular PAct in T1DM.

CORRESPONDING AUTHOR: Barbara Stetson, PhD, University of Louisville, Louisville, KY, 40292; barbara.stetson@louisville.edu

### **B-053c INCREASING ACCESS TO MENTAL HEALTH CARE THROUGH BRIEF PRIMARY CARE-BASED PSYCHOEDUCATION FOR VETERANS NEWLY DIAGNOSED WITH DIABETES**

Sarah Wahl, PhD, Peter Brawer, PhD, Ann Brugh, MA, Patrick Lustman, PhD and Stephanie Ryan, NP  
Saint Louis Veterans Affairs Medical Center, Saint Louis, MO.

Diabetes is the sixth leading cause of death, affecting more than 23 million Americans and costing over 174 billion dollars annually. The prevalence of diabetes is especially high in the veteran population, affecting 1 in 5 veterans and accounting for 25% of VA pharmacy costs. Research also suggests that diabetes-related healthcare costs increase for individuals with co-morbid mental health disorders. In an effort to integrate mental and physical health care, the St. Louis VAMC developed an interdisciplinary (i.e. nursing, nutrition, endocrinology and mental health) education program for veterans

newly diagnosed with diabetes. The mental health component of the education program involved a one-time psychoeducation class that was scheduled to coincide with diabetes nutrition and foot-care classes. This class incorporated motivational interviewing and cognitive behavioral techniques with an emphasis on practical strategies for daily diabetes management. The current retrospective quality improvement project examined the prevalence of mental health treatment for veterans who attended the class, predicting that the program would increase access to mental health care by offering a seamless integration of services in the medical center while reducing stigma associated with mental health treatment. A total of 114 veterans (93% male; 54% Caucasian) attended this one-time class during a pre-selected two-month interval. In the 12 months prior to this class, 32% (n=37) of veterans had at least one mental health visit. Our most significant finding revealed that 6.5% of veterans with no prior mental health treatment sought mental health treatment within four months after the class, suggesting the effectiveness of a one-time class in improving access to mental health treatment for this at-risk population. These penetration rates suggest that a brief, labor and cost-effective intervention can increase the likelihood of individuals with diabetes seeking mental health treatment.

CORRESPONDING AUTHOR: Sarah Wahl, PhD, Primary Care Mental Health Integration, St. Louis VA Medical Center, St. Louis, MO, 63106; Sarah.Wahl@va.gov

### **B-053d DEPRESSIVE SYMPTOMS, ANTIDEPRESSANT USE AND DIABETES IN A LARGE MULTIETHNIC NATIONAL SAMPLE OF POSTMENOPAUSAL WOMEN**

Yunsheng Ma, MD, PhD,<sup>1</sup> Raji Balasubramanian, PhD,<sup>2</sup> Kristin Schneider, PhD,<sup>1</sup> Annie Culver, BPharm, RPH,<sup>1</sup> Barbara Olendzki, RD, MPH,<sup>1</sup> Monika Safford, PhD,<sup>3</sup> Deidre Sepavich, MS,<sup>1</sup> James Hébert, ScD,<sup>5</sup> Milagros Rosal, PhD,<sup>1</sup> Judith Ockene, PhD,<sup>1</sup> Lesley Tinker, PhD,<sup>4</sup> Mercedes Carnethon, PhD,<sup>6</sup> Simin Liu, MD, PhD,<sup>7</sup> Martha Zorn, MS<sup>2</sup> and Sherry Pagoto, PhD<sup>1</sup>

<sup>1</sup>University of Massachusetts Medical School, Worcester, MA; <sup>2</sup>UMass, Amherst, MA; <sup>3</sup>University of Alabama at Birmingham School of Medicine, Birmingham, AL; <sup>4</sup>Fred Hutchinson Cancer Research Center, Seattle, WA; <sup>5</sup>University of South Carolina, Columbia, SC; <sup>6</sup>Northwestern University, Chicago, IL and <sup>7</sup>University of California, Los Angeles, CA.

Objective: Using data from the Women's Health Initiative (WHI), we examined depressive symptoms, antidepressant use, and their combined effects on risk of new onset self-reported diabetes. Methods: The WHI recruited healthy postmenopausal women (N=161,808) who were 50-79 years old at 40 clinical centers across the U.S from 1993-1998. Data on depressive symptoms, antidepressant medication use, and new diabetes diagnoses were collected over an average of 7.6 years from enrollment. Cox proportional hazards models were used to estimate the risk of diabetes. Results: At baseline, as measured by the Center for Epidemiological Studies Depression Scale-short form, 15.8% of women reported depressive symptoms at levels above which the diagnosis of clinical depression is highly probable, and 8.4% reported taking antidepressant medication. Depressive symptoms at baseline were significantly related to diabetes risk (hazard ratio=1.37, 95% CI: 1.30-1.44). Antidepressant use at baseline also was significantly related to diabetes risk (hazard ratio=1.23, 95% CI: 1.14-1.32). However, the interaction of depressive symptoms and antidepressant use on diabetes risk was not significant. Analyses evaluating the association of self-reported diabe-

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

tes with longitudinal measures of depressive symptoms and antidepressant use based on a subset of 60,048 women resulted in similar findings. Conclusions: Both depressive symptoms and antidepressant medication use were independently associated with an increased risk of diabetes in postmenopausal women; however, the combination of depressive symptom and antidepressant medication use did neither add appreciably to nor did it decrease diabetes risk.

CORRESPONDING AUTHOR: Yunsheng Ma, MD, PhD, Medicine, UMass Medical School, Worcester, MA, 01655; Yunsheng.Ma@umassmed.edu

## **B-065a** **RURAL DRUG USERS' HIV RISK BEHAVIOR AND COMMUNITY CORRECTIONS INVOLVEMENT: IS THERE AN ASSOCIATION?**

Carl G. Leukefeld, PhD,<sup>2</sup> April M. Young, MPH,<sup>1</sup> Adam Jonas, MA,<sup>2</sup> Robert Seaver, MS<sup>2</sup> and Jennifer R. Havens, PhD<sup>2</sup>

<sup>1</sup>Department of Behavioral Sciences and Health Education, Emory University, Atlanta, GA and <sup>2</sup>Department of Behavioral Science, University of Kentucky College of Medicine, Lexington, KY.

Numerous studies have found that illicit drug users involved in the criminal justice system are more likely to engage in HIV risk behavior and to be HIV infected. However, little is known about HIV risk behavior among active rural drug users involved in community corrections (CC) (e.g. on probation, parole, pretrial release, or diverted from prison). The purpose of this study is to examine the association between CC involvement and HIV risk behavior among rural drug users. The sample (n=400) of active drug users were recruited from rural Appalachia who were involved in a longitudinal HIV risk study. Participants were eligible if they were age 18 or older and had used either prescription opioids, heroin, cocaine or methamphetamine to get high in the past 30 days. Data on demographics, drug use, HIV risk behavior, and CC involvement were collected through an interviewer-administered questionnaire. Participants were white (93.8%) and male (58.8%), and had a mean age of 32.8. Risk behavior was prevalent; 77% reported injection drug use (IDU), and 45.8% tested positive for HCV. One-fifth (22.9%) were currently involved in CC. However, only one HIV risk behavior emerged: CC involved participants were significantly more likely to have initiated someone into injection drug use (IDU) (p=0.003). There were no significant differences in other HIV risk behaviors, including IDU, syringe and other injection equipment sharing, number of sexual partners, and unprotected sex with IDUs and/or while trading sex. Among these rural Appalachian active drug users, the proportion of participants engaging in HIV risk behavior is high, but shows little association with CC involvement. In turn, CC-involved rural drug users do not appear to differ behaviorally from other rural drug users and should receive equity without stigma to participate in the limited community drug treatment programs and HIV services, which may not be a current reality.

CORRESPONDING AUTHOR: April M. Young, MPH, Department of Behavioral Sciences and Health Education, Emory University, Atlanta, GA, 30322; apyoung@gmail.com

## **B-065b** **THE RELATIONSHIP OF PARENT-CHILD COMMUNICATION ABOUT SEXUAL HEALTH TO SEXUAL RISK TAKING AMONG AFRICAN AMERICAN ADOLESCENTS**

Janan Wyatt, BA (in progress),<sup>1</sup> Peter Venable, PhD,<sup>1</sup> Katherine E. Bonafide, MS,<sup>1</sup> Jessie D. Heath, MS,<sup>1</sup> Michael P. Carey, PhD,<sup>1</sup> Jennifer L. Brown, PhD<sup>2</sup> and Rebecca A. Bostwick, MPA<sup>1</sup>

<sup>1</sup>Center for Health and Behavior, Syracuse University, Syracuse, NY and <sup>2</sup>Department of Behavioral Sciences and Health Education, Emory University, Atlanta, GA.

Clarifying the influence of parental communication on sexual risk behavior can help to inform the development of interventions to reduce HIV risk among adolescents. The aim of this study was to characterize the relationship of parent-child communication about HIV/STIs to sexual initiation and condom use in a sample of African American adolescents. Participants recruited for a health promotion study (N = 298, M age = 14.2, 62% female) completed a computer-administered survey that included items assessing the frequency of parent-child communication regarding sexual health, along with measures of demographics, lifetime sexual behavior, and condom use during last intercourse. Parent-child communication about HIV, STIs, and safer sex was reported by 41% of participants. Parent-child communication about sexual health was most common among older youth (p < .0001), but did not vary by gender or other demographic factors. Sexually active youth reported more frequent parent-child communication about sexual health relative to youth who were not yet sexually active (p < .0001). Among those who were sexually active, condom use at last intercourse was associated with higher levels of parent-child communication about sexual health (p < .005). Findings suggest that parent-child communication becomes more frequent as adolescents age towards becoming sexually active and appears to have a positive effect on adolescent condom use. Findings lend support for the development of family-based interventions to reduce HIV/STI risk among African American Adolescents.

CORRESPONDING AUTHOR: Peter Venable, PhD, Psychology, Syracuse University, Syracuse, NY, 13244; pvenable@syr.edu

## **B-065c** **INFLUENCE OF PERCEIVED STRESS, HIV STIGMA, AND SEXUAL MINORITY STIGMA ON ATTITUDES TOWARD HEALTHCARE IN HIV+ MSM**

Julia Seay, BA, Michael H. Antoni, PhD, Gail Ironson, PhD, Ron Duran, PhD and Neil Schneiderman, PhD  
Psychology, University of Miami, Coral Gables, FL.

Background: Previous research has linked stress and forms of social adversity such as HIV stigma to poor health-related outcomes in HIV+ individuals. While the effects of HIV stigma have been previously examined, the effects of sexual minority stigma on health-related outcomes in HIV+ Men who have Sex with Men (MSM) have been less studied. The current study examines the relationship between HIV stigma, sexual minority stigma, perceived stress, and attitudes toward healthcare in HIV+ MSM.

Methods: Study participants were 113 HIV+ MSM ages 20-62 (Mean age= 42.2, SD= 8.7). The sample was ethnically diverse (21% African-American, 52% Caucasian, 20% Hispanic, 7% other ethnicities). Participants completed the Perceived Stress Scale (PSS) as well as factor-analytically derived measures of HIV stigma ( $\alpha$  = .81) and sexual minority stigma (SM stigma,  $\alpha$  = .81). Participants also completed the Attitudes Toward Healthcare (ATHC) scale, which assessed

perceived quality of relationship with HIV healthcare provider as well as attitudes toward anti-retroviral therapy.

Results: Hierarchical regression analyses were conducted to examine whether HIV stigma, SM stigma, and perceived stress were associated with ATHC. After controlling for ethnicity, income, education, and viral load, higher perceived stress was associated with poorer ATHC ( $\beta = .258, p = .013$ ). When SM stigma was added to the model, higher SM stigma was associated with poorer ATHC ( $\beta = -.244, p = .038$ ) and the association between stress and ATHC became non-significant. HIV stigma was not associated with ATHC ( $\beta = -.023, p = .827$ ).

Conclusion: While HIV stigma has been found to influence a variety of health-related outcomes, sexual minority stigma may also play a key role in health-related processes such as interactions with health care providers and perceptions of HIV treatment in HIV+ MSM. More research is needed to understand the influence of stress and stigma on health-related outcomes in HIV+ MSM.

CORRESPONDING AUTHOR: Julia Seay, BA, Psychology, University of Miami, Coral Gables, FL, 33146; jseay@psy.miami.edu

**B-073a**  
**AVOIDANCE, AROUSAL AND COMORBID DEPRESSION IN OIF/OEF AND NON-OIF/OEF VETERANS: DEVELOPING A PRIMARY CARE-MENTAL HEALTH TREATMENT FOR PARTIAL PTSD**

Sara L. Kornfield, PhD,<sup>1,2</sup> Johanna Klaus, PhD,<sup>1,2</sup> Caroline McKay, PhD,<sup>1,2</sup> Amy Helstrom, PhD<sup>1,2</sup> and David Oslin, MD<sup>1,2</sup>  
<sup>1</sup>MIRECC, Philadelphia VAMC, Philadelphia, PA and <sup>2</sup>Department of Psychiatry, University of Pennsylvania, Philadelphia, PA.

Primary care-mental health integration (PCMH-I) models have developed effective evidence-based protocols for the treatment of mild to moderate depression, anxiety, and substance abuse, however no comparable approach has been identified for the treatment of PTSD symptoms in primary care. We investigated PTSD symptoms and depressive disorders endorsed by OIF/OEF and non-OIF/OEF Veterans meeting less than full PTSD criteria in order to inform the development of a novel primary care-based treatment for partial PTSD. Differences in symptom cluster endorsement by conflict era were explored given the rise in recently returning Veterans from the Middle East conflicts. Partial PTSD, defined as meeting DSM-IV criterion A with a PCL > 40 and no severe comorbid psychiatric problems, was diagnosed among 141 Veterans assessed by the Philadelphia VA Behavioral Health Lab (BHL) over an 8 month period. OIF/OEF veterans made up 34.7% (n=49) of the sample. Chi square analysis revealed significant differences in the frequency of avoidance and arousal reported by each group. Avoidance was reported significantly more frequently in the non-OIF/OEF group (36% vs. 14%;  $\Phi = .228, p < .01$ ), while arousal was reported more frequently in the OIF/OEF group (90% vs. 75%;  $\Phi = .177, p < .05$ ). Overall comorbidity of partial PTSD and depression was found among 43.9% of the total group with no significant differences between groups. Current evidence-based treatments for full PTSD target avoidance symptoms, however given that endorsement of avoidance symptoms was low in both of our groups, this may not be the most effective treatment target for Veterans with partial PTSD. For these Veterans, treatments that target re-experiencing and arousal symptoms and/or comorbid depression may be more effective. This information will be used to inform the development of a novel primary care treatment for partial PTSD.

CORRESPONDING AUTHOR: Sara L. Kornfield, PhD, Behavioral Health, Philadelphia VA Medical Center, Philadelphia, PA, 19146; sara.kornfield@gmail.com

**B-073b**  
**A CROSS-CULTURAL STUDY OF INCIDENCE OF SELF-REPORTED SYMPTOMS OF EATING DISORDERS: A COMPARISON OF U.S. AND CYPRIOT SAMPLES**

Georgia Frangou, MS Candidate,<sup>1</sup> Eleni Karayianni, PsyD<sup>2</sup> and Janet Smith, PhD<sup>1</sup>

<sup>1</sup>Psychology and Counseling, Pittsburg State University, Pittsburg, KS and <sup>2</sup>Psychology, University of Cyprus, Nicosia, Cyprus.

There is a considerable body of research investigating the impact of culture on the development of eating disorders. However, cross-cultural studies have found conflicting results regarding the role of culture in the etiology of eating disorders. The present study examined the differences in self-reported behaviors and values commonly associated with eating disorders in a sample of college students from two different countries. One hundred and thirteen students from a Midwestern U.S. University and 94 students from a Cypriot University completed the Eating Disorder Examination - Questionnaire (EDE-Q: Fairburn & Beglin, 1993). Participants rated frequencies of occurrence of behaviors and attitudes towards weight and body shape during the preceding 28 days. As hypothesized, the U.S. sample reported significantly higher rates of these behaviors and attitudes as compared to the Cypriot sample. Specifically, the U.S. sample showed higher mean scores on the EDE-Q Global scale, the Weight Concern scale, the Shape Concern Scale, and the Restraint scale. In addition, the U.S. sample reported higher frequencies of consumption of large amounts of food as well as excessive exercise. The results provide support for the view that culture may contribute to the etiology of eating disorders. Results from the study are discussed in terms of the impact of culture on the development of behaviors associated with eating disorders.

CORRESPONDING AUTHOR: Janet Smith, PhD, Psychology and Counseling, Pittsburg State University, Pittsburg, KS, 66762; jsmith@pittstate.edu

**B-073c**  
**UNDERSTANDING THE PHENOTYPIC STRUCTURE OF ADHD IN A US POPULATION BASED SAMPLE**

Bernard F. Fuemmeler, PhD,<sup>1</sup> Krista W. Ranby, PhD,<sup>1</sup> Marcella H. Boynton, PhD,<sup>1</sup> Marissa Stroo, BS,<sup>1</sup> Scott H. Kollins, PhD,<sup>1</sup> F. Joseph McClernon, PhD<sup>1,2</sup> and Chongming Yang, PhD<sup>1</sup>

<sup>1</sup>Duke University, Durham, NC and <sup>2</sup>Durham Veterans Affairs Medical Center and VISN 6 Mental Illness Research, Education, and Clinical Center, Veterans Administration, Durham, NC.

Attention-Deficit/Hyperactivity Disorder (ADHD) is a highly heterogeneous disorder and the phenotypic structure comprising of inattention and hyperactive-impulsive type symptoms has been the focus of a growing body of recent research. Methodological studies are needed to better characterize these phenotypes in order to advance etiologic research as well as clinical practice. The study population included participants (n=14,307) from a large US population-based sample. Factor analysis, latent class analysis, and factor mixture modeling approaches were compared in order to determine which underlying structure best fit data on ADHD symptoms. Overall fit statistics (e.g., AIC, BIC, adj-BIC, Lo-Mendell-Rubin test) as well as substantive criteria were used to compare models within and across model subtypes. Results support a 2-factor, 2-class structure for both

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

males and females with the 2 continuous latent factors representing inattentive and hyperactive-impulsive symptom dimensions. The 2 latent classes divided people into a smaller affected class and a larger unaffected class. Individuals who reported having been diagnosed with ADHD were more likely to be in the affected class (OR males = 4.03, 95% CI, 2.65-6.13; OR females = 5.65, 95% CI, 3.15-10.10). This work aids in the understanding of ADHD symptomatology within the population showing that a majority of people experience very low symptom severity and a minority of people experience high symptom severity. Within this high symptom group, however, variability in symptom severity exists. Dimension reduction strategies, such as these, can be helpful in clarifying ADHD phenotype structures which has the potential to advance research on the etiology and consequences of ADHD symptoms.

CORRESPONDING AUTHOR: Marissa Stroo, BS, Community and Family Medicine, Duke University, Durham, NC, 27710; marissa.stroo@duke.edu

## **B-073d** **ASSOCIATIONS BETWEEN MENTAL HEALTH SYMPTOMS AND QUALITY OF LIFE AMONG IRAQ WAR VETERANS RECRUITED FROM VA PRIMARY CARE CLINICS**

Emily Kaier, BA,<sup>1</sup> Clare Campbell, BA,<sup>1</sup> Shannon McKenzie, BA,<sup>1</sup> Kyle Possemato, PhD,<sup>1,2</sup> Larry Lantinga, PhD,<sup>1,2</sup> Stephen Maisto, PhD,<sup>1,2</sup> and Paige Ouimette, PhD<sup>1,2</sup>

<sup>1</sup>Center for Integrated Healthcare, Syracuse VA Medical Center, Syracuse, NY and <sup>2</sup>Department of Psychology, Syracuse University, Syracuse, NY.

The literature has shown that Iraq and Afghanistan veterans returning home from war face a variety of mental health concerns. Some of the most prevalent concerns include posttraumatic stress disorder (PTSD), alcohol use disorders (AUD), and depression (Hoge et al., 2004, Milliken et al., 2007). Among our newest group of combat veterans information is still limited about how co-occurring PTSD, AUD and depression are related to veteran's physical and mental health related quality of life. The present study sought to investigate which mental health concern was most strongly related to veterans' self-reported quality of life. Preliminary baseline data from a study examining PTSD/AUD symptom fluctuations among OEF/OIF veterans was utilized. Fifty-two veterans completed the Clinician-Administered PTSD Scale (CAPS; Blake et al., 1995), the Alcohol Use Disorders Identification Test (AUDIT; Saunders et al. 1993), the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, L., 1977), and the Short-Form Health Survey (SF-12; Ware et al., 1996). PTSD, alcohol use, and depression severity were each significantly correlated with mental health-related quality of life but not with physical quality of life. A multiple linear regression revealed that after controlling for hazardous alcohol use and PTSD severity, depression severity was found to uniquely predict poorer mental health quality of life ( $\beta = .27$ ,  $t(48) = 2.38$ ,  $p < .001$ ). This suggests that depression may have the most significant impact on veteran's quality of life. Clinicians treating patients with co-occurring PTSD, depression, and at-risk alcohol may want to prioritize the treatment of depression to make the largest impact on the patient's mental health related quality of life.

CORRESPONDING AUTHOR: Emily Kaier, BA, Center for Integrated Healthcare, Syracuse VA Medical Center, Syracuse, NY, 13210; emily.kaier2@va.gov

## **B-073e** **COLLABORATIVE CARE FOR DEPRESSION: SYSTEMATIC REVIEW AND META-ANALYSIS**

Anil Thota, MBBS, MPH and Theresa A. Sipe, PhD, MPH, CNM, RN

The Guide to Community Preventive Services, CDC, Atlanta, GA.

Collaborative Care models have developed from the Chronic Care Model over the last twenty years to improve the quality of depression management. Collaborative Care is a multicomponent, healthcare system-level intervention that uses case managers to link primary care providers, patients, and mental health specialists. In addition to case management support, primary care providers receive consultation and decision support from mental health specialists.

We conducted a systematic review of the literature and a meta-analysis to examine the effectiveness of collaborative care interventions. This systematic review and meta-analysis were conceptualized and conducted by a team of subject matter experts in mental health representing various agencies and institutions. This team worked under the guidance of the Task Force on Community Preventive Services, a non-federal, independent, volunteer body of public health and prevention experts. Methods developed at the Guide to Community Preventive Services (Community Guide) of the CDC were employed to identify, evaluate and analyze the evidence available.

An earlier review<sup>1</sup> (Bower et al 2006) with 37 RCTs of Collaborative Care studies was identified. This body of evidence was updated for the time period 2004 to 2009. We found 32 studies of Collaborative Care models between 2004 and 2009. The results from the meta-analyses suggest robust evidence of the effectiveness of Collaborative Care in improving depression symptoms [Standardized Mean Difference (SMD)=0.34], adherence to treatment [Odds Ratio (OR)=2.22], response to treatment [OR=1.78], remission of symptoms [OR=1.74], recovery [OR=1.75], quality of life/functional status [SMD=0.12] and satisfaction with care [SMD=0.39] for patients diagnosed with depression (all effect estimates were statistically significant).

Based on Community Guide rules of evidence, there is strong evidence that collaborative care models are effective in improving outcomes for depressed patients in a wide-range of populations, settings and organizations.

CORRESPONDING AUTHOR: Anil Thota, MBBS, MPH, CDC, Atlanta, GA, 30345; hdv2@cdc.gov

## **B-078a** **DEVELOPING A TAXONOMY OF BEHAVIOUR CHANGE TECHNIQUES: LABELS AND DEFINITIONS**

Susan Michie, BA, MPhil, DPhil,<sup>1</sup> Marie Johnston, DPhil,<sup>1,2</sup> Charles Abraham, DPhil,<sup>3</sup> Jill Francis, DPhil,<sup>2</sup> Wendy Hardeman, DPhil,<sup>4</sup> Martin Eccles, DPhil<sup>5</sup> and Michelle Richardson, DPhil<sup>1</sup>

<sup>1</sup>University College London, London, United Kingdom; <sup>2</sup>Aberdeen University, Aberdeen, United Kingdom; <sup>3</sup>Sussex University, Brighton, United Kingdom; <sup>4</sup>Cambridge University, Cambridge, United Kingdom and <sup>5</sup>Newcastle University, Newcastle, United Kingdom.

To date, there has been no shared language for describing the content, especially the 'active ingredients' of behavior change interventions; by contrast, biomedical interventions are precisely specified. This limits the possibility of replicating effective behavior change interventions, synthesising evidence, and understanding the causal mechanisms underlying behavior change. Our ultimate aim is to develop a reliable method of specifying behavior change techniques

(BCTs), link them to relevant theory and specify the behaviors necessary to implement them.

In several stages, we have generated lists of BCT labels based on a) systematic reviews of behavior change interventions b) systematic text-book search c) expert brainstorming. We have generated definitions a) from textbooks, b) from dictionaries (including APA Dictionary of Psychology) and c) by reframing to specify the behavioral competencies required of the person implementing the BCT. We report the first stage of a UK Medical Research Council funded international collaboration to refine and develop a BCT taxonomy.

As the basis for a subsequent Delphi consensus and validation exercises, an expert group has generated a list of 94 conceptually distinct BCTs from 6 published BCT taxonomies. Of these, 24 and 37 BCTs had two or more labels and definitions respectively. For these, five researchers independently rated their preferred label and definition. The BCT ratings were categorised in terms of agreement: complete (label, 25%; definition, 16%), majority (label, 38%; definition, 30%), some (label, 33%; definition, 49%), and little (label, 4%; definition, 5%).

While showing some agreement, heterogeneity in responses was large. These findings demonstrate the need for the next planned stage i.e. a Delphi consensus process with a group of international experts with wide ranging experience of designing and delivering behavior change interventions.

CORRESPONDING AUTHOR: Susan Michie, BA, MPhil, DPhil, University College London, London, WC1E 7HB; s.michie@ucl.ac.uk

**B-083a**  
**DEVELOPMENT AND EXPLORATORY ANALYSIS OF AN INTERVENTION DELIVERY CHANNEL EFFECTIVENESS SCALE**

Lisa M. Quintiliani, PhD RD,<sup>1</sup> Julie A. Wright, PhD,<sup>2</sup> Timothy Edgar, PhD<sup>3</sup> and Robert H. Friedman, MD<sup>1</sup>  
<sup>1</sup>Boston University, Boston, MA; <sup>2</sup>University of Massachusetts, Boston, MA and <sup>3</sup>Emerson College, Boston, MA.

Tailoring health behavior intervention content to an individual's personal characteristics consistently increases relevance and effectiveness, as posited by the Elaboration Likelihood Model of Persuasion. The emergence of new technologies indicates a need to also tailor the intervention delivery channel (i.e., the means to deliver an intervention such as texting). In this abstract, we describe the development of the Channel Effectiveness Scale [CES] to measure an individual's perceptions of meaningful channel characteristics and then report exploratory scale analyses. To our knowledge, there are no scales of this type. A list of channel characteristics based on the communication work of Salmon and Atkin was compiled, followed by a question sort. This process yielded 27 items representing 7 characteristics: credibility, personalization, depth, decodability, intrusiveness, safety, and participation. The CES was administered at 6 months during a 3-group (automated computer telephone, Web, and control) randomized trial targeting diet. Exploratory analyses were conducted among computer telephone group participants (n=129). Most were non-Hispanic White (98%), male (68%), and mean age was 53 years. Principal components analysis yielded an 11-item scale accounting for 74% of total variance across four components: credibility (n=3), relevance (n=3), decodability (n=2), and intrusiveness (n=3). This reduced scale eliminated 'safety' due to high ratings, eliminated 'participation' due to overlap with other characteristics, and combined 'depth' and 'personalization' into 'relevance'. Cronbach's

alpha ranged from 0.7-0.9. Positive ratings (reflecting high credibility, relevance, decodability, and low intrusiveness) were correlated with computer telephone use (r=0.33, P<0.0001). The CES demonstrated content validity, internal reliability, and was associated with intervention use. Future work will entail confirmatory analyses of scale stability across different populations and channels and validation with behavioral change.

CORRESPONDING AUTHOR: Lisa M. Quintiliani, PhD RD, Boston University Medical Center, Boston, MA, 02118; lmqinti@bu.edu

**B-083b**  
**ASSOCIATIONS BETWEEN SNACKING AND WEIGHT LOSS AND NUTRIENT INTAKE AMONG POSTMENOPAUSAL OVERWEIGHT TO OBESE WOMEN IN A DIETARY WEIGHT LOSS INTERVENTION**

Angela Kong, PhD, MPH, RD,<sup>1</sup> Shirley A. Beresford, PhD,<sup>2,4</sup> Catherine M. Alfano, PhD,<sup>3</sup> Karen E. Foster-Schubert, MD, MPH,<sup>2,4</sup> Marian L. Neuhouser, PhD, RD,<sup>4,2</sup> Donna B. Johnson, PhD, RD,<sup>2</sup> Catherine R. Duggan, PhD,<sup>4</sup> Ching-Yun Wang, PhD,<sup>4</sup> Liren Xiao, MSc,<sup>4</sup> Carolyn E. Bain, MPH<sup>4</sup> and Anne McTiernan, MD, PhD<sup>4,2</sup>  
<sup>1</sup>University of Illinois at Chicago, Chicago, IL; <sup>2</sup>University of Washington, Seattle, WA; <sup>3</sup>National Cancer Institute, Bethesda, MD and <sup>4</sup>Fred Hutchinson Cancer Research Center, Seattle, WA.

Background: The frequency and timing of snacking occasions are thought to play a role in weight control.

Objective: This study examined the relationships in between meal snacking and overall snacking frequency with weight loss (%) and nutrient intake (e.g. % calories from fat, fiber, and fruit and vegetable intake).

Methods: Data are from women enrolled in a dietary intervention for weight loss from a randomized trial. All participants (n=123) who were weighed and measured at baseline and twelve months and completed a food frequency questionnaire (12 months) and meal pattern grid (12 months) to assess snacking were included in this study. Generalized linear models were used to test the associations between snacking and weight loss (%) and nutrient intake. Models were adjusted for age, study arm (diet, diet+exercise), race/ethnicity, baseline BMI, number of main meals, snacking at other times, and baseline nutrient values.

Results: Study participants were on average 58 years old and mainly non-Hispanic White (84%). At least 1 snack/day was reported by 97% of the women, with most (75%) reporting to snack in the afternoon (2:00pm-5:30pm). Women who reported to snack in the morning (10:30am-11:29am) had statistically significantly lower adjusted weight loss of 7.1% (95% CI 4.5, 9.7) vs. a weight loss of 11.4% (95% CI 10.2, 12.6; p value: 0.004) among non-snackers at this time. Compared to afternoon (82.8%) and evening (80.6%) snackers, a higher proportion of morning snackers (95.7%) reported more than one snack/day. We did not observe any other significant differences in weight loss or nutrient intake at other time periods.

Conclusion: With the high prevalence of snacking among US adults, lifestyle behavior weight loss interventions should address snacking behaviors.

CORRESPONDING AUTHOR: Angela Kong, PhD, MPH, RD, University of Illinois at Chicago, Chicago, IL, 60608; akong@uic.edu

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

## B-104a

### THE RELATIONSHIP BETWEEN BODY MASS INDEX, HEALTH BEHAVIORS, AND DEPRESSIVE SYMPTOMS IN PRIMARY CARE SETTINGS

Stephanie A. Hooker, BAS,<sup>1,2</sup> Kristin L. MacGregor, MS,<sup>1,2</sup> Jennifer S. Funderburk, PhD<sup>1,2</sup> and Stephen A. Maisto, PhD<sup>1,2</sup>

<sup>1</sup>Syracuse University, Syracuse, NY and <sup>2</sup>Center for Integrated Healthcare, Syracuse VA Medical Center, Syracuse, NY.

The relationship between obesity and depressive symptoms or major depressive disorder has been investigated in large population studies, with results dependent on the sample and the depression measure used. There have been no published studies of this relationship in primary care patients. This study's aim was to explore this relationship in Veteran's Affairs (VA) and non-VA primary care patients (N = 497) and to test its moderation by health behaviors. After adjusting for sex, age, posttraumatic stress disorder (PTSD) screen score, and site, body mass index (BMI) was used to predict depressive symptoms. In three separate models, health behaviors (alcohol use, smoking status, and vigorous exercise) and the two-way interactions between the health behavior and BMI were entered. All three overall models were significant,  $F_s > 36.17$ ,  $p_s < .0001$ . BMI was significantly related to reporting more depressive symptoms in all three models,  $p_s < .05$ . Smoking was related to reporting more depressive symptoms,  $b = 1.43$ ,  $SE = .45$ ,  $p = .002$ , whereas vigorous exercise was inversely related to depressive symptoms,  $b = -.08$ ,  $SE = .02$ ,  $p = .001$ . Alcohol use was not related to depressive symptoms,  $b = -.07$ ,  $SE = .08$ ,  $p = .36$ . The interaction between vigorous exercise and BMI was significant,  $b = -.009$ ,  $SE = .004$ ,  $p = .03$ , but the interactions between smoking and BMI,  $b = -.014$ ,  $SE = .06$ ,  $p = .82$ , and alcohol use and BMI,  $b = -.006$ ,  $SE = .01$ ,  $p = .56$ , were not. These results indicate that BMI is positively related to depressive symptoms in primary care patients, even after controlling for relevant covariates and health behaviors. Also, the relationship between BMI and depressive symptoms is attenuated in patients who participate in vigorous exercise, suggesting that it reduces the risk for depressive symptoms in overweight and obese patients.

CORRESPONDING AUTHOR: Stephanie A. Hooker, BAS, Syracuse University, Syracuse, NY, NY; sahooker@syr.edu

## B-104b

### RELATIONSHIP OF BRAIN RESPONSES TO PALATABLE FOOD WITH FOOD ADDICTION TENDENCIES. LEDOUX<sup>1</sup>, LOHRENZ<sup>2</sup>, BARANOWSKI<sup>2</sup>, & MONTAGUE<sup>2</sup> UNIVERSITY OF HOUSTON<sup>1</sup>; BAYLOR COLLEGE OF MEDICINE<sup>2</sup>

Tracey Ledoux, PhD, RD,<sup>1,2</sup> Terry Lohrenz, PhD,<sup>2</sup> Tom Baranowski, PhD<sup>3</sup> and Read Montague, PhD<sup>2</sup>

<sup>1</sup>Health and Human Performance, University of Houston, Houston, TX; <sup>2</sup>Human Neuroimaging Laboratory, Baylor College of Medicine, Houston, TX and <sup>3</sup>Children's Nutrition Research Center, Baylor College of Medicine, Houston, TX.

Food addiction tendencies may contribute to obesity. Reward related brain activity among obese versus lean individuals to palatable food cues and consumption are consistent with brain activity among drug addicted versus non-drug addicted individuals under similar conditions with addictive substances (Stice et al., 2010; van Hell et al., 2010). Objective: To support the concept of food addiction by demonstrating reward related brain activity during 1) cue exposure to and 2) consumption of a palatable beverage was related to food addiction behaviors among adolescents. Methods: In this cross-sectional

pilot study, 18 14-17 year old male and female youth were recruited. Brain activity during 1) exposure to a cue for chocolate milk or tasteless solution and 2) consumption of either solution was assessed via fMRI. The fMRI scanning procedures were based on a previously validated paradigm among adolescents (Stice et al., 2009). Images presented on a computer screen cued delivery of a dose of chocolate milk or tasteless solution, which were subsequently delivered via mouthpiece. Then participants completed the Adolescent Food Addiction Questionnaire (AFAQ), adapted from a valid measure of food addiction for adults (Gearhardt et al., 2009). Results: Across-subjects multiple regression showed a significant association between brain activity in the orbitofrontal cortex (OFC) to chocolate milk cue [ $p < .0001$ ] and tasteless solution cue [ $p < .001$ ] with AFAQ total scores. There was no significant relationship between brain activity during consumption of either beverage with CFAQ scores. Discussion: OFC activity, which is associated with reward stimuli encoding, was related to food addiction behaviors upon exposure to cues for a palatable beverage and a tasteless solution. A small sample size in this pilot study may have been a limitation.

CORRESPONDING AUTHOR: Tracey Ledoux, PhD, RD, Health and Human Performance, University of Houston, Houston, TX, 77204-6015; TALedoux@uh.edu

## B-104c

### PROSPECTIVE PREDICTORS OF WEIGHT CHANGE OVER 18 MONTHS IN METROPOLITAN TRANSIT WORKERS

Kamisha Escoto, PhD<sup>1</sup> and Simone French, PhD<sup>2</sup>

<sup>1</sup>Psychiatry, University of Minnesota, Minneapolis, MN and

<sup>2</sup>Epidemiology and Community Health, University of Minnesota, Minneapolis, MN.

Purpose: 1) To examine change in weight status among transit workers; and 2) examine demographic, behavioral and work-related variables predictive of weight loss, maintenance and gain. Methods: Data were drawn from 712 transit workers (e.g., bus operators) who participated in a worksite obesity prevention trial. Height and weight measurement were collected at two time points, approximately 18 months apart. Transit workers self-reported sociodemographic variables, dietary intake, vending machine use at work, physical activity, use of healthy and unhealthy weight control practices, and smoking status. Work-related variables included the number of hours worked per week, work schedule, number of years worked, job position, and co-worker support for healthful weight control behaviors. Weight loss was defined as losing >5% of initial BMI (weight losers), weight maintenance was defined as being within 5% of initial BMI (weight maintainers), and weight gain was defined as gaining >5% of initial BMI (weight gainers). Variables with significant bivariate associations ( $p < .05$ ) were examined using multivariate logistic regression predicting 18-month weight status. Results: Over 18 months, 13.1% of the transit workers lost weight, 68.3% maintained their weight, and 18.7% gained weight. Only age, gender, income, initial BMI, smoking status, hours spent watching television, and number of years worked at Metro Transit showed significant bivariate associations with weight status category. Females and those watching 1-2 hours or greater of television/day were more likely to be weight gainers, while older transit workers and those who never smoked were less likely to be weight gainers. Income and years worked at Metro Transit did not predict weight status category. Conclusions: While weight maintenance was common, nearly 20% of these transit workers gained weight over 18 months. Future worksite interventions in this occupational group should focus on strategies to decrease television viewing and include tailoring towards female transit workers.

CORRESPONDING AUTHOR: Kamisha Escoto, PhD, University of Minnesota, Minneapolis, MN, 55454; escoto@umn.edu

**B-104d  
UTILIZATION OF FACEBOOK AMONG STUDY PARTICIPANTS FROM LOW-INCOME COMMUNITIES IN RURAL NORTH CAROLINA**

Daniel Dix, BS, Perry Foley, MPH, MSW, Erica Levine, BA and Gary Bennett, PhD

Duke Global Health Institute, Durham, NC.

**PURPOSE:** Social networking websites hold promise as tools for intervention, recruitment, and retention in varied populations. They may be particularly important for reaching individuals from low-income communities. Despite ongoing discussion about the "digital divide," recent data suggests that these populations utilize social networking sites at similar levels as those from more advantaged communities. In order to determine the penetration of Facebook participation, we conducted an enumeration study of Facebook profiles in The Shape Program, an obesity prevention trial among overweight and obese Black female patients of a community health center network in rural North Carolina. **METHODS:** We developed a protocol to search for Facebook profiles amongst 116 participants enrolled in The Shape Program between December 2009 and November 2010. We used 6 variables to match participants to Facebook profiles: 1) Email address; 2) Name; 3) Date of Birth (DOB); 4) Race (visual confirmation if available); 5) Current city; 6) High school graduation date. To confirm a profile, at least 2 variables needed to match. Email address, name and DOB were considered the strongest indicators of a correct match. **RESULTS:** Out of 116 participants, 65 (56%) were found to have a Facebook profile, 46 (40%) were not, and 5 (4%) were undetermined. Of the 65 participants with a Facebook profile, 50 (77%) were matched using email address and name. Statistical agreement between our enumeration protocol and participant self-report was high. **CONCLUSIONS:** 56% of participants in our obesity prevention trial among community health center patients had searchable and viewable Facebook profiles. It is possible that more participants have profiles that are not as easily viewable. Data from this enumeration study suggests that researchers may successfully use social networking sites for recruitment and retention purposes, even in lower income or rural communities. Furthermore, utilization of social networks should be explored as a valuable tool for behavioral interventions across many populations.

CORRESPONDING AUTHOR: Perry Foley, MPH, MSW, Duke Global Health Institute, Durham, NC, 27705; perry.foley@duke.edu

**B-104e  
CALORIES, PHYSICAL ACTIVITY (PA) AND BMI AT 2 AND 6 MOS POSTPARTUM OF 1ST TIME MOTHERS**

Deborah Young-Hyman, PhD and Marlo M. Vernon, MPH  
GPI - Dept of Pediatrics, Medical College of Georgia, Augusta, GA.

Weight gained during pregnancy is expected to be lost by 6 mos, and if not lost by 12 mos is likely to be retained. It is important to understand how caloric intake/expenditure and PA of 1st time mothers is associated with BMI during the postpartum period. We therefore associated caloric intake, expenditure and PA with mothers' (18-38y, 59% black, Edu=less than HS to grad. sch.) BMI at 2mos (n=128), and 6mos (n=76) postpartum. Caloric intake was derived from 24h food recalls analyzed by NDS, expenditure from accelerometry (AC) and 7Day PA recall (7PAR).

Pre-pregnancy BMI (preBMI) X=28.2±7.8, 2mos BMI X=29.9±7.3

and 6mos BMI X=30.5±7.9 Mothers were significantly heavier at 2mos (t=-6.2, p<.001) and 6mos (t=-5.8, p<.001) than before pregnancy.

Mothers reported avg intake of 1833±733 kcal/d@2mos and 1743±750 kcal/d@6mos; expended 227±140 kcal/d@2mos and 232±147kcal/d@6mos measured by AC; and reported 448±547 kcal/d@2mos and 601±534 kcal/d@6mos expenditure measured by 7PAR.

Mothers achieved an average of 8.1±7.7 min/d of moderate-vigorous(MV)PA @2mos and 9.0±8.2 min/d@6mos (AC), and reported 115.2±146.4 min/d@2mos and 148.1±125.6 min/d MVPA@6mos (7PAR). PA appears significantly inflated at both time points when self reported (2mos t=-6.68, p<.001 ; 6mos t=-5.90, p<.001).

2mos and 6mos BMIs were modeled using regression, controlling for Age, Race, Ed. Contributions of preBMI, birth BMI, caloric intake and expenditure, breastfeeding, and PA were then tested. Pre-pregnancy BMI, birth BMI and 2mosAC kcal (expenditure) (ps<.001) were associated with 2mos BMI (R2=95%, F=208.2, p<.001). In the model of 6mos BMI, PreBMI (p<.001) and 6mos ACkcal (p<.007) were significantly associated with BMI (R2=94%, F=75.91, p<.001).

Mothers were heavier at 2mos and 6mos postpartum than before pregnancy. It appears that caloric expenditure (when accurately measured) in the context of intake was not sufficient to facilitate weight loss. Consequently, early monitoring of and interventions for eating and PA are needed to prevent postpartum weight retention and subsequent weight gain.

CORRESPONDING AUTHOR: Marlo M. Vernon, MPH, GPI - Dept of Pediatrics, Medical College of Georgia, Augusta, GA, 30912; mvernon@georgiahealth.edu

**B-104f  
DEPRESSION SEVERITY AND DIET QUALITY IN WOMEN WITH OBESITY AND DEPRESSION**

Bradley M. Appelhans, PhD,<sup>1</sup> Matthew C. Whited, PhD,<sup>2</sup> Kristin L. Schneider, PhD,<sup>2</sup> Olendzki C. Barbara, RD,<sup>2</sup> Yunsheng Ma, PhD, MD, MPH,<sup>2</sup> Jessica L. Oleski, MA,<sup>2</sup> Philip A. Merriam, MSPH,<sup>2</sup> Molly E. Waring, PhD,<sup>2</sup> Devin M. Mann, MD, MS,<sup>3</sup> Ira S. Ockene, MD<sup>2</sup> and Sherry L. Pagoto, PhD<sup>2</sup>

<sup>1</sup>Rush University Medical Center, Chicago, IL; <sup>2</sup>University of Massachusetts Medical School, Worcester, MA and <sup>3</sup>Boston University Medical School, Boston, MA.

Among the depressed, depression severity may be associated with lower diet quality due to emotional/binge eating, SES, or depression-related appetite changes. These hypotheses were tested among depressed, obese women enrolled in a behavioral weight loss trial (N=161; body mass index [kg/m<sup>2</sup>]: M=35.4, SD=3.3; age: M=45.9, SD=10.8; 17% ethnic minority). Major depression was verified in diagnostic interviews, and depression severity was quantified with the Beck Depression Inventory II. The Alternate Healthy Eating Index (AHEI) was applied to 24-hour diet recall data to capture overall diet quality. Greater depression severity was associated with poorer diet quality (β=-.16, t=-2.13, p=.04) in a regression model controlling for age, education, income, body mass, and antidepressant use. Neither emotional nor binge eating accounted for the association, and depression-related appetite change (via BDI-II) was unrelated to AHEI (p=.39). Higher depression severity correlated with greater intake of daily energy (r=.27, p<.01), sodium (r=.22,

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

$p < .01$ ), total sugars ( $r = .23$ ,  $p < .01$ ), percentage energy from saturated ( $r = .21$ ,  $p < .01$ ) and trans fat ( $r = .18$ ,  $p = .02$ ), and lower ratios of polyunsaturated to saturated fat ( $r = .19$ ,  $p = .02$ ) and white to red meat ( $r = -.27$ ,  $p < .001$ ). Depression severity was unrelated to intake of healthful components of diet such as fruit, vegetables, and dietary fiber. Findings link depression severity among obese women to poor overall diet quality and greater intake of foods high in sugar, fats, and salt. Associations were not accounted for by SES, emotional/binge eating, or depression-related change in appetite. Future studies should examine mechanisms by which depression affects diet quality and whether diet quality improves with depression treatment.

CORRESPONDING AUTHOR: Bradley M. Appelhans, PhD, Department of Preventive Medicine, Rush University Medical Center, Chicago, IL, 60612; brad\_appelhans@rush.edu

## **B-104g** **CAN SMALL CHANGES RESULT IN WEIGHT LOSS AND PSYCHOLOGICAL IMPROVEMENT? RESULTS FROM TWO SMALL CHANGES STUDIES**

Marissa A. Errickson, BA,<sup>1</sup> Emily Steinbaugh, BA in Psychology,<sup>1</sup> Suzanne Daiss, PhD in Psychology,<sup>2</sup> Steven Barger, PhD in Psychology,<sup>2</sup> Richard Winett, PhD in Psychology<sup>3</sup> and Lesley Lutes, PhD in Psychology<sup>1</sup>

<sup>1</sup>Psychology, East Carolina University, Greenville, NC; <sup>2</sup>Psychology, Northern Arizona University, Flagstaff, AZ and <sup>3</sup>Psychology, Virginia Tech, Blacksburg, VA.

Although standard behavioral treatments for weight management are successful at helping participants achieve significant weight loss, decrease health risks and improve psychological function, weight regain is typical and reverses physical and psychological gains. Recently, four studies have shown that a small changes approach, including patient-selected small changes in nutrition and activity, can promote initial and continued weight loss across 3, 7, 9, and 12 month periods. However, the psychological implications of this approach have yet to be examined. Therefore, the present study examines changes in depression, body satisfaction, and life satisfaction in two small changes studies (ASPIRES II and ASPIRES III). Seventy-four overweight female adults, ages 25-75, participating in a 12-week weekly group-based small changes treatment with 6-month bi-weekly follow-up completed the Beck Depression Inventory, Multidimensional Body-Self Relations Questionnaire, and the Satisfaction with Life Scale. Using intent-to-treat analyses, average initial weight loss in ASPIRES II and III was 3.17 (SD = 2.41) and 2.47 (SD = 2.86) kilograms, respectively, with continued loss of 2.19 (SD = 4.13) and 0.80 (SD = 3.54) kilograms, respectively at follow-up. Analyses revealed improvements in depression in both ASPIRES II,  $F(2, 48) = 6.19$ ,  $p = .004$ ,  $\eta^2 = 0.205$  and ASPIRES III,  $F(2, 94) = 8.14$ ,  $p = .001$ ,  $\eta^2 = 0.15$ . Also, body satisfaction improved in both ASPIRES II,  $F(2, 48) = 3.99$ ,  $p = .025$ ,  $\eta^2 = 0.14$  and ASPIRES III,  $F(2, 92) = 8.31$ ,  $p < .001$ ,  $\eta^2 = 0.15$ . Improvements in life satisfaction were limited to initial treatment in ASPIRES II,  $t(24) = 3.64$ ,  $p = .001$ . Findings suggest that a small changes approach may be a viable option for promoting sustained weight loss and improvements in psychological function. Future research should directly compare a small changes approach to standard behavioral treatment on both behavioral and psychosocial outcomes long-term.

CORRESPONDING AUTHOR: Marissa A. Errickson, BA, Psychology, East Carolina University, Grimesland, NC, 27837; erricksonm03@students.ecu.edu

## **B-104h** **PARENTAL CONCERN, TEEN WEIGHT SATISFACTION AND BINGE EATING IN YOUTH IN TREATMENT FOR OBESITY**

Eleanor R. Mackey, PhD,<sup>1</sup> Bridget Armstrong, BA,<sup>1</sup> Lauren Clary, PhD,<sup>1</sup> Randi Streisand, PhD<sup>1</sup> and Michael Lowe, PhD<sup>2</sup>

<sup>1</sup>Psychiatry and Behavioral Sciences, Children's National Medical Center, Washington, DC and <sup>2</sup>Psychology, Drexel University, Philadelphia, PA.

Little is known about weight-related attitudes and behaviors in youth in treatment for obesity that may be associated with success of treatment. One area of concern for treatment success is binge eating behaviors. The current study assessed the relationship between parental concern with youths' weight and youth binge eating in teens in treatment for obesity, hypothesizing that more parental concern would be associated with more binge eating, mediated by less youth weight satisfaction.

Participants were 36 teens ages 12-18 ( $M = 15.02$ ,  $SD = 1.68$ ) in treatment for obesity or type 2 diabetes (T2D) ( $M$  BMI = 39.46,  $SD = 7.65$ ). Youth completed the Eating Disorder Diagnostic Scale to assess frequency of binge eating with loss of control and the Body Esteem Scale. One parent reported on concerns about their child's weight.

Sixty percent of the teens endorsed, on average, at least one episode of binge eating per week. Mediation hypotheses were supported. Parental concern with weight was significantly associated with higher levels of binge eating ( $F(1, 32) = 4.37$ ,  $p < .05$ ) and lower levels of youth weight satisfaction ( $F(1, 33) = 6.14$ ,  $p < .02$ ). With all variables in the equation and controlling for zBMI, the regression equation was significant ( $F(3, 27) = 6.94$ ,  $p = .001$ ) and parental concern no longer predicted binge eating ( $p = .43$ ). Sobel's test was significant ( $z = 1.97$ ,  $p < .05$ ).

In teens in treatment for obesity, parental concern about the effect of their child's weight (e.g., on making friends, general success) is associated with a higher frequency of youth-reported binge eating, mediated by youths' lower weight satisfaction. Clinical implications include bolstering weight satisfaction, which has previously been related to increased weight loss in obese youth, and treatment of binge eating in youth in treatment for obesity. Future research should utilize larger samples followed longitudinally to examine these relationships in teens with obesity and T2D.

CORRESPONDING AUTHOR: Eleanor R. Mackey, PhD, Psychiatry and Behavioral Sciences, Children's National Medical Center, Washington, DC, 20010; emackey@cnmc.org

## **B-104i** **DOES REIMBURSING THE COST OF COMMERCIAL WEIGHT CONTROL PROGRAMS INFLUENCE WEIGHT LOSS?**

Lorraine Shack, PhD,<sup>1,2</sup> Lu Shuang, MSc,<sup>1</sup> Tony Mottershead, MSc,<sup>4</sup> Corinne Parker, MBA<sup>3</sup> and Fredrick Ashbury, PhD<sup>5,6</sup>

<sup>1</sup>Public Health Innovation and Decision Support, Alberta Health Services, Calgary, AB, Canada; <sup>2</sup>Community Health Sciences, University of Calgary, Calgary, AB, Canada; <sup>3</sup>Environment Unit, Alberta Health Services, Calgary, AB, Canada; <sup>4</sup>Canadian Institute for Health Information, Victoria, BC, Canada; <sup>5</sup>Dalla Lana School of Public Health, University of Toronto, Toronto, ON, Canada and <sup>6</sup>PICEPS Consultants Inc, Whitby, ON, Canada.

Obesity contributes to over 35% of all cancers. Improving nutritional and physical activity behavior associated with obesity is a public

health challenge. Financial incentives have been used to enhance behavior change in the short term but the impact of incentives on weight loss over a longer period is still unclear. This study measures the effects of continuous reimbursement of the cost of commercial weight control programs on participant weight loss in the first 12 weeks of a two year follow-up study. This community-based trial took place in six health regions (three intervention, three control) matched on obesity prevalence and population density. Participants were eligible if they were aged between 20-65 years old, had a BMI of  $\geq 25$ , and lived in the selected communities. Intervention participants received a 70% reimbursement of program fees for a commercial weight control program (max \$600) if they attended 75% of sessions in the first 9 months. Throughout the study participants completed weight measures, lifestyle and behavioral surveys. In the first 12 weeks of weight control programs, both incentive and control groups lost weight. Receiving a financial incentive significantly increased the percentage of body weight lost in the first 12 weeks (incentive 4.4%, control 3.1%;  $p < 0.0001$ ). Weight loss was significantly higher for participants who were men, had more social support, had a higher initial BMI, and had not previously enrolled in weight control programs. Repeated financial incentives appear to enhance weight loss for individuals participating in commercial weight control programs in the first 12 weeks. Reimbursing the cost of weight control programs may be a potential population health obesity-prevention initiative.

CORRESPONDING AUTHOR: Lorraine Shack, PhD, Alberta Health Services and University of Calgary, Calgary, AB, T2N 3C3; lorraine.shack@albertahealthservices.ca

**B-104j**  
**THE MOVE!23 PATIENT QUESTIONNAIRE: RELIABILITY AND PREDICTIVE UTILITY**

Sari R. Chait, PhD and Patricia Rosenberger, PhD  
 Health Psychology, VA Connecticut Healthcare System, West Haven, CT.

Background: The MOVE!23 Patient Questionnaire (MOVE!23) was created to provide individualized weight management advice to Veterans and providers to aid in weight loss efforts. Since its initial development, the MOVE!23 has become widely adopted in conjunction with the Veterans Health Administration MOVE! Weight Management Program. No studies examining its reliability and predictive utility have been reported.

Method: A sample of 124 Veterans (BMI > 25) participated in a study assessing factors related to weight management. They completed MOVE!23 at 3 study visits: baseline, 2-week follow-up, and 6-month follow-up. Kappa and intraclass correlation coefficients were calculated to determine test-retest reliability based on visit 1 and 2 responses. Weight change was determined between visits 1 and 3 and the sample was dichotomized into those who gained or lost weight. Chi-square and correlational analyses determined MOVE!23 visit 1 items associated with weight gain/loss at 6 months.

Results: The mean age of the sample was 60 (SD= 9.4) years and mean BMI was 35.4 (SD=6.1). 89% of the sample were men and 25% were non-Caucasian. Mean weight loss from baseline to 6-month follow-up was 2.7 pounds (SD=10.9) with 18.4% of patients achieving a 5% weight loss. The majority of MOVE!23 items demonstrated moderate to good reliability with only 4 items demonstrating problematic reliability. Analyses comparing the weight gain/loss groups revealed that 1 item, no history of medical conditions, was significantly associated with weight loss at 6 months. Several

items were significantly associated with weight gain: presence of anxiety, family or relationship problems, bipolar disorder, history of fasting or skipping meals to lose weight, and lack of transportation for exercise.

Discussion: The MOVE!23 is a reliable instrument for use with patients concerned about weight management. Mental health conditions, extreme dietary practices, and difficulties identifying resources for exercise are predictive of poorer weight loss. The MOVE!23 can be a clinically useful instrument for Veterans engaged in weight management.

CORRESPONDING AUTHOR: Sari R. Chait, PhD, Health Psychology, VA Connecticut Healthcare System, West Haven, CT, 06516; sari.chait@gmail.com

**B-105a**  
**ENVIRONMENTAL EXPOSURE CONCERNS AMONG OEF/OIF VETERANS**

Lisa McAndrew, PhD, Anna Rusiewicz, PhD, Ronald Teichman, MD, Omowunmi Osinubi, MD, Jessica Jasien, MEn, Helena Chandler, PhD and Karen S. Quigley, PhD  
 WRIISC, VA NJHCS, East Orange, NJ.

Objectives: Environmental exposures have been a problem after most modern wars. Although studies have examined the effects of environmental exposures after many of these wars, there have been few studies on exposures during OEF/OIF. Our objectives were to examine the prevalence of self-reported environmental exposures and concerns among treatment seeking OEF/OIF Veterans and to examine if environmental exposure concerns were a mechanism through which environmental exposures may lead to greater reporting of non-specific physical symptoms.

Methods: We conducted a chart review of a clinical intake packet given to 466 OEF/OIF veterans seen at a tertiary VA clinic. In the intake packet, veterans were asked if they had been exposed to 16 environmental agents, and if so how concerned they were about each exposure. Veterans also completed the Patient Health Questionnaire-15 item (PHQ-15) which is a validated measure of non-specific physical symptoms.

Results: OEF/OIF veterans reported a high level of self-reported environmental exposures and a high prevalence of concern about these exposures. In a regression analysis non-specific physical symptoms were predicted by a count of self-reported exposures (Beta = .13), and a measure of the total severity of exposure concerns (Beta = .39). We also found that concerns about exposures accounted for (mediated) some of the relationship of self-reported exposures on non-specific physical symptoms (95% CI = .33 to .60).

Conclusions: In this sample, OEF/OIF veterans reported both a high prevalence of environmental exposures and exposure concerns. Both self-reported environmental exposures and exposure concerns were related to greater non-specific physical symptoms. This study examined whether a psychological mechanism (exposure concerns) provided a plausible means by which exposures may be associated with non-specific physical symptoms. Future studies should examine additional mechanisms, such as physiological ones by which environmental exposures may lead to increased physical symptom reports.

CORRESPONDING AUTHOR: Lisa McAndrew, PhD, WRIISC, VA NJHCS, East Orange, NJ, 07018; lisa.mcandrew@va.gov

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

## B-121a

### BEHAVIORAL INTERVENTION AND ADHERENCE IN RENAL DIALYSIS

Quinn D. Kellerman, MA,<sup>1</sup> Alan J. Christensen, PhD<sup>1,2</sup> and William J. Lawton, MD<sup>2</sup>

<sup>1</sup>Psychology, University of Iowa, Iowa City, IA and <sup>2</sup>Internal Medicine, University of Iowa, Iowa City, IA.

Approximately 355,000 patients with end-stage renal disease are treated with hemodialysis. Management of this condition requires adherence to a restrictive fluid and dietary regimen. Despite the deleterious effects of nonadherence, 40-60% of patients have difficulty limiting their fluid intake. The current study was designed to test the efficacy of a behavioral intervention for improving fluid-intake adherence among dialysis patients. Nonadherent individuals (i.e., interdialysis weight gains over 2.5kg for 4 weeks) were recruited from centers across Iowa. Interested patients were randomized to a Self-Regulation intervention or a Support & Discussion attention placebo control group. Both conditions included 7 one hour weekly groups led by trained clinicians. The focus of the intervention group was on reducing fluid-intake, and self-regulation techniques (monitoring, goal setting and reinforcement) were used. In contrast, the control group provided psychoeducation and support for managing renal disease, excluding the specific behavioral techniques taught to intervention patients. Fluid weight gains were collected at pre-tx, post-tx, 3 and 6 month follow-up and were the primary outcome.

A total of 130 patients were randomized: 64 to the intervention and 66 to the control group. Patients were predominately male (65%), diabetic (61%) and had been on dialysis for an average of 53 months (SD = 64.7). Repeated measures analyses were conducted to compare fluid weight gain means across conditions for completers (i.e., attendance at 4 or more groups). Results indicated that the within subjects effect for time was significant ( $F_{3,69}=3.20, p=.02$ ) reflecting reduced fluid gains at follow-up, but the time x condition effect was not significant. Although the unique effect of the self-regulation intervention was not significant, adherence improved from pre-tx to follow-up for completers in both conditions. Intent-to-treat analyses were not significant, suggesting that participation in the groups, regardless of the specific content, resulted in meaningful change in adherence.

CORRESPONDING AUTHOR: Quinn D. Kellerman, MA, Psychology, University of Iowa, Iowa City, IA, 52242; quinn-kellerman@uiowa.edu

## B-121b

### TO TELL OR NOT TO TELL: CAM DISCLOSURE IN UNDERSERVED RHEUMATIC DISEASE PATIENTS

Alyssa Todaro, BS and Gwenyth Wallen, PhD  
Clinical Center, NIH, Bethesda, MD.

Background: Arthritis patients increasingly use complementary and alternative medicine (CAM) to manage pain and symptoms, but their disclosure rates vary. Providers often dominate during patient interactions, yet shared decision-making (SDM) is known to improve health outcomes. Evidence suggests patients who rate their physicians as using participatory styles are more likely to disclose CAM use.

Methods: Logistic regression analyses were conducted using data from health behavior interviews among underserved patients with rheumatic diseases (n=109, 75% female, 42% Hispanic) at an urban clinic supported by the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS). Two models were explored to predict

CAM use (Model 1) and CAM disclosure (Model 2). Variables for both models included gender, ethnicity, race, age, pain levels, and SDM (3-item scale). Self-efficacy was added in Model 2.

Results: Seventy-eight of the participants reported CAM use with 59% reporting they told their health care provider about their CAM use. In Model 1 SDM scores were predictive ( $p<.05$ ) of CAM use (OR 1.25, 95% CI 1.04-1.52) but the overall model fit was not significant. In Model 2 the overall fit predicting CAM disclosure was significant ( $p=.001$ ) with 73.2% of the patients correctly classified. Gender, ethnicity, and SDM were significant ( $p<.05$ ) with self-efficacy approaching significance. Females (OR=10.2, 95% CI 1.95-53.40) and patients with higher SDM scores were more likely to disclose CAM use (OR=1.51, 95% CI 1.13-2.04). Hispanics (OR = 0.83, 95% CI 0.15-0.44) were less likely to disclose CAM use.

Conclusions: SDM played a significant role in whether patients in this sample used CAM and whether they disclosed this use to their provider. It is unclear whether self-efficacy, a patient's sense of control, would have been a significant predictor of CAM disclosure in a larger sample and should be explored further. Teaching providers improved communication skills and strategies for improving SDM in their patient-provider interactions may be important in patients who are least likely to disclose their CAM use.

CORRESPONDING AUTHOR: Alyssa Todaro, BS, Clinical Center, National Institutes of Health, Bethesda, MD, 20892; todaroad@mail.nih.gov

## B-121c

### MEDICAL HEALTHCARE USE AMONG LATINOS DIFFERING IN LEGAL STATUS

Luz M. Garcini, MA,<sup>1</sup> Guadalupe X. Ayala, PhD, MPH<sup>2,3</sup> and Elizabeth A. Klonoff, PhD<sup>1,2</sup>

<sup>1</sup>SDSU/UCSD Joint Doctoral Program in Clinical Psychology, San Diego, CA; <sup>2</sup>San Diego State University, San Diego, CA and <sup>3</sup>San Diego Prevention Research Center, San Diego, CA.

Latinos are a large and rapidly growing segment of the U.S. population (Passel & Taylor, 2010). Of the foreign-born Latinos in California, approximately 825,000 are naturalized citizens and nearly three million are non-citizens. Unfortunately, research examining the use of medical care among Latinos differing in legal status is scant. The present study explored differences in the use of recent medical care, as well as differences in perceived health among Latinos differing in legal status. Data from the 2007 California Health Interview Survey (CHIS, 2007), including responses from 5922 Latinos, were used in the analyses. Results showed that overall, 77.2% of adult Latinos (M=42.4 yrs, SD=15.9) reported having visited a doctor within the past year, including 83.8% of women and 67.5% of men. In terms of healthcare use by legal status, results showed that US-born Latinos and naturalized citizens differed from non-citizen Latinos in recent use of general ( $\chi^2(2, n=5922)=210.86, p<.001, \phi=.19$ ) and emergency medical care ( $\chi^2(2, n=5922)=46.45, p<.001, \phi=.09$ ), with non-citizens reporting lower use of health services. Also, differences were found in the use of preventive health services (flu vaccination) ( $\chi^2(2, n=5922)=126.84, p<.001, \phi=.15$ ), as well as in perceived health ( $\chi^2(8, n=5922)=296.18, p<.001, \phi=.22$ ) among Latinos varying in legal status. No significant differences were found in obesity rates by legal status categories ( $\chi^2(2, n=5922)=1.193, p=.55$ ), with approximately 70% of Latinos meeting criteria for obesity regardless of legal status. The aforementioned results suggest that despite a need for health services,

non-citizen Latinos reported significantly lower use of preventive and curative medical services than Latino citizens. Further discussion of results will include consideration of findings in terms of implications for development of community interventions and relevance to public policy. Limitations of the study and directions for future research will also be discussed.

CORRESPONDING AUTHOR: Luz M. Garcini, MA, SDSU/UCSD JDP, SDSU/UCSD Joint Doctoral Program in Clinical Psychology, San Diego, CA, 92130; lgarcini@righttodream.org

**B-121d**  
**PATH ANALYSIS OF LEVEL OF INJURY, FAMILY FUNCTIONING, POSTTRAUMATIC STRESS AND FUNCTIONAL INDEPENDENCE IN PEDIATRIC-ONSET SPINAL CORD INJURY: TWO LEVELS OF MEDIATION**

Bret Boyer, PhD and Catherine Porter, BA  
 Institute for Graduate Clinical Psychology, Widener University, Chester, PA.

Previous multiple regression analyses have supported a mediational relationship, in which posttraumatic stress symptoms (PTS) mediate the relationship between family functioning (FF) and Functional Independence (FI), the primary rehabilitation outcome following pediatric-onset spinal cord injury. The present study utilized structural equation modeling to test whether PTS mediated the relationship between FF and FI, as well as whether the PTS Avoidance symptom cluster mediated the relationship between Intrusive Reexperiencing (RI), Anxious arousal and FI. Path analyses that included Level of Injury (paraplegic v. tetraplegic), Child PTSD Symptom Scale scores, Family Assessment Device, and The Pediatric Orthopedic Surgeons of North America Pediatric Musculoskeletal Functional Health Questionnaire for 109 patients aged 11-21, indicated that PTS avoidance scores mediated the relationship between both RI and FI, arousal and FI, and that this cluster of relationships mediated the relationship between FF and FI ( $\beta = 1.185$ ,  $p = .222$ ; CFI = .99, NFI = .95, RMSEA < .054). Clinical implications of PTS avoidance as a crucial mediational factor following SCI are discussed.

CORRESPONDING AUTHOR: Bret Boyer, PhD, Institute for Graduate Clinical Psychology, Widener University, Chester, PA, 19013; baboyer@mail.widener.edu

**B-121e**  
**PERCEIVED ROLES OF EMERGENCY DEPARTMENT PHYSICIANS REGARDING FIREARM VIOLENCE**

Amy Thompson, PhD,<sup>1</sup> James H. Price, PhD, MPH,<sup>1</sup> Jagdish Khubchandani, MBBS, PhD, MPH, CHES,<sup>2</sup> Michael Wiblishauser, MS, CHES,<sup>1</sup> Jamie Dowling, MPH<sup>1</sup> and Karen Teeple, Undergraduate Student<sup>1</sup>

<sup>1</sup>Health and Recreation Professions, University of Toledo, Toledo, OH and <sup>2</sup>Physiology and Health Sciences, Ball State University, Muncie, IN.

Purpose:

To assess Emergency Department Physicians support for firearm control policies. Additionally, physician's interactions with patients regarding firearm safety/trauma were assessed.

Methods:

A simple random national sample of 500 ED physicians was selected using the American College of Emergency Physicians (ACEP) membership list. A four-page, 39 item previously validated survey was used to assess respondent's exposure to firearm trauma patients,

involvement in firearm safety counseling, likelihood of firearm policy support, interest, exposure, and involvement with firearm control advocacy. The questionnaire was mailed using a three wave mailing procedure to ensure adequate response rates.

Results:

A majority (55.6%) of ED physicians completed the survey. A majority (63%) perceived firearm violence to be a major problem in the US. Almost all (98%) had personally treated a patient who was shot. However, only 7% routinely charted whether patients own/ had access to firearms. The main barrier (56%) to discussing firearm safety issues with patients was lack of time. Only 4% received formal training on firearm safety counseling. About a third (37%) would not participate in any activities regarding gun control, even though 60% agreed that a reduction in handgun ownership would reduce firearm homicides and suicides.

Conclusions:

Although the ACEP supports legislative and public health efforts to prevent firearm-related injuries and deaths, approximately one third of ED physicians do not discuss firearm safety issues with patients (32%) and do not participate in gun control activities. These findings indicate a need for more formal training on firearm safety counseling for ED physicians.

CORRESPONDING AUTHOR: Jagdish Khubchandani, MBBS, PhD, MPH, CHES, Physiology and Health Sciences, Ball State University, Muncie, IN, 47306; jkhubchandani@bsu.edu

**B-121f**  
**THE EFFECT OF COMPREHENSION OF THE TERM HEALTH CARE ADVOCATE ON THE LIKELIHOOD OF HIRING A HEALTH CARE ADVOCATE**

Elaina A. Vasserman-Stokes, MA,<sup>1,2</sup> Maya Santoro, MA<sup>2</sup> and Terry Cronan, PhD<sup>2</sup>

<sup>1</sup>Counseling, George Washington University, Washington DC, DC and <sup>2</sup>SDSU/UCSD, San Diego, CA.

The quality of health care for older Americans with multiple chronic conditions is fragmented, uncoordinated, and inefficient. As a result, the quality of life for many patients and their families is poor. It could be improved by a health care advocate (HCA), a professional who represents the needs, views, and desires of a patient and his/her family in a clinical setting. While there is an increasing interest in HCAs, a clear consensus on what an HCA is, or what his or her duties are, has not yet been reached. The present study investigated whether participants' comprehension of the term HCA had an effect on their likelihood of hiring an HCA for a parent. Randomly selected participants (N = 141) completed a questionnaire and reported demographic information, their comprehension of the term HCA, and their likelihood of hiring an HCA (measured on a 10-point Likert scale) (Mean = 5.50). An hierarchical linear regression was conducted to examine the association between comprehension of the term HCA and likelihood of hiring an HCA, while controlling for demographic information. In step one, the demographic information, including ethnicity, education, family income, and health insurance status was entered. It explained 1.0% of the variance in the dependent variable [ $F(4, 137) = 1.134$ ,  $p = .257$ ]; thus demographic information did not explain a significant amount of variance in the likelihood of hiring an HCA. In step two, comprehension of the term HCA was entered. It explained 7.3% of the variance in the DV [ $F(1, 136) = 3.213$ ,  $p = .009$ ]. Thus, people are more likely to hire an HCA for their parents if they have better comprehension of the

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

concept of HCA ( $\beta = .34, p < .05$ ). It appears that working toward a consensus on what an HCA is, or what his or her duties are, will stimulate the development of this field.

CORRESPONDING AUTHOR: Elaina A. Vasserman-Stokes, MA, Counseling, George Washington University, Washington DC, DC, 20002; elainavassermanstokes@gmail.com

## **B-121g** **HEALTH-RELATED SELF-CONCEPT AND REPORT OF PHYSICAL SYMPTOMS**

Jenifer Thomas, PhD, John Moring, MS, Glenna Hopper, DVM and Julie Angiola, MS  
Fay W. Whitney School of Nursing, University of Wyoming, Laramie, WY.

Knowledge of health-related self-concept could further the understanding of individual variability in the meaning attributed to symptoms and related behavior. However, there is little research on the significance of health as a related factor to self-concept (Wiesmann, Niehorster, Hannich, & Hartmann, 2008) and on the relationship to health-related behavior. The goal of the current research is to investigate the dimensions of health-related self-concept that might predict symptom reporting in a sample of college students. Sociodemographic information and complete surveys were obtained from 124 college students. The dimensionality of the HRSC-86 was analyzed using maximum likelihood factor analysis and an oblique rotation procedure yielded four interpretable factors; health-protective dispositions, health-protective motivation, vulnerability, and health-risky habits. Four separate regression analyses were performed to test the ability of the four dimensions of health-related self-concept to account for self-reported physical symptoms. All components of health-related self-concept entered in the regression equations accounted for: 23% of the variance in total number of symptoms,  $F(4, 119) = 8.90, p = .00$ ; 21% of the variance in number of symptoms every month or so,  $F(4, 119) = 8.08, p = .00$ ; 11% of the variance in number of symptoms every week or so,  $F(4, 119) = 3.60, p = .00$ ; and 14% of the variance in number of symptoms more than once every week,  $F(4, 119) = 4.91, p = .00$ . The results of this study replicated the multidimensional structure of the HRSC-86, as well as supported the relationship between overall health-related self-concept and report of physical symptoms. Four of the five independent dimensions described by Wiesmann, Niehorster, Hannich, and Hartmann (2008) were confirmed in this study. In addition, three of the four dimensions (health-protective motivation, vulnerability, and health-risky habits) were significant predictors of symptom report. This research indicates continued investigation of health as an aspect of self-concept.

CORRESPONDING AUTHOR: Jenifer Thomas, PhD, Fay W. Whitney School of Nursing, University of Wyoming, Laramie, WY, 82071; jthoma41@uwyo.edu

## **B-121h** **CHOOSING THE WRONG SNACK: A PARADOXICAL EFFECT OF PRIMING HEALTHY EATING GOALS**

Katherine Adams, BA, Katherine Wainwright, BA, Elliot Spengler, BA, Toni Maraldo, BA and R. B. Giesler, PhD  
Psychology, Butler University, Indianapolis, IN.

Health is declining in many populations due in part to unhealthy food choices, leading to increased chronic illness and reduced quality of life. Greater insights are needed into processes that may allow individuals to achieve healthier diets. In the current experiment, we examined whether non-consciously priming individuals' health-related

goals could affect food choice. Participants ( $n=65$ ) were randomly assigned to complete one of two types of word search puzzles, a manipulation commonly used in priming research. The puzzles contained either healthy words (e.g. healthy) or control words (e.g., desk). After completing the puzzle, participants were invited to select a snack from a box containing a mixture of relatively healthy (e.g., 100 calorie snack packs) and unhealthy (e.g., Dingdongs) snacks. Afterwards, participants completed some additional measures, including questions about goal commitment and underwent a funneled debriefing. Overall, snack choice was unaffected by puzzle type. However, puzzle type interacted with level of commitment to the goal of eating healthy to predict snack choice ( $p = .04$ ). Specifically, participants who were not definitely committed to eating healthy were more likely to select a healthy snack after completing a healthy puzzle than a control puzzle. Paradoxically, participants who were definitely committed to eating healthy exhibited the reverse effect: they were more likely to select an unhealthy snack after completing a healthy puzzle. The majority of participants did not believe the puzzle had affected their behavior, suggesting the impact of non-conscious goal activation on health behavior may depend upon level of commitment to the activated goal.

CORRESPONDING AUTHOR: R. B. Giesler, PhD, Psychology, Butler University, Indianapolis, IN, IN; rgiesler@butler.edu

## **B-121i** **INDIVIDUAL THRESHOLDS FOR LIFE-PROLONGING INTERVENTIONS CAN BE IDENTIFIED USING SCENARIOS**

Karen G. Scandrett, MD, MPH,<sup>1</sup> Kathy Cordeiro, MD,<sup>2</sup> Megan Ong, RA<sup>1</sup> and Linda Emanuel, MD, PhD<sup>1</sup>

<sup>1</sup>Buehler Center on Aging, Northwestern University, Chicago, IL and <sup>2</sup>Evanston Hospital, Evanston, IL.

### Background

End-of-life decisions are often made by surrogates and may be complicated by various competing principles. An advance directive is an important component of good decision making, yet is lacking among 55% of Americans. The best way to discuss end of life preferences may vary between populations; one approach is to use scenarios to identify the threshold beyond which goals of care shift from mainly curative to palliative. The purpose of this project is to determine whether the threshold can be identified using a structured scenario-based tool.

### Methods

We analyzed a sample of survey data collected at an outpatient urban clinic from 1988-1991. Four clinical scenarios were presented, describing a range of cerebral dysfunction from coma to advanced dementia. Subjects were asked which of 11 interventions they would opt to receive in each scenario. Data were plotted and visually inspected for clear thresholds and sorted into groups according to preferences for care. The analysis was conducted by two independent sets of investigators and differences resolved through discussion.

### Results

Data were available from 31 patients ages 19-89, median 64. We found that 11/31 subjects had already passed their threshold, selecting no to nearly every intervention in all scenarios, while 17 had a detectable threshold. Among the remaining subjects, 2 selected yes to nearly all interventions in each scenario, while one person's responses did not have a discernible pattern.

### Discussion

Consideration of clinical scenarios may allow patients and clinicians

to identify a threshold beyond which curative interventions become undesirable. Thresholds are detected when previously desired interventions become clearly undesirable, or when the patient reaches the point of uncertainty. Our results were limited by the small sample size. Future work using a modified set of scenarios may allow a threshold to be detected among those who are past their threshold in the situations described here, and permit examination of how individual thresholds change over time.

CORRESPONDING AUTHOR: Karen G. Scandrett, MD, MPH, Northwestern University, Chicago, IL, 60611; kgsandrett@northwestern.edu

### B-121j

#### **EMOTIONAL DISTRESS, DI-URNAL SALIVARY CORTISOL AND SYMPTOMS IN INDIVIDUALS WITH CHRONIC FATIGUE SYNDROME: EVIDENCE FOR A DISTRESS-SYMPOM EXACERBATION BIOBEHAVIORAL MODEL**

Emily Lattie, BS,<sup>1</sup> Michael H. Antoni, PhD,<sup>1</sup> M. A. Fletcher, PhD,<sup>2</sup> F. Penedo, PhD,<sup>1</sup> S. Czaja, PhD,<sup>3</sup> C. Lopez, MS,<sup>1</sup> D. Perdomo, PhD,<sup>3</sup> A. Sala, MEd,<sup>3</sup> S. Nair, MS,<sup>3</sup> S. Fu, MS<sup>3</sup> and N. Klimas, MD<sup>2</sup>

<sup>1</sup>Psychology, University of Miami, Coral Gables, FL; <sup>2</sup>Medicine, University of Miami, Miami, FL and <sup>3</sup>Psychiatry and Behavioral Sciences, University of Miami, Miami, FL.

Cortisol dysregulation and hypocortisolism are frequently seen in Chronic Fatigue Syndrome (CFS). Emotional distress has been shown to alter cortisol regulation in healthy populations and exacerbate symptoms in CFS patients. However, the relationships among emotional distress, cortisol levels and health symptoms in CFS patients have not been tested. Our biobehavioral model holds that stress-associated alterations in cortisol regulation may influence the severity of CFS symptoms. The present study examines relations among emotional distress, cortisol regulation indices and physical symptoms in 85 men and women with CFS. The sample had a mean age of 51.33 (SD=9.89) and was primarily Caucasian (78.8%) and female (87.4%). Saliva samples (4 samples a day for 2 days) and self-reported perceived stress, depression, and CDC-based CFS symptoms were provided by participants. Di-urnal cortisol variability and mean cortisol output were computed for analyses. An emotional distress composite score was computed using scores from the PSS, CES-D and POMS Depression subscale. Controlling for gender, emotional distress positively predicted both the frequency ( $r=.298$ ,  $p=.023$ ) and severity ( $r=.314$ ,  $p=.015$ ) of CFS symptoms, and as well as the amount of interference that symptoms caused in daily life ( $r=.518$ ,  $p<.000$ ). Poorer diurnal cortisol regulation (less di-urnal variability) was associated with greater emotional distress ( $r=-.235$ ,  $p=.033$ ) and feeling more sluggish ( $r=.227$ ,  $p=.040$ ) and less alert ( $r=.233$ ,  $p=.035$ ). Lower cortisol output was associated with feeling more fatigued ( $r=-.218$ ,  $p=.049$ ) and less alert ( $r=-.274$ ,  $p=.013$ ). These findings support our theoretical model and suggest that emotional distress may exacerbate the symptoms of CFS in tandem with alterations in cortisol regulation.

CORRESPONDING AUTHOR: Emily Lattie, BS, Psychology, University of Miami, Coral Gables, FL, 33146; elattie@psy.miami.edu

### B-128a

#### **WHAT ARE THE CURRENT PRACTICES OF PROVIDERS FOLLOWING A NRS PAIN SCORE?**

Jennifer S. Funderburk, PhD,<sup>2,1</sup> Kristin L. MacGregor, MS,<sup>1,2</sup> Kelly Wheaton, MA,<sup>3,2</sup> Kevin S. Masters, PhD,<sup>6,1</sup> Stephen Bruehl, PhD,<sup>5</sup> Christopher R. France, PhD<sup>4</sup> and Stephen A. Maisto, PhD<sup>1,2</sup>

<sup>1</sup>Department of Psychology, Syracuse University, Syracuse, NY; <sup>2</sup>Center for Integrated Healthcare, Syracuse VA Medical Center, Syracuse, NY; <sup>3</sup>Department of Clinical and Social Sciences, University of Rochester, Rochester, NY; <sup>4</sup>Department of Psychology, Ohio University, Athens, OH; <sup>5</sup>Department of Anesthesiology, Vanderbilt University School of Medicine, Nashville, TN and <sup>6</sup>Department of Psychology, University of Colorado Denver, Denver, CO.

This study examined practices of primary care providers meeting with patients with NRS pain scores above and below the established cut-off ( $\geq 4$ ). A chart review was conducted on an NRS pain rating stratified random sample of 400 male patients obtained from a larger dataset (80,944) of all primary care patients seen in the VISN 2 network from January 1 to June 30, 2005. Descriptive analyses were conducted, and preliminary regression analyses revealed that demographic variables did not predict NRS pain groupings or NRS pain rating. Yet, 21% of patients with a positive pain score ( $\geq 4$ ) did not evidence that pain was assessed or any intervention was provided. Controlling for demographic variables, logistic regression analyses revealed that patients with a pain diagnosis were 2.48 times more likely to fall within this group. In contrast, 47% of patients reporting a NRS pain score  $< 4$  had pain assessment or intervention mentioned in the medical chart. Logistic regression analyses revealed that patients with a pain diagnosis were 3.56 more likely to have their pain assessed than those without a diagnosis. Analyses also revealed that with every increase in the NRS pain rating, patients were 1.28 times more likely to have an assessment/intervention. Results suggest that the NRS pain rating is not always used by providers to dictate whether or not to complete a pain assessment/intervention. As a primary care screener, the NRS pain rating scale does not seem to capture a majority of patients needing assessment/intervention. This study provides some understanding regarding the clinical practices providers use when assessing pain and whether the NRS pain rating is useful as a screener.

CORRESPONDING AUTHOR: Kristin L. MacGregor, MS, Department of Psychology, Syracuse University, Syracuse, NY, 13244; kmacgreg@syr.edu

### B-128b

#### **SELF-PERCEPTION OF COGNITIVE FUNCTIONING IS AN IMPORTANT PREDICTOR OF PAIN AND EMOTIONALITY IN ADULT AFRICAN AMERICAN PATIENTS WITH SICKLE CELL DISEASE (SCD)**

Miriam Feliu, PsyD,<sup>1</sup> Keith E. Whitfield, PhD,<sup>2</sup> Christopher L. Edwards, PhD,<sup>1,2</sup> Mary Wood, MA<sup>1</sup> and Camela S. McDougald, MA<sup>3</sup>

<sup>1</sup>Psychiatry and Behavioral Sciences, Duke University Medical Center, Durham, NC; <sup>2</sup>Psychology, Duke University, Durham, NC and <sup>3</sup>B and D Behavioral Health, Durham, NC.

Cognitive deficits are known consequences of hematological conditions like Sickle Cell Disease (SCD). Little, however, is known about the influence of these disturbances in cognition on pain and emotional functioning in adults with this disease. In the current study, we evaluated the influence the self-perception of cognitive deficits on pain and emotionality in a small convenience sample of 27 adults (mean age  $33.66 \pm 12.66$ ) with SCD. Using survey methodology, patients responded to the question "In general, how would you describe your memory as compared to when you were in high school (mem)" using a 5-point scale where "5" represented "much better now" and "1" represented "much worse now." Using Multivariate General Linear

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

Modeling, we found that when controlling for age, self perception of memory functioning was predictive of the average self-reported pain over the past month ( $p=.01$ ), Interpersonal Sensitivity ( $p=.02$ ), Hostility ( $p=.03$ ), Psychosis ( $p=.01$ ), General Severity Index (GSI:  $p=.04$ ), and Positive Symptom Total (PST:  $p=.01$ ). We believe this study to be the first documented evidence that self-perception of cognitive change is an influence on pain and emotional functioning in adults with SCD. We interpret this data to suggest that cognitive functioning of adult African American patients with SCD requires additional research as a significant influence on pain and emotional outcomes.

CORRESPONDING AUTHOR: Christopher L. Edwards, PhD, Psychiatry and Behavioral Sciences, Duke University Medical Center, Durham, NC, 27713; christopher.edwards@duke.edu

## **B-128c** **STUDY DESIGN AND TREATMENT OUTCOMES: THE EFFECT OF WAITING LIST DURATION, PATIENT EXPECTATIONS, AND PATIENT SATISFACTION**

Katherine A. VanBuskirk, BA<sup>1,3</sup> and Julie L. Wetherell, PhD<sup>2,1</sup>

<sup>1</sup>University of California, San Diego, San Diego, CA; <sup>2</sup>Veterans Affairs Healthcare System, San Diego, CA and <sup>3</sup>San Diego State University, San Diego, CA.

Randomized controlled trials often use waiting list (WL) as a control condition in behavioral interventions for chronic pain. This investigation sought to determine whether there is an association between length of WL, which varies across studies, and change in pain interference and severity as measured by the Brief Pain Inventory (BPI) in a sample of patients with chronic pain. In addition, the study sought to determine if pre-treatment expectancies, as measured by the Client Expectations Inventory (CEI), or post-treatment satisfaction, measured by the Client Satisfaction Questionnaire (CSQ), were related to treatment outcomes. Treatment-seeking individuals with chronic pain ( $N = 80$ ) completed a pre-treatment waiting period ranging from 2 to 8 weeks. They then received either 8 weekly sessions of group-administered Cognitive-Behavioral Therapy or Acceptance and Commitment Therapy. Non-study treatments were kept constant during WL period and intervention. Multiple regression analysis determined that the length of WL phase did not predict change in pain scores either over the course of the waiting period or during subsequent treatment. Expectations prior to treatment did not significantly predict change in BPI scores over the course of treatment ( $p's > .05$ ). Satisfaction, however, was marginally related to BPI outcome ( $t = -1.82$ ,  $p = .07$ ). These results suggest that the length of WL, up to 8 weeks, may not be related to amount of improvement in samples of individuals with chronic pain enrolled in intervention studies. Also, these results suggest 1) that shorter WL periods, which may be more sensitive to the needs of individuals with chronic pain, may be as appropriate as longer WL periods as control conditions for intervention studies; 2) expectations may play less of a role than previously thought, particularly when participants are being randomized to two active treatments; and 3) satisfaction with treatment may not be strongly related to improvements in pain.

CORRESPONDING AUTHOR: Katherine A. VanBuskirk, BA, Psychology, University of California, San Diego & San Diego State University, San Diego, CA, 92161; kvanbusk@ucsd.edu

## **B-128d** **PAIN MEDICATION USE IS HIGHER IN SURVIVORS OF CHILDHOOD SEXUAL ABUSE**

Tierney K. Ahrold, MA and Cindy M. Meston, PhD  
Department of Psychology, University of Texas at Austin, Austin, TX.

The relationship between traumatic stress and physical pain conditions is becoming well known (for review, see Otis, Keane, & Kerns, 2003). As sexual assault or abuse is the most likely kind of trauma to cause subsequent psychopathology (Kessler et al., 2005), it is possible that victims of sexual abuse are more likely to experience pain, and have an increased need for pain medications. We defined CSA as "experience of at least one involuntary sexual experience prior to age 16 (and no less than 2 years prior) that included one or more of the following acts: oral, anal, or vaginal intercourse, penetration of the vagina or anus using objects or digits, and genital touching or fondling." Women with a history of CSA ( $N = 144$ ) and without (NSA,  $N = 99$ ) were asked about their current medication use, history of psychiatric diagnosis, and current levels of traumatic stress and depression. Pain medication use was coded dichotomously (current use vs. no use) and included prescription medications as well as over-the-counter medications. Current depression symptoms were measured with the Beck Depression Inventory and traumatic stress symptoms with the PTSD Checklist. We used a logistic regression with age as well as trauma and depression symptoms in the first block, and CSA history, psychiatric history, and the interaction between the two in the second block. The second block added significantly to the model ( $\chi^2(1) = 11.83$ ,  $p < 0.001$ ), and the interaction term was significant (Wald statistic = 10.28,  $p < 0.05$ ), such that CSA women with a history of a psychiatric diagnosis were significantly more likely than any other group to be currently using a pain medication. Even after controlling for age and current symptoms of depression and traumatic stress, there was an effect of CSA and psychiatric history on pain medication use. That is, there is something beyond current psychiatric symptom level which increased the use of pain care for those women who had CSA and psychiatric diagnosis histories. It is possible that those who received diagnoses were more likely to be treatment seeking for pain conditions as well.

CORRESPONDING AUTHOR: Tierney K. Ahrold, MA, Department of Psychology, University of Texas at Austin, Austin, TX, 78712; tierney.ahrold@mail.utexas.edu

## **B-128e** **RACIAL AND GENDER DISPARITIES IN PAIN WITHIN A VETERAN POPULATION**

Layne A. Goble, PhD, Derik Yeager, MBS and Kathryn Magruder, PhD  
Charleston VAMC, Charleston, SC.

There has been considerable interest in disparities related to pain, although there have been few reports among Veterans. This study compared patient report and provider assessment of pain severity across race and gender among patients from four VA Medical Centers. Participants were randomly drawn from patients seen in primary care at least once within a three year period. A sample of 777 individuals was drawn for this study: 300 African-American and 477 Caucasian, 127 women and 650 men. Pain severity was reported on a scale from 0-10, where 0 indicated no pain and 10 indicated extreme pain. We defined pain as minimal if patients rated their pain between 1 and 3 and severe if patients rated their pain between 4 and 10. Using a two-year window, we computed the percentage of pain ratings for each patient that met our definitions of minimal and

severe pain using that patient's total number of pain ratings as the denominator. We then tested the mean percentage across racial and gender variables. We found no significant difference in the percentage of African-Americans and Caucasians who reported minimal pain severity (9.8% and 10% respectively), although more African-Americans (27%) reported significant pain compared to Caucasians (21%). We also found that a significantly larger percentage of women reported minimal pain compared to men (15% and 9% respectively), similarly more women reported significant pain compared to men (34% and 21%). Lastly, we examined the number of visits in which providers recorded pain severity scores by race and gender. We found that there was no significant difference in recording pain severity scores between African-Americans (11%) and Caucasians (10%), and further analyses indicates that there were no significant differences by race among individuals with 20 or more healthcare visits. We did observe that significantly more pain severity scores were recorded for women (14%) compared to men (10%). These results indicate that while gender disparities exist across both reports of minimal and significant pain, racial disparities are prominent only in reports of significant pain.

CORRESPONDING AUTHOR: Layne A. Goble, PhD, Anesthesia, Charleston VAMC, Charleston, SC, 29401; layne.goble@va.gov

### **B-150a** **PATTERNS OF PHYSICAL ACTIVITY AND OTHER HEALTH RISK BEHAVIORS DURING THE TRANSITION INTO EARLY ADULTHOOD: A LONGITUDINAL COHORT STUDY OF CANADIANS**

Matthew Kwan, PhD,<sup>1</sup> John Cairney, PhD,<sup>1,2</sup> Eleanor E. Pullenayegum, PhD<sup>2</sup> and Guy E. Faulkner, PhD<sup>3</sup>

<sup>1</sup>Family Medicine, McMaster University, Hamilton, ON, Canada;

<sup>2</sup>Department of Clinical Epidemiology & Biostatistics, McMaster, Hamilton, ON, Canada and <sup>3</sup>Exercise Sciences, University of Toronto, Toronto, ON, Canada.

Research consistently demonstrates that physical activity (PA) declines with age. However, such declines do not occur linearly. The transition into early adulthood is one period where disproportionate declines in PA have been evident (Caspersen, et al., 2000). Much of our understanding of such declines among Canadian young adults has been based on cross-sectional data (e.g., CCHS, 2005), or with prospective studies exclusively focused on convenience samples of college/university students (e.g., Bray & Born, 2004). The purpose of the current study was to use multilevel modeling to discern patterns of physical activity based on gender and educational trajectory among a nationally-representative cohort of Canadian adolescents (N = 640, nmales = 332). Smoking and binge drinking behaviors were also examined as a basis for comparison. Results found a significant three-way time by gender by educational trajectory interaction (coefficient = -0.189, SE = .09, p < .05) for physical activity; while main effects for time2 (coefficient = -0.114, SE = .01, p < .01) and time3 (coefficient = 0.028, SE = .01, p < .01) were significant for binge drinking and smoking, respectively. Overall, PA decline was evident among Canadian young adults transitioning into early adulthood - with declines being most precipitous among males entering college or university. The results also highlight the saliency of PA decline, as young adults tend to mature out of binge drinking and smoking behaviors during early adulthood. While differences in PA patterns emerged based on gender and educational trajectories, it appears that binge drinking and smoking behaviors were consistent among

the broader population. Given the public health implications, efforts must be taken to prevent the occurrence of these health-risk behaviors with a particular focus on the PA decline during the transition into early adulthood.

CORRESPONDING AUTHOR: Matthew Kwan, PhD, Family Medicine, McMaster University, Hamilton, ON, L8P 0A1; maty.kwan@utoronto.ca

### **B-150b** **CHANGES IN SELF-EFFICACY DURING SOCIAL COGNITIVE THEORY BASED INTERVENTION TO PROMOTE MODERATE EXERCISE IN RURAL ADOLESCENTS**

Brian Hartz, PhD<sup>1</sup> and Rick Petosa, PhD<sup>2</sup>

<sup>1</sup>Denison University, Granville, OH and <sup>2</sup>The Ohio State University, Columbus, OH.

The purpose of the study was to test the ability of a Social Cognitive Theory (SCT) based intervention to impact self-efficacy and moderate exercise during and after the intervention in rural adolescents. A quasi-experimental design was used to compare the treatment and comparison group. Two rural high schools in Ohio agreed to have their Physical Education classes participate in the study N=143 subjects in the intervention group and N=97 subjects in the comparison group. Students in each group were exposed to similar physical education curricula, however the experimental group students will receive an additional 10 lesson social cognitive theory based intervention focused on behavioral skill building exercises. Measurements were collected at pre-test, 5 weeks and post intervention. Previously validated measures were used for exercise, and self-efficacy. At post test the intervention group reported higher rates of moderate-intensity exercise (p=.001). There was a statistically significant interaction with regard to self-efficacy (p=.001). The intervention group reported statistically significant decreases in self-efficacy at midpoint in intervention. However, this recovered by the end of the intervention to achieve a statistically significant increases relative to baseline levels by the end of the 10 week intervention. This data demonstrates that self-efficacy for exercise may drop while engaging in SCT based behavioral skill building interventions, but can recover as they become more proficient with the behavior changes necessary for successful execution of exercise behavior. This study is one of just a few projects demonstrating how self-efficacy changes during a SCT based intervention. This study reinforces that self-efficacy can be one SCT variable that is amenable to change by a SCT intervention and this can result in a positive effect on leisure time physical exercise behavior. This study provides information that adds to the body of literature pertaining to exercise promotion among adolescent high school students.

CORRESPONDING AUTHOR: Brian Hartz, PhD, Denison University, Granville, OH, 43023; hartzb@denison.edu

### **B-150c** **RELATIONSHIP AMONG TRANSTHEORETICAL MODEL CONSTRUCTS AND BODY SATISFACTION: IMPLICATIONS FOR PHYSICAL ACTIVITY MAINTENANCE**

Paige Johnson, BS,<sup>1</sup> Elizabeth A. Fallon, PhD,<sup>1</sup> Brandon S. Harris, PhD<sup>2</sup> and Madelaine N. Ellison, BS<sup>1</sup>

<sup>1</sup>Department of Kinesiology, Kansas State University, Manhattan, KS and <sup>2</sup>Department of Special Education, Counseling, and Student Affairs, Kansas State University, Manhattan, KS.

Negative body image is a known barrier to physical activity; yet little research has examined the potential mechanisms by which body

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

image influences the physical activity behavior change process. This study aimed to (1) examine associations between body satisfaction and transtheoretical model (TTM) constructs (stage of change, temptation, decisional balance, processes of change) and (2) determine if body satisfaction moderates the relationship between TTM constructs and stage of change. Participants (N=759) completed an online survey assessing body satisfaction and the TTM constructs. Regression analyses were conducted separately for men and women. For men in the action/maintenance stages, body satisfaction was positively associated with barrier efficacy and behavioral processes of change, and negatively associated with temptation ( $p's < .05$ ). For men in the maintenance/termination stages, body satisfaction was positively associated with stage of change, barrier efficacy, pros and processes of change, and negatively associated with temptation and cons ( $p's < .05$ ). For women in the action/maintenance stages, body satisfaction was positively associated with stage of change, barrier efficacy, and experiential processes of change, and negatively associated with temptation and cons ( $p's < .05$ ). For women in the maintenance/termination stages, body satisfaction was positively associated with barrier efficacy and processes of change and negatively associated with temptation and cons ( $p's < .05$ ). Moderating relationships were not found. In conclusion, body satisfaction directly impacts stage of change and the TTM constructs proposed to influence progression through the later stages of change. Prospective and randomized control methods are needed to further clarify the mechanisms by which body image influences the physical activity behavior change process among men and women.

CORRESPONDING AUTHOR: Elizabeth A. Fallon, PhD, Department of Kinesiology, Kansas State University, Manhattan, KS, 66506; efallon@ksu.edu

## **B-150d INCORPORATING BODY IMAGE INTO PHYSICAL ACTIVITY INTERVENTIONS FOR WOMEN: PILOT STUDY OUTCOMES AND PROCESS EVALUATION**

Shely Weinrich, BS,<sup>1</sup> Elizabeth A. Fallon, PhD,<sup>1</sup> Brandon S. Harris, PhD,<sup>2</sup> Sharolyn Jackson, MS,<sup>3</sup> Rachel Witham, BS,<sup>2</sup> Julie Pickler, BA,<sup>1</sup> Sarah Fieger, BS<sup>1</sup> and Aubrey Arnold, MS<sup>1</sup>

<sup>1</sup>Department of Kinesiology, Kansas State University, Manhattan, KS; <sup>2</sup>Department of Special Education, Counseling, and Student Affairs, Kansas State University, Manhattan, KS and <sup>3</sup>K-State Research and Extension, Kansas State University, Manhattan, KS.

Compared to men, women are less physically active and report low body image as a barrier to physical activity. Thus, a randomized control pilot trial was conducted comparing a standard of care physical activity (PA) intervention ( $n = 16$ ) to an enhanced intervention aiming to improve PA and body image ( $n = 21$ ). Both interventions were based on the Social Cognitive Theory and Transtheoretical Model, met weekly for 14-weeks, and were delivered using several small discussion groups. Baseline and post-program self-report measures of body image and physical activity were obtained. While the interventions resulted in no between group differences for PA or body image ( $p's > 0.05$ ), a trend emerged such that women with low body image receiving the enhanced program were more physically active than women with low body image receiving the standard of care program ( $p = 0.10$ ). A comprehensive theory-based process evaluation revealed both programs were implemented with high fidelity (>90%) and received positive participant ratings. Statistical differences in program implementation were evident; compared to the standard of care program, the enhanced program fully covered

a greater number of the program objectives ( $p = 0.003$ ). In conclusion, incorporating body image into physical activity interventions is feasible, acceptable for participants, and potentially more effective than a standard of care program for women with low body image. Due to the smaller sample size in this pilot study, larger clinical trials are warranted to test the efficacy of such interventions intended to enhance physical activity and body image. These research studies, however, should be targeted towards women expressing negative body image.

CORRESPONDING AUTHOR: Elizabeth A. Fallon, PhD, Department of Kinesiology, Kansas State University, Manhattan, KS, 66506; efallon@ksu.edu

## **B-154a EXERCISE DURING PREGNANCY: A REVIEW OF PATTERNS AND DETERMINANTS**

Anca Gaston, MA and Anita Cramp, PhD  
School of Kinesiology, The University of Western Ontario, Brantford, ON, Canada.

The mental and physical health benefits of exercise during pregnancy highlight the importance of understanding the determinants of pregnant women's physical activity. This paper presents a review of the existing research on pregnancy and physical activity, in order to a) summarize the existing body of literature since 1986 examining changes in physical activity during pregnancy, b) summarize correlates and predictors of physical activity during pregnancy, and c) present directions for future research. A literature search yielded 25 articles published from 1986 to 2009 in English peer-reviewed journals. The major findings were categorized into the following: a) physical activity patterns, b) demographic correlates/predictors, c) the influence of pre-pregnancy physical activity on pregnancy physical activity, d) theory-based predictors and barriers, and f) other correlates of physical activity (e.g. general health, safety concerns). Results indicated that pregnant women are less active than non-pregnant women and that pregnancy leads to a decrease in physical activity. Consistent demographic predictors of higher exercise participation during pregnancy include higher education and income, not having other children in the home, being white, and being more active prior to becoming pregnant. Only a few studies used theoretical models to understand physical activity during pregnancy with varied results. The review outlines demographic and theory-based correlates / predictors that should be taken into consideration when developing interventions to increase physical activity among pregnant women.

CORRESPONDING AUTHOR: Anca Gaston, MA, School of Kinesiology, The University of Western Ontario, Brantford, ON, N3T 6M5; agaston2@uwo.ca

## **B-154b THE EFFECTIVENESS OF AN ACTION AND COPING PLANNING INTERVENTION ON PREGNANT WOMEN'S PHYSICAL ACTIVITY**

Anca Gaston, MA and Harry Prapavessis, PhD  
School of Kinesiology, The University of Western Ontario, Brantford, ON, Canada.

Despite the confirmed health benefits of physical activity (PA) during pregnancy, many expectant mothers are inactive. Previous research has demonstrated that exposure to information about the role of PA in preventing maternal-fetal disease grounded in Protection Motivation Theory (PMT) can influence pregnant women's beliefs, motivation and initial behavior (Gaston & Prapavessis, 2009). The purpose of the

present intervention was to determine whether augmenting a PMT-based PA intervention with an action and coping planning intervention grounded in the Health Action Process Approach (Schwarzer, 2003) can lead to longer lasting behavior change. Once recruited, participants (inactive women between 14 and 30 weeks pregnant) were randomly assigned to one of three treatment groups: control, action planning, and action planning plus coping planning. While all women received information about the benefits of PA during pregnancy, those in the action planning group formulated specific action plans identifying how, when and where they will exercise. In addition to formulating such action plans, women in the combined action and coping planning group also formulated coping plans by identifying how they will accomplish their goals in the face of unexpected obstacles (i.e. "If my plan is to walk outside, how will I exercise if/when it rains?"). Week-long objective (i.e., ACTICAL accelerometer) measures of PA were collected from all participants at baseline, and at 1 week and 4 weeks post-intervention. A repeated measures ANOVA of preliminary objective data (N = 51) demonstrated that while participants in all groups increased physical activity from baseline to week 1, only participants in the action planning and combined action and coping planning groups were still engaging in a minimum of three, 30-minute weekly sessions of moderate-intensity exercise by week 4 post-intervention ( $\eta^2 = .16$ ,  $p = .001$ ). Overall, these preliminary results demonstrate that augmenting a PMT intervention with action and coping planning may lead to longer lasting behavior change in pregnant women.

CORRESPONDING AUTHOR: Anca Gaston, MA, School of Kinesiology, The University of Western Ontario, Brantford, ON, N3T 6M5; agaston2@uwo.ca

## **B-160a** **LOVE ON THE INTERNET: MORE THAN COLLEGE STUDENTS BARGAIN FOR?**

Lindsey L. Ross, MS, John Moring, MS and Julie E. Angiola, MS  
Psychology, University of Wyoming, Laramie, WY.

In recent years, online dating has become a popular and widespread activity. Researchers have responded to the rising popularity of online dating by examining the intrapersonal characteristics (e.g., levels of anxiety) of individuals who date using the Internet, as well as sexual risk behavior (e.g., anonymous sex; use of deception). As a whole, this literature suggests that individuals who use the Internet to find dates have high levels of dating anxiety and are at increased risk for sexually transmitted diseases via anonymous sex and deception. Despite the risks described in the media about meeting someone in-person originally met online (e.g., Craigslist murder), there is little empirical discourse on the dating behaviors and risks encountered (e.g., sexual assault, stalking, or physical assault) by those who use the Internet to find dates. We examined college students' negative Internet dating experiences. College students (n=143) reported their on-line dating behaviors, beliefs about on-line dating risks, and the frequency of negative experiences. Participants were predominately 18 to 21 years of age, female (60%), and currently in college (78%). The majority (98%) had met between one and five people in-person that they originally met on the Internet. Participants utilized social networking sites, such as Facebook and MySpace, to meet potential dates. Less than 1 in 5 online daters indicated any fear of sexual assault when meeting an Internet acquaintance. Nearly 10% of participants first met their date offline at their own home or their date's home. Only a small percentage of students reported a negative experience following a date with a person they met online. Negative ex-

periences included stalking (7%), non-sexual physical assault (2.1%), and sexual assault (1.4%). The low level of perceived risk on the part of college students suggests areas for additional research (e.g., how students determine that dates are safe to meet) and needed intervention (e.g., safety tips on social networking websites).

CORRESPONDING AUTHOR: Lindsey L. Ross, MS, Psychology, University of Wyoming, Laramie, WY, 82071; lross6@uwyo.edu

## **B-164a** **DIMENSIONS OF PSYCHOLOGICAL WELL-BEING PREDICT CONSISTENT CONDOM USE AMONG OLDER ADULTS LIVING WITH HIV**

Kristi E. Gamarel, EdM,<sup>1,3</sup> Michael Botsko, MSW,<sup>2,3</sup> Jeffrey T. Parsons, PhD,<sup>2,3</sup> Mark Brennan, PhD,<sup>4,5</sup> Stephen Karpiak, PhD<sup>4,5</sup> and Sarit A. Golub, PhD MPH<sup>2,3</sup>

<sup>1</sup>Psychology, Graduate Center, CUNY, New York, NY; <sup>2</sup>Psychology, Hunter College, CUNY, New York, NY; <sup>3</sup>Center for HIV Educational Studies & Training (CHEST), New York, NY; <sup>4</sup>AIDS Community Research Institute of America, New York, NY and <sup>5</sup>New York University, New York, NY.

Background: HIV prevention efforts have largely adopted a pathogenic perspective, focusing on psychological factors that exacerbate HIV risk. Researchers have begun to challenge pathogenic perspectives and examine salutogenic models focused on health promoting behaviors such as positive psychological functioning.

Methods: This cross-sectional study examined psychological well-being as a preventative factor in promoting consistent condom use among a sample of 328 sexually-active HIV-positive adults ages 50-78 in New York City. Participants completed a measure of psychological well-being and sexual behavior in the past 90 days. Three separate multivariable logistic regression models were constructed for gay/bisexual men, straight men, and women to estimate the effects of each of the six domains of psychological well-being on the odds of engaging in protected anal/vaginal sexual activity only in the past three months.

Results: Consistent condom use during every act of anal or vaginal sex was associated with: personal growth for gay/bisexual men (OR=1.63;  $p=0.04$ ); positive relationship scores for gay/bisexual men (OR=1.72;  $p=0.02$ ) and straight men (OR=1.53;  $p=0.02$ ); purpose in life for straight men (OR=0.01;  $p=0.01$ ) and women (OR=2.22;  $p=0.01$ ); environmental mastery (OR=2.16;  $p=0.01$ ) and autonomy (OR=1.99;  $p=0.03$ ) for women only.

Conclusion: Findings indicate unique dimensions of psychological well-being were associated with protective sexual practices in each of the three groups. Positive mental health factors may be an important factor to consider in fostering HIV prevention behaviors among HIV-positive older adults. Future research is needed to examine the associations of specific psychological resources and consistent condom use among HIV-positive persons, and to foster a salutogenic approach to HIV prevention.

CORRESPONDING AUTHOR: Kristi E. Gamarel, EdM, Social Personality Psychology, Graduate Center, City University of New York, New York, NY, 10001; kgamarel@chestnyc.org

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

## B-164b

### INFORMATION NETWORK NODES: SOURCES OF SEXUAL HEALTH INFORMATION AMONG URBAN AFRICAN AMERICAN YOUTH

M. M. Dolcini, PhD,<sup>1</sup> J. A. Catania, PhD,<sup>1</sup> K. Richards, PhD,<sup>1</sup> G. W. Harper, PhD<sup>2</sup> and C. B. Boyer, PhD<sup>3</sup>

<sup>1</sup>Oregon State University, Corvallis, OR; <sup>2</sup>DePaul University, Chicago, IL and <sup>3</sup>University of California San Francisco, San Francisco, CA.

Youth may rely on diverse networks for information and support regarding sexual health. Messages from these sources impact sexual attitudes and behavior. It is important to examine the breadth of sources that youth rely on, identify message content, and assess message consistency in order to provide new avenues for interventions that address healthy sexuality. We obtained a purposive sample of sexually active African American youth ( $n=25$ ; aged 15-17) through recruitment at community-based agencies in two cities. Semi-structured interviews were conducted by trained interviewers, taped, transcribed, and entered into NVIVO. The present analyses focus on information networks, message content and consistency. Case analyses provide a framework for categorizing youth by level of preparedness for sex. Numerous sources of information were identified: family, peers, school, medical, religion, media, and the Internet. Results show substantial variation in network size and message content. Prevention was a common theme. Sex education was nearly universal, while the media and Internet were rarely used. Medical personnel provided instructional information; religious sources focused on abstinence. Messages from family and peers varied widely. Messages about condoms and birth control varied by gender. Case analysis revealed three types of youth: highly prepared, moderately prepared, and unprepared for sex. Highly prepared youth had diverse networks with consistently sex positive prevention messages; unprepared youth had limited networks and inconsistent messages. The foundational role of sex education suggests that public health efforts in this domain have paid off. Lack of access to sexual health information on the Internet and in media point to areas for future development. Data provide insight into how consistent messages from a variety of sources prepare youth for sex. Information networks are a critical source of sexual health information with potential for innovative intervention.

CORRESPONDING AUTHOR: M. M. Dolcini, PhD, Public Health, Oregon State University, Corvallis, OR, 97331; peggy.dolcini@oregonstate.edu

## B-167a

### THE RELATIONSHIP BETWEEN PTSD SEVERITY, HAZARDOUS ALCOHOL USE AND INSOMNIA AMONG OEF/OIF VETERANS

Clare Campbell, BA,<sup>1</sup> Shannon McKenzie, BA,<sup>1</sup> Emily Kaier, BA,<sup>1</sup> Kyle Possemato, PhD,<sup>1,2</sup> Wilfred Pigeon, PhD,<sup>1,3</sup> Larry Lantinga, PhD,<sup>1,2</sup> Stephen Maisto, PhD<sup>1,2</sup> and Paige Ouimette, PhD<sup>1,2</sup>

<sup>1</sup>Center for Integrated Healthcare, Syracuse VA Medical Center, Syracuse, NY; <sup>2</sup>Syracuse University, Syracuse, NY and <sup>3</sup>Center of Excellence for Suicide Prevention, Canandaigua VA Medical Center, Canandaigua, NY.

Problems with sleep are common among combat veterans, especially among veterans with PTSD. PTSD and sleep problems are also both associated with hazardous alcohol use. Some research suggests that alcohol use is positively correlated with insomnia among individuals with PTSD-only, but not for individuals with comorbid PTSD and alcohol dependence. The current study sought to extend these findings by examining the relationships among PTSD severity, hazardous alcohol

use, and insomnia among Operation Enduring Freedom and Operation Iraqi Freedom (OEF/OIF) veterans. Accordingly, we hypothesized that hazardous alcohol use would moderate the relationship between PTSD severity and insomnia severity such that PTSD would be more predictive of insomnia for veterans with less hazardous alcohol than for veterans with more hazardous alcohol use. The current study used the Clinician-Administered PTSD Scale (CAPS), Alcohol Use Disorders Identification Test (AUDIT), and Insomnia Severity Index (ISI), drawing from a sample of 50 veterans with PTSD symptoms and problematic alcohol use (AUDIT  $\geq 8$ ). As expected, insomnia was associated with PTSD severity,  $r(46)=.57$ ,  $p<.001$ , as well as with each symptom cluster [reexperiencing,  $r(46)=.47$ ,  $p<.01$ ; avoidance,  $r(46)=.39$ ,  $p<.01$ ; and hyperarousal,  $r(46)=.65$ ,  $p<.001$ ]. Regression analyses revealed that the hyperarousal symptom cluster was the only unique predictor of insomnia,  $\beta=.56$ ,  $t(43)=3.38$ ,  $p<.001$ . Contrary to our hypothesis, preliminary analyses did not support an interaction effect of PTSD and alcohol use on insomnia. Alcohol use was not significantly correlated with insomnia ( $p=.10$ ), although it was positively associated with one ISI item (waking too early),  $r(50)=.32$ ,  $p<.05$ . Rather than examining insomnia as a whole, future research should investigate how alcohol use relates to specific sleep difficulties experienced by OEF/OIF veterans with PTSD.

CORRESPONDING AUTHOR: Clare Campbell, BA, Center for Integrated Healthcare, Syracuse VA Medical Center, Syracuse, NY, 13210; clare.campbell@va.gov

## B-177a

### YOGA ENHANCES SMOKING ABSTINENCE AND MOOD IN WOMEN

Ronnesia B. Gaskins, PhD, MSPH,<sup>1</sup> Joshua Magee, PhD,<sup>1</sup> Ernestine Jennings, PhD,<sup>1</sup> David Williams, PhD<sup>2</sup> and Beth C. Bock, PhD<sup>1</sup>

<sup>1</sup>Brown Alpert Medical School/The Miriam Hospital, Providence, RI and <sup>2</sup>Institute for Community Health, Brown Alpert Medical School, Providence, RI.

Yoga as an alternative to traditional (Western) aerobic exercise may have promise as a complementary treatment for smoking cessation. In prior studies, exercise has been shown to enhance cessation efforts, reduce the rise in negative affect that often accompanies quit attempts and improve overall wellbeing. However, no research exist examining yoga and mood in the context of smoking cessation. This pilot study examines the efficacy of yoga as a complementary therapy for smoking cessation. Women ( $n=55$ ) were enrolled in an 8-week group-based smoking cessation program and were randomized to either twice weekly vinyasa yoga or general health and wellness (control). Measures included demographics, smoking withdrawal symptoms, anxiety (STAIT), and depressive symptoms (CES-D). The sample was 18% ethnic/racial minorities; mean age=45.6 years ( $\pm 8.3$ ) and 35% were college graduates. Participants smoked an average of 16.0 ( $\pm 7.3$ ) cigarettes per day at baseline. We conducted logistic regression and longitudinal GEE analysis to examine abstinence outcomes. To examine changes in mood symptoms over treatment, we used ANCOVAs, covarying the baseline value of each dependent measure. Results indicate that at the end of treatment, yoga participants demonstrated increased odds of 24-hour abstinence (46.9% vs. 17.4%; OR=4.19 [95% CI: 1.2-15.1];  $p=.029$ ) and 7-day abstinence (40.6% vs. 13.0%; OR=4.56 [95% CI:

1.1-18.6];  $p=.034$ ) compared to controls. Yoga participants also showed greater reductions in anxiety (-9.6% vs. -0.7%) than controls. These results provide preliminary evidence that yoga may be efficacious in improving mood as a complimentary treatment for smoking cessation among women.

CORRESPONDING AUTHOR: Ronnesia B. Gaskins, PhD, MSPH, Institute for Community Health, Brown Alpert Medical School, Providence, RI, 02905; ronnesia\_gaskins@brown.edu

**B-177b**  
**USING PARTICIPATORY RESEARCH AND HEALTH LITERACY PRINCIPLES TO DEVELOP A THEORY-DRIVEN POSTPARTUM SMOKING RELAPSE PREVENTION TM INTERVENTION**

Kuang-Yi Wen, PhD, Suzanne Miller, PhD, Amy Lazev, PhD, Allison Todd, MS, Janiah Sanford, BS, Tammy Stump, MS and Rachel Slamon, BS  
 Fox Chase Cancer Center, Philadelphia, PA.

Up to 80% of female smokers who quit during their pregnancy relapse in the postpartum period. The design of effective smoking interventions for postpartum relapse prevention is challenging, due in large part to the competing needs and stressors of this population. In collaboration with the Women, Infants, and Children's Clinics (WIC), guided by the Cognitive-Social Health Information Processing (C-SHIP) framework as well as by health communication best practices, a postpartum smoking relapse prevention TM intervention is being developed through an iterative formative evaluation and a community-based participatory research process. In the needs assessment interview phase ( $n=30$ ), daily texting was reported by 83% of the participants, supporting the potential of a TM intervention for this population. Social support (63%), concerns for their children's health (60%), exercise (40%), and relaxation techniques (37%) were reported as facilitators for staying smoke-free and reducing cravings. Based on the findings of needs assessment and literature review, 204 messages were developed under the C-SHIP framework. A review of these messages using plain language evaluation programs further improved the literacy level of these messages by reducing number of polysyllabic words, complex health terms, and long sentences. In the participant message review phase ( $n=30$ ), messages were generally perceived as understandable and very helpful. Participants preferred messages that are personal and relevant. A scientific advisory panel is currently in the process of evaluating message content and an one-week usability testing session will be implemented prior to a feasibility study to test the functionality of the text messaging system and mobile phones. The iterative developmental process we adopted highlight the importance of using formative evaluation methods and participant feedback to develop user-centered health communication interventions.

CORRESPONDING AUTHOR: Kuang-Yi Wen, PhD, Fox Chase Cancer Center, Cheltenham, PA, 19012; Kuang-Yi.Wen@fccc.edu

**B-177c**  
**FACTORS ASSOCIATED WITH SMOKING MENTHOL CIGARETTES AMONG TREATMENT-SEEKING AFRICAN AMERICAN LIGHT SMOKERS**

Babalola Faseru, MD, MPH,<sup>1</sup> Won S. Choi, PhD, MPH,<sup>1</sup> Ron Krebill, MPH,<sup>1</sup> Matthew Mayo, PhD,<sup>1</sup> Nicole L. Nollen, PhD,<sup>1</sup> Kolawole S. Okuyemi, MD, MPH,<sup>2</sup> Jasjit S. Ahluwalia, MD, MPH, MS<sup>2</sup> and Lisa Sanderson Cox, PhD<sup>1</sup>

<sup>1</sup>University Of Kansas Medical Center and School of Medicine,

Kansas City, KS and <sup>2</sup>University of Minnesota Medical School, Minneapolis, MN.

Background: Smoking menthol cigarettes is more prevalent among African Americans (AA) compared to Whites. Menthol has been found to be inversely related to smoking cessation among AA, yet little is known about the factors associated with menthol smoking among AA light smokers. This study examines baseline demographic, psychological, and smoking factors associated with smoking menthol cigarettes among AA light smokers ( $\leq 10$  cigarettes per day). Methods: Participants ( $n=540$ ) were enrolled in a double blind, placebo-controlled randomized trial of bupropion in combination with health education counseling for smoking cessation. Bivariate differences between menthol and non-menthol smokers were explored and baseline factors associated with smoking menthol cigarettes were identified using logistic regression. Results: Participants averaged 46.5 years in age, predominately female (66.1%), and smoked an average of 8.0 cpd ( $SD=2.5$ ). In bivariate analysis, the majority (83.7%) smoked menthol cigarettes. Menthol cigarette smokers were younger (mean age: 45 vs. 52 years  $p<0.0001$ ), were more likely to be female (68% vs. 52%  $p=0.003$ ). While depression and withdrawal scores were slightly higher and exhaled carbon monoxide values were lower among menthol smokers, the differences were not statistically significant. In logistic regression analysis menthol cigarette smokers were more likely to be younger (AOR 0.94 95% CI 0.92-0.97), females (AOR 2.0 95% CI 1.3-3.3), and to have less than a high school education (AOR 2.3 95% CI 1.1-4.9). Conclusions: Among AA light smokers, younger individuals, individuals with a lower level of education and females were more likely to smoke menthol cigarettes and may be more susceptible to the health effects of smoking. Appropriately targeted health education campaigns are needed to prevent smoking uptake in this high-risk population.

CORRESPONDING AUTHOR: Babalola Faseru, MD, MPH, Preventive Medicine and Public Health, University of Kansas Medical Center, Kansas City, KS, 66160; bfaseru@kumc.edu

**B-177d**  
**WISE: WORKING INSIDE FOR SMOKING ELIMINATION**

Jennifer G. Clarke, MD, MPH,<sup>1</sup> Beth C. Bock, PhD,<sup>2</sup> L. Stein, PhD,<sup>3</sup> Rosemarie Martin, PhD,<sup>4</sup> Jennifer A. Mello, MPH<sup>1</sup> and Cheryl Lopes, BA<sup>5</sup>

<sup>1</sup>Memorial Hospital of Rhode Island, Pawtucket, RI; <sup>2</sup>The Miriam Hospital, Providence, RI; <sup>3</sup>University of Rhode Island, South Kingston, RI; <sup>4</sup>Brown University, Providence, RI and <sup>5</sup>RI Department of Corrections, Cranston, RI.

BACKGROUND: Tobacco use among prisoners is approximately three times that of the general population. Minorities, poor, mentally ill and illicit substance using individuals experience significant health disparities compared to the general population and are all over-represented in correctional facilities. Since the announcement of the negative health consequences of second hand smoke, correctional facilities are increasingly becoming tobacco-free. The Rhode Island Department of Corrections has been tobacco-free since February 2003 with no tobacco products allowed anywhere on grounds by inmates or staff. However, nearly all inmates return to smoking as soon as they are released back into the community. OBJECTIVE: To determine if a combination of Motivational Interviewing (MI) and Cognitive Behavioral Therapy (CBT) will increase tobacco abstinence rates after being released from a smoke-free correctional facility. METHODS: Inmates were approached about the study eight weeks prior to their release date. Participation was limited to individuals who had

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

smoked >10 cigarettes/day before incarceration and would be able to come to a follow-up visit three weeks after release. Participants were randomized to either six weekly control videos or six sessions of MI & CBT. RESULTS: To date 136 participants have completed the study. The 3-week smoking abstinence rate in the intervention group was 23% vs. 10% in the control group. The Odds Ratio of continued abstinence was 2.68 (95% CI 1.05-6.84) for the intervention group versus controls. CONCLUSIONS: Incarcerated individuals, who smoked before entering a smoke free prison who are treated with a combination of MI and CBT are more likely to remain smoke free upon release, compared to a control group. Smoking cessation interventions targeting this high risk and underserved population are instrumental to decrease health disparities and decrease tobacco related illnesses in vulnerable populations

CORRESPONDING AUTHOR: Jennifer A. Mello, MPH, Memorial Hospital of Rhode Island, Pawtucket, RI, 02860; Jennifer\_Mello@mhri.org

## B-177e

### THE INFLUENCE OF FDA TOBACCO REGULATION INFORMATION ON YOUNG ADULTS BELIEFS ABOUT CIGARETTE SMOKING

Annette Kaufman, PhD, MPH<sup>1</sup> and Philip Moore, PhD<sup>2</sup>

<sup>1</sup>Division of Cancer Control and Population Sciences, National Cancer Institute, Bethesda, MD and <sup>2</sup>Psychology, The George Washington University, Washington, DC.

To address the continued public health threat posed by cigarette use, legislation was passed in 2009 that gives the Food and Drug Administration (FDA) the authority to regulate tobacco products. An unintended consequence of regulation may be the suggestion that cigarettes have the tacit approval of the government, which may propagate a belief that cigarettes are relatively 'safe.' Risk perceptions include the core components of expectancy (perceived likelihood) and value (positive/negative evaluation). The current study assessed the influence of cigarette regulatory information on expectancies and values about the health effects of cigarette smoking. Non-smoking university undergraduates (n=285) were randomly assigned to one of three conditions which indicated 1) the FDA regulates cigarettes; 2) the FDA does not regulate cigarettes; or 3) no regulatory information (control condition). Negative health expectancies were higher in the regulation (F(1, 187)=6.50, p<.05) compared to the control group. The effect of regulation information compared to the control condition (F(1, 185)=4.12, p<.05) and no regulation condition (F(1, 181)=6.32, p<.05) on expectancy was moderated by FDA competence perceptions. FDA regulation information had no impact on value. Informing young-adult nonsmokers that cigarettes were or were not regulated (vs. control) increased their perceived health risks of smoking. These results suggest that any explicit reference to the regulation of cigarettes may increase the salience of negative health expectancies such that the strength of existing attitudes toward smoking is augmented among nonsmokers. Additionally, FDA competency perceptions in the regulation condition lead to decreases in expectancy whereas for the no regulation condition lead to increases in expectancy compared to perceptions of low FDA competency. These findings have important implications for both our understanding of smoking-related beliefs, as well as interventions designed to reduce the burden of cigarette use.

CORRESPONDING AUTHOR: Annette Kaufman, PhD, MPH, Division of Cancer Control and Population Sciences, National Cancer Institute, Bethesda, MD, 20892-7361; kaufmana@mail.nih.gov

## B-186a

### THE EFFECTS OF BRIEF RELAXATION ON NEEDLE ANXIETY

Linda McWhorter, MA and Virginia Gil-Rivas, PhD  
Psychology, University of North Carolina, Charlotte, Charlotte, NC.

Needle anxiety is associated with delays in seeking medical care (Burden & Whorwell, 1991). This study examined the effectiveness of a brief relaxation exercise (BR) compared to standard care (SC) in reducing anxiety, pain and discomfort associated with receiving injections.

Methods: Following IRB approval, 38 college students were recruited, and provided informed consent. Participants were randomly assigned to BR (a 15 min. relaxation audiorecording) or SC (sitting quietly for 15 mins.).

At baseline (T1), demographics, blood pressure (BP), heart rate (HR); anxiety (State Anxiety Inventory; SAI); prior needle experiences (PNE); and expected fear and pain associated with the current vaccination (EFP) were assessed.

Following the BR or SC (T2), BP, HR, SAI and EFP were assessed. Participants then received their vaccine(s). Nurses recorded participants' reaction to the vaccine(s) and participants reported perceived anxiety and pain associated with the vaccine(s).

Results: The majority of participants were women (65.5%) and were of diverse backgrounds. Over half of the students had prior negative experiences during needle sticks. ANCOVA analysis controlling for SAI, PNE, and EFP at T1, and sex revealed that participants in the BR condition had lower T2 SAI scores (F=10.08, p<.01, partial  $\eta^2 = .35$ ) and lower anxiety during the current vaccine (F=11.16, p<.01, partial  $\eta^2 = .37$ ) than the SC participants. This association did not differ by sex. There were no significant differences between BR and the SC participants on T2 BP and HR, and nurse rating of fear and discomfort.

Conclusion: The brief relaxation intervention reduced perceived needle anxiety prior to and during vaccination. This simple intervention may be a useful tool for reducing needle anxiety, potentially increasing adherence to vaccine recommendations.

CORRESPONDING AUTHOR: Linda McWhorter, MA, Psychology, University of North Carolina, Charlotte, Monroe, NC, 28112; lmcwhor1@unc.edu

## B-186b

### EFFECT OF CONFEDERATE GENDER CONGRUENCE WITH TASK ON CARDIOVASCULAR AND BEHAVIORAL REACTIONS TO INTERPERSONAL STRESS AMONG YOUNG MEN AND WOMEN

Heather Eelsey, BS,<sup>1</sup> Kevin Larkin, PhD,<sup>1</sup> Lauren Penwell, MS<sup>1</sup> and Matthew Whited, PhD<sup>2</sup>

<sup>1</sup>Psychology, West Virginia University, Morgantown, WV and <sup>2</sup>Behavioral Medicine, UMass Medical School, Worcester, MA.

Previous research has shown that men and women react differently to interactions with others, with women exhibiting greater heart rate reactions than men and men exhibiting greater blood pressure reactions than women. The present study was conducted to determine whether confederate gender congruence with the nature of the interpersonal task moderated this pattern of results. Twenty-six men and 31 women participated in a conflict (masculine) and comfort (feminine) interaction. Participants were randomized to a congruent condition, in which they engaged in conflict with a male confederate and comforted a female confederate, or an incongruent condi-

tion, in which they engaged in conflict with a female confederate and comforted a male confederate. Measures of cardiovascular, behavioral (nonverbal; verbal), affective (positive; negative), and interpersonal motive (agency; communion) responses were obtained. Although results confirmed differences between men's and women's cardiovascular reactions to interpersonal stress, confederate gender congruence did not moderate any findings across all study variables (all  $p$ s > .05). These findings indicate that efforts to match sex of confederate with the nature of interpersonal task under investigation are likely unnecessary when examining sex differences in response to interpersonal stress.

CORRESPONDING AUTHOR: Heather Elsey, BS, West Virginia University, Middletown, VA, 22645; helsey@mix.wvu.edu

### **B-192a RURAL WOMEN: QUITTING & RELAPSING FROM METHAMPHETAMINE**

Glenna Hopper, DVM and Anne M. Bowen, PhD  
Nursing, U. Wyoming, Laramie, WY.

The methamphetamine (MA) epidemic has spread into rural US. In Wyoming MA treatment admissions often exceeding those for alcohol dependence! MA dependence is one of the most challenging problems to treat. Research is sparse on rural MA users due to extreme paranoia, and stigma. We conducted in-depth interviews with 45 (28 IDUs) rural women in treatment for MA addiction (64% court ordered, 36% self-referred). We examined: 1) reasons for quitting, 2) reasons for relapse, and 3) current beliefs about long term success. Four themes regarding previous quit attempts emerged. Legal intervention was cited by 35 women, whose primary motivation included a desire to adhere to probation requirements, fear of losing children, and of going to prison. Twenty-two of 24 women who became pregnant quit spontaneously throughout their pregnancies. Seventeen women stated that reconnecting with their family, including children, was a major motivator. Finally, hitting bottom was reported by 10 of the women. Relapsing was reported by all but 2 women prior to their current treatment. Relapse themes included: 1) Bad relationships, (67%), 2) No commitment (56%), and 3) no social support (18%). Lack of commitment was related to short treatment programs (< 30days), with 100% relapse from 30d treatment. Interestingly, while pregnancy was related to quitting, children in the household were not protective for "staying clean" after parturition. Hierarchical cluster analysis of the themes revealed 2 clusters: 1) Legal cluster: Quitting due to adjudication and relapse related to no commitment, short treatment, and bad relationships and 2) "Social" cluster: quitting due to pregnancy, a desire to reconnect with family and hitting bottom, with relapse due to "no support". Interventions at pregnancy by health providers that focus on promoting children's health needs, parenting skills, and family support may prevent relapse. Legal interventions (e.g. Drug Courts) that promote long term intervention immediately would promote commitment and allow for developing functional social skills. Women felt that long term treatment and giving up old friends was required for successful recovery.

CORRESPONDING AUTHOR: Glenna Hopper, DVM, Nursing, U. Wyoming, Laramie, WY, 82071; ghopper@uwyo.edu

### **B-192b INTEGRATING TECHNOLOGY INTO ADOLESCENT SUBSTANCE ABUSE TREATMENT: IDEAS FROM COUNSELORS**

Jessica L. Ainscough, BA, Kimberlee J. Trudeau, PhD and Sadaf Charity, MBA  
Inflexxion, Inc., Newton, MA.

Background: Seventy-five percent of adolescents in substance abuse treatment relapse within one year. Many of these adolescents do not have the fundamental coping skills to stay sober. An online relapse prevention program could provide an innovative way for adolescents to remain engaged in treatment and aftercare. Purpose: The goal of this qualitative study was to ask adolescent substance abuse counselors about integrating technology into treatment. Methods: Individual one hour telephone interviews were conducted with a convenience sample of 16 adolescent substance abuse counselors (sample was 50% women and 25% minority). Questions included: a) did they like the idea of an online relapse prevention program for adolescents, b) how they would use such a program with adolescents, c) did they think adolescents would continue to use the program during aftercare, and d) what factors would attract and maintain the interest of adolescents in the program. Results: All of the counselors indicated that they liked the concept of an online relapse prevention program. They said they would use the following methods of integrating an online program into treatment: in group sessions or individually with their clients (69%) and/or as homework (31%). When asked if they thought adolescents would continue to use the program after treatment, all but one of the counselors said yes: The reasons they provided for continued adolescent use included: features to make it interesting to adolescents (60%); adolescent motivation to recover (27%); and including the program as part of treatment (20%). Features that counselors suggested to help maintain adolescent interest in an online relapse prevention program included: an online community (63%); interactive activities (25%); and peer stories (25%). This feedback informed the development of a demonstration program. Conclusion: Counselors are receptive to integrating technology into treatment. The next step is to create and test the efficacy of this proposed online relapse prevention program for adolescents.

CORRESPONDING AUTHOR: Jessica L. Ainscough, BA, Inflexxion, Inc., Newton, MA, 02464; jainscough@inflexxion.com

### **B-192c ILLUMINATING THE LINK BETWEEN EXPERIENCES OF DISCRIMINATION AND EPISODIC ALCOHOL ABUSE IN ETHNIC MINORITY POPULATIONS**

Marcella H. Boynton, PhD<sup>1</sup> and Laura Smart Richman, PhD<sup>2</sup>  
<sup>1</sup>Center for Child and Family Policy, Duke University, Durham, NC  
and <sup>2</sup>Psychology Department, Duke University, Durham, NC.

African Americans and Latinos comprise the two largest minority groups in the United States (US Census Bureau, 2008). Both groups generally consume less alcohol than Whites overall, but have higher rates of alcohol-related problems (Blume, Resor, Villanueva, & Braddy, 2009; Herd, 1994). Recent research suggests that experiences of discrimination may help to explain this pattern. Specifically, binge drinking may be sometimes used by a subset of minority group members to temporarily alleviate the aversive effects of discrimination. However, the alcohol abuse literature is largely silent on whether risk varies by the type of discrimination (i.e., subtle versus overt) and as a function ethnic/racial identification. The current research attempts to illuminate the links between alcohol abuse, experiences of discrimina-

# **32<sup>nd</sup> Annual Meeting & Scientific Sessions**

April 27-30, 2011 | Rapid Communications

tion, and ethnic identity through the analysis of data from the NIMH Collaborative Psychiatric Epidemiology Surveys. Results indicate that for both Black and Latinos even infrequent experiences of overt discrimination significantly increase the risk of meeting DSM-IV criteria for alcohol abuse. In addition, there was an interaction between overt discrimination and ethnic identity such that individuals who experienced overt discrimination and who felt little or no identification with their ethnic/racial group were almost twice as likely as those who did identify with their ethnic/racial group to meet DSM-IV criteria for alcohol abuse. Possible causal mechanisms, including social support and alcohol accessibility, are discussed.

CORRESPONDING AUTHOR: Marcella H. Boynton, PhD, Center for Child and Family Policy, Duke University, Durham, NC, 27708-0420; marcella.h.boynton@duke.edu

# **Rapid Communications Poster Session C**

Friday, April 29, 2011

6:30 PM - 8:00 PM

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

## C-033a

### BRCA GENETIC TESTING UPTAKE AND BARRIERS AMONG AN ETHNICALLY DIVERSE AND UNDERINSURED POPULATION SEEN FOR CANCER GENETIC COUNSELING THROUGH A SAFETY NET COUNTY HOSPITAL

Heidi A. Hamann, PhD, Wendy P. Bishop, MS, Linda Robinson, MS, Amy Moldrem, MD, Jay Morrow, DVM, MPH, Elisabeth Brown, BA and Julie Mook, MD  
UT Southwestern Medical Center, Dallas, TX.

Background: Important questions about genetic testing uptake and cancer risk management have been significantly understudied among racial/ethnic minorities and underinsured populations. Individuals without insurance coverage may face significant financial barriers to BRCA testing, even with the availability of programs that fund testing for high risk, uninsured individuals.

Objective: Our study objectives were to document rates of BRCA genetic testing and barriers among ethnically and socioeconomically diverse women seen for cancer genetic counseling.

Method: We performed a retrospective chart review of 195 women seen for breast/ovarian cancer genetic counseling in 2008 and 2009 at Parkland Hospital, the Dallas County health system that primarily treats uninsured or underinsured patients.

Results: Patients were relatively young (mean age = 43.3 years), with 46.6% identifying themselves as Hispanic, 37.4% non-Hispanic Black, and 12.3% non-Hispanic White. Less than 30% had private insurance, Medicare, or Medicaid coverage. Overall, 128 women (65.6%) were tested for BRCA mutations; of these women, 26 (20.3%) were found to be BRCA carriers. The majority of tests (76%) were funded through an assistance program from Myriad Genetics. Of the 67 women who did not get tested, approximately half had documented barriers to testing that were unrelated to genetic risk. The most common of these barriers were financial (e.g., uninsured and financially ineligible for Myriad program; unable to provide financial documents needed for test coverage).

Conclusions: Results indicate a relatively high level of test uptake in our racially/ethnically diverse and underinsured sample. However, test uptake was primarily facilitated by a financial assistance program and significant financial barriers to testing remained among the non-tested women. More research is needed to understand cancer genetic testing decisions and outcomes in this understudied population.

CORRESPONDING AUTHOR: Heidi A. Hamann, PhD, Psychiatry, UT Southwestern Medical Center, Dallas, TX, 75390-9044; heidi.hamann@utsouthwestern.edu

## C-033b

### PSYCHOLOGICAL DISTRESS IN WOMEN DIAGNOSED WITH CANCER DURING YOUNG ADULTHOOD

Andrea Floyd, PhD,<sup>1</sup> Kateland Sykes, BA<sup>1</sup> and Michael Andrykowski, PhD<sup>2</sup>

<sup>1</sup>Dept. of Psychology, East Tennessee State University, Johnson City, TN and <sup>2</sup>Dept. of Behavioral Sciences, University of Kentucky, Lexington, KY.

Women diagnosed with cancer during young adulthood (i.e. 18-39 years of age) are an understudied population and face unique challenges due to their developmental life stage. As a result, cancer may be particularly distressing for this population. The present study investigated psychological distress in 82 women diagnosed with cancer (n=31 breast cancer, n=51 genital cancer) during young adulthood

(mean age at diagnosis=31). All women completed a questionnaire packet within 1-5 years of diagnosis. Psychological distress was measured by the Hospital Anxiety and Depression Scale (HADS). Clinically significant anxiety was present in 43% of the sample, clinically significant depression was endorsed by 10% of the sample and 46% of the sample met or exceeded the cutoff score for clinically significant psychological distress. An ANCOVA with education as a covariate revealed no significant differences in psychological distress by cancer type. On a Concerns Checklist, participants endorsed clinically significant concern on an average of 6 of 26 items; 76% of the sample endorsed clinically significant concern on at least one item. Clinically significant concern was most commonly expressed regarding 'cancer recurrence' (55%), 'the future' and 'health insurance coverage' (44%) as well as 'finances' and 'having hereditary cancer' (41%). In contrast, clinically significant concern was least commonly expressed regarding 'my relationship with friends' (7%), 'child care' (9%), and 'my relationship with family' (10%). These findings indicate clinically significant psychological distress is prevalent in women diagnosed with cancer during young adulthood, anxiety in particular. This suggests these women should be closely monitored and these symptoms evaluated to determine when treatment is necessary. Clearly, more research is needed to investigate the potentially unique impact of the cancer experience on survivors of cancer diagnosed during young adulthood.

CORRESPONDING AUTHOR: Andrea Floyd, PhD, Psychology, East Tennessee State University, Johnson City, TN, 37614; andrea.floyd01@gmail.com

## C-033c

### IDENTIFYING BARRIERS AND FACILITATORS OF HEALTH BEHAVIOR CHANGE AMONG VETERAN CANCER SURVIVORS

Gregory Beehler, PhD,<sup>1,2</sup> Amy Rodrigues, PhD,<sup>3</sup> Marc Kiviniemi, PhD<sup>2</sup> and Lynn Steinbrenner, MD<sup>3</sup>

<sup>1</sup>Center for Integrated Healthcare, VA WNY Healthcare System, Buffalo, NY; <sup>2</sup>University at Buffalo, Buffalo, NY and <sup>3</sup>VA WNY Healthcare System, Buffalo, NY.

Background: Cancer survivors are advised to engage in health promoting behaviors in order to improve their health and quality of life. However, adherence to healthy behaviors is low and obstacles to change among Veteran cancer survivors have not been previously described. Purpose: This study explores Veteran-identified barriers and facilitators to health behavior change within the context of cancer survivorship. Method: Thirty-five Veterans who completed cancer treatment at a VA medical center participated in a qualitative interview about perceptions of cancer survivorship and health behavior change. Grounded theory guided the line-by-line analysis of verbatim transcripts. Results: Participants identified numerous survivor-specific contextual factors that influenced behavior change, including lack of knowledge about cancer survivorship wellness goals, discomfort with embracing a "cancer survivor" identity, distress from the uncertainty about longevity following diagnosis, and de-prioritizing of cancer-related concerns over time. Specific barriers to change included persistent pain and fatigue resulting from cancer treatment, modifying long standing dietary and physical activity patterns too quickly and without professional support, being skeptical that behavior change can improve one's health after cancer, seeing healthy change as requiring too much sacrifice, and losing motivation for change due to depression, anxiety, or unexpected negative life events. In contrast, facilitators to change included being motivated by fear of recurrence, being

encouraged to change by VA medical staff, having a hobby to keep active, trying to improve one's body image, and making changes to improve non-cancer medical comorbidities, such as diabetes. Conclusions: Veteran cancer survivors were uninformed about recommended health behavior goals and may benefit from interventions that address motivational enhancement while considering physical limitations and comorbid conditions.

CORRESPONDING AUTHOR: Gregory Beehler, PhD, Buffalo VA Medical Center, VA Center for Integrated Healthcare, Buffalo, NY, NY; gregory.beehler@va.gov

**C-033d**  
**ENACTED SOCIAL SUPPORT BUFFERS STRESS AMONG HEMATOPOIETIC STEM CELL SURVIVORS—BUT ONLY IF IT IS FROM A PARTNER AND ONLY IF IT IS EFFECTIVE**

Christine Rini, PhD,<sup>1,2</sup> Lisa Wu, PhD,<sup>2</sup> Jane Austin, PhD,<sup>3</sup> Heiddis Valdimarsdottir, PhD,<sup>2</sup> Katie Basmajian, MA,<sup>2</sup> Christine Dunkel Schetter, PhD,<sup>4</sup> Scott Rowley, MD,<sup>5</sup> Luis Isola, MD<sup>2</sup> and William Redd, PhD<sup>2</sup>

<sup>1</sup>University of North Carolina at Chapel Hill, Chapel Hill, NC; <sup>2</sup>Mount Sinai School of Medicine, New York, NY; <sup>3</sup>William Paterson University, Wayne, NJ; <sup>4</sup>University of California at Los Angeles, Los Angeles, CA and <sup>5</sup>Hackensack University Medical Center, Hackensack, NJ.

There is ample evidence that negative life events cause psychological distress, especially when paired with a persistent stressor such as recovery from cancer. Theoretically, enacted support should provide resources that “buffer” adverse effects of these events. Yet evidence for buffering effects of enacted support is weak. We propose that buffering is most likely if support is effective (i.e., a good match for recipients’ needs in terms of its quality and quantity). We tested this hypothesis in a cross-sectional study of 228 cancer survivors treated with hematopoietic stem cell transplant, an aggressive treatment that entails lengthy recovery and high dependence on caregiver support. All survivors had a transplant 9 months to 3 years earlier and were suffering from at least moderate distress. They completed measures of generalized distress (Derogatis, 1993), negative life events (Sarason, Johnson, & Siegel, 1978), and the effectiveness of caregiver support (Rini & Dunkel Schetter, 2010). Survivors with partners (n = 188) rated the effectiveness of their partner’s support and other survivors rated a primary caregiver’s support (usually a relative or friend). Hierarchical multiple regression analyses revealed that a greater number of negative life events predicted higher distress ( $\beta = .20$ ,  $p = .001$ ), as did receiving less effective caregiver support ( $\beta = -.22$ ,  $p < .001$ ). A three-way interaction ( $\beta = -.26$ ,  $p = .03$ ) revealed that caregiver support buffered adverse effects of negative life events only if it was effective and only if it was provided by a partner ( $\beta = -.15$ ,  $p = .02$ ) rather than another caregiver ( $\beta = .12$ ,  $p = .54$ ). We discuss potential reasons for this difference and describe implications for interventions and social support theory.

CORRESPONDING AUTHOR: Christine Rini, PhD, Health Behavior and Health Education, University of North Carolina at Chapel Hill, Chapel Hill, NY, 27599-7440; christine.rini@mssm.edu

**C-033e**  
**HIGH-RISK COLON CANCER SURVIVORSHIP EXPERIENCES**

Sarah Kelleher, MS,<sup>1</sup> Kristi Graves, PhD<sup>2</sup> and Richard Winett, PhD<sup>1</sup>  
<sup>1</sup>Psychology Department, Virginia Tech, Blacksburg, VA and  
<sup>2</sup>Lombardi Comprehensive Cancer Center, Cancer Control Program,

Georgetown University, Washington, DC.

Little is known about the health behaviors of colorectal cancer (CRC) survivors at high-risk for future disease due to hereditary cancer syndromes such as HNPCC. We explored relationships between psychosocial and social cognitive variables and self-reported health behaviors, specifically diet and physical activity (PA), in high-risk CRC survivors. We assessed distress, quality of life (QoL), resilience, risk perception, self-efficacy (SE), self-regulation (SR), outcome expectancy (OE), and health behaviors using an online questionnaire. 20 CRC survivors who received HNPCC genetic counseling completed the survey. Greater distress was significantly ( $p$  values  $< .05$ ) related to lower: QoL ( $r = -.75$ ), resilience ( $r = -.52$ ), SE for diet and PA ( $r = -.47$ ), SE for medical care ( $r = .67$ ), and SR ( $r = -.54$ ) and OE regarding diagnosis/treatment ( $r = -.72$ ). Since diagnosis, 35% reported increasing and 10% reported decreasing the number of days/month they eat a healthful diet. Only 1 participant reported increasing alcohol consumption vs. 7 participants (35%) who reported decreasing consumption post-diagnosis. 30% and 40% of participants reported decreasing fast-food and soft drink/candy intake since diagnosis, respectively; none reported increases in these behaviors. We found no significant differences in psychological variables between participants who increased vs. decreased positive health behaviors post-diagnosis. Most (70%) reported no changes in time or intensity of PA since diagnosis, and although 93% appeared to meet the recommended duration per PA session, only 36% met the recommended frequency of PA/month. Most participants who reported no change in diet ate a healthful diet pre-diagnosis. Results suggest that post-diagnosis, many high-risk CRC survivors report increasing healthy behaviors or retaining healthy lifestyles practiced prior to CRC diagnosis. The present high-risk sample was a moderately health-conscious group, but results suggest areas in which health promotion efforts can be tailored to improve post-treatment care in CRC survivors.

CORRESPONDING AUTHOR: Sarah Kelleher, MS, Psychology Department, Virginia Tech, Blacksburg, VA, 24061; skelleher@vt.edu

**C-033f**  
**HIGH-RISK COLON CANCER SURVIVORS’ ATTITUDES ABOUT HEALTH BEHAVIORS**

Sarah Kelleher, MS,<sup>1</sup> Kristi Graves, PhD<sup>2</sup> and Richard Winett, PhD<sup>1</sup>  
<sup>1</sup>Psychology Department, Virginia Tech, Blacksburg, VA and  
<sup>2</sup>Lombardi Comprehensive Cancer Center, Cancer Control Program, Georgetown University, Washington, DC.

Colorectal cancer (CRC) survivors with strong family history/ hereditary cancer syndrome like HNPCC are at high risk of future CRC. Few studies have assessed high-risk survivors’ attitudes about post-diagnosis health behavior. Following an online survey assessing participants’ CRC screening behaviors and their oncologists’ recommendations about diet and physical activity (PA), we conducted telephone interviews with 17 high-risk CRC survivors about genetic counseling (GC), family communication, and health behaviors. Half (55%;  $n = 11$ ) reported having a colonoscopy within 10 years. 60% ( $n = 12$ ) and 30% ( $n = 6$ ) reported their oncologist made PA and dietary recommendations, respectively. All participants received HNPCC GC post-diagnosis and half (53%;  $n = 9$ ) indicated openly discussing diagnosis and GC with family. Other topics discussed with family included: Medical facts (28% of responses); CRC screening (24%); Hereditary cancer risk (33%); Life stage (2%); Logistical issues (2%); Insurance/healthcare concerns (7%); Research (4%). 88% of participants discussed the importance of health behaviors with family. When asked about familial attitudes toward health behavior,

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

4 themes emerged: General emphasis on leading healthy lifestyle (61% of responses); Healthy lifestyle for prevention and risk reduction (14%); Struggles between what they should and actually are doing (21%); Emphasis on mental health/stress reduction, not diet and PA (4%). We asked participants about the importance of health behaviors to future CRC risk; 4 categories emerged: Very important for prevention, risk reduction, recovery (44% of responses); Important, but "not the whole pie" (11%); Generally important, but not likely to impact risk due to genetic predisposition (28%); Generally important, but uncertain of risk impact (17%). Although participants were well informed about the importance of health behaviors, several appeared skeptical about the benefits of such behaviors and many within this high risk group were not adhering to CRC screening guidelines.

CORRESPONDING AUTHOR: Sarah Kelleher, MS, Psychology Department, Virginia Tech, Blacksburg, VA, 24061; skelleher@vt.edu

## C-033g PREVALENCE AND CORRELATES OF PAIN IN SURVIVORS OF EARLY-STAGE LUNG CANCER

Amy Lowery, PhD,<sup>1</sup> Paul Krebs, PhD,<sup>2</sup> Elliot Coups, PhD,<sup>3</sup> Marc Feinstein, MD,<sup>1</sup> Jack Burkhalter, PhD,<sup>1</sup> Bernard Park, MD<sup>4</sup> and Jamie Ostroff, PhD<sup>1</sup>

<sup>1</sup>Memorial Sloan-Kettering Cancer Center, New York, NY; <sup>2</sup>NYU School of Medicine, New York, NY; <sup>3</sup>UMDNJ-Robert Wood Johnson Medical School, The Cancer Institute of New Jersey, New Brunswick, NJ and <sup>4</sup>Hackensack University Medical Center, Hackensack, NJ.

Understanding the pain experience following diagnosis and treatment of early-stage lung cancer requires considering physical, psychological and social factors. We aimed to identify non-small cell lung cancer (NSCLC) survivors at high risk for persistent post-treatment pain using a multidimensional model. A random sample of 184 stage I, NSCLC survivors completed a telephone interview. Years since treatment ranged from 1-6 (M = 3.0); 15% had been treated with use of video-assisted thoracic surgery (VATS). Participants were primarily female (64%), Caucasian (94%) and married (61%) with a mean age of 69 years. Pain was reported by 58% of survivors, with mild intensity (M = 3.00, SD = 1.67 on a 1-10 scale). Moderate/severe pain was reported by 22%. Most (74%) survivors with pain reported not receiving current pain treatment. An overall mild interference with daily activities was reported (M = 2.20, SD = 2.20 on a 1-10 scale). Neither age nor gender was associated with pain severity. Higher pain severity ratings were significantly associated ( $p$ 's < .05) with being unmarried (rpb = -.19), unemployment (rpb = -.25), lower income (r = -.22), fatigue (r = .58), dyspnea (r = .45), number of comorbid diseases (r = .19), decreased quality of life (physical health: r = -.63; mental health: r = -.21), depressive symptoms (r = .37), anxiety symptoms (r = .35) and cancer-related distress (r = .17). Pain is common in NSCLC survivors, with several at-risk subgroups who may require interventions to prevent the development of persistent pain and disability following cancer treatment. Funding was supported by NCI grants T32CA009461-25 and the Byrne Fund.

CORRESPONDING AUTHOR: Amy Lowery, PhD, Psychiatry & Behavioral Sciences, Memorial Sloan-Kettering Cancer Center, New York, NY, 10022; lowerya@mskcc.org

## C-033h ASSESSING BREAST CANCER SURVIVOR NEEDS FOR TREATMENT DECISION SUPPORT

Joanne Buzaglo, PhD,<sup>1</sup> Jeff Belkora, PhD,<sup>2</sup> Kasey Dougherty, MA,<sup>1</sup> Melissa Miller, PhD,<sup>1</sup> Marni Amsellem, PhD<sup>1</sup> and Mitch Golant, PhD<sup>1</sup>

<sup>1</sup>Cancer Support Community, Philadelphia, PA and <sup>2</sup>University of California, San Francisco, CA.

As breast cancer treatment advances, survivors are confronted with more complex treatment decisions; yet, patients are not fully prepared for communicating effectively with their doctor (IOM, 2007). The Cancer Support Community asked a series of questions about the quality of decision support received in making treatment choices to assess survivor needs and inform future directions for community-based decision support interventions. Methods: Over 2,700 survivors joined the Breast Cancer M.A.P. Project, an online registry designed to examine the psychosocial impact of breast cancer. In October 2010, 962 registrants answered study-specific questions about their treatment decision process with the medical team. This sample was 99% female, 83% Caucasian. The mean age was 55. 71% had at least a college degree. The average time since diagnosis was 5.5 yrs (mean age at diagnosis was 50). Over half were Stage II + and 13% had a recurrence. Results: 52% came to a treatment decision during the first visit with a breast cancer specialist. Only 14% received materials before the first visit and 20% were dissatisfied with the materials they received. 50% brought a written list of questions to the first visit, and 34% forgot to ask questions they had formulated. 17% were dissatisfied with the questions they asked. Of those who were dissatisfied with the questions they asked, 27% were unsure what to ask and 22% were too overwhelmed. On a 10-point scale, a majority of registrants rated 10 on the importance of: gathering information (52%) and developing a written question list (58%) before the first visit; and taking notes during the consultation (66%). Conclusion: While the majority of patients make their treatment decisions within their first consultation with a specialist, a significant proportion arrive at the meeting unprepared and leave with "question regret", not having asked questions they wish they had. These findings suggest the need for patient support and information before and during the initial visit with the breast cancer specialist.

CORRESPONDING AUTHOR: Kasey R. Dougherty, MA, Research and Training Institute, Cancer Support Community, Philadelphia, PA, 19131; kasey@cancersupportcommunity.org

## C-033i CANCER SURVIVAL THROUGH WEIGHT LOSS AND EXERCISE (CASTLE)

Melissa M. Nauta, BS,<sup>1</sup> Damon L. Swift, PhD, MS, MEd,<sup>1</sup> Valerie H. Myers, PhD,<sup>1</sup> Conrad P. Earnest, PhD,<sup>1</sup> Catherine M. Champagne, PhD, RD, LDN,<sup>1</sup> Becky D. Parker, PhD,<sup>2</sup> Erma Levy, MPH, RD, LDN,<sup>1</sup> Katherine Cash, RD, LDN<sup>1</sup> and Timothy S. Church, MD, MPH, PhD<sup>1</sup>  
<sup>1</sup>Preventive Medicine, Pennington Biomedical Research Center, Louisiana State University System, Baton Rouge, LA and <sup>2</sup>TrestleTree, Inc., Fayetteville, AR.

Excess weight is a strong predictor of both incident breast cancer (BC) and survivorship. There are few studies comparing strategies for promoting successful weight loss in women with remitted BC. CASTLE was a pilot study which compared the effectiveness/feasibility of in-person and telephonic behavioral-based lifestyle weight loss interventions in BC survivors. Fifty-two overweight/obese women (BMI=25-45 kg/m<sup>2</sup>) with remitted BC (stage IIIa) who recently completed cancer treatment were assigned to either an in-person group (n=24) or an individual telephone-based condition (n=11). Both interventions consisted of behavioral and motivational interviewing techniques aimed at increasing physical activity and reducing caloric intake. The Phase I intervention lasted 6 months. The in-person condition received 16 group-based sessions, and the telephone condition received

weekly intervention calls. Phase II lasted 6 months (e.g. months 6-12), and all participants received monthly intervention calls via telephone. The participants were predominately Caucasian (80%) with a mean age of 52.8 years and mean BMI of 31.9 kg/m<sup>2</sup>. Mixed models ANOVAs showed significant within group weight loss after 6 months for both the in-person (-3.33 kg ± 4.38, p=0.002) and the telephonic (-4.01 kg ± 6.00, p=0.01) conditions with no between group differences. During the weight maintenance period (Phase II), the in-person group demonstrated significant weight re-gain (1.34 kg ± 1.72, p=0.009), which approached significance (p=0.055) compared to the change in weight in the telephonic group (-1.0 kg ± 3.42, p=0.185). Our findings from this small pilot study demonstrate that behavioral-based telephonic weight loss programs are effective and feasible in BC survivors and that telephonic programs may have advantages in promoting weight loss maintenance.

CORRESPONDING AUTHOR: Melissa M. Nauta, BS, Preventive Medicine, Pennington Biomedical Research Center, Baton Rouge, LA, 70808; melissa.nauta@pbr.c.edu

**C-033j**  
**EMOTIONAL SOCIAL SUPPORT OPTIMIZES WELL-BEING IN CANCER SURVIVORS**

Teresa Lee, BA,<sup>1</sup> Thomas V. Merluzzi, PhD,<sup>1</sup> Carolyn A. Heitzmann, PhD<sup>3</sup> and Errol J. Philip, MA<sup>2</sup>

<sup>1</sup>Psychology, University of Notre Dame, Notre Dame, IN; <sup>2</sup>School of Medicine, Yale University, New Haven, CT and <sup>3</sup>Department of Psychology, Ohio State University, Columbus, OH.

Introduction: Cancer can be a debilitating disease, as patients and survivors face both psychological and physical challenges. For many patients and survivors, the social support provided by friends and family can assist with these challenges. Social support may take the form of emotional, instrumental, or advice/informational support. Depending on the level of physical debilitation a patient or survivor experiences, he or she may require different levels of the three types of support. The amount and type of support received may optimize well-being if it matches the needs of the patient or survivor. Method: This study addressed these different needs in 159 cancer survivors. The main effects and interaction of social support (The Inventory of Socially Supportive Behaviors) and physical debilitation (The Sickness Impact Profile) were evaluated in relation to three outcomes: depression (CES-D), quality of life (FACT), and illness adjustment (Psychosocial Adjustment to Illness Scale). Results: Significant statistical interactions followed by post-hoc analyses indicated that low emotional support was related to higher levels depression (p<.01) and lower quality of life (p<.05) in patients with high levels of debilitation compared to those with low levels of physical debilitation. Instrumental and advice/informational support were not found to be significantly related to any of the outcome measures, regardless of the level of debilitation. Discussion: The results support a matching hypothesis: High levels of debilitation should therefore be matched with a high level of emotional support, whereas lower emotional support is optimal for those with low physical debilitation. Thus, for family and professionals the optimal match of need for social support and its provision should be taken into account. Moreover, not all forms of social support are related to well-being.

CORRESPONDING AUTHOR: Thomas V. Merluzzi, PhD, Psychology, University of Notre Dame, Notre Dame, IN, 46556; tmerluzz@nd.edu

**C-033k**  
**RELIGIOUS PROBLEM SOLVING AND WELL-BEING IN CANCER SURVIVORS**

Ryan Dolan, BA,<sup>1</sup> Thomas V. Merluzzi, PhD<sup>1</sup> and Errol J. Philip, MA<sup>2</sup>  
<sup>1</sup>Psychology, University of Notre Dame, Notre Dame, IN and <sup>2</sup>School of Medicine, Yale University, New Haven, CT.

Introduction: Pargament identified three types of religious problem solving: Deferring (D) to a higher power, Collaborating (C) with a higher power, and Self-Directing (SD). This study examined how cancer survivors' approach to religious problem solving was related to their coping efficacy and their well being (quality of life, life satisfaction, depression). Method: Data from a diverse, national, convenience sample of 365 cancer survivors (M= 10 yrs. post diagnosis) was collected via mail. Participants completed a religious problem solving scale (RPSS), as well as measures of self-efficacy for coping (CBI), quality of life (FACT), life satisfaction (LSS), and depression (CES-D). Results: A person X RPSS-scale cluster analysis revealed three groups: 1) High D and C/low SD (65% of sample), 2) High SD/Low D and C (5%), and 3) a third (30%), that was moderately high on D, C and SD. These groups correspond to people a) who actively use a higher power (high DC group) in coping, b) who do not. (high SD), and c) who use all three religious problem strategies (moderately high on D, C and SD). ANOVA demonstrated that for self-efficacy and the measures of well being, there were no significant differences between the High D/C and High SD groups and both were significantly higher on self-efficacy and well being than the third group. Discussion: These exploratory findings suggest that with regard to religious problem solving a clear, singular approach (i.e., high D/C or SD) is more functional in terms of well-being than moderate use of all three types of religious problem solving. In terms of clinical relevance, if religious coping is an important part of the patient's or survivor's repertoire, it would be important to assess the type of religious problem solving used and the commitment to that approach.

CORRESPONDING AUTHOR: Thomas V. Merluzzi, PhD, Psychology, University of Notre Dame, Notre Dame, IN, 46556; tmerluzz@nd.edu

**C-042a**  
**CEREBROVASCULAR RISK FACTORS AND NEUROCOGNITIVE PERFORMANCE AMONG INDIVIDUALS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE**

Patrick J. Smith, PhD,<sup>1</sup> James A. Blumenthal, PhD,<sup>1</sup> Benson M. Hoffman, PhD,<sup>1</sup> Michael A. Babyak, PhD,<sup>1</sup> Duane Davis, MD,<sup>2</sup> Tereza Martinu, MD<sup>3</sup> and Scott Palmer, MD<sup>2</sup>

<sup>1</sup>Psychiatry and Behavioral Sciences, Duke University, Durham, NC; <sup>2</sup>Surgery, Duke University, Durham, NC and <sup>3</sup>Medicine, Duke University, Durham, NC.

Objective: To examine the association between cerebrovascular risk factors and neurocognitive performance among individuals with chronic obstructive pulmonary disease (COPD). Methods: Forty-five individuals with end-stage COPD completed a test battery assessing executive function (Stroop test, Digit Symbol Substitution test, Animal Naming, Controlled Oral Word Association Test, Ruff 2&7 Test, and Trail Making Test) and verbal memory (Wechsler Memory Scale (WMS): Logical Memory, Digit Span, Verbal Paired Associates). Cerebrovascular risk factors, including the Framingham Stroke Risk Profile (FSRP) and smoking, were assessed by chart review and self report. Results: Fifteen participants (33%) exhibited moderate to severe impairments (< 8th percentile) on two or more tests when compared with age- and education-matched normative data.

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

Greater FSRP scores were associated with poorer performance on a composite measure of memory ( $B = -0.30$ ,  $P = .054$ ) but not with executive functioning ( $B = -0.03$ ,  $P = .833$ ). A graded relationship was found between number of years of smoking cessation and executive functioning ( $B = 0.35$ ,  $P = .043$ ), after controlling for previous smoking quantity, with longer abstinence associated with better performance. Previous smoking quantity was related to poorer memory performance among individuals who quit smoking <5 years prior to testing ( $B = -0.76$ ,  $P = .02$ ), but was unrelated to memory performance among individuals who quit  $\geq 5$  years ago ( $B = 0.21$ ,  $P = .344$ ). Conclusions: Impaired memory performance was related to increased cerebrovascular risk factors and executive functioning was positively related specifically to duration of smoking abstinence individuals with end-stage COPD.

CORRESPONDING AUTHOR: Patrick J. Smith, PhD, Psychiatry and Behavioral Sciences, Duke University, Durham, NC, 27710; smith562@mc.duke.edu

## C-042b ENDOGENIC VS EXOGENIC STRESS: CORRELATES WITH PSYCHOLOGICAL AND PHYSICAL MORBIDITY

Jennifer Ceglowski, MS,<sup>1</sup> Elizabeth Chattillion, BA,<sup>2,1</sup> Susan K. Roepke, MS,<sup>2,1</sup> Roland von Känel, MD,<sup>3,1</sup> Paul J. Mills, PhD,<sup>1</sup> Thomas L. Patterson, PhD,<sup>1</sup> Igor Grant, MD<sup>1</sup> and Brent T. Mausbach, PhD<sup>1</sup>

<sup>1</sup>University of California, San Diego, San Diego, CA; <sup>2</sup>San Diego State University, San Diego, CA and <sup>3</sup>Inselspital, Bern University Hospital/University of Bern, Bern, Switzerland.

Background: The chronic stress of providing care for a disabled loved one may increase caregivers' (CG) risk for cardiovascular disease (CVD) and mortality. However, there is little understanding of the specific aspects of caregiving that increase CVD risk. We examined the links between exogenous and endogenous stress and CVD-related outcomes (i.e., blood pressure and coagulation/inflammation).

Method: 56 elderly CG of family members with Alzheimer's disease (mean age = 71.3 + 8.8) underwent in-home assessment of 5 measures of subjective caregiving stress and 5 physiologic indicators of blood pressure, coagulation and inflammation.

Results & Conclusions: Principal components analyses indicated that the 5 stress variables were best characterized as 2 factors accounting for 66.3% of the variance. The "Exogenic Stress Index" comprised dementia severity score, years of caregiving, and number of activities of daily living requiring help from the CG. The "Endogenous Stress Index" included role overload (i.e., a subjective stress index), and CG appraisal of problem behaviors. The 5 physiological markers formed 2 factors accounting for 69.7% of the variance. The "Blood Pressure Index" included systolic and diastolic blood pressure. The "Coagulation/Inflammation Index" included d-dimer, von Willebrand Factor, and IL-6. Pearson correlations revealed that the Blood Pressure Index was significantly correlated with Exogenic Stress ( $r = .33$ ,  $p = .012$ ), but not with Endogenic Stress ( $r = .040$ ,  $p = .772$ ). The Coagulation/Inflammation Index was not significantly correlated with Exogenic Stress ( $r = -.046$ ,  $p = .736$ ) or Endogenic Stress ( $r = .207$ ,  $p = .126$ ). Results suggest that exogenic stressors can impact blood pressure and possibly CVD risk. This may aid in developing interventions for CG focused on managing external stressors rather than changing CG's appraisal of these stressors.

CORRESPONDING AUTHOR: Jennifer Ceglowski, MS, University of California, San Diego, San Diego, CA, 92093-0680; jceglowski@ucsd.edu

## C-042c PERCEPTIONS OF RISK, KNOWLEDGE, & HEALTH BEHAVIORS IN COLLEGE STUDENTS: CARDIOVASCULAR DISEASE

Christoffer Grant, MA and Sharon Danoff-Burg, PhD  
Psychology, University at Albany - SUNY, Albany, NY.

Cigarette smoking, hypercholesterolemia, hypertension, physical inactivity, and obesity together account for approximately 50% of the variance in the development of cardiovascular disease (CVD) (Jenkins, 1978). The health belief model (Rosenstock, 1966) predicts that persons higher in perceived risk of developing CVD will be more likely to engage in health-ameliorative behaviors that will reduce their risk.

Two studies were conducted examining relations among risk knowledge, risk perception, and health behaviors. In the first study, 317 college students (49.1% male) filled out questionnaires related to smoking, physical activity, BMI, family history, and perceived risk. It was predicted that college students with CVD-specific risk factors would be higher in perceived risk of developing CVD. College students with more risk factors did score higher on measures of risk perception. However, these risk factors only accounted for 8% of the variance in perceived risk.

In the second study, 193 college students (42.1% male) filled out the same questionnaires as in the first study. In addition, they were asked to list at least three major risk factors for CVD in an open-ended fashion in order to assess their knowledge. In addition to duplicating the first study, it was also hypothesized that greater knowledge of CVD-specific risk factors would be related to engagement in health-ameliorative behaviors. The results of the first study were duplicated in the second study with greater risk factors for CVD being associated with greater risk perception. College students demonstrated a generally good knowledge of CVD risk factors, ranking poor diet, physical inactivity, smoking, and obesity as the top CVD risk factors. However, they also demonstrated awareness of other risk factors which may have been accounting for the variance in perceived risk, such as hypertension and hypercholesterolemia. Knowledge of risk factors for CVD was related to engaging in those four specific health behaviors that were assessed ( $p's < 0.05$ ) with the exception of family history of CVD ( $p = .013$ ).

CORRESPONDING AUTHOR: Christoffer Grant, MA, Psychology, University at Albany - SUNY, Albany, NY, 12222; cg6512@albany.edu

## C-042d GENDER DIFFERENCES IN THEORETICAL CORRELATES OF PHYSICAL ACTIVITY DURING CARDIAC REHABILITATION

Michelle Fortier, PhD, Shane Sweet, BA, Shaelyn Strachan, PhD and Chris Blanchard, PhD  
University of Ottawa, Ottawa, ON, Canada.

Cardiovascular diseases (CVD) are a prevalent and expensive problem in Canada and worldwide (Heart & Stroke Foundation of Canada, 2006). There is strong evidence for the independent role of physical activity in the secondary prevention of CVD (Jolliffe, et al., 2003) however we are still uncertain which factors most influence physical activity and theory integration has been strongly recommended. A longitudinal study was conducted which had as primary goal integrating Self-Efficacy Theory (SET; Bandura, 1997) and Self-Determination Theory (SDT; Deci & Ryan, 1985; 2002) to increase understanding of physical activity during cardiac rehabilitation. The

purpose of this presentation is to examine gender differences in the key theoretical variables in the hopes of better comprehending women's lower physical activity rates in cardiac rehabilitation. Participants from two cardiac rehabilitation programs (N = 109; 67.9% male) answered validated questionnaires for self-determination and self-efficacy theory variables and completed the Godin Leisure Time Exercise Questionnaire at baseline, two-months (mid program) and four months (end of program). A 2: gender X (3): time ANOVA was used to determine effects on physical activity. A main effect for time was revealed showing an increase over time in physical activity and as expected females reported lower levels of physical activity from baseline to 4 months. Then, multiple 2 X (3) ANOVAs were conducted on the theoretical correlates and showed gender differences on outcome expectations where females had higher outcomes expectations from 2-4 months. These results could indicate that women's expectations related to physical activity might be too high leading to disappointment and ensuing decreased activity. The fact that no other gender differences were found alludes to the fact that factors beyond SET and SDT are accounting for the gender differences in physical activity levels and should be investigated. From a practical standpoint, efforts should be made to ensure realistic expectations related to physical activity especially for females.

CORRESPONDING AUTHOR: Michelle Fortier, PhD, University of Ottawa, Ottawa, ON, K1N 6N5; mfortier@uottawa.ca

**C-053a**  
**THE MISSOURI HEALTH LITERACY AND DIABETES INITIATIVE (MHLI): HELPING PATIENTS ACTION PLAN AND ACHIEVE GOALS**

Anjali U. Pandit, MPH,<sup>1</sup> Stacy C. Bailey, MPH,<sup>1</sup> Laura M. Curtis, MS,<sup>1</sup> Yuka Asada, MHSc,<sup>1</sup> Sumati K. Jain, BA,<sup>1</sup> Terry C. Davis, PhD,<sup>2</sup> Hilary Seligman, MD,<sup>3</sup> Dean Schillinger, MD,<sup>3</sup> Darren DeWalt, MD<sup>4</sup> and Michael S. Wolf, PhD MPH<sup>1</sup>

<sup>1</sup>General Internal Medicine, Northwestern University, Chicago, IL; <sup>2</sup>Health Sciences Center, Louisiana State University, Shreveport, LA; <sup>3</sup>University of California - San Francisco, San Francisco, CA and <sup>4</sup>University of North Carolina, Raliegh, NC.

This study evaluates the effectiveness of the American College of Physicians Foundation Diabetes Guide (Living with Diabetes: An Everyday Guide for You and Your Family); a low literacy strategy to improve diabetes self-management. The Diabetes Guide (DG) resource can be easily disseminated and used in diverse ambulatory care settings to support the ongoing care of diabetes patients.

The MHLI is a randomized controlled trial taking place in three sites. Each site enrolled 3 to 5 clinics to represent the arms of the study: Carve-In (CI), Carve-Out (CO) and Control. Subjects in CI and CO devise personalized, attainable health behavior goals. These action plans, are patient driven but facilitated by a diabetes coach (i.e. RNs or MAs from their primary care clinic for CI and an off-site health educator for CO).

At baseline, patients are introduced to the DG and create their first action plan. Follow-up interactions with their Diabetes coach occur at 2 weeks, and at 2, 3, 6 and 9 months; at which time patients may choose to maintain or modify their goal.

At baseline, goals pertaining to diet were chosen most frequently (n=163; 44%) followed by physical activity (n=138; 37%) and other (n=48; 13%). We found higher rates of patient follow-up in CO compared to CI (95% v. 74%, p<.001). Across both arms, 28% of patients do not accomplish their action plans at first follow-up. In

multivariate analyses controlling for socioeconomic and patient characteristics, neither intervention arm nor type of action plan predicts the likelihood of accomplishing the baseline action plan.

Analyses show that the CO arm is more consistent at tracking patients over time. Many patients report not accomplishing their action plans (28%) at first follow-up; this may imply that a more robust intervention approach is necessary.

CORRESPONDING AUTHOR: Anjali U. Pandit, MPH, General Internal Medicine, Northwestern University, Chicago, IL, 60610; a-pandit@northwestern.edu

**C-053b**  
**SMOKING STATUS AND DISTRESS, SELF-CARE AND INDICES OF DIABETES CONTROL**

Sean Spille, BA, Barbara Stetson, PhD, Jb Floyd, BA and SriPrakash Mokshagundam, MD  
 University of Louisville, Louisville, KY.

Smoking has been linked to insulin resistance and macrovascular risks in type 2 (T2DM) and microvascular complications in type 1 (T1DM) diabetes. Less is known about proximal aspects of well-being in smokers with diabetes such as psychological stress, self-care and diabetes control. The present study compared stress, self-care and indices of diabetes control in smokers and nonsmokers in 3 groups: T1DM, T2DM using (T2DM+) and not using (T2DM-) insulin. Participants were 746 outpatients (194 T1DM, 188 T2DM+, 364 T2DM-).

No group differences were noted for gender, ethnicity or education. T1DMs were younger [M age = 39.72 (15.15)] than T2DM+ [M = 58.16 (12.88)] and T2DM- [M=53.99 (12.58) p<.001] and more likely to be smokers (26.3%) than both T2DM+ (17.65%) and T2DM- (14.95%) p=.004. Two (smoking status) by three (diabetes group) ANCOVAs [age, gender covariates (CoV)] were performed; perceived stress (PSS), self-care and DM control indices were DVs. For PSS, main effects were noted for smoking status (F=9.54, p=.002), with the highest PSS scores in T1DM smokers and lowest in T2DM-nonsmokers [gender, age signif. CoV, p<.001]. For HbA1c, there was a main effect for smoking status (F=5.82, p<.016) and trend for insulin group (p=.07; gender, age signif. CoV, p<.05). HbA1c was highest in T1DM smokers and lowest in T2DM- nonsmokers. For BMI, Main effects were noted for smoking status (F=14.85, p<.001) and insulin group (F=74.19, p<.001); (age, gender signif. CoV, p<.001). BMI was lowest in T1DM smokers and highest in T2DM- nonsmokers. ANCOVA examining Systolic BP revealed main effects for smoking (F=5.88, p=.016) and insulin group (F=5.95, p=.003). Systolic BP was highest in non smoking T2DM+ and lowest in T1DM- smokers (age signif. CoV, p<.001). No effects for smoking were noted for diastolic BP, eating problems, activity level or reported problems with medication use. Findings implicate the role of smoking in aspects of diabetes related control. Future studies should examine the moderating role of smoking in associations between stress, diabetes control and health outcomes in adults living with diabetes.

CORRESPONDING AUTHOR: Barbara Stetson, PhD, University of Louisville, Louisville, KY, 40292; barbara.stetson@louisville.edu

**C-055a**  
**EMPATHY AND THE PATIENT-PROVIDER RELATIONSHIP AMONG FIRST YEAR MEDICAL STUDENTS**

Paula Repetto, PhD  
 P. Universidad Católica de Chile, Santiago, Chile.

Several researchers have emphasized the relevance of empathy for a positive patient - provider relationship and have been associ-

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

ated with better health outcomes. Researchers have also found that empathy appears to decrease over time while students are trained in medical school and that it may have an impact on the relationship with patients. In fewer studies, researchers have examined the relationship between empathy and students and physicians attitudes toward the patient-provider relationship. Consequently, in the present study we examine the relationship between their attitudes toward the patient provider relationship (more or less patient centered) and empathy. Participants included over 300 medical students from four different generations who completed the questionnaire that has been part of the evaluation of a Health Communication class. This class was completed during the second term of their first year of training. Students complete several questionnaires at the beginning and end of the class which explored changes in their perceptions and attitudes toward the patient-provider. This data was part of the class activities and were used to evaluate how the class had influenced their attitudes. For the purposes of this study we used only wave 1 data. Students completed a questionnaire that included the Jefferson Empathy Scale and a measure that assesses patient provider communication. Our findings suggest that there is relationship between empathy and attitude towards the patient provider relationship ( $P < 0.01$ ). We also found some sex differences that are consistent with previous findings and suggest that empathy scores are associated with attitude about having a more patient centered relationship with patients even during the first year of medical school.

CORRESPONDING AUTHOR: Paula Repetto, PhD, P. Universidad Católica de Chile, Santiago, 00000; prepetto@uc.cl

## C-055b IMPROVING CULTURAL COMPETENCY AMONG NURSING STUDENTS

John Moring, MS and Penelope Caldwell, RN, MS, CNM  
University of Wyoming, Laramie, WY.

Cultural competency is the ability to care for and tailor practices to meet the needs of patients with diverse values, beliefs, and behavior. Teaching cultural competency is important in rural areas with limited exposure to other cultures. Nursing programs in the U.S. have begun to adopt more formalized training to increase cultural competency. For example, the School of Nursing at the U. of Wyoming hosts a volunteer program for nursing students to provide healthcare services to rural Hondurans. However, it is unknown whether international training programs have the potential to increase nursing students' cultural competency. The goal of this study was to examine whether the volunteer program in Honduras would impact competencies related to students' cultural awareness. Cultural competencies were examined using the Cultural Awareness Scale that includes five domains. The five domains are: general educational experiences, cognitive awareness, research issues, comfort interacting with different cultures, and patient care. Other measures included the Cultural Receptivity Scale and the Meaning in Life Measure. Twenty-five student volunteers and twenty-six non-volunteers completed all measures before the Honduras healthcare mission, and one-month after the healthcare mission. Results indicate no significant differences between the groups at baseline. The students' baseline scores indicate that they were high on scores of meaning of life, educational experiences, cognitive awareness, comfort with interacting with different cultures, and patient care. Students scored low on research issues and cultural receptivity at baseline. Also at baseline, there was a significant correlation between Receptivity to Cultures and Meaning in Life, ( $r = .31^*$ ). Initial post-trip scores indicate that the volunteer group

significantly increased their scores on cognitive awareness compared to the non-volunteer group  $F(1, 7) = 12.479$ ,  $p = .010$ . Nursing programs in areas with limited cultural diversity should encourage international nursing to improve future practice.

CORRESPONDING AUTHOR: John Moring, MS, Psychology, University of Wyoming, Laramie, WY, 82072; jmoring@uwyo.edu

## C-065a POSITIVE STATES OF MIND MODERATES THE RELATIONSHIP BETWEEN STRESS AND NATURAL KILLER CELL CYTOTOXICITY IN WOMEN CO-INFECTED WITH HIV AND HPV

Alexis Branca, HS,<sup>1</sup> Corina Lopez, MS,<sup>1</sup> Michael Antoni, PhD,<sup>1,3</sup> Deidre Pereira, PhD,<sup>2</sup> Nicole Whitehead, PhD,<sup>3</sup> Joseph Lucci, MD,<sup>3</sup> Jonell Potter, PhD,<sup>3</sup> MaryJo O'Sullivan, MD<sup>3</sup> and MaryAnn Fletcher, PhD<sup>3</sup>

<sup>1</sup>University of Miami, Coral Gables, FL; <sup>2</sup>University of Florida, Gainesville, FL and <sup>3</sup>University of Miami School of Medicine, Miami, FL.

Life stress can affect immune system status in women co-infected with HIV and human papillomavirus (HPV) infection by decreasing natural killer cell cytotoxicity (NKCC) as well as influencing mental health in pessimistic women. However, little is known about the salutary effects of positive psychological states as stress moderators in this population. The present study explored positive states of mind (PSOM) and its moderating effect on the relationship between life stress and NKCC in women co-infected with HIV and HPV. Participants ( $n=27$ ) were predominantly African American women (66.7%) ranging in age from 18-43 ( $M = 31.22$ ,  $SD = 8.00$ ) with an average yearly household income of \$12,127. Participants completed questionnaires and provided morning peripheral blood samples. Stress was measured using the Abbreviated Life Experiences Survey-Revised, while focused attention, mindfulness, and relaxation was measured by the PSOM scale. A whole-blood chromium51 release assay was used to determine interferon (IFN) gamma stimulated NKCC. Hierarchical regression analysis showed an interaction effect of life stress x PSOM on NKCC ( $\beta = .727 (.230)$ ,  $p = .001$ ). Post hoc probing indicated that stress was related to higher NKCC in women with high PSOM ( $\beta = .83 (.230)$ ,  $p = .007$ ). The relationship between stress and NKCC in women with low PSOM was negative but non-significant ( $\beta = -.30 (1.28)$ ,  $p = .13$ ). Results suggest that states of mindfulness and relaxation may be helpful for women with HIV and HPV under high stress. Future research should investigate the mechanisms by which PSOM affects immunity as well as the viability of a mindfulness and relaxation intervention for this population.

CORRESPONDING AUTHOR: Alexis Branca, HS, Psychology, University of Miami, Baltimore, MD, 21230; a.branca@umiami.edu

## C-065b STRUCTURAL ISSUES & CHALLENGES IN THE TRANSLATION OF A POSITIVE PREVENTION HIV INTERVENTION IN ZAMBIA

Deborah Jones, PhD, MEd,<sup>1</sup> Szonja Vamos, BS,<sup>1</sup> Stephen Weiss, PhD, MPH,<sup>1</sup> Ndashi Chitalu, MD,<sup>2</sup> Miriam Mumbi, RN<sup>2</sup> and Laura Bruscantini, BA<sup>1</sup>

<sup>1</sup>University of Miami Miller School of Medicine, Miami, FL and <sup>2</sup>University of Zambia School of Medicine, Lusaka, Zambia.

Zambia has one of the highest rates of HIV in the world and one of the lowest income levels (\$1600 per capita). This study presents preliminary structural data from the Partner Project, an ongoing study

translating a successful evidence-based intervention from a clinical trial hospital-based setting to 6 community health centers (CHC). The Partner Project has currently enrolled 4 CHCs (3 sites, participants n = 80 per site, 1 site, n = 16). Of the 4 CHCs, 2 have completed the translation of the intervention (5 cohorts, 4 sessions, 3 assessments); 1 ongoing site has completed 2 cohorts; 1 site has recruited the first cohort. Participants are compensated for assessments but not for session attendance.

Participant retention (n = 272) at the 2 completed sites differed between intervention sessions (100%, 91%) and assessments (82%, 88%). Participant compensation was not related to retention. Rates of retention were not found to be due to staff-reported site-specific factors (e.g., site endorsement, overcrowding, space, patient volume), staff-specific factors (e.g., energy, burnout, social support) or funding-related factors (e.g., adequate resources) in chi square analyses (staff, n = 60; p > .05). Uptake of the intervention at completion of the translation cycle did not differ by site.

Both staff implementation of the intervention and participant retention were much higher than expected. Although there was considerable patient burden, this did not appear to adversely affect the enthusiasm of both patients and staff. Barriers to ongoing implementation of the program following its translation at each site have been limited to staff turnover and staff compensation limitation at the clinic level. This study illustrates the importance of broad-based financial support and buy-in for HIV positive prevention interventions in resource limited communities. The use of innovative strategies for HIV prevention in public health settings is highlighted. This study is funded by NICHD R01HD058481.

CORRESPONDING AUTHOR: Deborah Jones, PhD, MEd, University of Miami Miller School of Medicine, Miami, FL, 33136; djones@med.miami.edu

**C-073a**  
**COGNITIVE-BEHAVIORAL TREATMENT FOR INSOMNIA FOR AFGHANISTAN AND IRAQ (OEF/OIF) VETERANS WITH PTSD**

Skye Ochsner Margolies, MA,<sup>1,2</sup> Bruce Rybarczyk, PhD,<sup>1</sup> John Lynch, PhD<sup>2</sup> and Scott Vrana, PhD<sup>1</sup>

<sup>1</sup>Clinical Psychology, Virginia Commonwealth University, Richmond, VA and <sup>2</sup>McGuire VAMC, Richmond, VA.

High rates of PTSD are being seen in veterans who served in Operation Enduring Freedom and Operation Iraqi Freedom (OEF/OIF). Sleep disturbance is a defining feature of PTSD and can maintain or exacerbate associated symptoms. Recent research demonstrates that sleep-focused behavioral interventions with a component for nightmares improve sleep disturbances as well as PTSD symptoms. Studies to date have focused primarily on civilian PTSD participants, with some recent pilot work on older veterans with PTSD. This study examines the efficacy of cognitive behavioral therapy for insomnia (CBTI) in significantly improving sleep and reducing PTSD severity in younger OEF/OIF combat veterans.

Recruited from the mental health clinic at the McGuire VAMC, participants included 27 (mean age = 36.8, 85% male) OEF/OIF veterans with clinically significant insomnia and PTSD. Participants were randomized to treatment or waitlist control group. The treatment condition consisted of four CBTI sessions including sleep restriction, stimulus control, cognitive restructuring, sleep education, sleep hygiene and imagery rehearsal therapy for trauma-related nightmares. All participants completed measures pre and post-treatment: Sleep

Diary (sleep efficiency, wake after sleep onset, sleep latency, total sleep time), Insomnia Severity Index (ISI), Pittsburgh Sleep Quality Index (PSQI), Pittsburgh Sleep Quality Index- Addendum (PSQI-A, assesses PTSD related sleep disturbances), and PTSD Symptom Scale. Actigraphy was measured for treatment group participants pre and post treatment.

Treatment group participants demonstrated significant improvement in sleep efficiency, p < .001; sleep latency, p < .05; PSQI, p < .001; PSQI-A, p = .01; ISI, p < .001; PTSDSS, p = .001 compared to the control. Three month follow-up data will be presented at the conference.

CBTI is an effective treatment for insomnia, nightmares and PTSD symptoms in OEF/OIF veterans with combat related PTSD and should be used as an adjunctive therapy to standard PTSD treatment.

CORRESPONDING AUTHOR: Skye Ochsner Margolies, MA, Clinical Psychology, Virginia Commonwealth University, Richmond, VA, 23284; ochsnersm@vcu.edu

**C-073b**  
**DISPOSITIONAL MINDFULNESS IN PATIENTS WITH IMPLANTABLE CARDIOVERTER DEFIBRILLATORS (ICD)**

Elena Salmoirago-Blotcher, MD, PhD, Sybil Crawford, PhD, Lawrence Rosenthal, MD, PhD and Ira Ockene, MD  
 Medicine, University of Massachusetts Medical School, Worcester, MA.

Background Dispositional mindfulness (DM) may be an important predictor of the response to mindfulness training; however there is limited information about the characteristics of DM, particularly in unhealthy populations. The aim of this study was to evaluate the association of DM with psychological morbidity and disease severity in ICD patients naive to mindfulness training. Methods Thirty stable outpatients with recent shocks or who underwent ICD surgery at the UMass Memorial Medical Center in Worcester, MA completed a series of surveys after providing informed consent. DM was measured using the Five Facets of Mindfulness (FFM) questionnaire. Information was collected on demographics (age, gender, income, marital status, education and ethnicity); previous history of anxiety and depression and related prescriptions; disease-related characteristics; and use of other complementary therapies. Anxiety and depression scores were measured using the Hospital Anxiety and Depression Scale. The association between DM and possible predictors was estimated using linear regression models.

Results FFM scores were inversely associated with anxiety scores ( $\beta = -1.10$ , CI: -1.71, -0.49), and with a previous diagnosis of depression ( $\beta = -7.95$ ; CI: -14.31, -1.6). Associations with other psychological variables, although not reaching statistical significance, were in the expected direction, i.e. they were inversely associated with DM. FFM scores were not associated with demographic characteristics, indicators of disease severity (previous cardiac arrest or severe arrhythmia, previous shocks, ejection fraction), time from ICD procedure and use of other alternative therapies during the past month.

Conclusion. Current psychological well-being and prior psychological morbidity, and not indicators of disease severity appear to be associated with DM in ICD patients never exposed to mindfulness training, supporting the hypothesis of an inverse association between DM and negative mind states. Further research in larger populations is needed to confirm these findings.

CORRESPONDING AUTHOR: Elena Salmoirago-Blotcher, MD, PhD,

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

Medicine, University of Massachusetts Medical School, Worcester, MA, 01655; Elena.Salmoirago-Blotcher@umassmed.edu

## **C-073c** **SOCIAL SUPPORT AS A PREDICTOR OF PSYCHOLOGICAL FUNCTIONING IN ADULT PATIENTS WITH SICKLE CELL DISEASE**

Mary Wood, MA,<sup>1</sup> Christopher L. Edwards, PhD,<sup>1</sup> Miriam Feliu, PsyD,<sup>1</sup> Camela S. McDougald, MA<sup>2</sup> and Keith Whiffield, PhD<sup>3</sup>  
<sup>1</sup>Psychiatry and Behavioral Sciences, Duke University Medical Center, Durham, NC; <sup>2</sup>Behavioral Interventions, B and D Behavioral Health, Durham, NC and <sup>3</sup>Psychology, Duke University, Durham, NC.

The role of social support (SS) was hypothesized to be significant in the functioning of patients with Sickle Cell Disease (SCD) dating back to the 1980s. Few studies since that time have explored the influence of social support on medical and psychological outcomes among adults with SCD. We analyzed the first year data of 94 African American adults with SCD (mean age 33.66 ± 12.67) that had been assessed using survey methods as part of a larger longitudinal evaluation. Using Multivariate, General Linear Modeling, we found that when controlling for age, Emotional support was predictive of Hostility ( $p=.03$ ) while Comparative support was predictive of Somatization ( $p=.01$ ), Depression ( $p=.02$ ), and Hostility ( $p=.01$ ). Informational and Instrumental Support were not significantly predictive of psychological outcomes. We conclude that emotional and comparative supports are essential contributors to affective stability among patients with SCD. Understanding the differential influence of domains of support on other clinical outcomes in this population is essential.

CORRESPONDING AUTHOR: Christopher L. Edwards, PhD, Psychiatry and Behavioral Sciences, Duke University Medical Center, Durham, NC, 27713; christopher.edwards@duke.edu

## **C-073d** **DIRECTIONAL ASSOCIATIONS BETWEEN BINGE EATING AND DEPRESSION OVER 12 MONTHS: A CROSS-LAGGED MODELING APPROACH**

Courtney Stevens, BS, Angela Bryan, PhD, Renee Magnan, PhD, Jane Ellen Smith, PhD and Katherine Belon, PhD  
Psychology, University of New Mexico, Albuquerque, NM.

According to NIMH, major depressive disorder is a leading cause of disability among adults aged 15-44. Less is known about rates of binge eating disorder (BED); the literature suggests depression and binge eating (BE) often co-occur, with a stronger association among obese individuals (Yanovski et al., 1993; and Smith et al., 1998). Studies to date have been cross-sectional; our study utilized longitudinal data with measures of both depression and BED obtained from a non-clinical sample to explore the directional association between these constructs. Colorado STRIDE (COSTRIDE) was a 12-month randomized controlled trial conducted at the University of Colorado at Boulder (CU). A total of 238 men and women (ages 18-45) were recruited from CU and the Denver area through electronic ads, flyers and community events. Participants were primarily White (68.9%); all were inactive (<90 minutes of exercise per week for the past 3 months). Body mass index (BMI) ranged between 18 and 37.5. Depression was measured with the Center for Epidemiological Studies Depression Scale (CES-D) and BE with the Binge Eating Scale (BES). We examined the pattern of change over time in both the CES-D and BES. Significant decreases in depression (est. = -1.38, se=.21,

$t(718) = -6.66, p<.001$ ) and BE symptomatology (est. = -.79, se=.47,  $t(722) = -5.61, p<.001$ ) were found over time. Mplus version 5.1 was utilized for a cross-lagged path analysis, and the fit of this model was adequate, CFI = .91, SRMR=.07. Temporal stability was high for the BES, yet only moderately so for the CES-D over time. There is indication that a higher level of BE at one time point is associated with a higher level of depression at the next, as two of those cross-lagged paths were significant. There is less evidence for effects of depression on BE, as only one of the paths was significant in that direction. Higher levels of BE symptomatology predict higher levels of depressive symptomatology 3 months later in a non-clinical sample of inactive adults participating in an intervention to improve their health.

CORRESPONDING AUTHOR: Courtney Stevens, BS, Psychology, University of New Mexico, Albuquerque, NM, 87108; cjs6487@unm.edu

## **C-073e** **HOW DID THEY GET THE GUN: FIREARM POLICY FAILURE BASED ON NICS SCREENING**

Amy Thompson, PhD, CHES,<sup>1</sup> James H. Price, PhD, MPH,<sup>1</sup> Jagdish Khubchandani, MBBS, PhD, MPH, CHES<sup>2</sup> and Michael Wiblishauser, MS, CHES<sup>1</sup>

<sup>1</sup>Health and Recreation Professions, University of Toledo, Toledo, OH and <sup>2</sup>Physiology and Health Sciences, Ball State University, Muncie, IN.

Background:

Firearm violence is a significant public health problem in the United States. Predominantly, this issue is linked with citizen ownership and widespread availability of firearms in the United States. While the U.S is not well known for restrictive firearm control policies those who legally want to purchase a firearm through a federally licensed gun dealer must undergo criminal background check.

Objectives:

This study comprises a series of case scenarios that demonstrate the ease of firearm availability to individuals with a history of mental health, drug or violence behaviors who potentially would pass a background check through the National Instant Criminal Background Check System (NICS) in the United States and legally qualifying them to purchase a firearm. The study also assessed directors of State Mental Health Agencies and their perceptions regarding the need to modify current federal NICS forms to conduct firearm purchase background checks.

Methods:

A series of 5 case studies on mental health, drugs, and violence were created based on a series of interviews with mental health professionals (psychiatrists). Additionally, a one page questionnaire was sent to the state mental health directors in all 50 states to assess NICS screening questions and their perceived effectiveness in restricting means.

Conclusion:

It would appear from the results of this study that federal and state policies on firearm sales are not conducive for controlling a high priority issue like firearm violence in the community and prevent individuals with questionable criminal histories and/or mental health issues to purchase firearms legally when appropriate screening questions could have restricted the means for firearms to injure themselves and others.

CORRESPONDING AUTHOR: Jagdish Khubchandani, MBBS, PhD, MPH, CHES, Physiology and Health Sciences, Ball State University, Muncie, IN, 47306; jkhubchandani@bsu.edu

**C-078a**  
**PSYCHOMETRIC PROPERTIES OF THE BARRIERS TO RESEARCH PARTICIPATION QUESTIONNAIRE IN A COMMUNITY SAMPLE OF AFRICAN AMERICAN ADULTS**

Jeffrey L. Kibler, PhD,<sup>1</sup> Mindy Ma, PhD,<sup>1</sup> K. Shakira Washington, MPA<sup>2</sup> and Carla Dillard Smith, MPA<sup>3</sup>

<sup>1</sup>Nova Southeastern University, Ft. Lauderdale, FL; <sup>2</sup>Rebecca Project for Human Rights, Washington, DC and <sup>3</sup>California Prevention Education Program, Oakland, CA.

The Barriers to Research Participation Questionnaire (BRPQ) was developed to assist researchers in identifying barriers and facilitative factors in recruiting participants from ethnic and racial minority groups. A previous study conducted with African American undergraduates provided psychometric support for the proposed 5-factor structure of the BRPQ (mistrust, religious beliefs, health beliefs/fears, number of occupational/academic and social roles, and personal and community incentives). The present study was conducted to examine whether the psychometric properties generalize to a community sample of African American adults. Both men ( $n = 141$ ) and women ( $n = 179$ ) ages 16-68 ( $M \pm SD$  age =  $34 \pm 11$ ) from three study sites (Jackson, MS; Washington, DC; and Oakland, CA) were administered the BRPQ at barbershops, beauty salons, and community events. Internal consistency of the full scale was acceptable ( $\alpha = .66$ ) given the proposed multidimensionality of the BRPQ. Of the three factor structures that were tested, 1) a one factor model with all items loading on a single factor, 2) a five factor model with the factors being uncorrelated, and 3) a five factor model with the factors being correlated, the results indicate that the third model provided the best fit for the data ( $GFI = .97$ ;  $RMSEA = .11$ ). Analyses were also conducted to examine gender or site differences among the BRPQ factor means and no differences were found. The 5-factor model that provided the best fit for the data is consistent with the model originally proposed by the developers of the BRPQ. These findings provide additional support for the psychometric properties of the BRPQ in a diverse sample, suggesting greater generalizability than in the original psychometric analyses of the BRPQ. Results also suggest that the factors are endorsed with similar frequency across genders and geographic regions.

CORRESPONDING AUTHOR: Jeffrey L. Kibler, PhD, Center for Psychological Studies, Nova Southeastern University, Ft. Lauderdale, FL, 33314; kibler@nova.edu

**C-078b**  
**HEALTH LOCUS OF CONTROL PREDICTS CHANGE IN DEPRESSIVE SYMPTOMS OVER A 10-YEAR PERIOD IN PATIENTS WITH RHEUMATOID ARTHRITIS**

Ken Wallston, PhD

Vanderbilt University Medical Center, Nashville, TN.

Although many studies have shown that Multidimensional Health Locus of Control (MHLC) scores are associated cross-sectionally with depressive symptoms, few studies have examined the predictive ability of MHLC to predict change in depressive symptoms over time, especially over long periods of time. In addition, few MHLC studies have examined the predictive ability of interactions among the MHLC subscales. In this analysis, MHLC scores from the first of 12 waves of data (W1) in a longitudinal study of persons with rheumatoid arthritis

were used to predict changes in CES-D scores from Wave 1 to Wave 12, 10 years later. Residualized CES-D change scores were regressed on W1 IHLC, PHLC, and CHLC subscale scores as well as on all interactions among the subscales for the 126 patients who remained in the study at W12. Among the main effects, only Chance HLC was related, both linearly ( $p < 0.05$ ) and curvilinearly ( $p < 0.05$ ), to CES-D; the more these RA patients believed their health was controlled by chance factors, the greater their increase in depression over time. There was also, however, a significant ( $p < 0.02$ ) 3-way interaction among the MHLC subscales. Further examination revealed that the greatest increase in CES-D scores was for "Double Externals," i.e., those patients low in IHLC but high in both CHLC and PHLC (Wallston & Wallston, 1982), while the "Believers in Control" (high in both IHLC and PHLC, but low in CHLC) was the only group to show a mean decrease in CES-D scores over the 10 year period. These results add to the body of evidence that CHLC beliefs are mostly antithetical for patients' mental health. They also demonstrate the value of examining interactions among the MHLC subscales (Wallston, 2005). Believing that your health status is determined by "powerful other" people (i.e., high PHLC scores), has little health consequences in and of itself, but coupled with the other two MHLC dimensions may presage either positive or negative outcomes.

CORRESPONDING AUTHOR: Ken Wallston, PhD, Vanderbilt University Medical Center, Nashville, TN, 37240; ken.wallston@vanderbilt.edu

**C-082a**  
**ADVERSE OUTCOMES ASSOCIATED WITH MEDIA EXPOSURE TO CONTRADICTORY NUTRITION MESSAGES: RESULTS FROM A POPULATION-BASED SURVEY OF U.S. ADULTS**

Rebekah Nagler, PhD

<sup>1</sup>Harvard School of Public Health, Boston, MA and <sup>2</sup>Dana-Farber Cancer Institute, Boston, MA.

Public health and communication scholars have raised concerns about contradictory nutrition messages in the media, speculating that they may have effects on public confusion, trust in dietary recommendations, and nutrition behaviors. However, these concerns have received little empirical attention. This study explores whether media exposure to contradictory nutrition information is associated with adverse outcomes, including confusion about nutrition research and recommendations (e.g., belief that "it is not always clear what foods are best for me to eat") and feelings of backlash toward such research and recommendations (e.g., belief that "nutrition recommendations should be taken with a grain of salt"). We used data from the 2010 Annenberg National Health Communication Survey, which collects data monthly from a nationally representative sample of U.S. adults over the age of 18 ( $N = 631$ ). Results showed that exposure to conflicting information on the health benefits and risks of, for example, wine, fish, and coffee consumption was associated with confusion about what foods are best to eat ( $r = 0.10$ ,  $p < .05$ ). People who reported experiencing greater confusion also reported experiencing greater backlash ( $r = 0.51$ ,  $p < .001$ ), and there was evidence that confusion partially mediated the relationship between contradictory message exposure and backlash. Additionally, confusion and backlash beliefs were associated with decreased intentions to engage in healthy lifestyle behaviors: people who reported higher levels of confusion and backlash had lower intentions of consuming fruits and vegetables ( $r = -0.22$ ,  $p < .001$  and  $r = -0.21$ ,  $p < .001$ , respectively), as well as lower intentions of exercising ( $r = -0.22$ ,

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

$p < .001$  and  $r = -0.28$ ,  $p < .001$ , respectively). All associations remained significant after adjusting for sociodemographic characteristics in linear regression models. The implications of these findings for communication campaigns and health behavior interventions are discussed.

CORRESPONDING AUTHOR: Rebekah Nagler, PhD, Harvard School of Public Health, Boston, MA, 02115; rnagler@hsph.harvard.edu

## **C-101a** **UTILITY OF THE BINGE EATING SCALE IN PREDICTING BINGE EATING DISORDER DIAGNOSES IN BARIATRIC SURGERY CANDIDATES**

Megan M. Hood, PhD,<sup>1</sup> Allison Grupski, PhD,<sup>1</sup> Brian J. Hall, MA,<sup>2,3</sup> Leila Azarbad, PhD,<sup>4</sup> Joyce Corsica, PhD,<sup>1</sup> Stephanie Fitzpatrick, MS<sup>1</sup> and Iulia Ivan, BA<sup>1</sup>

<sup>1</sup>Behavioral Sciences, Rush University Medical Center, Chicago, IL; <sup>2</sup>Medical University of South Carolina, Charleston, SC; <sup>3</sup>Kent State University, Kent, OH and <sup>4</sup>North Central College, Naperville, IL.

Rates of binge eating disorder (BED) are higher in individuals presenting for bariatric surgery (BS) compared to community samples. The inclusion of a self-report questionnaire for screening of BED symptomatology can complement clinical interviews for BED. The Binge Eating Scale (BES) is a commonly used measure of binge eating-related behaviors, cognitions, and emotions among BS candidates. Though not designed as a measure of BED, the BES has been found to have adequate sensitivity for BED diagnoses among non-BS weight loss patients. However, the utility of this measure as a screener for BED has not been evaluated among individuals presenting for BS. Participants included 480 patients presenting for a psychological evaluation prior to undergoing Roux-en-Y gastric bypass. As part of the evaluation, a DSM-IV SCID-based semi-structured interview for BED was administered, along with the BES. The prevalence of BED according to SCID-based clinical interview was 13.1%, consistent with other studies of this population. Results of ROC curve analyses identified an optimal BES cutoff of 17, which is consistent with the recommended cutoff between "absent or minimal" binge eating and "mild to moderate" binge eating. This cutoff resulted in the correct classification of 78% of patients with BED (sensitivity of .94, specificity of .76). Usage of the commonly applied cutoff for "severe binge eating" of 27 increased the correct classification to 88% of patients (sensitivity of .37, specificity of .96), but resulted in a considerable increase in false negatives, which is undesirable for a screening assessment. Discriminant function analysis (DFA) indicated that 15 of the 16 BES items significantly predicted BED diagnoses. This study suggests that the BES is a valid screener of BED among patients presenting for bariatric surgery with reasonable sensitivity and specificity when a cutoff score of 17 is used.

CORRESPONDING AUTHOR: Megan M. Hood, PhD, Behavioral Sciences, Rush University Medical Center, Chicago, IL, 60612; meganmhood@gmail.com

## **C-101b** **PSYCHOMETRIC PROPERTIES OF THE BINGE EATING SCALE AMONG BARIATRIC SURGERY CANDIDATES**

Megan M. Hood, PhD,<sup>1</sup> Allison Grupski, PhD,<sup>1</sup> Brian J. Hall, MA,<sup>2,3</sup> Stephanie Fitzpatrick, MS,<sup>1</sup> Joyce Corsica, PhD<sup>1</sup> and Iulia Ivan, BA<sup>1</sup>  
<sup>1</sup>Behavioral Sciences, Rush University Medical Center, Chicago, IL; <sup>2</sup>Medical University of South Carolina, Charleston, SC and <sup>3</sup>Kent State University, Kent, OH.

Up to 64% of bariatric surgery patients may have clinical or subclinical levels of binge eating. Some evidence suggests that pre-surgical binge eating may be associated with poor maintenance of weight loss post-surgery. Binge eating symptomatology is commonly assessed in pre-surgical bariatric evaluations, with the Binge Eating Scale (BES) being one of the most commonly used self-report measures of binge eating symptoms in this population. The BES is a 16-item self-report measure designed to assess two components of binge eating: behavioral manifestations (e.g. eating quickly, overeating) and emotions/cognitions that precede or follow a binge (e.g., feeling out of control, guilt). No studies to date have confirmed the two factor structure or identified the specific items that tap into each proposed factor of the BES. Further, the psychometric properties of the BES for patients presenting for bariatric surgery are not widely reported. 508 patients presenting for Roux-en-Y gastric bypass surgery completed the BES as a component of their pre-surgical psychological evaluation. The overall mean score was 13.38 (SD=8.5) with a range of 0 to 39. Sixty-seven percent of patients scored in the absent to minimal binge eating range (scores of 0-16), 24% in the mild to moderate range (scores of 17-26), and 9% in the severe range of functioning (scores over 26). The measure had good reliability (Cronbach's alpha = .87). Results of confirmatory factor analysis indicated that the two factor model was a good fit to the data. In addition, chi-square difference testing indicated that the two-factor model consisting of behavioral and emotions/cognitions factors, was superior to a one-factor model ( $\chi^2_{diff}(1) = 47.17$ ,  $p < .001$ ). This study suggests that within a bariatric surgery-seeking population, the Binge Eating Scale is best conceptualized as consisting of two factors: behavioral manifestations of binge eating and emotions/cognitions that are associated with binge eating.

CORRESPONDING AUTHOR: Megan M. Hood, PhD, Behavioral Sciences, Rush University Medical Center, Chicago, IL, 60612; meganmhood@gmail.com

## **C-101c** **MINDFULNESS-BASED EATING AWARENESS TRAINING (MB-EAT): EFFECTS ON EATING REGULATION AND OBESITY INDEPENDENT OF BINGE STATUS**

Jean L. Kristeller, PhD and Kevin Bolinskey, PhD  
Psychology, Indiana State University, Terre Haute, IN.

Mindfulness-based treatment may be particularly suited to disorders marked by behavioral and emotional dysregulation. Previous research on Mindfulness-Based Eating Awareness Training (MB-EAT) for obese women with BED found improvement in eating regulation and mood, but no avg. weight loss. The current NIH-funded study evaluates MB-EAT with a wider population, with weight loss as an explicit goal. The 12-session program includes training in sitting meditation, eating-related meditations, cultivation of awareness of hunger and satiety cues, and mindful use of nutritional and exercise knowledge, with a focus on developing permanent changes in eating behaviour. Obese (M=256 lbs) participants (N=117 (13% men; 12% Af-Am/Other; M age=50;)) were randomized to the MB-EAT program or to Wait-List Control. Approx. 12% met criteria for BED and 14% for sub-clinical BED. F/Up was at immediate post (IP), 1, 3 & 6 mos; measures included the Binge Eating Scale (BES), Three Factor Eating Questionnaire (TFEQ), the Beck Depression Inventory (BDI), and the Five Facet Mindfulness Questionnaire (FFMQ), among others. At baseline, clinical and sub-clinical BED Ss were similar on depression, TFEQ Disinhibition and Hunger scales, and higher on these scales ( $p < .001$ ) than non-clinical Ss. Relative to WLC, the MB-EAT Ss had

more weight loss (6.02 vs. 0.24 lbs;  $p < .05$ ) at 1P, sustained at 1 and 3 months, and improvement on all 3 TFEQ factors ( $p < .001$ ), the BES ( $p < .001$ ), and the BDI ( $p < .05$ ). Improvement was comparable regardless of binge status.

CORRESPONDING AUTHOR: Jean L. Kristeller, PhD, Psychology, Indiana State University, Terre Haute, IN, 47809; [jkristeller@indstate.edu](mailto:jkristeller@indstate.edu)

**C-101d**  
**SUGAR SWEETENED BEVERAGE CONSUMPTION AMONG COLLEGE STUDENTS**

Lara J. LaCaille, PhD, Rick A. LaCaille, PhD, Ryan Hjelle, BA, Rachel Krambeer, Bachelor's Candidate and Michelle SanCartier, Bachelor's Candidate

Psychology, University of Minnesota Duluth, Duluth, MN.

Use of sugar sweetened beverages (SSB) has been identified as playing a role in the increasing rates of obesity in children and adolescents. However, little is known about SSB use among college students despite the noted increased risk of weight gain for young adults during this transitional period. This study investigated SSB use within a sample of college students. Using a stratified random sample, based on year in school and gender, 4000 students were solicited for a web-based survey inquiring about consumption of various SSBs. Overall, 551 students (age 20.1 +/- 1.7 yrs, 60% females, 90% Caucasian) responded to the survey. Approximately 60% of the students reported drinking at least one SSB per day, with 18% consuming three or more such beverages daily. The mean weekly estimated caloric intake for all SSBs was 1,140.6 +/- 1,219.8 kcals. Females consumed significantly ( $p < .05$ ) more gourmet coffee drinks than males; however, males consumed significantly ( $p < .05$ ) more of all other types of SSBs. The gender differences for SSB consumption was moderated by weight status,  $F(1, 545) = 8.4, p < .01$ , such that non-overweight males drank more SSBs than overweight males and overweight females consumed more than non-overweight females. Notably, multiple regression analyses revealed that for males having taken a college-level health or nutrition course was inversely associated with SSB intake ( $p < .05$ ), whereas having a prepaid meal plan at the on-campus dining center was related to higher SSB consumption ( $p < .05$ ). For females, the only significant correlate of SSB intake was current dieting ( $p < .001$ ), which was inversely related to consumption. The findings from this study suggest that the intake of SSB by college-age adults is considerable, but appears to vary significantly by gender with different emerging factors influencing males and females. These factors have implications for developing university-based interventions and managing services directed toward mitigating the increased risk of weight gain.

CORRESPONDING AUTHOR: Lara J. LaCaille, PhD, Psychology, University of Minnesota Duluth, Duluth, MN, 55812; [llacaille@d.umn.edu](mailto:llacaille@d.umn.edu)

**C-101e**  
**DISTRIBUTION OF WEIGHT RISKS FOR LOW-INCOME WOMEN AFTER CHILDBIRTH**

Lorraine Walker, EdD, MPH, Eileen Fowles, PhD and Bobbie Sterling, PhD

School of Nursing, Univ. of Texas at Austin, Austin, TX.

Objective: Postpartum weight retention and overweight/obese status, independently and combined, pose later health risks for childbearing women. Little research has been done to document how these risks change over time. Our aim was to determine the distribution of

these two weight risks (individually and combined) at 5 points during the first postpartum year, and associations with race/ethnicity, time, maternal age or parity.

Design: Secondary analysis of data at 1-3 days, 6 weeks, and 3, 6 and 12 months postpartum. All postpartum weights were measured, converted to body mass indices (BMI) and classified as: not overweight/obese versus overweight/obese. Overweight and obese were merged because chronic disease risk commences at the overweight level. Weight retention was classified as significant if it was 5 kg or more of prepregnant weight.

Participants: 247 (White, African American, or Hispanic) low-income healthy women with term births (median age was 22 years).

Results: Weight risks were distributed as follows at 1-3 days postpartum: 6.1% no weight risks, 17.0% significant weight retention only, 12.1% overweight/obese only, and 64.8% both weight-related risks. At 12 months, the weight risks were distributed as follows: 32.4% no weight risks, 8.9% significant weight retention only, 16.6% overweight/obese only, and 42.1% both weight risks. Distributions differed by race/ethnicity at 6 months ( $p = .013$ ) and 12 months postpartum ( $p = .003$ ). Being both overweight/obese and having significant weight retention (versus not) at 12 months was 3.1 (OR) times more likely (95% confidence interval [CI], 1.6, 6.2) for African American and 2.4 (OR) times more likely (95% CI, 1.3, 4.6) for Hispanic than White/Anglo women. Having two weight risks decreased, but only between 1-3 days and 6 weeks ( $p = .000$ ). Maternal parity, but not age, was related to weight risk distributions.

Conclusion: Even though the proportion of women with one or both weight risks decreased between 1-3 days and 6 weeks postpartum, African American and Hispanic women were at higher risk of both weight risks at 12 months postpartum.

CORRESPONDING AUTHOR: Lorraine Walker, EdD, MPH, School of Nursing, Univ. of Texas at Austin, Austin, TX, 78701; [lwalker@mail.nur.utexas.edu](mailto:lwalker@mail.nur.utexas.edu)

**C-101f**  
**PSYCHOLOGICAL RESPONSES TO GENETIC TESTING FOR WEIGHT GAIN - A VIGNETTE STUDY**

Suzanne Meisel, MSc, C. Walker, MSc and Jane Wardle, PhD  
 Epidemiology & Public Health, University College London, London, United Kingdom.

Genetic testing for obesity risk is increasingly available to the public but no studies have examined motivational or affective reactions. Here we report findings from a 'vignette' study investigating reactions to 'higher-risk' and 'average-risk' results for the obesity-related FTO gene in two samples: i) obese individuals recruited from the user panel of a voluntary organisation ( $n = 306$ , mean age=45 years, mean BMI= 35) and ii) a student sample ( $n = 395$ , mean age = 25, mean BM = 23). Participants were given FTO gene information that described higher-risk alleles as linked with modest weight gain and a slightly higher risk of obesity. They completed both conditions with order randomized. Interest in genetic testing was high overall, but higher in panel respondents than students (93% vs. 78% would 'probably' or 'definitely' have the test;  $p < .001$ ). In students, anticipating a higher-risk result generated higher motivation to change (effect size (ES) = .15;  $p < .001$ ), but also slightly higher negative affect (ES = .03,  $p < .001$ ) and fatalism (ES = .05,  $p < .001$ ) than an average-risk result. Panel respondents also had higher motivation to change (ES = .17,  $p < .001$ ), as well as relief about having an explanation for their body weight (ES = .02,  $p = .013$ ) in the higher-risk condition,

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

but no increase in fatalism or depression. At the level of anticipated responses to FTO gene feedback, higher-risk results had positive motivational effects, especially in 'normal weight' individuals. Fatalism and negative affect increased slightly in the student respondents, but not in the obese sample. Genetic testing has the potential to be a useful clinical tool when combined with appropriate information.

CORRESPONDING AUTHOR: Jane Wardle, PhD, University College London, London, WC1E 6BT; j.wardle@ucl.ac.uk

## **C-101g SELF-WEIGHING FREQUENCY AND PSYCHOSOCIAL OUTCOMES**

Jennifer A. Linde, PhD  
Epidemiology and Community Health, University of Minnesota,  
Minneapolis, MN.

Background: Some argue that frequent weighing carries adverse psychosocial consequences, yet scant data have been reported to support this assertion.

Purpose: The purpose of this pilot study was to test the feasibility of assigning participants to daily or weekly weight tracking, track adherence to weighing instructions, and monitor behavioral and psychosocial factors over six months.

Methods: Data were collected from 30 adults (21 female, 9 male) randomly assigned to daily or weekly weight tracking for 6 months. Participants completed questionnaires and height/weight measurements at baseline, 3, and 6 months. They received bathroom scales, monitoring postcards, and weighing instructions at baseline, and received 24 weekly emails with tracking reminders and weight control tips. Depression, anxiety, body image, barriers to weight tracking, perceptions of weight tracking, and weight were assessed. Repeated measures general linear models examined differences over time and by treatment group.

Results: Mean age of participants was 45.7 years; mean baseline body mass index (BMI) was 31.0 kg/m<sup>2</sup>. All participants were retained in the study. Tracking compliance was over 95% at 6 months, with no difference between groups. Weight did not change during the study, which is not surprising given that weight loss instruction was minimal. There were no differences between groups in depression, anxiety, or body image during the study ( $p = .10 - .61$ ), with minimal change over time. At 3 months, daily trackers reported fewer barriers to weighing ( $p < .01$ ) and slightly more favorable perceptions ( $p = .06$ ) compared to weekly trackers, though groups were comparable by 6 months.

Conclusions: The study was highly successful at delivering a daily weighing instruction without adverse psychosocial effects or decreases in compliance relative to a more typically delivered weekly weighing instruction. Future weight loss interventions are encouraged to deliver a daily weighing instruction to enhance program compliance and outcomes.

CORRESPONDING AUTHOR: Jennifer A. Linde, PhD, Epidemiology and Community Health, University of Minnesota, Minneapolis, MN, 55454; linde074@umn.edu

## **C-101h WEIGHT LOSS EXPECTATIONS AND SUCCESS IN AN OBESITY TREATMENT PROGRAM**

Narineh Hartoonian, MS,<sup>1</sup> Sarah Ormseth, MA,<sup>1</sup> Adam Arechiga, PsyD, DrPH<sup>1</sup> and David Wellisch, PhD<sup>2</sup>

<sup>1</sup>Loma Linda University, Loma Linda, CA and <sup>2</sup>University of California, Los Angeles, Los Angeles, CA.

PURPOSE: The purpose of this research is to examine the role of weight loss expectations on the amount of weight lost by individuals enrolled in an obesity treatment program. Based upon previous research, it is expected that greater success, in terms of total pounds lost, would be observed among individuals with more moderate weight loss goals (i.e., ten percent of starting weight) as compared to those with more aggressive initial aspirations. METHODS: The study employed a retrospective cohort analysis of data from 88 individuals enrolled in a self-pay outpatient weight loss program. The protocol was approved by the University of California, Los Angeles Institutional Review Board. Participants were prescribed a low calorie diet, counseled on exercise and invited to participate in weekly support classes. Individuals completed an intake form that included questions related to past dieting and individual weight loss goals. Weight loss expectations were operationalized in terms of the number of pounds discrepancy between a participant's stated goal and the recommended goal of ten percent of initial body weight. Multivariate linear regression was used to evaluate the association among weight loss goal discrepancy and number of pounds lost after controlling for initial body weight, diet plan, age, and use of psychiatric medication. RESULTS: The overall model was shown to be significant,  $F(5,82)=3.32$ ,  $p=.009$ . Weight loss goal discrepancy was significant as an individual predictor, with greater discrepancy associated with less weight lost ( $\beta=-.58$ ,  $p=.007$ ). Additionally, initial weight and diet plan showed individual significance, with greater weight loss being related to greater initial body weight ( $p=.001$ ) and use of a modified very low calorie diet ( $p=.023$ ). Age and use of psychiatric medication did not show significance as individual predictors. CONCLUSION: These findings suggest that moderate weight loss goals may predict greater success in obesity treatment. Results will be discussed in terms of their theoretical implications and potential applied value.

CORRESPONDING AUTHOR: Narineh Hartoonian, MS, Psychology, Loma Linda University, Loma Linda, CA, 92350; nhartoonian@llu.edu

## **C-101i BMI VS. WAIST CIRCUMFERENCE: EXPLORING THE RELATIONSHIP BETWEEN MEASURES OF OBESITY AND BLOOD PRESSURE IN THE NHANES 2007-2008 SAMPLE**

Jennifer M. Kowalsky, MS, Jaime Huckins, MS, Elizabeth M. Bolinger, MA, Kristoffer S. Berlin, PhD and Bernadette D. Heckman, PhD

Ohio University, Athens, OH.

According to the World Health Organization, an estimated 1.1 billion people worldwide are overweight, with 350 million considered obese. A debate exists whether body-mass index (BMI), a measure that considers both height and weight, or waist circumference (WC) are more strongly related to cardiovascular risk factors. Moreover, it has been suggested that associations among BMI, WC, and adverse health outcomes vary across racial groups. The National Health and Nutrition Examination Survey (NHANES) is an ongoing, cross-sectional survey of the health and nutrition of the United States popula-

tion. The current study used the NHANES 2007-2008 dataset to assess associations among BMI, WC, and hypertensive status across racial groups. Participants were 4,499 adults (20-79 years of age; 1,332 Mexican-American, 2,220 Non-Hispanic Whites, and 947 Non-Hispanic Blacks) who completed standardized interviews and medical examinations, which included BMI, WC, and manual blood pressure. For the analyses, participants' hypertensive status was based on the mean of the second and third blood pressure readings. Controlling for education, income and marital status, hierarchical linear regression analyses found that BMI, and WC were significantly associated with hypertensive status for Mexican-Americans (BMI:  $t(1325) = -4.58$ ,  $p < 0.001$  and WC:  $t(1325) = 6.18$ ,  $p < 0.001$ ), and Non-Hispanic Whites (BMI:  $t(2213) = -2.62$ ,  $p < 0.01$ , and WC:  $t(2213) = 4.45$ ,  $p < 0.001$ ). However, only WC was significantly associated with hypertensive status in Non-Hispanic Blacks (BMI:  $t(940) = -1.85$ ,  $p > 0.05$ ; WC:  $t(940) = 4.02$ ,  $p < 0.001$ ). These findings suggest that when choosing a measure of obesity, such as BMI and/or WC, to assess cardiovascular disease risk factors, the patient's race should be taken into consideration.

CORRESPONDING AUTHOR: Jennifer M. Kowalsky, MS, Ohio University, Athens, OH, 45701; jmkowalsky@gmail.com

### C-101j

#### THE EMOTIONAL EATING SCALE: CAN A SELF-REPORT MEASURE PREDICT OBSERVED EMOTIONAL EATING?

Emily Panza, BA,<sup>1</sup> Kristin L. Schneider, PhD,<sup>1</sup> Bradley M. Appelhans, PhD,<sup>2</sup> Matthew C. Whited, PhD,<sup>1</sup> Jessica Oleski, MA<sup>1</sup> and Sherry L. Pagoto, PhD<sup>1</sup>

<sup>1</sup>Preventive and Behavioral Medicine, University of Massachusetts Medical School, Worcester, MA and <sup>2</sup>Department of Preventive Medicine, Rush University Medical Center, Chicago, IL.

Emotional eating is an extensively studied but controversial construct. At least one study failed to find an association between self-report measures of emotional eating and observed emotional eating in the laboratory, suggesting that emotional eating may be difficult to measure (Evers et al., 2009). The present study aimed to expand on this literature by examining whether the Emotional Eating Scale (EES) predicts greater food intake in response to two negative emotions associated with emotional eating, anxiety and anger, relative to a neutral mood state. Participants completed the EES, then underwent 3 counterbalanced laboratory sessions involving autobiographical mood inductions for anxiety, anger and neutral mood, after which they received snack foods in a sham palatability test. Only participants who reported > 4 point increase in targeted mood were included in the analyses ( $n=45$ ; 71.7% female; 37% obese). ANCOVA analyses controlling for sex, BMI, age, hunger and mood induction sequence revealed a significant effect of the EES anxiety subscale on food intake, [ $F(1,39) = 5.56$ ,  $p = .02$ ,  $\eta^2 = .13$ ], but not for the EES anger subscale on food intake ( $p = .24$ ). Participants high on EES anxiety consumed an average of 192.52 more calories during the anxiety mood induction compared to the neutral mood induction, whereas participants low on EES anxiety consumed an average of 48.78 fewer calories during the anxiety mood induction. Results suggest that EES anxiety scale, but not EES anger scale, predicts emotional eating. Further research with larger samples and in naturalistic settings is required to validate the ability of the EES anxiety subscale to categorize emotional eaters and the inability of the EES anger subscale to do so.

CORRESPONDING AUTHOR: Emily Panza, BA, Preventive + Behavioral Medicine, University of Massachusetts Medical School, Worcester, MA, 01655; emily.panza@umassmed.edu

### C-101k

#### NONLINEAR RELATIONS BETWEEN BODY MASS INDEX AND COGNITIVE FUNCTION IN HEALTHY OLDER ADULTS

Megan M. Hosey, MA,<sup>1</sup> Carrington R. Wendell, MA,<sup>1</sup> Leslie I. Katzell, MD, PhD<sup>2,3</sup> and Shari R. Waldstein, PhD<sup>1,2</sup>

<sup>1</sup>University of Maryland, Baltimore County, Baltimore, MD; <sup>2</sup>University of Maryland School of Medicine, Baltimore, MD and <sup>3</sup>Geriatric Research and Education Clinical Center, Baltimore Veterans Affairs Medical Center, Baltimore, MD.

Both higher and lower levels of body mass index (BMI) have been associated with poorer neurocognitive performance in community-based and medical samples, but it is unusual for nonlinearity to be assessed directly. Here we examined linear and nonlinear relations of BMI to several neurocognitive measures. This study included 191 older adults (56.3% men, mean age=64 yrs) free of major medical (other than mild-to-moderate hypertension), neurologic, and psychiatric disease. Measures of height and weight were collected and BMI was calculated as weight(kg)/height (m squared). Participants completed a neurocognitive battery assessing attention, verbal/visual memory, visuospatial, psychomotor speed and executive function. Multiple regression analyses examined BMI as a linear and quadratic predictor of neurocognitive tests. Adjustment variables included age, sex, race, education, alcohol consumption, smoking, depressive symptoms, fasting glucose, and systolic blood pressure. Significant quadratic effects of BMI were identified for Visual Span Backwards (VSB;  $b = -.01$ ,  $p = .02$ ), such that both lower and higher BMI were associated with lower VSB scores (i.e., a U-shaped relation). A significant relation was also noted between quadratic BMI and completion of Grooved Pegboard with the dominant hand ( $b = -.097$ ,  $p = .003$ ); both lower and higher BMI were associated with faster completion time (i.e., inverted U-shape). Finally, a significant and negative linear relation between BMI and Block Design was noted ( $b = -2.32$ ,  $p = .04$ ). Results suggest complex relations between BMI and several domains of cognitive functions. Whereas both high and/or low levels of BMI were detrimental to visual attention and visuoconstruction abilities, high and low BMI were beneficial to manual dexterity. These findings suggest that BMI may act as both a risk and a protective factor in aspects of cognitive aging.

CORRESPONDING AUTHOR: Megan M. Hosey, MA, University of Maryland, Baltimore County, Baltimore, MD, 21250; mhosey1@umbc.edu

### C-101l

#### OBESITY EPIDEMIC: CHANGING THE PHYSICIAN AND PATIENT RELATIONSHIP

Cheryl Irtmier, PhD, LCSW, CADC and Suzen Moeller, PhD  
American Medical Association, Chicago, IL.

From an exploratory study which sought to understand the physician's perspectives regarding preventing and treating overweight or obese patients and the obesity epidemic (the factors which contribute to the epidemic), the authors will use a post modern psychological perspective to help change physician behavior.

A study used secondary analysis with a mixed methods approach. A two phase survey was devised. The first phase, qualitative, included 20 face to face interviews. The second phase, quantitative, included a electronic survey distributed to 1,000 physicians (63% PCPs; 21% OBGYNs; and 17% cardiologists and endocrinologists) from across the country. The first phase was thematically analyzed and informed the second phase, while the second phase was analyzed using a cluster analysis.

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

Roughly three quarters of the quantitative sample refer patients to weight watchers programs for treatment, and another are likely to seek out more information on preventing obesity. Two distinct groups (25%) only somewhat agreed that obesity is an epidemic. One group (15%) did not believe that the environment contributed to obesity (the lack of access to healthy foods; lack of healthy school food; cost of healthy foods; nor the lack of education about good nutrition contribute to obesity). A majority indicate they would be likely to educate patient's on prevention and treatment and participate in a program that motivates both physician and patients with monetary rewards to promote services for the prevention of obesity.

Many physicians believe that obesity is not an epidemic, and that the environment does not impact their patient's overweight or obese issues. A post modern psychological theory will be applied to highlight what is needed to change the attitudes and behaviors of physicians to impact the obesity epidemic.

CORRESPONDING AUTHOR: Cheryl Irmier, PhD, LCSW, CADC, American Medical Association, Chicago, IL, Illinois; cheryl.irmier@ama-assn.org

## **C-119a PRELIMINARY EVIDENCE FOR LONG TERM OUTCOMES FOLLOWING BRIEF BEHAVIORAL HEALTH INTERVENTION IN INTEGRATED PRIMARY CARE CLINICS**

Bobbie N. Ray-Sannerud, PsyD,<sup>2</sup> Craig J. Bryan, PsyD,<sup>4</sup> Diana C. Dolan, PhD,<sup>3</sup> Chad E. Morrow, PsyD,<sup>1</sup> Kent A. Corso, PsyD,<sup>5</sup> Kathryn E. Kanzler, PsyD<sup>3</sup> and Meghan L. Corso, PsyD<sup>6</sup>

<sup>1</sup>Maxwell Air Force Base, Montgomery, AL; <sup>2</sup>Nellis Air Force Base, Las Vegas, NV; <sup>3</sup>Lackland Air Force Base, San Antonio, TX; <sup>4</sup>University of Texas Health Science Center at San Antonio, San Antonio, TX; <sup>5</sup>NCR Behavioral Health, Bethesda, MD and <sup>6</sup>National Naval Medical Center, Bethesda, MD.

Because primary care is the most frequently accessed source of mental health care in the U.S., it is often called the de facto source for mental health care. The Behavioral Health Consultant (BHC) model was designed to place specially-trained mental health professionals in primary care medical clinics to assist with assessing and treating psychosocial issues in this high-demand setting. Although studies have demonstrated significant clinical patient improvement within the fast-paced, high-volume primary care setting, there is limited research considering the long-term effects of these newer behavioral health care models. This study utilized mixed effects modeling to evaluate long-term outcomes of 70 patients who were seen by BHCs in a large family medicine clinic. The Behavioral Health Measure (BHM) was used to measure psychological symptoms and functioning. Results revealed that patients generally improved from first to last BHC appointment, and gains made were maintained over an average of two years following intervention, with more severe distress at baseline being generally associated with greater overall improvement. Patterns of results did not change when considering whether or not patients accessed mental health treatment of any kind after BHC intervention, and how recently this mental health treatment occurred. These preliminary findings suggest that the clinical improvements among patients treated by BHCs were maintained up to two years after primary care intervention, regardless of subsequent mental health treatment.

CORRESPONDING AUTHOR: Chad E. Morrow, PsyD, USAF, MONTgomery, AL, 36116; chad.morrow@maxwell.af.mil

## **C-119b EXPLORING THE RELATIONSHIP BETWEEN DEPRESSION, STRESS, MOOD AND DIET IN A COLLEGE AGE POPULATION**

Melody Pearson, MA and Deborah Norris, PhD  
Psychology, American University, Washington, DC.

Mental health issues among college students are a growing public health concern, making predictors such as diet important to consider. Seventy-three college-aged students completed 24-hour dietary recalls and the following measures: Beck Depression Inventory (BDI), Perceived Stress Scale (PSS) and Positive Affect and Negative Affect Scale-X (PANAS-X). Data were categorized into dietary patterns, which were then analyzed with three mood scales, positive affect, negative affect, and fatigue using descriptive statistics, correlation matrices and regression analysis. Significant correlations were found between fatigue and Total Soda intake ( $r = 0.265$ ,  $p = 0.024$ ), Non-animal Protein ( $r = -0.307$ ,  $p = 0.009$ ) and Raw Fruit and Vegetable consumption ( $r = -0.412$ ,  $p = 0.000$ ). Additional regression analyses found Raw Fruit and Vegetable consumption remained inversely associated with feelings of fatigue, which was upheld when controlling for perceived stress and depression. When Total Soda intake and Non-animal Protein consumption are held constant, Raw Fruit and Vegetable consumption continues to be a significant predictor of fatigue. Furthermore, differences were found to exist between the consumption of raw and cooked fruits and vegetables. Specifically, results indicated significance with Raw Fruit and Vegetable consumption, but not with Cooked Fruit and Vegetable consumption and fatigue. Additional investigations into the differences between raw and cooked fruits and vegetables may prove useful in future scientific endeavors. These findings support the body of research on diet, mood and fatigue by extending the relationship into a nonclinical college age population. Consideration of diet for alleviating symptoms of fatigue in nonclinical populations may be a valuable contribution to overall wellbeing and health.

CORRESPONDING AUTHOR: Melody Pearson, MA, American University, Arlington, VA, 22205; mjp308@gmail.com

## **C-119c PSYCHOMETRIC ASSESSMENT OF THE PATIENT ACTIVATION MEASURE SHORT FORM (PAM-13) IN RURAL SETTINGS**

Man Hung, PhD, Matthew Samore, MD, Majorie E. Carter, MSPH, Jorie M. Butler, PhD, Molly Leecaster, PhD, Jose Morales, MSPH, Candace L. Hayden, MPH, Laverne Snow, MSPH and Rhonda Dzierzon, MSPH  
University of Utah, Salt Lake City, UT.

The Patient Activation Measure Short Form (PAM-13) is a 13-item survey instrument developed to measure patients' knowledge, skills and confidence in managing their personal health (Hibbard et al., 2004, Hibbard et al., 2005). It has been previously validated on subgroups of the US general population using Rasch measurement model. However, there lacks study to examine its validity and reliability amongst patients in the rural settings. As such, our current research aims to investigate the performance of PAM-13 in rural settings.

A computer assisted telephone survey was administered to 812 patients in four US primary care rural clinics during the year 2010. The sample consisted of 38% male and 62% female; 36% were under the age 45 and 64% were 45 or older; 63% had at least some college experiences and 37% were high school graduates or below.

We applied a Rasch model to examine reliabilities and validities, including item fit, and dimensionality. The 13 items seemed to cover the full range of the patients' measures, suggesting very little ceiling and floor effects. All items displayed excellent infit and outfit statistics (ranging from 0.76 to 1.13, and from .075 to 1.17 respectively). However, there was a slight indication of multidimensionality - After taking out the first dimension, there were still 8.4% variance left unexplained. Given the multifacet nature of the items, such slight deviations were inevitable. In general, PAM-13 performs well among rural patients.

CORRESPONDING AUTHOR: Man Hung, PhD, University of Utah, Salt Lake City, UT, 84108; man.hung@hsc.utah.edu

### **C-119d** **HEALTH CARE PROFILE OF THE 50+ RURAL/FRONTIER POPULATION: EXPERIENCES, CONCERNS, AND PREFERENCES**

Emily Boal, AA,<sup>1</sup> Deborah Fleming, PhD,<sup>1</sup> Beverly Morrow, MPA,<sup>2</sup> Joanne Bowlby, MPA,<sup>3</sup> Katherine Kitchen, BS<sup>1</sup> and Christine McKibbin, PhD<sup>1</sup>

<sup>1</sup>University of Wyoming, Laramie, WY; <sup>2</sup>Wyoming Department of Health, Cheyenne, WY and <sup>3</sup>American Association of Retired Persons (AARP), Cheyenne, WY.

Background: The number of older individuals in rural settings is expected to rapidly grow, increasing the demand for medical resources. However, little is known about the health care experiences and preferences for receiving health information in a population of rural/frontier adults age 50 and older. The present study aimed to gain an understanding of health information needs in this group. Methods: A mail survey of 4,000 Wyoming residents (i.e., age $\geq$ 50) was conducted. Residents were sampled by Sampling Inc. using existing lists and Census data. Surveys were returned by 1,427 older residents. Mean age was 65.2 (SD=11.5). A majority of the sample was male (48.8%) and White, non-Hispanic (90.9%). Results: Key findings reveal that rural residents consider themselves healthy, but many (75%) are being treated for at least one health condition. Some of the rural/frontier residents (i.e., 17%) had not sought out medical care when it was needed—largely due to cost. Importantly, nearly one in five respondents reported not receiving any patient care plan or follow-up after leaving a health care facility. Among those individuals, 25% reported they, a family member, or a friend were readmitted to the hospital within three months for the same condition. With respect to health information, most participants (i.e., 93%) believe their primary care doctor is the most important source of health information. However, a majority want providers to disclose more information about care options (79%), medication side effects (76%), and to encourage questions from patients (74%). Variations on health care experiences, satisfaction, and preferences for receiving information by age cohort will be discussed. Findings are likely of value to health and health service researchers, providers, and administrators.

CORRESPONDING AUTHOR: Emily Boal, AA, University of Wyoming, Laramie, WY, 82070; eboal@uwyo.edu

### **C-119e** **ORAL HEALTH IN PEOPLE WITH SEVERE MENTAL ILLNESS: NEEDS AND PERSPECTIVES ON CARE**

Katherine Kitchen, BS, Aaron Lee, BS and Christine McKibbin, PhD University of Wyoming, Laramie, WY, WY.

Background: People with severe mental illness (SMI) have a 63% lifetime prevalence of suboptimal oral health care, yet they show more tooth decay and poorer oral quality of life than the general population. Despite its importance, oral health care for adults with SMI is a low treatment priority and little work has been conducted to understand oral health from patients' perspectives. This study used qualitative methods to investigate participants' knowledge about oral health care in addition to perceived barriers and facilitators to receiving oral health care. Methods: Adult outpatients over age 18 with schizophrenia and bipolar disorders were recruited from two community mental health centers in Wyoming. Semi-structured, qualitative interviews were conducted and transcribed verbatim. Grounded theory methods and constant comparison analysis were used to analyze the data. Results: Eleven adults (men: n=5; women: n=6) ages 35-63 (m= 52.5) were interviewed. A majority was Caucasian (90.9%), divorced (45.5%), and had at least some college (54.5%). Participants lacked knowledge about adequate oral health care, although the majority was familiar with the basic necessities of care (e.g., you should brush your teeth daily). A number of barriers (e.g., poverty, dental anxiety, depression) keep patients from receiving oral care. When oral care is accessed, patients report that stigma prevents them from disclosing their mental health status and that providers also do not initiate discussion about mental health. They also report difficulty understanding procedures and instructions. Facilitators of oral health care included (e.g., payment programs, social support, provider/patient communication). Conclusions: Although the importance of oral health was recognized by participants as being necessary for health and quality of life, barriers and missed opportunities impact quality of care. Oral health may be improved for people with SMI by implementing education in points of frequent service contact, educating dental providers about mental health, and increasing oral health service availability.

CORRESPONDING AUTHOR: Katherine Kitchen, BS, University of Wyoming, Laramie, WY, WY, 82071; kkitchen@uwyo.edu

### **C-126a** **DEVELOPMENT OF A PICTORIAL SCALE FOR ASSESSMENT OF FUNCTIONAL INTERFERENCE FROM CHRONIC PAIN**

Andrew J. Cook, PhD,<sup>1,2</sup> David A. Roberts, MPH<sup>3</sup> and Karen C. Nelson, MD<sup>3,4</sup>

<sup>1</sup>MH & Behav Med, Central Texas Veterans Health Care System, Temple, TX; <sup>2</sup>Psychiatry & Behav Sci, Texas A&M College of Medicine, Temple, TX; <sup>3</sup>American Pain Research Association, Casper, WY and <sup>4</sup>Health & Kinesiology, University of Texas, Tyler, TX.

Background: Existing standardized rating scales for functional interference, a core dimension of chronic pain assessment, are language dependent. This can limit their utility for patients with low education level, limited language proficiency, and/or mild cognitive impairment.

Methods: The authors created sketches to represent polar anchors for a series of functional tasks. Ten items were elaborated by a professional illustrator, and a 5-point rating scale was incorporated to form the Pictorial Pain Interference Questionnaire (PPIQ). The PPIQ was administered to a sample of 111 chronic pain patients (78% female, mean age= 50.6 yrs, SD=14.2) as part of a clinical assessment

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

trial. Other measures of pain functioning included the Pain Disability Index (PDI), Oswestry Disability Index (ODI), and the Interference scale of the Multidimensional Pain Inventory (MPI). Standardized measures of other chronic pain dimensions (i.e., pain severity, affect, depression, control) were also obtained.

Results: The total score of the PPIQ was found to have high internal consistency reliability ( $\alpha=0.91$ ). Concurrent validity was demonstrated via correlations with the PDI ( $r=0.80$ ), ODI ( $r=0.81$ ) and MPI Interference ( $r=0.72$ ). Discriminant validity was supported by correlations with MPI Life Control ( $r=0.29$ ) and PANAS Positive Affect ( $r=0.29$ ). Additional evidence for construct validity of the total scale and individual items was obtained through correlations with other chronic pain measures. Patients reported the measure to be understandable and easy to complete.

Conclusions: Good initial psychometric properties were demonstrated for a new, brief pictorial measure of chronic pain interference. The measure may have useful applications in clinical and research settings involving diverse patient populations, and for multi-national clinical trials.

CORRESPONDING AUTHOR: Andrew J. Cook, PhD, MH & Behav Medicine, Central Texas Veterans Health Care System, Belton, TX, 76513; drewjcook@gmail.com

## **C-126b** **PAIN COPING SKILLS, BUT NOT MOTIVATION, ARE ASSOCIATED WITH PAIN-RELATED FUNCTIONING AT PRE-TREATMENT**

Patrick H. Finan, MA,<sup>1</sup> Robert Kerns, PhD,<sup>1</sup> John Burns, PhD,<sup>2</sup> Mark Jensen, PhD<sup>3</sup> and Warren Nielson, PhD<sup>4</sup>

<sup>1</sup>VA Connecticut Healthcare System, West Haven, CT; <sup>2</sup>Rush University Medical Center, Chicago, IL; <sup>3</sup>University of Washington, Seattle, WA and <sup>4</sup>St. Joseph's Health Care, London, ON, Canada.

Research suggests that motivation, or readiness to change, is an antecedent to engagement in pain-coping behaviors. However, this model does not account for the paths from motivation and coping to pain-related functioning. The purpose of this study was to determine if motivation was related to coping, and whether those relations explained variance in pain, pain interference, and depression. 129 patients with chronic low back pain completed the Brief Multidimensional Pain Readiness to Change Questionnaire (B-MPRCQ), the Brief Chronic Pain Coping Inventory (B-CPCI), the Numeric Rating Scale for pain (NRS), the West Haven-Yale Multidimensional Pain Inventory (WHYMPI), and the Beck Depression Inventory II (BDI-II) prior to participation in a clinical trial of cognitive-behavioral therapy for pain. Results showed that the coping skill-matched subscales of the B-MPRCQ and B-CPCI were moderately correlated ( $R$ 's between .30 and .60), and mismatched subscales were weakly related. None of the motivation subscales were significantly associated with any of the functioning variables ( $p$ 's  $\geq .05$ ). However, several aspects of coping were associated with functioning. Specifically, B-CPCI task persistence was associated with lower pain interference ( $R^2 = .06$ ,  $p < .01$ ) and depression ( $R^2 = .09$ ,  $p < .0001$ ); asking for assistance was associated with higher pain interference ( $R^2 = .11$ ,  $p < .0001$ ); and resting was associated with higher pain interference ( $R^2 = .17$ ,  $p < .0001$ ). Overall, the results indicate that, prior to intervention, adaptive coping is associated with better pain-related functioning and maladaptive coping is associated with poorer functioning, while motivation appears to not play any role in patient functioning prior to treatment. The possibility remains that both motivation and coping

may dynamically influence pain-related functioning during or after cognitive-behavioral or motivational enhancement intervention.

CORRESPONDING AUTHOR: Patrick H. Finan, MA, Psychology, Arizona State University, Tempe, AZ, 85287-1104; patrick.finan@asu.edu

## **C-126c** **ASSOCIATIONS AMONG PARENTAL CATASTROPHIC COGNITIONS, CHILD PAIN BEHAVIOR, AND PARENTAL SOLICITOUSNESS IN THE CONTEXT OF PEDIATRIC INFLAMMATORY BOWEL DISEASE (IBD)**

Shelby Langer, PhD, Joan Romano, PhD, Jonathon Brown, PhD and Rona L. Levy, PhD  
University of Washington, Seattle, WA.

Catastrophizing, an overly negative appraisal in which pain is seen as signifying a high degree of threat, harm or damage, has been associated with pain-related distress and dysfunction in patients suffering from chronic pain. Catastrophizing by significant others may also adversely affect pain-related outcomes. A catastrophizing parent, for example, may view a child's symptoms of pain as threatening or harmful, and consequently respond with greater caretaking and solicitousness, potentially reinforcing the child's illness behavior. Such processes are hypothesized to occur in chronic conditions, even when a pathophysiologic process is present, such as IBD. In such situations, increased symptoms may or may not be indicative of an illness flare but may trigger catastrophic thought. This study sought to examine the association between child pain behavior and parental solicitousness, and the potential mediating role of parental catastrophizing in this association. Parents of children with IBD ( $n = 88$ ) completed measures designed to assess their child's pain behavior (Help Seeking subscale of the Pain Behavior Checklist), catastrophizing about their child's symptoms (Pain Catastrophizing Scale), and solicitous responses to their child's symptoms (Adults' Responses to Children's Symptoms). Demographics were as follows:  $M$  ( $SD$ ) age = 44.7 (6.8), 93% female, 2% Hispanic, and 92% Caucasian. Mediation analyses were conducted per Baron and Kenny (1986). In step 1, child pain behavior predicted parental solicitousness ( $B = .22$ ,  $p = .007$ ). In step 2, child pain behavior predicted parental catastrophizing ( $B = 3.33$ ,  $p = .01$ ). In step 3, solicitousness was treated as the criterion with both catastrophizing and child pain behavior in the model. Evidence for partial but not complete mediation was found ( $B$  for catastrophizing = .02,  $p = .009$ ;  $B$  for child pain behavior = .16,  $p = .047$ ). This suggests that further attention to the role of parental cognitions in the management of IBD is warranted.

CORRESPONDING AUTHOR: Shelby Langer, PhD, School of Social Work, University of Washington, Seattle, WA, 98105; shelby11@u.washington.edu

## **C-126d** **DIFFERENTIAL IMPACT OF PAIN AND FATIGUE ON PHYSICAL AND MENTAL HEALTH FUNCTIONING IN VETERANS**

Helena K. Chandler, PhD, Anna Rusiewicz, PhD, Lisa McAndrew, PhD, Karen S. Quigley, PhD and Gudrun Lange, PhD  
NJ-WRIISC, VAMC, East Orange, East Orange, NJ.

Background: Pain and fatigue are common complaints both in primary care and among veterans. The impact of these symptoms on physical and mental health functioning is well documented, but they frequently co-occur and there is scant research on this comorbidity in veterans. A study of civilian females found that fibromyalgia

comorbid with chronic fatigue syndrome was associated with greater deficits in physical but not mental health functioning (Cicccone & Natelson, 2003). Based on this work and our prior study of pain veterans (Helmer et al, 2009), we hypothesized that the effect of fatigue on physical, but not mental health function would be impacted by comorbid widespread pain.

**Method:** Self-reported physical and mental health information was gathered from 508 veterans seen at the NJ-WRIISC. We examined the impact of widespread pain (WVP) and chronic fatigue symptoms (CFS) on physical health functioning and mental health functioning using regression analysis, controlling for age and gender.

**Results:** Greater self-report of chronic fatigue symptoms ( $B=.313$ ,  $p<.001$ ) and widespread pain ( $B=.319$ ,  $p<.001$ ) were associated with worse physical health functioning. There was an interaction of WVP and CFS on physical function ( $B=.150$ ,  $p<.05$ ) such that the effect of CFS was most pronounced in absence of WVP. In contrast, greater CFS emerged as a stronger predictor of worse mental health function ( $B=-.456$ ,  $p<.001$ ) than greater WVP ( $B=.078$ ,  $p=.076$ ). The interaction of these variables was not a predictor of mental health functioning.

**Discussion:** The results are consistent with reports from the civilian literature. Divergent impact of widespread pain and chronic fatigue on physical and mental health function suggests that patients with comorbid widespread pain with fatigue may benefit from interventions that directly target physical functioning. In contrast, while patients with fatigue in the absence of pain may benefit from therapeutic approaches that address mental health.

**CORRESPONDING AUTHOR:** Helena K. Chandler, PhD, NJ-WRIISC, VAMC, East Orange, East Orange, NJ, 07018; Helena.Chandler@hotmail.com

**C-148a**  
**OBJECTIVE MEASUREMENT OF PHYSICAL ACTIVITY LEVELS IN VETERANS WITH TYPE 2 DIABETES: NORMATIVE ACCELEROMETER DATA FROM AN EXERCISE TRIAL**

Elizabeth Johnson, PhD,<sup>1,2</sup> DeAnna Mori, PhD,<sup>1,2</sup> Kelly Allsup, BS,<sup>1</sup> Allison Collins, PhD,<sup>1</sup> Daniel Forman, MD<sup>1</sup> and Barbara Niles, PhD<sup>1,3</sup>  
<sup>1</sup>VA Boston Healthcare System, Boston, MA; <sup>2</sup>Boston University School of Medicine, Boston, MA and <sup>3</sup>National Center for PTSD, Boston, MA.

Accelerometry is a relatively new technology that has become the preferred method of measurement in studies investigating rates of physical activity (PA). Understanding and analyzing the data can be complicated, and investigators often rely on preestablished cutoffs to determine the activity level of their targeted population. However, normative accelerometry data with different medical populations is often unavailable, which can make it difficult to interpret data. The purpose of this analysis is to provide normative baseline data on PA levels using accelerometry in a population of 74 overweight or obese, sedentary adults with poorly controlled Type 2 diabetes. Participants were predominantly male (97%), Caucasian (76%), with a mean age of 62 who were interested in enrolling in a 6-month, home-based walking program. Participants wore an Actigraph accelerometer for 7 days prior to the first assessment to obtain a baseline assessment of PA. Using cut-points established by the Freedson Equation,

analysis of baseline data measured by accelerometer revealed that over the 7 day period, participants spent 67.2% of measured activity in sedentary activities, 31.0% in light, 1.8% in moderate and 0.0% in vigorous activity. Sixty four percent of participants had no bouts of moderate to vigorous physical activity (MVPA)  $\geq 10$  min in duration. Although 36% of participants did engage in MVPA during their baseline assessment, they had an average of only 1.3 bouts over the 7 day period. Mean overall activity count/day was 170,821 (SD=83,036) which reflects a very low level of PA when compared to the general population, and previously studied obese populations. As expected, the baseline PA level of deconditioned, sedentary participants with Type 2 diabetes in the TLC-PED study was low. This presentation will address whether previously defined activity cut-points are applicable to this and other populations with chronic medical illnesses.

**CORRESPONDING AUTHOR:** Elizabeth Johnson, PhD, VA Boston Healthcare System, Boston, MA, 02130; elizabeth.johnson1@va.gov

**C-148b**  
**IMPACT OF PRIMARY CARE PHYSICAL ACTIVITY INTERVENTION ON PHYSICAL ACTIVITY LEVELS AND PSYCHOSOCIAL MEASURES IN MIDDLE-AGED WOMEN: THE HEALTHY BODIES, HEALTHY HEARTS STUDY**

Kathleen Spadaro, PhD,<sup>1</sup> Kathleen Sward, PhD, MPH,<sup>2</sup> Bobby L. Jones, PhD,<sup>2</sup> Shenay Jeffrey, BS<sup>2</sup> and Molly B. Conroy, MD, MPH<sup>2</sup>  
<sup>1</sup>Chatham University, Pittsburgh, PA and <sup>2</sup>University of Pittsburgh, Pittsburgh, PA.

**BACKGROUND:** Over 30% of US women do not engage in leisure-time physical activity (PA). Healthy Bodies, Health Hearts (HBHH) is a randomized, controlled PA intervention focused on translating behavioral interventions to primary care (PC) settings.

**METHODS:** 99 women with BMI > 30, aged 45-65, were recruited from 3 University of Pittsburgh PC clinics and randomized to either a 12-week in-person (IP) group or at-home (AH) group. IP sessions were 30 minute discussions with 30 minutes of group PA; AH group received self-guided manual. Assessments at baseline and 12 weeks included: Beck Depression Inventory (BDI), Modifiable Activity Questionnaire (MAQ), Physical Activity Self-Efficacy, Physical Activity Enjoyment Scale (PACES), PSQI Global Sleep Scale, Short Form-12 Health Survey (SF-12) and weight. Intention-to-treat comparisons of between group changes from baseline to 12 weeks were analyzed with t-test or rank-sum test.

**RESULTS:** Baseline sample data comprised of 98 women; mean (SD) age was 53.9 (5.4) years, weight 92.3 (17.7) kg, BDI 8.5 (7.3), and median MAQ 2.8 (IQR 12.0). 60% were Caucasian and 53% married. 68 (69%) of women attended 12-week assessment, with black women and AH group more likely to be lost to follow-up. Women in the IP group had significantly decreased depressive symptoms (BDI change: -1.6 vs. 0.1;  $p=0.04$ ), increased physical activity (MAQ change: 6.3 vs. 0;  $p=0.001$ ), and increased PA enjoyment (PACES change: 0.9 vs. 0.3;  $p=0.05$ ) compared to the AH group. There were no significant differences between groups in changes in self-efficacy ( $p=0.21$ ), sleep (PSQI  $p=0.40$ ), health-related quality of life (SF-12 PHC  $p=0.48$ , MHC  $p=0.65$ ) or weight ( $p=0.19$ ).

**CONCLUSIONS:** Inactive middle-aged women may increase PA levels and enjoyment and decrease depressive symptoms with PC referral to a 12-week PA program. Further research is warranted in sustainability of improvements and replication of HBHH in other PC settings.

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

CORRESPONDING AUTHOR: Kathleen C. Spadaro, PhD, Nursing, Nursing, Chatham University, Pittsburgh, WV, 15232; kspadaro@chatham.edu

## **C-148c** **ARE EXERCISE-INDUCED COGNITIVE BENEFITS IN CHILDREN DUE TO IMPROVEMENTS IN FATNESS, FITNESS, OR INSULIN RESISTANCE?**

Catherine L. Davis, PhD,<sup>1</sup> Amanda McDougald, MS<sup>1</sup> and Phillip D. Tomporowski, PhD<sup>2</sup>

<sup>1</sup>Pediatrics, Medical College of GA, Augusta, GA and <sup>2</sup>Kinesiology, Univ. of Georgia, Athens, GA.

**OBJECTIVE:** A randomized clinical trial found that a 3 mo. aerobic training intervention improved overweight children's fatness, fitness, insulin resistance, and aspects of cognition (executive function) and academic achievement (mathematics). This preliminary analysis tested whether changes in mental performance were related to the improvements in physical health observed in this trial.

**METHOD:** Overweight children (BMI-for-age  $\geq$ 85th percentile, 7-11 yrs, N = 209) provided posttest measures in the exercise trial (DK60692, DK70922). Baseline and posttest measures were obtained on anthropometrics and percent body fat by DXA (n = 209), visceral and subcutaneous fat by MRI (193), fitness with a graded treadmill test (205), insulin from an oral glucose tolerance test (197 fasting, 149 area under the curve), the Cognitive Assessment System (164), Woodcock-Johnson Tests of Achievement III (134), and Connors Rating Scales (206 parent, 144 teacher).

**RESULTS:** Changes in the following were related: CAS Successive scale with VO<sub>2</sub> and subcutaneous fat (r = .22, .22, ps < .01); reading achievement with AUC and fasting insulin (-.28, p < .01, -.18, p < .05);

parent ratings on Cognitive Problems/Inattention and subcutaneous fat (.15, p < .05).

**CONCLUSION:** Few of the changes in mental performance were correlated with changes in physical health. The changes in the cognitive variables that responded to exercise in the trial were unrelated to changes in physical health. Overall, the physical benefits of exercise training do not appear to be responsible for the cognitive benefits observed in this trial.

CORRESPONDING AUTHOR: Catherine L. Davis, PhD, Pediatrics, Medical College of GA, Augusta, GA, 30912; cadavis@mail.mcg.edu

## **C-148d** **EXAMINING AFFECTIVE CHANGES FROM PHYSICAL ACTIVITY IN ACTIVE WOMEN WITH MULTIPLE LIFE ROLES: PRELIMINARY EXPERIMENTAL FINDINGS OF SITUATIONAL MOTIVATION AS PREDICTOR**

Eva Guerin, BA and Michelle Fortier, PhD  
Human Kinetics, University of Ottawa, Ottawa, ON, Canada.

Active individuals as well as women in general can accrue unique enhancements in affect from physical activity (PA), which can lead to greater well-being. Despite existing evidence, further theoretical and person-centered explanation of this relationship is required, particularly in an active female population. The nature of one's motivation toward PA, as postulated by Self-Determination Theory (SDT), may supply a missing and understudied link. Therefore, the initial aim of this study was to ascertain pre-post changes in affect from a preferred bout of PA (i.e. running) while the primary aim was to examine the

predictive influence of self-determined motivation on pre-post affective changes. To date, 22 women with multiple roles (i.e., mother and employed) that were self-reported runners have attended two sessions to engage in (a) a 30-minute moderate-intensity self-paced treadmill run and (b) a 30-minute quiet activity (i.e., newspaper reading). Validated questionnaires on situational motivation for running and affect were answered before and/or after each task. Two (time) x 2 (task) repeated measures ANOVAs revealed significant time x task interactions for positive affect  $F(1,21)=38.73$ ,  $p<.001$ ,  $\eta^2=.65$  and negative affect  $F(1,21)=10.38$ ,  $p<.01$ ,  $\eta^2=.33$  both favouring the running task. For the running task, correlations of self-determined motivation ( $r=.78$ ,  $p<.001$ ) and introjection ( $r=-.039$ ,  $p=NS$ ) with post-run positive affect were in the expected direction. Hierarchical regressions showed that beyond pre-running affect, neither a composite score of self-determination nor introjected regulation predicted post-running affect ( $p>.05$ ), although self-determination remained a stronger predictor of post-running positive affect than introjection. The preliminary nature of this data warrants cautions interpretations in continued attempts to isolate underlying, individual-level mechanisms of PA-induced affective benefits. Future analyses with a larger sample could expose theoretical, motivational links worthy of further research.

CORRESPONDING AUTHOR: Eva Guerin, BA, Human Kinetics, University of Ottawa, Ottawa, ON, K1N 7T6; eguer016@uottawa.ca

## **C-148e** **USING SOCIAL COGNITIVE THEORY TO PROMOTE EXERCISE ADHERENCE AMONG SEDENTARY INDIVIDUALS AT THE WORKSITE**

Megan Wolfe, PhD,<sup>2</sup> Brian Hartz, PhD<sup>1</sup> and Rick Petosa, PhD<sup>2</sup>  
<sup>1</sup>Denison University, Granville, OH and <sup>2</sup>The Ohio State University, Columbus, OH.

The purpose of the study was to test the ability of a Social Cognitive Theory based intervention to increase exercise adherence among sedentary participants at the worksite. A quasi-experimental, pre-test, post-test group design was used to compare the treatment and comparison group. Subjects were screened to ensure they were sedentary (n=127). An eight session instructional intervention was delivered at the worksite over eight weeks. The intervention targeted the Social Cognitive Theory (SCT) constructs of self-regulation, self-efficacy, social support, exercise enjoyment and outcome expectations and expectancies. Subjects physical activity was self directed and conducted outside the class based intervention. Measurements were collected at pre-test, post-test, one and three months follow-up post-intervention. Previously validated measures were used and included: exercise, self-regulation, self-efficacy, social support, exercise enjoyment and outcome expectations and expectancies. At post test and follow up the intervention group reported higher rates of both moderate-intensity exercise and vigorous intensity exercise ( $p=.001$ ). The intervention group also reported statistically significant gains in self-regulation scores at post-test and follow-up ( $p=.001$ ). Family and friend social support group differences were not demonstrated at post-test and follow-up one, but demonstrated a significant difference at follow-up two ( $p=.001$ ). The SCT based intervention was successful in increasing the exercise rates among previously sedentary employees at the worksite. The Social Cognitive Theory based intervention is a cost effective way to promote activity at worksites that do not have access to fitness facilities.

CORRESPONDING AUTHOR: Brian Hartz, PhD, Denison University, Granville, OH, 43023; hartzb@denison.edu

### **C-148f** **TARGETED PHYSICAL ACTIVITY INTERVENTION FOR WOMEN AT FAMILIAL RISK FOR BREAST CANCER**

Sheri J. Hartman, PhD,<sup>1,2</sup> Shira I. Dunsiger, PhD<sup>1,2</sup> and Bess H. Marcus, PhD<sup>1,2</sup>

<sup>1</sup>The Miriam Hospital, Providence, RI and <sup>2</sup>Brown University, Providence, RI.

Getting women at increased breast cancer (BC) risk to engage in regular physical activity (PA) may be one important way to help decrease their BC risk. This pilot study tested a PA intervention targeted at women with a family history of BC. Sedentary women (n=27) with at least 1 first-degree relative with BC but no personal BC diagnosis, received a 12 week PA intervention. The women were a mean of 38.52 years old (SD=11.40), most identified as white (93%), non-Hispanic (89%), married (41%), with some college education (89%). There was a significant increase in minutes of moderate intensity PA from baseline to 12 weeks (t=4.93, p<.001), with a mean increase in PA of 155.56 mins/week (sd=127.52). At 12 weeks, 41% met ACSM criteria of engaging in 150 minutes or more of moderate intensity activity. Regression models indicate that change in perceived risk of BC was significantly associated with change in PA (t=-2.36, p=0.03, r=.34), with decreases in perceived risk associated with increases in PA over time. There was a trend (t=1.61, p=.12) with small to medium effect size (r=.26), for baseline perceived risk of BC to be associated with increasing PA. Baseline BC worry and change in BC worry were not significantly associated with a change in PA. However, there was a trend with medium effect size for perceived risk of BC (t=1.67, p=.11, r=.35) and perceived control over BC risk (t=1.68, p=.11, r=.30) to each moderate the relationship between BC worry and PA, such that among those with higher perceived risk at baseline or with higher perceived control over risk at baseline, more worry was associated with greater changes in PA over time. Findings suggest that a targeted intervention for women at increased risk for BC can increase PA and decrease perceived risk of BC. It also suggests that women may be more successful in a targeted PA intervention if they perceive themselves to be at risk for BC and that BC worry may interact with perceived risk and perceived control to influence change in PA. Future research in this area using a RCT design is warranted at this time.

CORRESPONDING AUTHOR: Sheri J. Hartman, PhD, The Miriam Hospital, Providence, RI, 02903; shartman@lifespan.org

### **C-148g** **PROMOTING EXERCISE DURING PREGNANCY: THE USE OF EFFICACY-ENHANCING MESSAGES TO INFLUENCE SCHEDULING AND TASK EFFICACY AND INTENTIONS**

Anca Gaston, MA, Anita Cramp, PhD and Harry Prapavessis, PhD  
School of Kinesiology, The University of Western Ontario, Brantford, ON, Canada.

Despite the confirmed health benefits of exercise during pregnancy, many expectant mothers are not sufficiently active. Furthermore, the two most commonly cited barriers to exercise during pregnancy are time constraints and physical limitations, highlighting the need for interventions aimed at improving pregnant women's confidence in a) their ability to fit exercise into their day (scheduling efficacy) and b) their ability to physically carry out the task of exercise (task efficacy). The present study sought to examine whether persuasive messages could influence scheduling and task efficacy as well as exercise readiness in active and inactive pregnant women. One hundred twenty-five pregnant women (M age = 26.4 years, SD = 5.79) completed premanipulation measures of scheduling and task efficacy

and exercise intentions before being randomly assigned to read one of four messages: scheduling, task, combined scheduling and task efficacy-enhancing, or attention control. Postmanipulation scheduling and task efficacy, goal intentions as well as action plans and behavioral commitment were then assessed. For inactive participants, a repeated-measures ANOVA revealed a significant message x time interaction effect in the expected direction for scheduling efficacy (p = .000,  $\eta^2 = .28$ ) and goal intention (p = .002,  $\eta^2 = .22$ ). Trend effects in the expected direction were found for task efficacy (p = .10,  $\eta^2 = .10$ ) and action plans (p = .07,  $\eta^2 = .11$ ). There was no significant effect for behavioral commitment and there were no significant effects for participants already meeting exercise guidelines. Overall, the present research demonstrates that a written persuasive message can increase exercise scheduling efficacy and goal intentions among inactive pregnant women.

CORRESPONDING AUTHOR: Anca Gaston, MA, School of Kinesiology, The University of Western Ontario, Brantford, ON, N3T 6M5; agaston2@uwo.ca

### **C-148h** **ASSESSING WALKING IN RELATION TO ABDOMINAL ADIPOSITY AND CARDIORESPIRATORY FITNESS IN HIGH RISK INDIVIDUALS**

Ashley Moncrieff, BA, Judith R. McCalla, PhD, Maria Llabre, PhD, Miriam Gutt, PhD, Marc Gellman, PhD, Ronald Goldberg, MD and Neil Schneiderman, PhD  
Psychology, University of Miami, Coral Gables, FL.

Studies have shown that moderate to vigorous activity is related to improved cardiorespiratory fitness (CRF) and in some instances decreased adiposity. Less is known about the relationship between walking and adiposity or CRF in overweight, unfit individuals. Such assessment may be of particular importance in patients with metabolic syndrome (MetS) and/or type 2 diabetes (T2D) who are at high risk for cardiovascular disease (CVD) and do not engage in vigorous exercise. 228 individuals took part in one of two studies of individuals with MetS or T2D. Participants were asked about the frequency and duration of walking during the week. Participants also wore an accelerometer to assess number of steps taken per week. CRF was assessed using VO<sub>2</sub>max (ml/min/kg) obtained during a sub-maximal exercise test. Girth (in) was measured to assess abdominal adiposity. Mean VO<sub>2</sub>max (M=17.94, SD=4.56 men; M=13.95, SD=3.14 women) and girth (M=42.46, SD=5.86 men; M=40.38, SD=4.02 women) indicated the sample was generally unfit and overweight to obese. Self-reported walking and accelerometer-recorded steps per week were not correlated in this sample and steps per week was the preferred indicator. A path model was specified with steps per week included as a predictor of girth and VO<sub>2</sub>max. Girth was also entered as a predictor of VO<sub>2</sub>max. There was a weak, inverse association between steps per week and girth ( $\beta = -.121$ , p = .056) after controlling for BMI and gender. VO<sub>2</sub>max was predicted by girth ( $\beta = -.200$ , p < .05) after controlling for age and gender. Steps per week was not directly or indirectly related to VO<sub>2</sub>max. The model accounted for 48% and 35% of the variance observed in girth and VO<sub>2</sub>max respectively. The data suggest that CRF is inversely related to girth and a mild inverse association may exist between walking and adiposity in this sample. Also, while data from self-report did not reliably predict adiposity or CRF, objective measures of activity may improve assessment of CVD risk.

CORRESPONDING AUTHOR: Ashley Moncrieff, BA, Psychology, University of Miami, South Miami, FL, 33143; amoncrieff@psy.miami.edu

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

## C-158a

### **WORRY MEDIATES THE RELATIONSHIP BETWEEN PERCEIVED AMBIGUITY AND DECISION-MAKING DIFFICULTY ABOUT STEM CELL TRANSPLANTATION IN FANCONI ANEMIA**

Jada G. Hamilton, PhD, MPH,<sup>1</sup> Paul K. J. Han, MD, MA, MPH,<sup>2</sup> Sadie P. Hutson, PhD, RN, WHNP, BC,<sup>3,4</sup> Sean C. Rife, MA,<sup>5</sup> Richard P. Moser, PhD<sup>6</sup> and Blanche P. Alter, MD, MPH<sup>4</sup>

<sup>1</sup>Applied Cancer Screening Research Branch, DCCPS, NCI, Rockville, MD; <sup>2</sup>Center for Outcomes Research and Evaluation, Maine Medical Center, Scarborough, ME; <sup>3</sup>College of Nursing, East Tennessee State University, Johnson City, TN; <sup>4</sup>Clinical Genetics Branch, DCEG, NCI, Rockville, MD; <sup>5</sup>Department of Psychology, Kent State University, Kent, OH and <sup>6</sup>Behavioral Research Program, DCCPS, NCI, Rockville, MD.

Substantial ambiguity, uncertainty regarding evidence about the risks of an action, exists for many health interventions. When presented with ambiguous information, people demonstrate ambiguity aversion, characterized by pessimistic cognitive and affective appraisals of the benefits and harms of the action and by decision-making avoidance. Ambiguity aversion is likely a critical phenomenon in decision making about medical interventions. An example is the decision about whether to use stem cell transplantation (SCT) to treat Fanconi Anemia (FA), an inherited, cancer-prone, bone marrow failure syndrome. Consistent with ambiguity aversion, we predicted that among FA patients and their parents, perceived ambiguity regarding SCT would be associated with heightened perceived risk and worry about harms of SCT, and greater difficulty deciding about SCT. We also hypothesized the effect of perceived ambiguity on decision-making difficulty would be mediated by perceived risk and worry. We conducted a cross-sectional mail survey of 194 FA patients and parents (94% of respondents). As predicted, greater perceived ambiguity was associated with greater perceived risk, worry, and decision-making difficulty (all  $p \leq .03$ ). In mediational analyses, both greater perceived risk and worry were associated with greater decision-making difficulty; however, only worry significantly reduced the strength of the association between perceived ambiguity and decision-making difficulty (Sobel test  $Z=2.58$ ,  $p=.01$ ). Results suggest FA patients and parents do exhibit ambiguity aversion when considering SCT, and highlight the important role of affect in decision making in response to ambiguous health information.

CORRESPONDING AUTHOR: Jada G. Hamilton, PhD, MPH, National Cancer Institute, Rockville, MD, 20892-7331; hamiltonjg@mail.nih.gov

## C-162a

### **PHYSIOLOGICAL RISK FACTORS FOR SEXUAL DYSFUNCTION IN WOMEN WHO HAVE AND HAVE NOT BEEN SEXUALLY ABUSED IN CHILDHOOD**

Tierney K. Ahrold, MA and Cindy M. Meston, PhD  
Department of Psychology, University of Texas at Austin, Austin, TX.

Childhood sexual abuse (CSA) predicts lower rates of sexual functioning and satisfaction in adult survivors. Two physiological factors have been implicated in impaired sexual response in women with CSA histories: elevated levels of cortisol (Yehuda, 2003; Hamilton, Rellini, & Meston, 2008), and sympathetic nervous system (SNS) activation (Rellini & Meston, 2006). We compared responses to sexual stimuli of cortisol and heart rate variability (HRV), a measure of SNS activity, in women with ( $N = 136$ ) and without CSA histories ( $N =$

102). Decreased cortisol secretion during sexual stimuli predicted sexual functioning and satisfaction in both groups, but was a stronger predictor in women with CSA histories. In women with CSA histories, decreases in SNS response to sexual stimuli predicted higher sexual functioning and satisfaction, whereas in NSA women, moderate increases of the SNS to sexual stimuli predicted higher sexual functioning and satisfaction. These findings imply that physiological processes may contribute to the increased rate of development of sexual problems in adult survivors of CSA.

CORRESPONDING AUTHOR: Tierney K. Ahrold, MA, Department of Psychology, University of Texas at Austin, Austin, TX, 78712; tierney.ahrold@mail.utexas.edu

## C-162b

### **AFRICAN AMERICAN GIRLS' BODY IMAGE AND SEXUAL ATTITUDES**

Michell Pope, BS, Rosalie Corona, PhD and Faye Z. Belgrave, PhD  
Psychology, Virginia Commonwealth University, Richmond, VA.

Adolescent girls with a negative body image are at increased risk of low self esteem and unsafe sexual practices. Few studies have explored family communication about body image and sexual behavior, yet communication may promote healthy behavior. We conducted qualitative interviews with 21 African American caregivers and their daughters (11-14 years). Interviews were recorded and reviewed. Preliminary coding found 3 themes. Acceptance & Change: 62% of girls were satisfied with their body, yet others wanted to change their appearance ("I could look more beautiful if I lose weight.") Some caregivers shared their daughters' insecurities ("She wants a breast reduction...She's concerned about her size and weight.") Caregiver Messages: Girls reported positive and negative messages from caregivers ("She tells me you should like who you are. You look pretty.") Caregiver messages also focused on weight ("She tells me if I'm getting too fat we'll go to the gym together...Now I'm afraid to eat too much.") Body Image & Risk Behaviors: Participants were asked, "Who would be more likely to have sex, a girl who likes her body, or a girl who does not like her body?" 33% of teens said the girl with a positive body image would be more likely to have sex ("...she feels pretty like she can have and do anything"), whereas others said the girl who did not like her body would be more likely to have sex ("...if they have sex they can change their body by them getting pregnant"). 60% of caregivers said the girl with the negative body image has lower self esteem and would be more likely to have sex. Participants were similarly asked how body image perceptions affect condom use. 92% of caregivers said the girl with a positive body image would want to maintain her figure, avoid pregnancy and/or disease, and therefore use a condom. Most adolescents reported similar reasons however, 21% felt the girl with a negative body image would be more likely to use a condom. Findings suggest that adolescents' positive and negative feelings about their body may affect their sexual behaviors, and that caregiver messages may affect teens' feelings about their body.

CORRESPONDING AUTHOR: Michell Pope, BS, Psychology, Virginia Commonwealth University, Richmond, VA, 23284; popema2@vcu.edu

### **C-162c** **PREVALENCE AND CORRELATES OF RECENT DOUCHING AMONG AFRICAN-AMERICAN ADOLESCENT FEMALES**

Ralph J. DiClemente, PhD,<sup>1</sup> April M. Young, MPH,<sup>1</sup> Julia E. Painter, PhD, MPH,<sup>2</sup> Jessica M. Sales, PhD<sup>1</sup> and Eve Rose, MPH<sup>1</sup>

<sup>1</sup>Department of Behavioral Sciences and Health Education, Emory University, Atlanta, GA and <sup>2</sup>Emory Vaccine Center, Emory University, Atlanta, GA.

Douching is especially common among African American women and has been associated with a number of adverse gynecological and pregnancy-related health outcomes. However, some studies have suggested race-specific behaviors and effects of douching. The purpose of this study was to describe douching behavior among urban African American young women in relation to STD status, and also to identify demographic, psychosocial, and behavioral correlates to douching. Cross-sectional baseline data were collected from 14 to 20 year old African-American females (N=701) participating in an HIV intervention program in Atlanta, GA. Data collection included 1) a survey of demographic, psychosocial, and behavioral measures and 2) self-collected, laboratory-confirmed vaginal swabs for trichomoniasis, chlamydia, and gonorrhea. Recent douching was defined as douching in the past 90 days (y/n). Bivariate and multivariate logistic regression analyses were used to assess correlates to recent douching. Almost half (42.5%) of participants had ever douched, and 28.7% reported douching in the past 90 days. Recent douching was not associated with current STD status. In bivariate analyses, recent douching was associated with multiple demographic (age, socio-economic status), behavioral (multiple partners, risky sex, much older partners), and psychosocial (self-esteem, relationship control) variables. In multivariate analyses, recent douching was associated with increased age (OR=1.22, CI=1.01-1.25), lower socio-economic status (OR=1.24, CI=1.05-1.47), and having sex with much older partners (OR=1.78, CI=1.19-2.80). Douching behavior in this sample is somewhat less prevalent than that identified in similar studies. While an association of douching with STD status was not identified, there was an association with lower socioeconomic status, increased age, and sex with older sexual partners.

CORRESPONDING AUTHOR: April M. Young, MPH, Department of Behavioral Sciences and Health Education, Emory University, Atlanta, GA, 30322; apyoung@gmail.com

### **C-165a** **PREDICTING TREATMENT RESPONSE TO COGNITIVE BEHAVIORAL THERAPY IN ADULTS WITH COMORBID INSOMNIA**

Laurin J. Mack, MS and Bruce D. Rybarczyk, PhD  
Clinical Psychology, Virginia Commonwealth University, Richmond, VA.

Accumulating research has demonstrated that Cognitive Behavioral Therapy for Insomnia (CBTI) is the most effective treatment for chronic insomnia in young and older adults. Recent research has also shown that CBTI is an effective treatment for individuals with chronic insomnia that co-occurs with a range of medical and psychiatric conditions. However, significant variability still exists in therapeutic outcomes. It is critical to investigate the predictors of CBTI treatment outcomes so interventions can be provided to those most likely to benefit. Health professionals could use predictors to determine who should be referred for behavioral treatment and of those, who could be referred to self-help CBTI. The latter is a low cost and more accessible treatment alternative to therapist-led CBTI.

The present exploratory study sought to identify predictors of treatment outcome in two previously published intervention studies for older adults with comorbid insomnia, one using classroom and the other self-help CBTI. The combined sample for the two studies included 107 older adults (mean age = 70.21) who had insomnia that co-occurred with a diagnosis of osteoarthritis, coronary artery disease, and/or chronic obstructive pulmonary disease. Demographic, sleep related, intervention specific, medical and psychiatric variables were tested as predictors of improvement in sleep efficiency at post-treatment and one year follow-up for the combined sample as well as for the classroom and self-help CBTI samples.

Regression analyses indicated that positive outcomes were predicted by insomnia severity. Classroom rather than self-help also predicted positive outcome at post-treatment, as did higher levels of hostility at one year follow-up in the classroom sample. Additionally, results indicated that participants with stronger beliefs about the benefits of sleep medication were less likely to benefit from self-help CBTI.

The identification of predictors will aid in the decision making process as to whom will likely benefit from CBTI and who can benefit from lower cost self-help CBTI.

CORRESPONDING AUTHOR: Laurin J. Mack, MS, Clinical Psychology, Virginia Commonwealth University, Richmond, VA, 23284; macklj@vcu.edu

### **C-165b** **PSYCHOSOCIAL DETERMINANTS OF SHORT SLEEP AMONG AMERICAN ADULTS**

Renee Murray-Bachmann, Ed D,<sup>1</sup> Felicia McKoy, MD,<sup>1</sup> Anne P. Francois, MSW,<sup>1</sup> Tené T. Lewis, PhD,<sup>4</sup> Ferdinand Zizi, MBA,<sup>1,2</sup> Gbenga Ogedegbe, MD<sup>3</sup> and Girardin Jean-Louis, PhD<sup>1,2</sup>  
<sup>1</sup>BHDC, SUNY Downstate Med. Ctr., Brooklyn, NY; <sup>2</sup>Sleep Ctr., Dept. of Med., SUNY Downstate Med. Ctr., Brooklyn, NY; <sup>3</sup>CHBC, Inter. Med., NYU Med. Ctr., New York, NY and <sup>4</sup>Epi. & PH, Yale Univ. Schl. of Med., New Haven, CT.

Introduction: This study assessed psychosocial, medical, and health risk determinants of short sleep in the US population.

Methods: Data from the CDC sponsored 2009 Behavioral Risk Factor Surveillance System were used for this analysis. It is a randomized survey that measures behavioral risk factors among adults in the US. Analysis focused on telephone interviews conducted in six representative states, soliciting sociodemographic, psychosocial, medical, sleep, and health-risk data, yielding observations for 31,059 respondents.

Results: Of the sample, 52% were employed with an average family income of up to 50K; 42% were not married and 8% had no HS degree. Prevalence of hypertension was 40%; diabetes, 12%; high cholesterol, 43%; overweight/obesity, 65%; cancer, 14%; and arthritis, 36%. Prevalence of short sleep ( $\leq 6$ hrs), referenced to average sleep (7-8hrs), was 35%. A multivariate adjusted logistic regression analysis ascertained associations of 4 factor sets with short sleep. They included demographic: age, sex, race/ethnicity, education; psychological: care-giving, emotional support, depression/anxiety; social: hours worked, number of adults/children in the household, and geographic residence; medical: hypertension, diabetes, high cholesterol, overweight/obesity, heart disease, arthritis and cancer; and health risk: smoking, drinking, physical inactivity, lack of fruit/vegetable, and no regular physical exams. Analysis showed significant\* psychosocial determinants of short sleep were: working  $>40$ hrs [OR=1.72, 95% CI=1.44-2.06], black race/ethnicity

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

[OR=1.42, 95% CI=1.12-1.80], care-giving to family/friends [OR=1.23, 95% CI=1.44-2.06], and lack of emotional support [OR=1.21, 95% CI=1.12-1.31]; \* $p < 0.001$ .

Conclusion: Psychosocial factors uniquely contribute to risk of short sleep. They should be considered when developing programs to increase awareness of ill effects of short sleep.

CORRESPONDING AUTHOR: Girardin Jean-Louis, PhD, SUNY Downstate Medical Center, Brooklyn, NY, 11203; gjean-louis@downstate.edu

## C-175a TALKING ABOUT TOBACCO & ALCOHOL HEALTH RISKS IN FAMILIES OF LATINO YOUNG ADULTS

Carla Shaffer, MS, Rosalie Corona, PhD and Kathryn Reid-Quinones, MS

Clinical Psychology, Virginia Commonwealth University, Manakin Sabot, VA.

Cancer is the second leading cause of death among Latinos in the U.S. Some causes of cancer, such as tobacco and alcohol use, can be prevented. Increasing family communication about risks associated with tobacco and alcohol use may help promote healthy family behavior. Yet, few studies have examined family communication about the health risks associated with tobacco and alcohol use, particularly in Latino families. Latino young adults completed a survey on family communication about tobacco/alcohol health risks; age; gender; familism; and spirituality. Data from 105 participants (of 156) that has been entered and cleaned were used in preliminary analyses. Mean age of participants was 21 years, 59% were female, and 77% were born in the U.S. Preliminary results suggest that communication with mothers varied depending on the type of substance. Specifically, participants reported talking to their mothers about the health risks of (a) smoking cigarettes (84%); (b) alcohol (83%); (c) cigars, cigarillos, or little cigars (65%); (d) smokeless tobacco (44%); and, (e) waterpipe (35%). There were no gender differences in mother-young adult discussions, however, participants who were more family oriented (familism score) reported more discussions than participants endorsing low familism,  $r(98) = .203$ ,  $p < .05$ . Preliminary results suggest that communication about cigarettes, cigars, and alcohol are relatively high yet discussions about the health risks associated with waterpipe or smokeless tobacco are less frequent. Given the increase in waterpipe smoking among youth, and their misperceptions that waterpipe smoking is "healthier" than other tobacco products, promoting family discussions in this area is important. Results also highlight the importance of familismo in discussions about tobacco/alcohol related health risks.

CORRESPONDING AUTHOR: Carla Shaffer, MS, Virginia Commonwealth University, Manakin Sabot, VA, 23103; cmroca@vcu.edu

## C-175b SENTIMENT ANALYSIS TO DETERMINE THE IMPACT OF ONLINE MESSAGE CONTENT ON SMOKERS' MEDICATION CHOICES

Nathan Cobb, MD,<sup>1,2</sup> Darren Mays, PhD<sup>1</sup> and Amanda Graham, PhD<sup>1,2</sup>

<sup>1</sup>Schroeder Institute, American Legacy Foundation, Washington, DC and <sup>2</sup>Georgetown University Medical Center, Washington, DC.

Aims: Online social networks have become a prominent modality in many Internet interventions for smoking cessation. Little is known about how social networks may effect behavior change. Sentiment analysis (SA) uses automated techniques to code text for its underlying

emotional polarity. SA has been used for large-scale data mining projects of free-form text from blogs, Twitter posts, or forum messages. Using SA we examined online discussions regarding varenicline - a controversial new cessation medication - in a large online community (QuitNet) to determine if discussions were associated with intent to use cessation medications.

Methods: Commercial software was used to code all discussions from 1/31/2005 to 3/9/2008 mentioning varenicline. All new QuitNet members who participated in at least one of these discussions were coded based on expressed medication choice at registration and last known smoking status 30 days later. Multivariate logistic regression examined whether message sentiment predicted medication choice controlling for potential confounders.

Results: 16,327 discussions with 9,647 participants mentioned varenicline; 2,177 participants were new registrants. 372 participants expressed intent to use a medication other than varenicline at registration but switched to varenicline by 30 days, 301 expressed intent to use varenicline at registration and didn't change and the remaining 1,504 did not express intent to use varenicline at either point. Exposure to positive message sentiment by other participants was associated with decisions to stay with varenicline (OR=5.451,  $X^2=10.482$ ,  $p=0.0012$ ) or switch to varenicline (OR=3.44,  $X^2=7.102$ ,  $p=0.0077$ ).

Conclusion: Results suggest that online forums can impact consumer decision-making, and that the tone of conversations impacts the outcome. Future research in this area will need to address pre-existing consumer biases. Sentiment analysis appears to be a promising means to explore mechanisms of information transfer and social influence in online support networks.

CORRESPONDING AUTHOR: Nathan Cobb, MD, Schroeder Institute for Tobacco Studies, Washington, DC, 20036; ncobb@americanlegacy.org

## C-175c MARKET TRIAL OF MEDIA LITERACY FOR TOBACCO PREVENTION AMONG YOUTH: LESSONS LEARNED

Christine E. Kaestle, PhD,<sup>1</sup> Yvonne Chen, PhD,<sup>2</sup> Paul Estabrooks, PhD<sup>3</sup> and Jamie Zoellner, PhD<sup>3</sup>

<sup>1</sup>Human Development, Virginia Tech, Blacksburg, VA;

<sup>2</sup>Communication, Virginia Tech, Blacksburg, VA and <sup>3</sup>Human Nutrition, Foods, & Exercise, Virginia Tech, Blacksburg, VA.

Introduction: The purpose of this market trial was to determine the feasibility and acceptability of a media literacy for tobacco prevention for youth through a mix-method approach. The trial was delivered through YMCA summer camps in a rural area of Southwest Virginia, a region long tied to the tobacco industry economically and culturally.

Methods: Focus groups and a randomized control trial were implemented. Adolescents ages 8-15 participated in either a five-session anti-smoking media literacy program or a matched-contact creative writing control program ( $n=17$  at this time, with additional sessions scheduled this spring). Focus group questions explored the acceptability of the anti-smoking program, as well as participants' understanding of media and awareness of marketing tactics by the tobacco industry. Themes were identified based on focus group transcripts. Using validated quantitative measures from the literature, changes in both general media literacy and tobacco-specific media literacy were also assessed. ANCOVA was used to analyze quantitative data.

Results: The anti-smoking media literacy intervention was feasible and acceptable to this audience. Suggestions to modify the intervention also emerged from the focus groups. Preliminary analyses indicate that smoking media literacy scores increased significantly after the intervention for the media literacy participants compared to the control group ( $p < 0.05$ ) but general media literacy scores did not change significantly.

Conclusions: These results support the potential of anti-smoking media literacy programs for health promotion among young adolescents. Additional media production activities may be beneficial for media literacy intervention programs.

CORRESPONDING AUTHOR: Christine E. Kaestle, PhD, Human Development, Virginia Tech, Blacksburg, VA, 24061; kaestle@vt.edu

### C-175d

#### UNMET BASIC NEEDS, SENSE OF COHERENCE AND CIGARETTE SMOKING IN LOW-INCOME ADULTS

Kassandra I. Alcaraz, MPH, Matthew W. Kreuter, PhD, MPH and Jason Q. Purnell, PhD, MPH  
Health Communication Research Laboratory, Washington University in St. Louis, St. Louis, MO.

Smoking prevalence is disproportionately high among low-income individuals, many of whom have basic needs (e.g., housing, food) that are unmet. Sense of Coherence (SOC), or one's perception of life as predictable and manageable, has been associated with successful coping and positive health behavior in prior research. This study is the first to examine relationships between smoking behavior, unmet basic needs and SOC. Telephone survey data ( $N=483$ ;  $M(SD)$  age=41 (12); 87% female; 60% African American; 52% household income  $< \$10K$ ) were obtained from an RCT of callers to United Way 2-1-1 Missouri, a phone referral system that connects predominantly low-income callers to resources that address their basic needs. Binomial logistic regression was used to examine the association of unmet basic needs and SOC with current smoking. A four-level independent variable was created based on level of unmet basic needs (high/low) and SOC (strong/weak). Individuals with low unmet basic needs and strong SOC served as the referent group, and the model controlled for age, sex, race, income, education, health insurance status and perceived stress. Individuals with high unmet basic needs and weak SOC had the highest smoking prevalence (69.5% vs. 47.6% in the referent group;  $p < .001$ ). Compared to the referent group, individuals with high unmet basic needs and weak SOC were 2.5 times as likely to smoke (95% CI=1.4-4.5;  $p=.003$ ). Smoking among other individuals (i.e., those with low unmet basic needs and weak SOC, and those with high unmet basic needs and strong SOC) did not differ from the referent group. These findings reveal that having high unmet basic needs is associated with smoking only when SOC is weak. Further examination of these relationships and the mechanisms through which they operate can aid in developing targeted smoking cessation strategies in low-income populations.

CORRESPONDING AUTHOR: Kassandra I. Alcaraz, MPH, Washington University in St. Louis, St. Louis, MO, 63112; alcarazk@gmail.com

### C-175e

#### MESSAGE FORMATS AND THEIR INFLUENCE ON TOBACCO USE RISK PERCEPTION: A PILOT FORMATIVE RESEARCH PROJECT IN INDIA

Claudia Pischke, PhD,<sup>1</sup> Ezequiel Galarze, PhD,<sup>2</sup> Eve Nagler, PhD,<sup>2</sup> Glorian Sorensen, PhD, MPH,<sup>2</sup> Prakash C. Gupta, DSc, FACE,<sup>3</sup> Mangesh S. Pednekar, MSc,<sup>3</sup> Mira Aghi, PhD,<sup>3</sup> Dharendra N. Sinha, MD<sup>4</sup> and K. Viswanath, PhD<sup>2</sup>

<sup>1</sup>Bremen Institute for Prevention Research and Social Medicine, Bremen, Germany; <sup>2</sup>Harvard School of Public Health, Center for Community-Based Research, Dana-Farber Cancer Institute, Boston, MA; <sup>3</sup>Healis Sekhsaria Institute of Public Health, Mumbai, India and <sup>4</sup>School of Preventive Oncology, Patna, India.

In India, tobacco kills ca. 900,000 people every year though the burden of tobacco is faced disproportionately in poorer states such as Bihar. In Indian culture, teachers are influential in setting social norms for tobacco cessation. However, tobacco use among teachers remains high and perceptions of tobacco-related health risks are unexplored. To qualitatively explore perceptions about tobacco use among teachers in Bihar and to examine how risk information may be communicated through a variety of message formats, 12 messages on tobacco health risks varying in formats were tested in focus groups with teachers from Bihar. Participants stated that teachers were already aware of tobacco-related health risks. To further increase tobacco use risk perception, the inclusion of evidence-based facts in messages was recommended. Communicating risk information using negative emotions such as fear and guilt had a great appeal to teachers and was deemed most effective for increasing tobacco use risk perception. Messages using narratives of teachers' personal accounts of quitting tobacco were deemed effective for increasing knowledge about the benefits of quitting. To conclude, messages using evidence-based information, negative emotions such as fear and guilt, role models and self-efficacy in the form of narratives appear to appeal to teachers in Bihar.

CORRESPONDING AUTHOR: Claudia Pischke, PhD, Bremen Institute for Prevention Research and Social Medicine, Bremen, 28359; pischke@bips.uni-bremen.de

### C-183a

#### STRESS, RACISM, AND HEALTH AMONG AFRICAN AMERICAN AND HISPANIC AMERICAN WOMEN

Erin L. Merz, MA,<sup>1</sup> Vanessa L. Malcarne, PhD,<sup>2,3</sup> Natasha Riley, MA<sup>4</sup> and Georgia R. Sadler, PhD<sup>3</sup>

<sup>1</sup>SDSU/UCSD Joint Doctoral Program in Clinical Psychology, San Diego, CA; <sup>2</sup>San Diego State University, San Diego, CA; <sup>3</sup>Moore's UCSD Cancer Center, La Jolla, CA and <sup>4</sup>Vista Community Clinic, Vista, CA.

Perceived racism is a multidimensional stressor concerning attributions of events and behaviors, and is a common occurrence for ethnic minorities. Racism-related stress has been linked with psychological and physical health, even after controlling for the impact of general life stress, suggesting that racism is a distinct stressor that may not be detected when assessing for general stress and may put ethnic minorities at an increased risk for poorer health outcomes. The present study used baseline data from a larger clinical trial to test the association between racism-related stress and mental/physical health after adjusting for general stress among African American (AA) and Hispanic American (HA) women, and explored potential ethnic group differences among these relationships. Participants ( $N = 119$ ) were AA (41) and HA (78) women from San Diego County. The Perceived

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

Stress Scale and the Reactions to Race Module from the Behavioral Risk Factor Surveillance System were predictors, while the Patient Health Questionnaire-9 (depression), and the Health Related Quality of Life-4 (general health) were outcomes in the analyses. Hierarchical regressions indicated that, after adjusting for general stress, racism-related stress was significantly associated with physical health ( $F [2, 113] = 8.47, p < .001, \beta = .19, p < .05$ ) and accounted for an additional 3.3% of the variance. Racism-related stress was also significantly associated with depression ( $F [2, 112] = 58.10, p < .001, \beta = .15, p < .05$ ) and accounted for an additional 2.0% of the variance, after adjusting for general stress. The relationships between racism-related stress and mental/physical health were not significantly different between AAs and HAs ( $ps > .05$ ). Although these data do not support a moderating effect of ethnicity, they do suggest that racism-related stress is a significant predictor of mental/physical health even after accounting for general stress, as has been previously reported.

CORRESPONDING AUTHOR: Erin L. Merz, MA, SDSU/UCSD Joint Doctoral Program in Clinical Psychology, San Diego, CA, 92120-4913; emerz@ucsd.edu

## C-183b

### DEPRESSION AND INCREASED EVENING CORTISOL IN WOMEN WITH LOW RESILIENCE

Nicolas Rosa, BA Candidate and KaMala S. Thomas, PhD, MPH Psychology, Pitzer College, Claremont Colleges, Claremont, CA.

Psychological resilience involves the ability to thrive under stress. It has been well documented that these qualities are associated with better mental health following stressful events. However, few studies have examined associations between resilience and stress biomarkers. Thus, we examined relationships between resilience, depression, and diurnal cortisol in a sample of 47 women (mean age=55.7, SD=13.5) who participated in a study of depression and immune activity in spouses of prostate cancer patients. We tested 2 hypotheses: 1) Less resilience would be associated with altered diurnal cortisol patterns, characterized by higher evening cortisol; 2) Those who reported less resilience would have more depression. Approximately 1/2 of the women ( $N=20$ ) were in relationships with prostate cancer patients. Women provided saliva samples (4 times per day, over 3 days) in their home environment. Resilience was measured using the Connor-Davidson Resilience Scale (CD-Risc), which assesses resilience across 5 dimensions: tenacity, ability to trust one's instinct, acceptance, perceived control, and spirituality. Depression was assessed using the Center for Epidemiological Studies Depression Scale (CESD). Correlations examined relationships between resilience and depression. Using the median split of CD-Risc scores, repeated measures ANOVA's examined differences in diurnal cortisol in women with high and low resilience. Women with low control ( $F [1, 37]=4.435, p < .05$ ) and acceptance ( $F [1, 37]=7.340, p < .05$ ) were more likely to have altered diurnal cortisol. Specifically, they had higher evening cortisol than women with high scores on these subscales. Similarly, there was a non-significant trend toward higher evening cortisol in women with low scores on the ability to trust one's instincts ( $p=.09$ ). Tenacity and spirituality were unrelated to cortisol. Low scores on each resilience subscale were associated with more depression ( $p's < .05$ ). These findings support research that resilience is associated with less depression and provide evidence that certain aspects of resilience are more closely tied to stress biomarkers.

CORRESPONDING AUTHOR: KaMala S. Thomas, PhD, MPH, Psychology, Pitzer College, Claremont University Consortium, Claremont, CA, 91711; kamala\_thomas@pitzer.edu

## C-188a

### DEVELOPMENT OF A COMMUNITY READINESS SURVEY FOR COALITIONS TO ADDRESS PRESCRIPTION OPIOID MISUSE THROUGH PARTICIPANT INPUT, COGNITIVE INTERVIEWING, AND PRETESTING

Kimberlee J. Trudeau, PhD, Meredith Trant, MSW, Daniel Surette, BA, Mollie Wood, MPH and Emil Chiauzzi, PhD Inflexxion, Inc., Newton, MA.

Background: Rates of prescription opioid misuse are rising nationwide. Community anti-drug coalitions offer a potential avenue for intervention. Purpose: The goal of this four step project was to develop a community readiness survey for coalitions to address prescription opioid misuse. Methods: A total of 70 coalition members participated in this four-part study. 1) We conducted 30-minute phone interviews with coalition members ( $n=30$ ) and a literature review to develop a list of items. This list was revised with input from consultants. 2) Coalition members rated these 60 items for importance, confidence in their ability to answer accurately, and confidence in others' ability to answer accurately on a scale of 1=Not at all to 5 = Extremely. Items for which at least 2/3 variables received a 3, 4, or 5 from at least 70% or more of the participants were revised with consultant input. 3) The revised survey was tested with coalition members ( $n=10$ ) using in-person cognitive interviewing, a method in which the respondent's interpretation of each item is explored. The questions and interview protocol were revised multiple times during the cognitive interview process, as we gained insight about how coalition members were interpreting the questions. 4) Lastly, we conducted pre-testing and satisfaction testing with additional coalition members ( $n=30$ ). Results: All of the respondents completed the survey in one sitting. Most (83%) of the respondents reported positive overall impressions of the survey (e.g., "easy to use," "well organized," and "led to critical thinking about the issue"). Overall, respondents reported that the proposed survey administration process would help their coalition to collect data about community readiness ( $M=6.20, SD=.064$ , on a scale of 1=Not at all to 7=Extremely). Conclusion: Coalitions are interested in using the survey we developed to help them address prescription opioid misuse in their communities.

CORRESPONDING AUTHOR: Kimberlee J. Trudeau, PhD, Inflexxion, Inc., Newton, MA, 02464; ktrudeau@inflexxion.com

## C-189a

### ADHERENCE DIFFERENCES BETWEEN OLDER AND YOUNGER PATIENTS IN A LARGE MULTI-SITE SAMPLE 5-10 YEARS AFTER HEART TRANSPLANTATION

Andrea Shamaskin, BS,<sup>1</sup> Bruce Rybarczyk, PhD,<sup>1</sup> Edward Wang, PhD,<sup>2</sup> Connie White-Williams, PhD, RN, FNP,<sup>3</sup> Hannah Lund, BA<sup>1</sup> and Kathy Grady, PhD, APN, FAAN<sup>2</sup>

<sup>1</sup>Virginia Commonwealth University, Richmond, VA; <sup>2</sup>Northwestern University, Chicago, IL and <sup>3</sup>University of Alabama Medical Center, Birmingham, AL.

Post-operative adherence for heart transplant (HT) patients includes a complex medical regimen of immunosuppressive drugs and often requires changes in lifestyle behaviors. The potential consequences of treatment nonadherence for HT patients can include organ rejection and death, and adherence rates tend to be lower than expected and decrease over time. A few studies have examined age differences in adherence rates among various medical populations, but there have been no studies examining adherence and age differences among HT patients. The purpose of this study was: 1) to compare older and younger patients' self-reported difficulty with medication adherence

and actual adherence rates, and 2) to examine other demographic and psychosocial predictors of difficulty with adherence. HT patients ( $n = 555$ , mean age at transplant = 54, range=21 to 75) from 4 U.S. centers were assessed 5-10 years post-surgery for adherence behaviors and difficulty with adherence. Analysis of variance results showed that older adults (age  $\geq 60$ ) had better medication adherence rates as compared to younger adults,  $F(1, 553) = 4.73$ ,  $p = .03$ . Linear multiple regression demonstrated that age and psychosocial factors, including satisfaction with social support and depressive cognitions, accounted for 21.6% of the variance in self-reported difficulty with adherence,  $R^2 = .216$ ,  $F(4, 550) = 37.84$ ,  $p < .001$ . Age significantly predicted difficulty with adherence,  $b = -.002$ ,  $t(550) = -4.12$ ,  $p < .001$ , with increasing age predicting less difficulty. Age might serve as a proxy for other factors that are related to adherence, and developmental theories may explain why older adults are generally more adaptive to the demands of post-transplant care. Clinical implications are discussed in terms of tailoring specific interventions to age groups for improving adherence rates.

CORRESPONDING AUTHOR: Andrea Shamaskin, BS, Virginia Commonwealth University, Richmond, VA, 23220; shamaskina@vcu.edu

**C-189b**  
**PERSONALITY AND COPING STRATEGIES IN VETERANS WITH END STAGE RENAL DISEASE**

Luci Martin, MS,<sup>1,2</sup> Erika J. Wolf, PhD<sup>1</sup> and DeAnna L. Mori, PhD<sup>1</sup>  
<sup>1</sup>Medical Psychology, VA Boston Healthcare System, Boston, MA and  
<sup>2</sup>Psychology, University of North Texas, Denton, TX.

Negative affect and social inhibition have been associated with poor health outcomes in patients with chronic medical conditions. Cognitive and behavioral methods of coping that are used to manage stress may provide a mechanism to impact this relationship. This study examined the relationship among coping strategies and two personality characteristics in a sample of veterans with end stage renal disease. Veterans ( $n = 81$ , 98% male, mean age 51.4,  $SD = 11.4$ ) completed self-report measures, including the COPE and the MMPI-2, as part of a structured assessment to determine their appropriateness for renal transplant. Veterans self identified as European-American (53%), African-American (27%), and Latino (20%). Based on a literature review of the COPE and Brief COPE, we created four scales measuring problem-focused, emotion-focused, social, and avoidant coping by averaging across select scales on the COPE. Bivariate correlations revealed that problem-focused coping was negatively associated with Scale 2/Depression ( $r = -0.22$ ,  $p < .05$ ). Social support ( $r = -0.23$ ,  $p < .05$ ) and problem-focused coping ( $r = -0.27$ ,  $p < .05$ ) were negatively associated with Scale 0/Social Introversion. Avoidant coping was positively associated with Scale 0 ( $r = 0.26$ ,  $p < .05$ ). Simultaneous multiple regression was used to examine the relative contribution of each coping strategy to the two MMPI-2 scaled scores. Greater use of avoidant coping ( $\beta = 0.28$ ,  $p < .05$ ) was predictive of a significant portion of the variance on Scale 2 (Adj.  $R^2 = .08$ ,  $F(4,76) = 2.83$ ,  $p < .05$ ). Greater use of avoidant coping ( $\beta = 0.27$ ,  $p < .05$ ) and lower use of social support ( $\beta = -0.25$ ,  $p < .05$ ) were predictive of a significant portion of the variance on Scale 0 (Adj.  $R^2 = .15$ ,  $F(6,73) = 3.40$ ,  $p < .01$ ). Although this study is a cross-sectional correlation-based study and cannot determine causality, these results suggest that improving social support and reducing avoidant forms of coping may serve to reduce negative affect and social inhibition.

CORRESPONDING AUTHOR: Luci Martin, MS, Psychology, University of North Texas, Denton, TX, 76203; luci7martin@gmail.com

**C-189c**  
**SOCIAL SUPPORT AND DEPRESSIVE AFFECT IN KIDNEY TRANSPLANT RECIPIENTS**

Melissa Constantiner, MA,<sup>1,2</sup> Judith Cukor, PhD,<sup>3</sup> Nisha Ver Halen, PhD<sup>2</sup> and Daniel Cukor, PhD<sup>2</sup>

<sup>1</sup>Ferkauf Graduate School of Psychology, Yeshiva University, New York, NY; <sup>2</sup>Psychiatry and Behavioral Science, SUNY Downstate Medical Center, Brooklyn, NY and <sup>3</sup>Psychiatry, Weill Cornell Medical College, New York, NY.

Perceived social support and depressive affect have been associated with a better quality of life (QOL) and with increased adherence to immunosuppressant medications in kidney transplant recipients. However, the precise relationship between social support, depressive affect (BDI), QOL (SF-36), and medication adherence is poorly delineated. To better understand the nature of these relationships, we evaluated these associations in a renal transplant population. Levels of self-reported perceived social support, as measured by the Interpersonal Support Evaluation List (ISEL), in one hundred predominantly transplant recipients were significantly associated with decreased levels of depressive affect ( $r = -.535$ ,  $p = .000$ ), increased QOL ( $r = .342$ ,  $p = .005$ ), and increased self-reported medication adherence ( $r = .248$ ,  $p = .026$ ). To further explore the nature of these relationships, regression analyses were conducted. All models controlled for age, gender, and length of time on dialysis. In the first model ( $F = 2.64$ ,  $p < .05$ ), the BDI ( $t = 2.2$ ,  $p < .05$ ) emerged as a mediator in the relationship between social support and QOL. Interestingly, in the second model ( $F = 3.08$ ,  $p < .05$ ) social support ( $t = 2.9$ ,  $p < .05$ ) emerged as the mediator in the relationship between depressive affect and medication adherence. These analyses indicate that the relationship between social support and depression is complex. When predicting QOL, social support is not a significant predictor after the strong association between social support and depressive affect is accounted for, whereas, in the relationship with medication adherence, social support drives the observed relationship between depression and adherence. This study highlights the varied roles that the association of social support and depression can play in a kidney transplant population.

CORRESPONDING AUTHOR: Melissa Constantiner, MA, Ferkauf Graduate School of Psychology, Yeshiva University, New York, NY, 10011; mconstantiner@gmail.com

# **Rapid Communications Poster Session D**

Saturday, April 30, 2011

8:30 AM - 10:00 AM

**D-033a****COPING WITH CANCER DIAGNOSIS AND TREATMENT: A QUALITATIVE COMPARISON OF AFRICAN AMERICAN AND WHITE CANCER SURVIVORS IN NORTH CAROLINA**

Leanne Kaye, RD, MPH, Carmina Valle, MPH and Marci Campbell, PhD

University Of North Carolina at Chapel Hill, Carrboro, NC.

There are over 11 million cancer survivors currently living in the United States. While advances in treatment have improved survival rates, many survivors continue to live with a number of treatment side effects. The purpose of this qualitative analysis was to understand what skills cancer survivors used to cope with their cancer diagnosis and treatment, and to describe how coping may have differed between whites and African-Americans (AA).

Self-administered surveys were completed by adult survivors in N.C. over a two year period (2008-2010). The survey collected data on information needs, preferred delivery methods for support, socio-demographics, and five qualitative questions regarding coping with a cancer diagnosis. Specifically, the descriptive questions asked survivors: how they coped with cancer; what helped them cope at the time of diagnosis/ during treatment/ after treatment; and what advice they would give other newly diagnosed patients. Key themes were identified by content analyses of participant comments. Matrix analyses were used to compare responses within and across racial groups. A total of 293 surveys were included in the final analysis (24% AA (21% male, 75% active treatment), 76% white (34% male, 73% active treatment)). Five themes emerged around topics of knowledge, affect, barriers, social support and religiosity. Social support emerged as a common factor in helping white survivors cope with a cancer diagnosis, whereas AA respondents reported religiosity as important. Both AA and whites reported that social support was central to coping at the time of diagnosis, as well as during and after treatment. Religiosity and information at the time of diagnosis were also important for AAs. Finally, survivors most often reported that the best advice for coping would be to: create/engage social support systems; be spiritual; openly discuss diagnosis; and remain positive. The results of this study are important in informing future programs and services to support coping among survivors.

CORRESPONDING AUTHOR: Leanne Kaye, RD, MPH, Univ. Of North Carolina at Chapel Hill, Carrboro, NC, 27510; leekaye@email.unc.edu

**D-033b****A WEB-BASED SURVEY OF PROSTATE CANCER SCREENING ATTITUDES AND BEHAVIORS IN VETERANS: CHALLENGES IN RECRUITING AFRICAN-AMERICAN PARTICIPANTS**

Elizabeth Johnson, PhD,<sup>1,2</sup> Amy Silberbogen, PhD<sup>1,2</sup> and Erin Ulloa, PhD<sup>3</sup>

<sup>1</sup>VA Boston Healthcare System, Boston, MA; <sup>2</sup>Boston University School of Medicine, Boston, MA and <sup>3</sup>Philadelphia VA Medical Center, Philadelphia, PA.

Due to the increased risk of prostate cancer among African-Americans, we sought to identify potential differences in prostate cancer screening behaviors and attitudes between African-American and Caucasian veterans. Recruitment of African-American veterans proved to be more challenging than expected. Traditional barriers to research participation and attempts to address them (e.g., community outreach) may not be applicable to web-based data collection.

Although access to the internet among African-Americans is growing (Pew Internet and American Life Project, 2010), recruitment mechanisms for web-based research must be evaluated to ensure African-Americans are adequately represented. Despite significant efforts to over-recruit this population using empirically-supported strategies, only 7% of the 461 male veterans from 47 states were African American (M=56 years). Attempts to recruit African-American veterans were made through national veterans' associations (e.g. Black Marine Reunion), as well as religious (e.g. National Baptist Association) and health outreach organizations (e.g. National African-American Outreach Program) with significant African-American memberships. Despite attempts to promote the study via African-American organizations, participants were recruited from general veteran organizations. Relevant demographic characteristics (e.g., geographic distribution, education, health literacy level, income, internet use preferences) will be presented to identify subsets of the population that we were unable to reach via these recruitment mechanisms. Further analysis of recruitment strategies for web-based behavioral medicine research is needed. We present recommendations to enhance the enrollment of African-American veterans in web-based studies based on the literature and relevant experiences.

CORRESPONDING AUTHOR: Elizabeth Johnson, PhD, VA Boston Healthcare System, Boston, MA, 02130; elizabeth.johnson1@va.gov

**D-033c****COMMUNITY EDUCATION TO INCREASE HPV-RELATED KNOWLEDGE AND VACCINATION INTENT AMONG PARENTS OF ADOLESCENT GIRLS, AGED 9-17 IN APPALACHIAN PENNSYLVANIA**

Angela Spleen, MS Candidate,<sup>1</sup> Brenda C. Kluhsman, PhD,<sup>1</sup> Eugene J. Lengerich, PhD,<sup>1</sup> Allison D. Clark, BA<sup>2</sup> and The ACTION Health Cancer Task Force, <sup>-2</sup>

<sup>1</sup>The Pennsylvania State University, Hershey, PA and <sup>2</sup>ACTION Health, Danville, PA.

Background: Human papillomavirus (HPV) is the most prevalent sexually transmitted infection; HPV is known to cause cervical and other cancers.

Purpose: To test a theory- and community-based educational intervention designed to increase HPV-related knowledge and parental intent to vaccinate daughters, aged 9-17, against HPV in Appalachia, an area with excessive cervical cancer.

Methods: An educational session based on the Health Belief Model was conducted in 11 community sites, with immediate pre and post-test questionnaires and 1-month follow-up telephone interview. McNemar tests evaluated change in individual knowledge variables and paired t-tests assessed change in overall knowledge and intent to vaccinate age-eligible daughters against HPV.

Results: Of the 117 attendees, 38 (32.5%) were parents of age-eligible daughters and 79 (67.5%) non-parents, 106 (95.5%) white, mean age 38.7 years (range 18-77), 87 (79.8%) had a steady partner or spouse, and most had health insurance (67.6% private; 26.1% public). HPV-related knowledge significantly increased for all participants ( $p < 0.0001$ ) and among parents ( $p < 0.0001$ ), particularly those aged 30-49 with private or public health insurance and living with a steady partner. Intent to vaccinate daughters within 1 month significantly increased among parents, aged 30-39 with public health insurance ( $p = 0.002$ ). No significant change was observed for intent to vaccinate within 6 months. Of 9 (23.7%) parents

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

who completed the 1-month telephone interview, 100% reported the intervention as helpful, 89% discussed the HPV vaccine with their daughters, and 44.4% reported that they or their daughter had received or started vaccination.

Conclusions: Community-based education for parents in Appalachian Pennsylvania effectively increased HPV-related knowledge and intent to vaccinate their daughters against HPV. A future randomized trial could test the efficacy of the intervention in a larger Appalachian region.

CORRESPONDING AUTHOR: Angela Spleen, MS Candidate, Pennsylvania State University, Harrisburg, PA, 17109; aspleen@hes.hmc.psu.edu

## **D-033d GENETIC LITERACY AND WOMEN'S KNOWLEDGE OF BREAST AND COLON CANCER: PRELIMINARY BASELINE DATA FROM THE KINFACCT STUDY- A FAMILY CANCER COMMUNICATION STUDY**

Maria E. Gyure, MS, CGC,<sup>1</sup> John Quillin, PhD, MPH,<sup>1</sup> Vivian Rodriguez, MS,<sup>1</sup> Joseph Borzelleca, MD,<sup>1</sup> Deborah Bowen, PhD,<sup>2</sup> Omolbanin Falah khir, MD,<sup>1</sup> Alexander Krist, MD, MPH,<sup>1</sup> Donna McClish, PhD,<sup>1</sup> Viswanathan Ramakrishnan, PhD<sup>1</sup> and Joann Bodurtha, MD, MPH<sup>1</sup>

<sup>1</sup>Human and Molecular Genetics, Virginia Commonwealth University, Richmond, VA and <sup>2</sup>Boston University, Boston, MA.

It is estimated that more than 1 in 6 women will develop breast or colon cancer. 1 Family history is known to be a strong risk factor for both. Therefore, basic knowledge of disease, including appreciation of a genetic component, is critical for prevention.<sup>2,3</sup> In 2003, the National Assessment of Adult Literacy reported 33% of women have only a basic or below basic level of health literacy.<sup>3</sup> To gain insight into whether a woman's genetic literacy level predicts knowledge of breast and colon cancer, baseline data of the ongoing Kin Fact study was analyzed. Adult patients within VCU Women's Health Clinic were recruited following appointment registration. Participants completed baseline measures as part of an ongoing randomized controlled trial examining effects of an intervention to increase understanding and family communication about cancer risk. General heredity knowledge measures for breast and colon cancer were analyzed to examine relationships between knowledge and scores from the Rapid Estimate of Adult Literacy in Genetics (REAL-G). Data from the first 157 participants was used for analysis. Median age of the sample was 28 and 54% were African American. As scores increased, knowledge regarding breast and colon cancer heredity also increased  $r=.428$  ( $p<0.05$ ),  $r=.271$  ( $p<0.05$ ), respectively. A significant positive correlation was also found among breast cancer heredity knowledge and colon cancer heredity knowledge,  $r=.443$  ( $p<0.05$ ). Regression analysis controlling for age and race showed REAL-G scores significantly predict breast and colon cancer heredity knowledge,  $\beta=.347$  ( $p<0.05$ ),  $\beta=.287$  ( $p<0.05$ ), respectively. Preliminary data suggests REAL-G scores may serve as an indicator of knowledge of breast and colon cancer heredity. This could have implications for clinical practice including assessing literacy prior to engaging patients in complex communication surrounding genetics and cancer.<sup>4</sup>

CORRESPONDING AUTHOR: Maria E. Gyure, MS, CGC, Human and Molecular Genetics, Virginia Commonwealth University, Richmond, VA, 23298; maria.gyure@gmail.com

## **D-033e PUBLIC AWARENESS OF CANCER RISK FACTORS AND NHS CANCER SCREENING PROGRAMMES IN BRITAIN (2004-2009)**

Emily Power, PhD,<sup>1</sup> Andy Pring, PhD,<sup>3</sup> Susan Barber, BA,<sup>1</sup> Anne Miles, PhD,<sup>4</sup> Jane Wardle, PhD,<sup>2</sup> Sara Hiom, BSc<sup>1</sup> and Catherine Thomson, MSc<sup>1</sup>

<sup>1</sup>Department of Health Information, Cancer Research UK, London, United Kingdom; <sup>2</sup>Department of Epidemiology and Public Health, University College London, London, United Kingdom; <sup>3</sup>South West Public Health Observatory, Bristol and West dean, United Kingdom and <sup>4</sup>Department of Psychological Sciences, Birbeck, London, United Kingdom.

Background: This study explored trends in awareness of cancer risk factors and NHS Cancer Screening Programmes in Britain between 2004 and 2009.

Methods: Data from approximately 4000 people were collected annually between 2004 and 2009 using the British Market Research Bureau's (BMRB) weekly face-to-face Omnibus survey which generates a nationally representative sample of adults over the age of 15 from Great Britain.

Results: Awareness of 'having many sexual partners' and 'drinking alcohol frequently' as risk factors for cancer significantly improved over time (approximately 10% increases each). Recognition of 'infection with certain viruses or bacteria', 'being overweight or obese', 'physical inactivity', and 'getting older', also improved when comparing 2009 with 2004, although awareness remained low overall (<50% recognition). Surprisingly, recognition of smoking significantly decreased over time, and fewer respondents were aware that fruit and vegetable intake and having a close relative with cancer could affect cancer risk in 2009 than in 2004. Awareness of the Bowel Cancer Screening Programme was significantly higher in 2009 compared with 2004 but is still low (33%).

Conclusions: Despite improvements in the recognition of some important cancer risk factors, awareness remains low (apart from smoking) and there was no evidence for a reduction in the knowledge gap between more affluent and deprived groups.

CORRESPONDING AUTHOR: Emily Power, PhD, Health Information, Cancer Research UK, London, EC1V 4AD; emily.power@cancer.org.uk

## **D-033f HEALTH BEHAVIORS, READINESS TO CHANGE AND INTEREST IN HEALTH PROMOTION PROGRAMS AMONG LUNG CANCER PATIENT-FAMILY MEMBER DYADS**

Mary E. Cooley, PhD, RN,<sup>1,2</sup> Qian Wang, PhD,<sup>1</sup> Ling Shi, PhD,<sup>2</sup> Sandra Christensen, BSN,<sup>2</sup> Kristin Roper, PhDc,<sup>1,2</sup> Kathleen Finn, MSN,<sup>3</sup> J. Paul Marcoux, MD,<sup>1</sup> Ken Zaner, MD<sup>3</sup> and Laura L. Hayman, PhD<sup>2</sup>

<sup>1</sup>Dana Farber Cancer Institute, Boston, MA; <sup>2</sup>University of Massachusetts-Boston, Boston, MA and <sup>3</sup>Boston Medical Center, Boston, MA.

Purpose: The purposes of this study were to examine the concordance of health behaviors (smoking, diet, alcohol use, and physical activity), describe readiness to change lifestyle, and identify interest in participation in a health promotion program among lung cancer patients who were current smokers or recent quitters (quit < 6 months ago) and one of their family members (spouse, partner or adult child).

Methods: Cross-sectional data were collected once from 37 lung cancer patient-family dyads. Standardized questionnaires were used to collect demographic and behavioral data. Descriptive statistics and percent agreement were used for analyses.

Results: Percent agreement for health behaviors among lung cancer patient-family member dyads was 40.5% (90% CI, 26.9-55.3) for smoking, 86.5% for diet (90% CI, 73.7-94.5), 73.0% for alcohol use (90% CI, 58.5-84.6), and 78.4% for physical activity (90% CI, 64.4-88.8). The average number of risk behaviors for patients and family members was 2.9 and 2.4 respectively. The majority of patients and family members indicated readiness to change health behaviors within the next 6 months ranging from 63.0% for physical activity, 72.7% for diet, and 87.5% to quit smoking for patients and 81.0% for physical activity, 58.1% for diet and 90.9% to quit smoking for family members. Interest in participating in a health promotion program was high for both patients and family members. Patient interest was highest for an exercise program (73%), stress management (56.8%), diet (51.4%) and smoking cessation (43.2%), whereas family member interest was highest for diet (78.4%), exercise (67.6%), stress management (64.9%) and smoking cessation (37.8%).

Conclusions: Readiness to change and interest in health promotion programs was high among lung cancer patient-family member dyads. Future development and testing of health promotion programs that target multiple health risks are warranted.

CORRESPONDING AUTHOR: Mary E. Cooley, PhD, RN, Research in Nursing, Dana Farber Cancer Institute, Boston, MA, 02115; mary\_cooley@dfci.harvard.edu

**D-033g**  
**LONELINESS MEDIATES THE IMPACT OF SOCIAL FACTORS ON DISTRESS FOLLOWING HEMATOPOIETIC STEM CELL TRANSPLANT**

Catherine E. Mosher, PhD,<sup>1</sup> Stephen Lepore, PhD,<sup>2</sup> Lisa Wu, PhD,<sup>3</sup> Jane Austin, PhD,<sup>4</sup> Heiddis Valdimarsdottir, PhD,<sup>3</sup> Katie Basmajian, PhD,<sup>3</sup> Scott Rowley, MD,<sup>5</sup> Luis Isola, MD<sup>3</sup> and Christine Rini, PhD<sup>6</sup>  
<sup>1</sup>Indiana University-Purdue University Indianapolis, Indianapolis, IN; <sup>2</sup>Temple University, Philadelphia, PA; <sup>3</sup>Mount Sinai School of Medicine, New York, NY; <sup>4</sup>William Paterson University, Wayne, NJ; <sup>5</sup>Hackensack University Medical Center, Hackensack, NJ and <sup>6</sup>University of North Carolina at Chapel Hill, Chapel Hill, NC.

Persistent psychological distress affects up to 40% of hematopoietic stem cell transplant (HSCT) survivors (Mosher et al., 2009). Many also report subjective social isolation or loneliness. Little is known about loneliness among HSCT survivors and its association with distress; however, it has been associated with mental health in cancer survivors (Boer et al., 1998) and healthy samples (Hawkey et al., 2006). Drawing on social-cognitive processing theory (Lepore, 2001), we investigated social predictors of loneliness among HSCT survivors. We hypothesized that lower emotional support and greater social constraints would predict loneliness, which in turn would predict distress. We also explored effects of support and constraints from partners versus from family and friends. Survivors (n = 195, 50% female, 87% White, mean age 54 years) who had undergone HSCT 9 months to 3 years earlier were recruited from medical centers and the community. All had romantic partners. They completed measures of general distress (Derogatis, 1992), loneliness (Russell, 1996), social constraints (Lepore & Ituarte, 1999), and emotional support (Newsom et al., 2005). Path analysis yielded a model with excellent fit ( $\chi^2 = 37.8$ ,  $p = .08$ ; CFI = .98; RMSEA = .05). As predicted,

social constraints and emotional support predicted distress, mediated in whole or part by loneliness. Loneliness partially mediated the effect of partner social constraints on distress and fully mediated the effect of family/friend social constraints on distress. Loneliness also fully mediated the effect of both partner and family/friend emotional support on distress. Findings suggest that loneliness is a key mechanism by which social processing and support impact psychological adjustment following HSCT.

CORRESPONDING AUTHOR: Catherine E. Mosher, PhD, Department of Psychology, Indiana University-Purdue University Indianapolis, Indianapolis, IN, 46202; cemosher@iupui.edu

**D-033h**  
**MEASURING PATIENT-CENTERED COMMUNICATION IN CANCER CARE**

Lauren McCormack, PhD,<sup>1</sup> Katherine Treiman, PhD,<sup>1</sup> Murrey Olmstead, PhD,<sup>1</sup> Doug Rupert, MPH,<sup>1</sup> Samruddhi Thaker, PhD,<sup>1</sup> Pamela Williams-Piehot, PhD,<sup>1</sup> Neeraj Arora, PhD,<sup>2</sup> William Lawrence, MD<sup>3</sup> and Richard Street, PhD<sup>4</sup>

<sup>1</sup>RTI International, Research Triangle Park, NC; <sup>2</sup>NCI, Bethesda, MD; <sup>3</sup>AHRQ, Rockville, MD and <sup>4</sup>Texas A&M University, College Station, TX.

Patient-centered communication (PCC) is a critical element of patient-centered care, which the IOM (2001) promulgates as essential to improving healthcare delivery. Consequently, the NCI's Strategic Plan for Leading the Nation (2008) calls for assessing the delivery of PCC in cancer care. However, no comprehensive measure of PCC exists, and stakeholders embrace different conceptualizations when measuring it. This study aimed to develop and test a set of self-administered patient survey items reflecting each of 6 PCC functions. Ultimately, the survey items could be used for population level monitoring or in intervention studies examining patients' communication experiences.

Our approach was grounded in Epstein and Street's (2007) PCC conceptual framework. We first created a set of domains and subdomains for PCC by reviewing relevant literature and theories, collecting limited data from cancer patients, and consulting experts. Then we identified a total of 174 existing questionnaires used to reflect PCC or some aspect of it. We narrowed the list to 83 priority instruments, mapped the relevant items from these prioritized instruments to the PCC functions and domains, and developed a comprehensive inventory of 1316 items. Through a culling process, we identified items for exclusion and developed new items to address gaps. We cognitively tested the leading 220 items with 46 cancer patients to identify potential measurement issues.

Challenges include measuring communication experiences across different a) care settings, b) types of clinicians, c) stages in the cancer care continuum, and d) types of cancer. Measuring PCC longitudinally over the course of care and balancing parsimony and comprehensiveness were important considerations. Although we focused specifically on cancer care, many of the items are applicable to other diseases, as patient-centered care is a goal for all healthcare.

CORRESPONDING AUTHOR: Pamela Williams-Piehot, PhD, RTI International, Research Triangle Park, NC, 27709; ppiehot@rti.org

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

## D-033i

### WHAT DO CANCER PATIENTS WORRY ABOUT?

Michelle Martin, PhD,<sup>1</sup> Julie Urmie, PhD,<sup>2</sup> Robert Oster, PhD,<sup>1</sup> Sara Sanders, PhD<sup>2</sup> and Maria Pisu, PhD<sup>1</sup>

<sup>1</sup>UAB, Birmingham, AL and <sup>2</sup>UI, Iowa City, IA.

Cancer patients face many difficult treatment decisions. Understanding what patients worry about when making those decisions is important to delivering patient-centered care. Methods: Newly diagnosed lung or colorectal cancer patients participating in the Cancer Care Outcomes Research and Surveillance observational study were interviewed. Patients reported the extent to which side effects, cost of treatment, time away from work, time away from family, and transportation concerns worried them as they made treatment decisions on a 4-point scale (1=Very worried, 2=Somewhat worried, 3=A little worried, and 4=Not at all worried). Sociodemographic and clinical variables were collected. Means were calculated for the dependent variables. ANCOVAs were used to examine racial differences for the dependent variables controlling for cancer stage and type, age, gender, education, income, and marital status. Results: 5153 patients (44.3% lung, 55.7% colorectal; 53%  $\geq$  65 years; 73.8% white, 14.1% black, 7.2% Hispanic, and 4.9% Asian) participated. Patients were most worried about treatment side effects ( $M \pm SD$ :  $2.5 \pm 1.1$ ), followed by time away from family ( $M \pm SD$ :  $3.0 \pm 1.1$ ); cost of treatment ( $M \pm SD$ :  $3.2 \pm 1.1$ ); time away from work ( $M \pm SD$ :  $3.3 \pm 1.1$ ); and transportation to treatment ( $M \pm SD$ :  $3.6 \pm 0.8$ ). After controlling for covariates: Blacks and whites were less worried about treatment costs than Asians ( $p < .05$ ); Hispanic patients were more worried about time away from family than blacks, Asians, and whites ( $p < .05$ ); Asians and Hispanics, compared to blacks, were more worried about time away from work; Hispanics, compared to whites, also had more work concerns ( $p < .05$ ); and Asians and Hispanics, compared to whites, were more concerned about transportation to treatment ( $p < .05$ ). There were no racial/ethnic differences related to worry about treatment side effects. Conclusions: Patients worry about medical and non-medical factors when making treatment decisions. The degree of worry varies across racial/ethnic groups. Addressing worry in the clinical encounter may be important to supporting patient decision-making.

CORRESPONDING AUTHOR: Michelle Martin, PhD, University of Alabama at Birmingham, Birmingham, AL, 35294; mymartin@uab.edu

## D-042a

### RACIAL DIFFERENCES IN IRRATIONAL HEALTH BELIEFS AMONG CARDIAC PATIENTS

Derek R. Anderson, MA and Charles F. Emery, PhD  
Psychology, The Ohio State University, Columbus, OH.

Individuals with distorted health beliefs may disregard empirical evidence in favor of personal past experience, leading to poor health choices. The Irrational Health Beliefs Scale (IHBS) was developed to evaluate distorted health beliefs in medical populations. Prior research indicates that higher scores on the IHBS are associated with poorer adherence among medical patients. However, IHBS has not previously been examined among cardiac patients. The purpose of this study was to evaluate racial differences in IHBS scores among cardiac patients. The sample included 75 patients (18 women; mean age 60.2,  $SD=11.9$ ; 71% Caucasian; 24% African-American) recruited from a hospital-based outpatient cardiac rehabilitation program who completed self-report questionnaires prior to beginning the rehabilitation program. The mean IHBS score ( $M=30.9$ ,

$SD=9.2$ ; range 20-68) was significantly lower than observed in healthy college students ( $n=392$ ;  $M=35.6$ ,  $SD=9.6$ ;  $p < .01$ ), but comparable to IHBS scores among diabetes patients ( $n=107$ ;  $M=33.2$ ,  $SD=12.2$ ), as reported by Christensen et al. (1999). IHBS scores were not associated with age, gender, or marital status. African American patients endorsed greater irrational health beliefs ( $M=37.1$ ) than did Caucasian patients ( $M=29.1$ ;  $p < .01$ ). IHBS scores also were lower among those that were employed ( $M=27.5$ ) versus those that were not employed ( $M=33.2$ ) and IHBS scores were correlated with reported income ( $r = -.37$ ,  $p < .01$ ). The relationship of race/ethnicity with IHBS remained statistically significant after controlling for employment in a hierarchical regression analysis (R-square change,  $F(1, 53)=7.65$ ,  $p < .01$ ). When income and employment were included as control variables in the regression analysis, there remained a trend for race/ethnicity to predict IHBS scores ( $p = .09$ ). Results indicate that individuals who identified as African-American were more likely to endorse irrational health beliefs than were Caucasian patients. Addressing irrational health beliefs is likely to be important among patients with cardiac disease, especially among culturally diverse groups of patients.

CORRESPONDING AUTHOR: Derek R. Anderson, MA, Psychology, The Ohio State University, Columbus, OH, 43201; anderson.1932@osu.edu

## D-042b

### PERCEPTIONS ABOUT CARDIOVASCULAR DISEASE AMONG AFRICAN-AMERICANS IN ARIZONA

Cheryl Der Ananian, PhD, Donna Winham, DrPH and Sharon Thompson, BS

Healthy Lifestyles Research Center, Arizona State University, Mesa, AZ.

In Arizona, African-Americans (AAs) comprise less than 4% of the population yet they have the highest mortality rates from heart disease. Understanding AAs' perceptions about cardiovascular disease (CVD) is necessary for creating culturally relevant interventions. Purpose: To qualitatively examine perceptions about CVD and CVD risk factors among AAs. Methods: Fifteen focus groups (FGs) and two interviews were conducted with AAs residing in AZ ( $n=109$ ). FGs were stratified by gender and age (25-39 and 40-65 years). Trained moderators led the FGs using a standard guide. All FGs were audio-taped and transcribed verbatim. N-Vivo text analysis software was used to aid theme classification. Results: Heart disease ( $n=12$  FGs), diabetes ( $n=10$  FGs), cancer ( $n=10$  FGs), HIV or AIDS ( $n=10$  FGs), hypertension ( $n=9$  FGs), stroke ( $n=4$  FGs) and obesity ( $n=3$  FGs) were identified as priority health concerns for AAs. Similarly, heart disease ( $n=12$  FGs), hypertension ( $n=11$  FGs), cancer ( $n=10$  FGs), diabetes ( $n=10$  FGs), HIV or AIDS ( $n=10$  FGs) and stroke ( $n=9$  FGs) were identified as the leading causes of death among AAs. Poor dietary habits ( $n=14$  FGs), stress ( $n=12$  FGs), physical inactivity ( $n=10$  FGs), smoking ( $n=5$  FGs), inadequate knowledge about heart disease and/or healthy lifestyles ( $n=5$  FGs), overweight or obesity ( $n=3$  FGs), and a fear of doctors ( $n=3$  FGs) were perceived as modifiable CVD risk factors. Diet was the most commonly discussed risk factor and was mentioned more than 100 times across the focus groups. Additionally, participants indicated that it was common for people to have multiple CVD risk factors. Genetics or heredity ( $n=6$  FGs) and socioeconomic status ( $n=5$  FGs) were identified as non-modifiable risk factors. Lower socioeconomic status was perceived as a barrier to healthier lifestyle choices, education about heart disease and ac-

cess to adequate care, all of which contribute to the development of heart disease. Conclusion: Participants identified several potentially modifiable targets for intervention efforts designed to improve cardiovascular disease outcomes.

CORRESPONDING AUTHOR: Cheryl Der Ananian, PhD, Arizona State University, Mesa, AZ, 85212; cheryld@asu.edu

**D-042c**  
**DYNAMICS OF SUPPORT PERCEPTIONS AMONG**  
**COUPLES COPING WITH CARDIAC ILLNESS: THE EFFECT**  
**ON RECOVERY OUTCOMES**

Noa Vilchinsky, PhD,<sup>1</sup> Rachel Dekel, Professor,<sup>2</sup> Morton Leibowitz, Professor,<sup>3</sup> Orna Reges, MPH,<sup>3</sup> Abed Khaskia, MD<sup>3</sup> and Morris Mosseri, Professor<sup>3</sup>

<sup>1</sup>Psychology, Bar-Ilan University, Ramat Gan, Israel; <sup>2</sup>Social work, Bar Ilan University, Ramat Gan, Israel and <sup>3</sup>Cardiology, Meir Medical Center, Kfar Saba, Israel.

Objective: The current prospective study explored how male cardiac patients' perceptions of received support (i.e., active engagement, protective buffering, and overprotection) moderated the associations between female partners' perceptions of provided support and patients' recovery outcomes: psychological well-being, cholesterol levels, and smoking cessation. Methods: Couples (N = 86) completed surveys at the initial hospitalization after patients' Acute Coronary Syndrome (ACS), and one and six months later. Partners' ways of providing support and patients' concurrent perceptions of these ways were measured using the Ways of Giving Support Questionnaire; patients' depressive and anxiety symptoms were measured using the Brief Symptom Inventory (BSI). Patients' cholesterol levels were assessed during hospitalization and six months later, and smoking habits were reported by the patients. Results: Female partners' protective buffering was positively associated with male patients' depressive symptoms at follow-up only when male patients' own perceptions of partners' protective buffering were low. Female partners' active engagement was positively associated with better odds for male patients' cessation of smoking only when patients' own perceptions of partners' active engagement were high. Finally, female partners' overprotection was associated with higher levels of male patients' harmful blood lipids at follow-up, but only when patients' own perceptions of partners' overprotection were high. Conclusions: As hypothesized, the effect of partners' perceptions of support provided on patients' recovery was moderated by patients' own perceptions of the support received. The effect of this interaction was determined by the specific types of support provided/received and by the specific recovery outcome which was measured. The clinical and theoretical implications of the findings are discussed.

CORRESPONDING AUTHOR: Noa Vilchinsky, PhD, Psychology, Bar Ilan University, Ramat Gan, 52900; noav18@inter.net.il

**D-053a**  
**TRENDS IN THE PREVALENCE OF DIABETES AND**  
**ASSOCIATED OBESITY IN PENNSYLVANIA ADULTS, 1995**  
**- 2005**

Oralia G. Dominic, PhD, MS, MA,<sup>1,5</sup> Linda A. Wray, PhD,<sup>5</sup> Eugene J. Lengerich, VMD, MS,<sup>1,4</sup> Frank Ahern, PhD,<sup>5</sup> Greg Bogdan, PhD,<sup>2</sup> Gene Weinberg, PhD<sup>2</sup> and Jan Ulbrecht, MB, BS<sup>5,3</sup>

<sup>1</sup>Public Health Sciences, Penn State Milton S. Hershey Medical Center, College of Medicine, Hershey, PA; <sup>2</sup>Division of Community Epidemiology, The Pennsylvania Department of Health, Harrisburg, PA; <sup>3</sup>Department of Medicine, Penn State College of Medicine,

Hershey, PA; <sup>4</sup>Penn State Milton S. Hershey Medical Center, COM, Co-Principal Investigator of the Appalachia Community Cancer Network PA and NY, Hershey, PA and <sup>5</sup>Biobehavioral Health, The Pennsylvania State University, University Park, PA.

Introduction: This study examined in adult Pennsylvanians from 1995 to 2005 trends in the prevalence and sociodemographic distributions of diabetes, and the associations of diabetes with obesity over time. Methods: BRFSS data collected between 1995 and 2005 were used for this study. Diabetes prevalence was assessed by self-report of physician diagnosis. Obesity was assessed by body mass index computed from self-report of height and weight. State-level data for diabetes and associated obesity prevalence from 1995 to 2005 were reported by each year. The sociodemographic factors (age, sex, race/ethnicity, income, education) and the known disease risk factor obesity were reported for 1995-2005. Logistic regression modeling was used to examine associations between diabetes, sociodemographic factors and obesity at two time points (1995 and 2005). Results: Diabetes prevalence in Pennsylvania, which increased from 5.7% in 1995 to 8.1% in 2005, followed national trends, but exceeded them each year by approximately 1%. A pattern of obesity becoming a more dominant risk factor for diabetes emerged over this eleven year time period. Conclusion: Results of this study allow better understanding of diabetes and obesity patterns that could help inform diabetes prevention strategies within the state.

CORRESPONDING AUTHOR: Oralia G. Dominic, PhD, MS, MA, Penn State Milton S. Hershey Medical Center, Hershey, PA, 17033; oag102@psu.edu

**D-053b**  
**A COMMUNITY-BASED INTERVENTION FOR THE**  
**PREVENTION OF TYPE-2 DIABETES IN OVERWEIGHT**  
**AND OBESE YOUTH: EFFECTS ON SELF-MANAGEMENT**  
**BEHAVIORS RELATED TO DIABETES PREVENTION**

Lori Pbert, PhD,<sup>1</sup> Lauren Gellar, MS,<sup>1</sup> A. James Lee, PhD,<sup>2</sup> Linda Sou, MHS,<sup>3</sup> William Gilmore, NA<sup>4</sup> and Garry Handelman, PhD<sup>2</sup>

<sup>1</sup>University of Massachusetts Medical School, Worcester, MA; <sup>2</sup>University of Massachusetts Lowell, Lowell, MA; <sup>3</sup>Lowell Community Health Center, Lowell, MA and <sup>4</sup>Boys and Girls Clubs of Greater Lowell, Lowell, MA.

Objective: Youth overweight and obesity have increased dramatically over the past several decades, and with it an increase in the prevalence of metabolic risk factors including hyperglycemia, hyperinsulinemia, and dyslipidemia. We explored the effect of a community-based weight-management intervention on adherence to self-management behaviors mediating metabolic changes in overweight and obese youth.

Methods: The pilot study used a one group, pre-post test design. Overweight and obese youth in grades 5-8 were recruited from a local community health center between July 2009-February 2010 and participated in 15 weekly 2-hour, group-based nutrition and physical activity sessions after school in a Boys and Girls Club. Adherence to self-management behaviors mediating metabolic change was measured via self-reported changes in dietary quality (total calories and consumption of fruits and vegetables, chips, soda, sweetened beverages, milk, fast food), physical activity (total number of minutes in various levels of activity), and sedentary behavior at baseline and 5-month follow-up.

Results: Sixteen children participated in this study. Mean age was 10.8 years (10 to 12), mean BMI 28.8 (97th percentile), 50%

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

were female. There were no statistically significant differences from baseline to follow-up for any self-management behavior or plans to change eating or physical activity behaviors.

Conclusion: A 15-session weight management program delivered in a community setting did not produce improvements in weight-related self-management behaviors. Future studies should investigate more intensive interventions with larger sample sizes to determine the efficacy of community-based interventions on type-2 diabetes metabolic risk factors.

CORRESPONDING AUTHOR: Lori Pbert, PhD, Preventive and Behavioral Medicine, University of Massachusetts Medical School, Worcester, MA, 01655; lori.pbert@umassmed.edu

## **D-053c EXPOSURE TO UPWARD COUNTERFACTUALS INCREASES VICTIM BLAME**

Mary T. DePalma, PhD, Clayton Moser, BA and Elijah Earl, BA Psychology, Ithaca College, Ithaca, NY.

Counterfactual thinking is defined as thinking about 'what might have been' (Roese, 2008). Counterfactuals "may posit alternative circumstances that are evaluatively better than actuality (i.e., upward counterfactuals) or evaluatively worse than actuality (i.e., downward counterfactuals)" (Roese, 1997, p. 134). For example, a smoker of 20 years diagnosed with lung cancer could generate upward counterfactuals such as, "If only I had not smoked, none of this would have happened." Upward counterfactuals are often associated with blame since they could be prefaced by an "if only" statement. Alternatively, an individual could generate downward counterfactuals, such as "At least it was caught early before it became worse." The present study focused on the role that counterfactuals play in patient perception; particularly in their influence on perceived responsibility for disease onset and behavioral expectations of the patient. An online survey assessed participants' (N = 321) baseline counterfactual tendencies. Each participant was then asked to imagine that a person close to them (the target) had been diagnosed with either type 1 or type 2 diabetes, and each diagnosis was presented with an upward, downward, or control counterfactual. The participants then provided anger, responsibility, and blame ratings regarding the target in the scenario. A significant counterfactual \* disease type interaction emerged [ $F(6,628) = 9.083, p < .001$ ]. Individuals exposed to upward counterfactuals associated with type 2 diabetes rated the target significantly higher for both responsibility [ $F(2,315) = 36.45, p < .001$ ] and blame [ $F(2,315) = 14.44, p < .01$ ]. While neither counterfactual or disease type information appeared to influence social support ratings, higher negative social support ratings were related to decreased diabetes self-efficacy ratings [ $F(1,294) = 19.52, p < .001$ ]. These data suggest that individuals' spontaneous generations of counterfactuals interact with information about the patient that can significantly - and negatively - influence perceptions and behavioral expectations of the patient.

CORRESPONDING AUTHOR: Mary T. DePalma, PhD, Psychology, Ithaca College, Ithaca, NY, 14850; depalma@ithaca.edu

## **D-053d FEAR OF HYPOGLYCEMIA IS ASSOCIATED WITH GREATER ANXIETY AND LOWER QUALITY OF LIFE IN PATIENTS WITH DIABETES MELLITUS**

Rozalina Grubina, MD,<sup>1</sup> Nilay D. Shah, PhD,<sup>3</sup> Holly K. Van Houten, BA,<sup>3</sup> Jeanette Y. Ziegenfuss, PhD<sup>3</sup> and Steven A. Smith, MD<sup>2</sup>

<sup>1</sup>Internal Medicine, Mayo Clinic, Rochester, MN; <sup>2</sup>Endocrinology, Mayo Clinic, Rochester, MN and <sup>3</sup>Health Sciences Research, Mayo Clinic, Rochester, MN.

Fear of hypoglycemia (FoH) occurs frequently among patients with diabetes and is thought to correlate with trait anxiety. FoH also likely leads to psychosocial and functional impairments, yet the extent of debility is not clearly defined and its importance therefore potentially under-appreciated.

Diabetic patients (n=1023) seen in a specialty clinic between August 2005 and July 2006 were contacted via postal survey in quarter 1 of 2010. The survey included the Generalized Anxiety Disorder-7 (GAD-7), EQ-5D, and Hypoglycemic Fear (HFS) surveys, in addition to questions about hypoglycemia during the preceding 6 months. Statistical analysis was performed using the Pearson correlation and two sample t-tests (reported as correlation coefficient [r] and mean  $\pm$  standard deviation).

The survey was completed by 419 patients (41% response rate). Responders were slightly older ( $61.8 \pm 14.5$  years vs.  $59.3 \pm 15.8$  years;  $p = 0.009$ ) and had lower baseline HbA1c ( $7.0 \pm 1.1\%$  vs.  $7.3 \pm 1.5\%$ ;  $p < 0.001$ ) than nonresponders. There was no difference in gender or diabetes duration. HFS score was positively associated with female gender ( $p = 0.015$ ), duration of diabetes ( $r = 0.34$ ;  $p < 0.001$ ), higher HbA1c ( $r = 0.16$ ;  $p = 0.001$ ), and insulin use ( $p < 0.001$ ). In addition, HFS correlated positively with the GAD-7 score ( $r = 0.22$ ;  $p < 0.001$ ) and negatively with the EQ5D utility index ( $r = -0.14$ ;  $p = 0.004$ ), specifically, with impairments in the self-care, usual activity, and anxiety/depression domains, but not in the pain or mobility domains. These associations remained significant after adjustment for age, gender, and duration of diabetes.

FoH among patients with diabetes is an important, but often unreported outcome, which is associated with significant psychosocial and physical impairment. Physicians should question patients about FoH and assess for debility. Additional research is needed to delineate causality and identify efficacious intervention strategies.

CORRESPONDING AUTHOR: Rozalina Grubina, MD, Internal Medicine, Mayo Clinic, Rochester, MN, 55905; grubina.rozalina@mayo.edu

## **D-053e THE PSYCHOLOGICAL BURDEN ASSOCIATED WITH SELF-REPORT OF HYPOGLYCEMIA IN DIABETIC ADULTS**

Rozalina Grubina, MD,<sup>1</sup> Nilay D. Shah, PhD,<sup>3</sup> Holly K. Van Houten, BA,<sup>3</sup> Jeanette Y. Ziegenfuss, PhD<sup>3</sup> and Steven A. Smith, MD<sup>2</sup>

<sup>1</sup>Internal Medicine, Mayo Clinic, Rochester, MN; <sup>2</sup>Endocrinology, Mayo Clinic, Rochester, MN and <sup>3</sup>Health Sciences Research, Mayo Clinic, Rochester, MN.

The microvascular benefits of intensive glucose control are thought to justify the associated increase in hypoglycemia. This was called into question by recent posthoc analyses of the ACCORD and ADVANCE trials, which demonstrated a correlation between hypoglycemia, micro- and macrovascular complications, and mortality. Whether self-report of hypoglycemia is associated with psychological distress is unknown.

Diabetic patients (n=1023) seen in a specialty clinic between August 2005 and July 2006 were contacted via postal survey in quarter 1 of 2010. It included the Generalized Anxiety Disorder (GAD)-7, EQ-5D, and Hypoglycemic Fear (HFS) surveys, and questions about hypoglycemia during the preceding 6 months. Data are reported as mean  $\pm$  standard deviation.

The survey was completed by 419 patients (41% response rate), who were slightly older ( $61.8 \pm 14.5$  years vs.  $59.3 \pm 15.8$  years;  $p=0.009$ ), with lower baseline HbA1c ( $7.0 \pm 1.1\%$  vs.  $7.3 \pm 1.5\%$ ;  $p<0.001$ ) and similar duration of diabetes compared to non-responders. Hypoglycemia was reported by 295 patients (70.4%). They were younger ( $59.6 \pm 15.2$  years vs.  $67 \pm 10.8$  years;  $p<0.001$ ) with higher baseline HbA1c ( $7.2 \pm 1.2\%$  vs.  $6.7 \pm 1.1\%$ ;  $p<0.001$ ), longer duration of diabetes ( $15.7 \pm 12.1$  years vs.  $10.2 \pm 10.1$  years;  $p<0.001$ ), and greater insulin use (83.4% vs. 50%;  $p<0.001$ ) than those without hypoglycemia. Self-report of hypoglycemia was associated with fear of hypoglycemia (FHS score  $34.6 \pm 13.8$  vs.  $18.3 \pm 12.9$ ;  $p<0.001$ ). Though GAD-7 and EQ5D utility index were similar in both groups, the anxiety-depression domain of EQ5D was higher in those reporting hypoglycemia (35.6% vs. 23.4%;  $p=0.04$ ).

Self-report of hypoglycemia is associated with greater psychological burden. Patient-reported outcomes regarding hypoglycemia therefore play an important role in medical decision-making and management of diabetes. Further study is needed to identify interventions that reduce hypoglycemia and fear of hypoglycemia.

CORRESPONDING AUTHOR: Rozalina Grubina, MD, Internal Medicine, Mayo Clinic, Rochester, MN, 55905; grubina.rozalina@mayo.edu

#### D-065a

##### REDUCING SEXUAL RISK IN THE SETTING OF INTIMATE PARTNER VIOLENCE IN NORTH INDIA

Ameeta S. Kalokhe, MD,<sup>1</sup> Deborah L. Jones, PhD,<sup>2</sup> Stephen M. Weiss, PhD, MPH,<sup>2</sup> Rashmi Bagga, MD<sup>3</sup> and Ritu Nehra, PhD<sup>3</sup>  
<sup>1</sup>Emory University, Atlanta, GA; <sup>2</sup>Post Graduate Institute of Medical Education and Research, Chandigarh, India and <sup>3</sup>University of Miami, Miami, FL.

Background: India's large burden of HIV and sociocultural diversity dictate the need for improved, regionally-targeted sexual risk reduction strategies. Previously intimate partner violence (IPV) has been associated with reduced condom negotiation and increased HIV risk. Woman-initiated sexual barrier use, such as female condoms, gels, and microbicides have the potential to shift safe-sex decision-making capacity from men to women, but need to be tested for efficacy and acceptability in settings of IPV.

Methods: Through a pilot study, 30 sexually-active at-risk married couples were recruited from an OB/GYN clinic in Chandigarh, India from Feb 2008 - Jan 2009. IPV histories using the Conflict Tactics Scale, barrier use and negotiation skills were assessed. Couples then underwent 3 group interventions addressing HIV/STI transmission and symptoms, safe sex practices (demonstration of female/male condoms and KY Jelly), and cognitive-behavioral skill training. Use of the protective barriers was then reassessed.

Results: At baseline, 83% (25/30) of the women reported verbal or physical IPV in the prior month. Safe-sex negotiating capacity was low, with over three-fourths of women failing to request condom use (77%), refuse sex in the absence of a condom (87%), and pre-plan condom use (80%). While only 43% reported using sexual barriers initially, all individuals reported using barrier protection post-inter-

vention. While the baseline, dominant protection method was male condoms, barrier use expanded to include female condoms and vaginal gels in all couples post-intervention.

Conclusions: This pilot study demonstrates the efficacy of a behavioral, educational intervention to increase female-initiated sexual barrier use among high-risk Indian couples, in a setting of prevalent verbal and physical abuse. Future studies to evaluate the association between IPV and acceptability and efficacy of various barriers, and the longitudinal effectiveness of this intervention in settings of violence are needed.

CORRESPONDING AUTHOR: Ameeta S. Kalokhe, MD, Infectious Diseases, Emory University, Atlanta, GA, 30309; akalokh@emory.edu

#### D-065b

##### HEAVY MARIJUANA USE AMONG YOUNG HIV-POSITIVE GAY AND BISEXUAL MEN

Douglas Bruce, PhD and Gary W. Harper, PhD, MPH  
 MPH Program, DePaul University, Chicago, IL.

Background: Marijuana use has been documented to be higher among emerging adults than among other age groups in the U.S. Persons living with HIV may use marijuana as a method for alleviating symptoms and side effects associated with treatment as well as a coping or mood adjustment strategy. We analyzed data from a two-phase mixed methods study of young HIV-positive gay/bisexual men to explore their marijuana use. Methods: Phase I consisted of qualitative interviews with 54 participants (mean age=21.0) conducted at four geographically diverse sites. Phase II consisted of a quantitative survey administered to 200 participants (mean age=21.1) across 14 clinical sites within the ATN. Results: Phase I participants described marijuana use chiefly within the contexts of responses to initial HIV diagnosis, stress relief, and relaxation, including active and avoidant coping techniques. Phase II results revealed that almost one-quarter (23%) of the sample reported smoking marijuana every day, and another 16% said they smoked at least weekly but not daily. There were no significant differences in marijuana use by race/ethnicity. Logistic regression analysis determined (1) using substances to reduce side effects of medication ( $\beta=1.70$ ,  $p<.05$ ), using substances while alone ( $\beta=1.54$ ,  $p<.01$ ), and lower education level ( $\beta=0.50$ ,  $p<.05$ ) to be significant predictors for daily marijuana use, and (2) using substances to relieve the stress of living with HIV ( $\beta=1.03$ ,  $p<.01$ ), using substances to reduce side effects ( $\beta=2.46$ ,  $p<.01$ ), using substances while alone ( $\beta=2.09$ ,  $p<.001$ ), and lower education level ( $\beta=0.50$ ,  $p<.05$ ) to be significant predictors of weekly marijuana use. Conclusions: Marijuana use was described in qualitative interviews as a response to initial HIV diagnosis and ongoing stress experienced living with HIV. Heavy marijuana use in our quantitative sample greatly exceeded rates reported in population-based studies of emerging adults. These data have implications for self-care strategies among young persons living with HIV and intervention development for this population.

CORRESPONDING AUTHOR: Douglas Bruce, PhD, MPH Program, DePaul University, Chicago, IL, 60614; dbruce1@depaul.edu

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

## D-073a

### MENTAL HEALTH SERVICES (MHS) FOR HEMATOPOIETIC CELL TRANSPLANT (HCT) SURVIVORS: PROVIDER AND SYSTEM DELIVERY CHARACTERISTICS THAT INFLUENCE SATISFACTION WITH CARE

Annette Richard, BA,<sup>1</sup> Flora Hoodin, PhD,<sup>1</sup> Jillian Carey, MS,<sup>1</sup> Bethany Gourley, BA,<sup>1</sup> Kevin Alschuler, PhD,<sup>1,2</sup> Lauren Hart, BA<sup>1</sup> and Courtney Sprague, PhD<sup>1</sup>

<sup>1</sup>Eastern Michigan University, Ypsilanti, MI and <sup>2</sup>University of Washington Medical Center, Seattle, WA.

Little is known about the most effective format for MHS delivery for HCT survivors despite joint EBMT/CIBMTR/ASBMT Recommendations (2006) for vigilance and treatment of psychological distress. This study aimed to inform effective care by determining types of MHS with which survivors are most satisfied. Recruited via websites frequented by HCT survivors, a cross-sectional nationwide US sample (n = 478) completed our online survey and 418 predominantly female (58.4%), well educated (m = 16 years), allogeneic (60.2%) graft recipients provided complete data. This is a preliminary report on a subset of 153 survivors (36.6%) who sought MHS during or after transplant, in the hospital, the community, or both. Utilizers of MHS did not differ from non-utilizers in age or years of education. Utilizers of community-based MHS were more likely female (p < .05) than non-utilizers. Overall satisfaction with MHS did not differ significantly by location (hospital- or community-based, nor was it significantly correlated with the degree to which HCT was a focus of therapy. Interestingly, in contrast, satisfaction with MHS was significantly correlated with ratings of how knowledgeable about HCT the therapist was in hospital-based, but not community-based MHS (p < .001). Of those who had multiple service providers, significantly more indicated that their most helpful therapist was community- rather than hospital-based (p < .001). Those whose most helpful therapist was community-based were less likely to rate them "very knowledgeable" (p < .05); those whose most helpful therapist was hospital-based were less likely to rate them "not at all knowledgeable" and more likely to rate them "very knowledgeable" (p < .05). These findings, suggesting HCT survivors' satisfaction with MHS varies with setting and therapist HCT knowledge, imply consideration of these factors would be important in development of MHS systems of care for HCT survivors.

CORRESPONDING AUTHOR: Annette Richard, BA, Psychology, Eastern Michigan University, Ypsilanti, MI, 48197; annette.e.richard@gmail.com

## D-073b

### META-ANALYTIC REVIEW OF PSYCHOLOGICAL INTERVENTIONS FOLLOWING SPINAL CORD INJURY

Katherine A. Raichle, PhD,<sup>1,2</sup> Ivan Molton, PhD<sup>2</sup> and Dawn Ehde, PhD<sup>2</sup>

<sup>1</sup>Psychology, Seattle University, Seattle, WA and <sup>2</sup>Rehabilitation Medicine, University of Washington, Seattle, WA.

Psychological interventions for depression, anxiety, and pain are widely used in spinal cord injury (SCI) rehabilitation settings. Although many of the standard psychological treatments used in rehabilitation settings have shown general efficacy (e.g., CBT for depression), neither a systematic review nor a meta-analysis of the effectiveness of psychological interventions for SCI is available. The purpose of this meta-analysis was to evaluate the efficacy of non-pharmacologic interventions for the treatment of depression, anxiety, and pain in adults with SCI, as well as the quality of existing published clinical

trials. Five studies were included in the analysis evaluating treatments targeting anxiety. The average weighted effect for anxiety outcomes was -.29 (p = .10). Six studies were included in the analysis evaluating treatments targeting depression. The average weighted effect for depression outcomes was -.32 (p = .07). Although based on only three rigorous studies, the mean effect on pain intensity was -1.0 (p < .05). When studies targeting pain, depression and anxiety were combined, a significant Qw statistic (p < .01) suggested a moderating effect of treatment type. Follow-up analyses revealed a greater effect for psychological interventions (dw = -.46, p < .01) than for physical activity interventions (dw = -.12, ns). By psychological intervention type, the effects of cognitive-behavioral interventions and coping skills training interventions were almost identical (dw = -.48 vs dw = -.44, respectively). These preliminary findings do not favor non-pharmacologic treatments for mental health in persons with SCI, but provide support for the use of such treatments for pain. However, upon close examination of the methodology and quality of existing literature, definitive conclusions about the effectiveness of treatments are not yet possible. There is a paucity of high quality clinical trials examining this important area of research.

CORRESPONDING AUTHOR: Katherine A. Raichle, PhD, Psychology, Seattle University, Seattle, WA, 98108; raichlek@seattleu.edu

## D-073c

### RELATIONSHIPS OF DEXAMETHASONE SUPPRESSION, STRESS, DEPRESSION AND PLASMA CORTISOL IN THE EARLY POSTPARTUM

Maureen Groer, PhD and Shaunte Nicole Williams, MS Nursing, USF, Tampa, FL.

The hypothalamic-pituitary-adrenal axis (HPA) is profoundly altered during pregnancy due to high levels of placental corticotrophin releasing hormone (CRH) and plasma cortisol. Delivery of the placenta is followed by a "resetting of glucocorticoid (GC) receptors" in all sensitive tissues. Exactly when this occurs, and how it affects stress and mood is not well characterized. Responsivity and recovery of sensitivity of GC receptors can be analyzed through the use of Dexamethasone, a synthetic steroid that suppresses GC receptors.

Healthy postpartum women were measured after birth at 1 week, 1 month, 2 months and 3 months with whole blood samples stimulated with 5 ug/mL lipopolysaccharide (LPS) and incubated for 24 hours in a range of dexamethasone concentrations from 10<sup>-6</sup> to 10<sup>-9</sup> M. There were between 8 and 11 samples for each time interval. Samples were collected in the morning hours by home visits. The supernatants were analyzed by ELISA for Interleukin 6 (IL-6) levels. Plasma cortisol was determined by ELISA. The participants completed Cohen's Perceived Stress Scale (PSS) and the Profile of Mood States (POMS) at each visit.

Dexamethasone significantly inhibited IL-6 production at each time interval p < .001. IL-6 production dropped steeply from the 1-week visit to the 1-month visit (p < .001), and then rose. Inhibition was greatest at the later time intervals. At the 1-month visit the plasma cortisol, depression scores and perceived stress scores were all higher than any other time point.

The significant decrease in IL-6 production at 1 month suggests that GC receptors had rebounded from the pregnancy and 1-week state to an upregulated state, which was followed by an increase in responsivity. This may represent an overshoot of the rebound response of the HPA, and was accompanied by higher perceived stress and

greater depressive symptoms at one month. The phenomenon may help explain the pathophysiology of postpartum depression in some women, which peaks in incidence in the first 6 weeks of the postpartum.

CORRESPONDING AUTHOR: Maureen Groer, PhD, Nursing, USF, Tampa, FL, 33612; mgroer@health.usf.edu

## **D-073d** **INTERACTIVE MEDIA FOR DEPRESSION TREATMENT**

James A. Cartreine, PhD,<sup>1,5</sup> Steven E. Locke, MD,<sup>3,5</sup> Luis Sandoval, MA<sup>4</sup> and Jay C. Buckey, MD<sup>2</sup>

<sup>1</sup>Department of Psychiatry, Brigham and Women's Hospital, Boston, MA; <sup>2</sup>Dartmouth Medical School, Hanover, NH; <sup>3</sup>Massachusetts General Hospital, Boston, MA; <sup>4</sup>University of Texas at Austin, Austin, TX and <sup>5</sup>Harvard Medical School, Boston, MA.

One way to accelerate impact on public health is to automate evidence-based interventions such that patients at any healthcare facility can access them, regardless of whether a trained specialist is available. We developed a 6-session, computer-delivered, interactive media program for depression using problem-solving therapy (ePST). It is designed to increase capacity to deliver behavioral health services in clinics where no mental healthcare providers are available. The program advances the field of computer-based interventions by its extensive use of interactive video and audio, its simulation of therapy, and its delivery via USB flash drive, enabling better media quality than would be available via internet.

The program uses a virtual therapist on video who guides the user through the ePST sessions. We conducted a randomized pilot study in which 7 individuals used the program and 7 served as a wait list control. All met criteria for Minor Depression at baseline.

One control group and no experimental group participants dropped out; however, 2 experimental group participants had longer than a 3-week lapse between sessions (longer than allowable per protocol). Usability, credibility, and treatment satisfaction received high scores. Intent to treat analysis found no effect; however, for the 5 participants who completed the intervention as intended (<3 weeks between sessions) a significant difference was found, (52.7% decrease on experimental group Hamilton Depression Inventory scores versus 11.1%;  $p < .04$ ; Cohen's  $d = 1.74$ ). These data suggest the potential value of the program and provide information to power a randomized clinical trial.

Overall, the program received high usability and acceptability ratings and the credibility scores were similar to credibility scores for PST delivered by live therapists from a separate study. The results provide the basis for larger feasibility and efficacy trials of ePST.

CORRESPONDING AUTHOR: James A. Cartreine, PhD, Department of Psychiatry, Brigham and Women's Hospital/Harvard Medical School, Boston, MA, 02215; jcartreine@partners.org

## **D-073e** **PSYCHIATRIC SYMPTOMS REPORTED BY A POPULATION-BASED SAMPLE OF RURAL ADULTS WITH PHYSICAL AND SENSORY IMPAIRMENTS**

Craig Ravesloot, PhD, Charles Asp, PhD, Bob Liston, MA and Kevin Thorsen, Student  
Rural Institute on Disabilities, The University of Montana, Missoula, MT.

People who have functional limitations from disabling medical conditions and permanent injuries and live in rural America are among

those with the greatest need for services, yet are the least likely to be served. They are at increased for health problems (e.g., cardiovascular disease, depression), many of which can be prevented or managed through health behavior change. While limited access to services for this population is well documented, little is known about their mental health, which can further compromise successful health behavior change. We randomly selected 6000 households in three rural areas of three states (CA, KS, MT) soliciting participation of individuals who could answer affirmatively to one of five American Community Survey questions used to identify individuals with either a physical or sensory impairment. We received useable returns from 166 individuals, which represents 23.4% from the estimated population of people living with an impairment in these geographic locations (N = 708 individuals; US Census). Participants completed a survey that included the Symptom Checklist -90 revised, the Quality of Life Module of the Behavior Risk Factor Surveillance System and demographics. Overall, mean scores for the Global Severity Index of the SCL-90R (women mean = .99,  $sd = .70$ ; men mean = .82,  $sd = .53$ ) fell between norms reported for the general population. We regressed SCL-90R scores onto the BRFSS items and demographics in a stepwise fashion which generated an equation with five variables that predicted 72% of the reliable variance. Results are discussed in terms of the relationship between psychiatric symptoms, physical impairment and pain. They raise important questions regarding the comorbidity of physical and psychiatric symptoms in this rural population. Finally, these results highlight the significant burden of illness among rural people who report limitations in their daily function. Novel approaches to service delivery are needed to reach individuals who could benefit from services.

CORRESPONDING AUTHOR: Craig Ravesloot, PhD, Rural Institute on Disabilities, The University of Montana, Missoula, MT, 59801; craig.ravesloot@umontana.edu

## **D-073f** **ASSESSING THE NEED FOR INTEGRATED PHYSICAL AND MENTAL HEALTH SERVICES**

Marisa Sklar, MS,<sup>1</sup> Andrew J. Sarkin, PhD<sup>2</sup> and Erik J. Groessler, PhD<sup>2</sup>  
<sup>1</sup>San Diego State University/University of California San Diego, San Diego, CA and <sup>2</sup>University of California San Diego, San Diego, CA.

The life expectancy of Americans with severe mental illness (SMI) is 25 years less than that of the general population, and poor medical care may impact these rates. The University of California San Diego Health Services Research Center explored how physical health problems and access to physical health care impact adult clients with SMI in San Diego County. Surveys ( $n = 1490$ ) and three focus groups ( $n = 27$ ) of clients with SMI, and interviews ( $n = 6$ ) with medical professionals, were conducted to assess the current physical health care needs of clients with SMI. Survey results were compared to the San Diego population, and the San Diego population under 200% federal poverty level, as reported in the 2007 California Health Interview Study. Results suggest only 42% of clients with SMI agreed they were "in good physical health," compared to 72% of San Diegans of similar income and 87% of San Diegans overall. Only 61% of clients with SMI reported having a usual place to go when sick or need health advice, compared to 72% of San Diegans of similar income, and 85% of San Diegans overall. When asked to identify barriers accessing care, 66% of clients with SMI reported financial barriers, 41% reported lack of information about their insurance, 35% reported past dissatisfying experiences, and 26% reported confusion about where to get help. In focus groups clients spoke about barriers

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

to getting help for physical health problems, reporting that doctors do not show concern for many of their physical health needs and neglect to share information about treatment options. The medical professionals interviewed admitted patients with SMI often do not receive the same level of care or referrals from their physicians as other patients. With modifiable problems affecting this population so severely, San Diego County Mental Health Services is responding with multiple initiatives to integrate mental and physical health services. Future research will focus these initiatives' impact on the physical health and access physical health care for clients with SMI.

CORRESPONDING AUTHOR: Marisa Sklar, MS, University of California San Diego, San Diego, CA, 92121; masklar@ucsd.edu

## **D-077a** **ELECTRONIC SELF-MANAGEMENT RESOURCE TRAINING (eSMART) TO ENHANCE SELF-MANAGEMENT AND COMMUNICATION AMONG ADULTS WITH CHRONIC HEALTH CONDITIONS**

Ronald L. Hickman, PhD, RN, ACNP-BC, John M. Clochesy, PhD, RN and Lisaann S. Gittner, PhD  
Case Western Reserve University, Cleveland, OH.

**BACKGROUND:** Enhancing self-management of chronic health conditions and improving patient communication skills have been associated with lower morbidity, mortality, and improved quality of life for individuals with chronic health conditions. This study evaluates the feasibility, acceptability, and initial efficacy of a computer-based self-management resource training (eSMART) which uses 3-D avatars to foster self-management and communication skills among individuals with chronic health conditions.

**METHOD:** Community dwelling adults (n=42) with a chronic health condition (asthma, chronic bronchitis, diabetes, and hypertension) were randomly assigned to receive eSMART or screen-based education on a monthly basis over 4 months. Participants completed a battery of surveys including the patient self-report of the quality of physician-patient interaction (QPPI). Univariate statistics were used to describe the feasibility of administering the intervention. Content analysis of open-ended questions was performed to assess the acceptability of eSMART. A paired t-test examined within participant changes in QPPI scores after the initial dose of the intervention.

**RESULTS:** Our data support the feasibility of administering eSMART (attrition rate = 0% over 4 months, consent and refusal rates respectively were 69%, 31%). Narrative data revealed the acceptability of eSMART and the use of our self-management communication structure by several participants with their healthcare providers. Initial efficacy was supported by the eSMART group reporting significantly higher QPPI scores one month post-intervention ( $t = -3.3, p = .004$ ).

**CONCLUSION:** As the prevalence of chronic health conditions continues to increase in the US, electronic interventions, like eSMART, represent an innovative approach that has the potential to support healthy behavior change in adults with chronic health conditions.

CORRESPONDING AUTHOR: Ronald L. Hickman, PhD, RN, ACNP-BC, Case Western Reserve University, Cleveland, OH, 44106-4904; rlh4@case.edu

## **D-082a** **THE COST OF A HEALTHFUL DIET: RELATIONS BETWEEN COST AND QUALITY OF DIETARY INTAKE IN YOUTH WITH TYPE 1 DIABETES**

Denise Haynie, PhD, MPH,<sup>1</sup> Leah Lipsky, PhD,<sup>1</sup> Tonja Nansel, PhD,<sup>1</sup> Sanjeev Mehta, MD, MPH<sup>2</sup> and Lori Laffel, MD, MPH<sup>2</sup>

<sup>1</sup>Prevention Research Branch, NICHD, Bethesda, MD and <sup>2</sup>Joslin Diabetes Center, Harvard Medical School, Boston, MA.

Contemporary media and qualitative research have promulgated the perception that healthful food is expensive and thereby cost is a barrier to a healthful diet. Quantitative research indicates that healthful foods cost more per calorie due to their relatively low density of calories. However research based on nutritive quality has shown many nutrient dense foods are cost-effective. Few studies compared costs based upon overall diet quality, and those focused on prescribed recommendations, such as the Mediterranean diet or USDA guidelines. We examined the relation between cost and quality of diets consumed by youth with Type 1 diabetes (mean duration 6.4 ± 3.4) participating in a study on dietary quality and diabetes outcomes.

252 youth ages 8 to 18 years (mean=13.4±2.9) completed 3-day diet records. We used 2 measures of diet quality, the Nutrient-Rich Foods 9.3 Index (NRF) and the 2005 Healthy Eating Index (HEI). The lowest non-sale unit prices were collected from 2 online groceries; estimated average cost/day (mean=\$6.27±2.25, range=2.17-18.74) was calculated as if food was prepared at home. Cost was modestly correlated with income ( $r = .14, p = .02$ ), and was higher for girls ( $p = .004$ ) after controlling for calories. In ANCOVAs controlling for daily calories, significant mean differences ( $p < .03$ ) were found for diet cost by tertile of diet quality for both NRF and HEI. The estimated mean cost difference between the highest and lowest tertiles was \$1.02 and \$0.73 on the NRF and HEI, respectively. These results are consistent with previous research demonstrating a reliable positive association between cost and quality of diet. However, the daily average cost difference was modest, and far less than the range of cost within any one tertile of diet quality (e.g., \$3.02-13.63 and \$2.17-18.74 for the low and high HEI tertiles, respectively). These results suggest that cost need not be a barrier to healthful eating, as improved diet quality does not necessitate substantial increase in expenditure.

CORRESPONDING AUTHOR: Denise L. Haynie, PhD, MPH, Prevention Research Branch, NICHD, Bethesda, MD, 20892; Denise\_Haynie@nih.gov

## **D-082b** **LONG-TERM DIETARY OUTCOMES OF THE FRESH START INTERVENTION FOR BREAST AND PROSTATE CANCER SURVIVORS**

Shannon Christy, MA,<sup>1</sup> Catherine Mosher, PhD,<sup>1</sup> Richard Sloane, MS, MPH,<sup>2</sup> Denise Clutter Snyder, MS, RD, LDN,<sup>2</sup> David Lobach, MD, PhD<sup>2</sup> and Wendy Demark-Wahnefried, PhD<sup>3</sup>

<sup>1</sup>Indiana University-Purdue University Indianapolis, Indianapolis, IN; <sup>2</sup>Duke University Medical Center, Durham, NC and <sup>3</sup>University of Alabama at Birmingham Comprehensive Cancer Center, Birmingham, AL.

Cancer survivors are at increased risk for cardiovascular disease, secondary cancers, and other chronic diseases (Rowland et al., 2004; Yabroff et al., 2004). Healthy lifestyle practices can reduce cancer survivors' comorbidities and improve well-being (Demark-Wahnefried et al., 2006). The present research focuses on 2-year

dietary outcomes of the FRESH START trial, a comparison of sequentially tailored versus standardized mailed materials to promote healthy lifestyle changes among cancer survivors (Demark-Wahnefried et al., 2003, 2007).

Survivors (N = 543, 56% female, 83% White, mean age 57 years, 64% overweight/obese) with newly-diagnosed, locoregional breast or prostate cancer were randomly assigned to either a 10-month program of tailored mailed print materials promoting a healthy diet and/or increased exercise or to a 10-month program of publicly-available mailed brochures on diet and exercise. Telephone surveys, including the Diet History Questionnaire (Subar et al., 2001; Thompson et al., 2002), were completed at baseline and 1 and 2 years later.

Dependent measures did not vary by study arm at baseline. A total of 489 participants completed the 2-year follow-up assessment (10% attrition). Both arms reported more servings of fruits and vegetables, decreased saturated fat intake, and better overall diet quality at year 2 relative to baseline (all p-values < .01); however, only the FRESH START intervention arm continued to show a significant reduction in total fat intake (-1.6% vs. +0.1%). Results suggest that both tailored and standardized mailed material interventions can improve long-term dietary outcomes among cancer survivors.

CORRESPONDING AUTHOR: Shannon Christy, MA, Psychology, Indiana University-Purdue University Indianapolis, Indianapolis, IN, 46202; shanchri@iupui.edu

**D-101a**  
**UNDERSTANDING THE INFLUENCE OF ACCULTURATION INTO THE U.S. ON HEALTH BEHAVIORS RELATED TO OBESITY**

Marisa A. Molina, MPH, Elva M. Arredondo, PhD, John P. Elder, PhD, MPH, Luz Garcini, MA and Guadalupe X. Ayala, PhD, MPH San Diego Prevention Research Center, San Diego, CA.

U.S. Latinos are disproportionately affected by obesity and chronic diseases. Research suggests that assimilation into the U.S. greatly influences the health behaviors Latinos exhibit. In this study, we explored the role of acculturation using the combined influence of birthplace, language preference and years lived in the U.S. to examine how these factors are associated with obesity-related health behaviors in Mexican American adults. A random digit dial telephone interview was completed with 620 adults who self-identified as Mexican American and lived in five selected zip code regions of south San Diego County. The sample was divided into four groups by level of acculturation: 1) U.S. born, English-speaking (assimilated), 2) Mexican-born, in the U.S. for > 15 years, English-speaking (moderately integrated), 3) Mexican-born, in the U.S. for > 15 years, Spanish-speaking (marginally integrated), and 4) Mexican-born, in the U.S. for < 15 years, Spanish-speaking (traditional). One-way analysis of variance was used to identify significant differences in health behaviors between acculturation groups. The mean age of respondents was 39.7 years and 70.3% were classified as overweight or obese. In this study, the traditional group had the lowest BMI (26.9) while the assimilated group reported the most leisure time physical activity (LTPA) and fast food consumption. Those classified as marginally integrated had the highest BMI (29.2, p<.01), the least LTPA (p<.001), and the least vegetable (p<.05) and fast food consumption (p<.001) compared to all other groups. They were also most likely to have ever been diagnosed with a chronic disease despite having less access to health care than both the moderately integrated and assimilated groups. The results of this study support the

need to use multiple measures of acculturation to further understand the impact it has on health behaviors and health outcomes of Latinos. Findings suggest that those classified as marginally integrated are at highest risk of developing health complications.

CORRESPONDING AUTHOR: Marisa A. Molina, MPH, San Diego Prevention Research Center, San Diego, CA, 92123; mmolina@projects.sdsu.edu

**D-101b**  
**SOCIAL CONTACTS AND PERCEPTUAL THRESHOLDS FOR OVERWEIGHT**

Peter D. Holt, MA in Psychology Candidate, Kellie M. Martens, BA and William G. Johnson, PhD Psychology, The Citadel, Charleston, SC.

Background: Studies indicate that social contacts influence body weight, suggesting the operation of weight-related social norms. These norms include evaluative standards whereby persons determine where body weight shifts from normal to overweight. The concept of a perceptual threshold for overweight is introduced to measure this transition point. This threshold variable is conceptually and empirically distinct from body image and BMI. Purpose: In a prospective study, we investigated whether social contacts affect perceptual thresholds of overweight. Persons with more frequent social contacts were expected to have more similar perceptual thresholds. Method: Adult participants, organized in pairs, (n=186) completed a survey in order to determine the nature and extent of their social contacts, and adult male, female, boy and girl perceptual thresholds for overweight. Participants indicated the four separate thresholds by placing an X on a 0-100 mm scale positioned below adult male and female, and boy and girl body silhouettes that ranged from emaciated to morbidly obese. The differences were measured in relation to the number of social contacts for each pair of participants. Results: Preliminary analyses indicate a complex relationship between perceptual thresholds and social contacts in these young adults. Specifically, differences in child perceptual thresholds for overweight were found to increase with greater social contact, while differences in adult thresholds were less with greater contact.

CORRESPONDING AUTHOR: Peter D. Holt, MA in Psychology Candidate, The Citadel, Charleston, SC, 29401; holtp1@citadel.edu

**D-101c**  
**IDENTIFICATION OF LATENT GROUPS OF OBESE ADOLESCENTS ENROLLED IN A WEIGHT MANAGEMENT PROGRAM**

Cassie Brode, MS,<sup>1</sup> Ian Kudel, PhD,<sup>2</sup> Edmond Wickham, MD<sup>1</sup> and Marilyn Stern, PhD<sup>1</sup>

<sup>1</sup>Virginia Commonwealth University, Richmond, VA and <sup>2</sup>Cincinnati VA, Cincinnati, OH.

Background: Self-report data is often used to elucidate the function of obese adolescents, and the unit of analysis is either the total instrument score or subscale score. However, it may advance understanding of the group to test whether empirical methods can be used to sort the data into a typology.

Method: Obese (N=248, Mean BMI percentile=98.1%; SD=9.75) teenagers (Mean age=13.9; SD=1.83) who were predominantly minority (n=197) and female (n=168) and enrolled in a weight loss intervention study completed 4 scales from the PedsQL 4.0, (physical-, emotional-, and social well-being, and school performance) and the Coopersmith Self-Esteem Inventory. Responses were analyzed using latent profile analysis (LPA). Model selection was based on identifying

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

the model with the lowest Bayesian information criterion (BIC) statistic and best explanatory power. Chi square and regressions were used to explicate the groups.

Results: LPA indicated that a 3-class solution was optimal (BIC=10543.275). The groups differed by severity across the measures. They include those who reported: 1) high functioning (HF; n=72, 29%); they indicated the highest levels of self-esteem and HRQoL (range of means=77-91), 2) moderate functioning (MF; n=110, 44%; range of means=57-76), and 3) lowest functioning (LF; n=65; range of means=45-59). The LF group included significantly higher proportions of white ( $\chi^2=7.99, p<.05$ ) and male ( $\chi^2=6.46, p=.04$ ) participants. BMI was not significantly different across groups. Thus, after controlling for demographic variables and BMI z-score, the LF group had significantly higher systolic ( $\beta=5.60, p=.03$ ) and diastolic ( $\beta=4.42, p=.02$ ) blood pressure than the HF group.

Conclusion: In this dataset, obese adolescents are best represented by 3 groups that reflect high-, medium-, and low functioning. The LF group is demographically distinct indicating that whites and males, proportionally, may be experiencing more distress as a result of their weight. Also, metabolic differences independent of age, sex, and BMI are apparent across the groups.

CORRESPONDING AUTHOR: Cassie Brode, MS, Psychology, Virginia Commonwealth University, Richmond, VA, 23284-2018; brodec@vcu.edu

## **D-101d CAN A SMALL CHANGES APPROACH PROMOTE WEIGHT LOSS ACROSS 12-MONTHS: WEIGHT AND PSYCHOSOCIAL OUTCOMES FROM A PILOT STUDY**

Allison Martir, BA, Emily Steinbaugh, BA, Marissa Erickson, BA and Lesley Lutes, PhD  
Psychology, East Carolina University, Greenville, NC.

While behavioral weight loss programs typically produce weight losses of 8-10%, weight regain, is common. This may be due to decreased adherence to strict, standardized treatment prescriptions over time. The small changes model (SCM) provides an alternate treatment approach. In the SCM participants are encouraged to make small, sustainable changes by modifying the Quantity, Quality, or Frequency of their baseline diet and physical activity. These self-selected changes result in a gradual but more permanent weight loss. While three recent studies have shown the SCM can promote significant weight loss for up to nine-months, studies have not yet assessed weight loss at 12-months post-intervention. Moreover, psychosocial variables supporting continued behavior change in the SCM need to be investigated. The present study examines the impact of small changes on weight-loss and psychosocial variables associated with the SCM over a one year period. Nineteen obese adults (89% female; age  $M = 46.2, SD = 9.5$ ; Initial BMI  $M = 35.21, SD = 6.06$ ), completed a 3-month weekly group-based small changes program and a 9-month bi-weekly follow-up program. Fourteen obese adults completed the 12-month assessment. Upon completion of the initial program, participants had lost a significant amount of weight ( $M = -4.26$  kg,  $SD = 3.68$  kg,  $p < .001$ ), and continued to lose weight across the following nine-months ( $M = -6.46$  kg,  $SD = 10.59$ ,  $p < .02$ ). Psychosocial measures showed that weight loss was associated with decreased feelings of dietary restriction ( $r = -.49, p < .04$ ), increased feelings of dietary satisfaction ( $r = .47, p < .05$ ), and decreased emotional eating ( $r = .50, p < .04$ ). This is the first pilot study to show that the SCM can be effective in helping

adults achieve significant, lasting weight loss. Moreover, the SCM may lead to increased satisfaction and decreased feelings of deprivation. A large scale clinical trial comparing the SCM to traditional behavioral treatment is needed.

CORRESPONDING AUTHOR: Allison Martir, BA, Psychology, East Carolina University, Greenville, NC, 27858; martira09@students.ecu.edu

## **D-101e THE EFFECT OF INDIVIDUAL CALORIC VARIABILITY ON WEIGHT LOSS**

Kristen E. Newell, M A, Kathryn M. Ross, MS, Lisa M. Nackers, MS, Valerie J. Hoover, MS, Danielle M. Lespinasse, BA, Stacey N. Maurer, BS, Samantha A. Minski, BS, Patricia E. Durning, PhD and Michael G. Perri, PhD  
Clinical & Health Psychology, University of Florida, Gainesville, FL.

In behavioral weight management programs, participants are often encouraged to develop a flatlining pattern by reducing variability in caloric consumption day-to-day (e.g., keeping calories at a consistent 1200 kcal daily goal vs. vacillating between higher and lower caloric intake during the week); however, it remains unclear whether this behavior is associated with improved weight loss. The current study investigated the effect of consistency of caloric consumption on weight change in 298 obese women (mean  $\pm$  SD weight =  $96.6 \pm 14.8$  kg), who participated in a six month lifestyle intervention. Participants were asked to set daily calorie goals, to regularly self-monitor their caloric intake, and to weigh in during each weekly session. An intraindividual variability analysis was used to assess each individual's weekly caloric variation from their weekly average. A regression analysis was then performed to investigate the effect of individual variability in caloric consumption on weight loss during the weight management program. After controlling for the effect of frequency of record-keeping, individual variability in caloric consumption significantly contributed to weight change at 6 months,  $\beta = 0.01, p < .001$ . An average weekly deviation of 100 calories from each individual's weekly mean was associated with 1.02 kg less weight lost at 6 months. Participants were further divided into quartiles based on their caloric variation to compare individuals who varied the most to those who varied least. After 6 months, participants with the smallest variation in caloric consumption (mean variation = 129) lost 7.03 kg more than those individuals with the largest variation (mean variation = 326),  $\beta = -7.03, p < .001$ . These results support the importance of encouraging participants to develop consistency in caloric consumption, which may be beneficial in weight loss attempts.

CORRESPONDING AUTHOR: Kristen E. Newell, M A, Clinical & Health Psychology, University of Florida, Gainesville, FL, 32608; knewell@phhp.ufl.edu

## **D-101f OEF/OIF VETERANS FOLLOWING DEPLOYMENT: BMI CHANGE TRAJECTORY GROUPS**

Patricia Rosenberger, PhD,<sup>1</sup> Yuming Ning, PhD<sup>2</sup> and Cynthia Brandt, MD<sup>1</sup>

<sup>1</sup>VA Connecticut Healthcare System, Hamden, CT and <sup>2</sup>Montefiore Medical Center, New York, NY.

OEF/OIF Veterans represent the newest and youngest Veteran cohort to use VA healthcare services. They are at highest risk for becoming obese and developing serious obesity-related health comorbidities. The present study used trajectory modeling to identify distinct trajectories of post deployment BMI change within a sample of OEF/

OIF Veterans. Differences in BMI change were examined through association with trajectory membership. The study included 16,656 OEF/OIF Veterans with a minimum of 7 VA encounters starting from the date of the first VA healthcare visit. The encounters were at least 6 months apart within the designated 6 year study time frame. Mean age at study onset was 33.2 years, mean BMI was 28.2, and 16.4% of the sample were female. To identify BMI trajectories, we used the SAS procedure Proc Traj, which fits a semiparametric (discrete) mixture model to longitudinal data with the use of the maximum likelihood method. Five distinct BMI trajectories were identified. Of the study sample, 14.1% were included in trajectory group 1 (mean initial BMI = 22), 36.3% were included in trajectory group 2 (mean initial BMI = 26), 29.7% were included in the trajectory group 3 (mean initial BMI = 30), 15.7% were included in trajectory group 4 (mean initial BMI = 33), and 6.0% were included in trajectory group 5 (mean initial BMI = 38). Female Veterans and younger age were more likely to be associated with lower initial BMI trajectory groups. Trajectories with higher initial BMIs (groups 3 - 5) had more fluctuations in slope and greater increase in BMI over time. Gender specific trajectory analyses revealed that educational level was associated with male Veteran trajectory membership, and ethnic group was associated with female Veteran trajectory membership. Results indicate that age, gender, ethnicity, and educational level are associated with OEF/OIF Veteran BMI change following deployment. Further, there are gender differences in associations between these variables and BMI change trajectory groups, and should be considered in developing Veteran weight management programs.

CORRESPONDING AUTHOR: Patricia Rosenberger, PhD, VA Connecticut Healthcare System, Hamden, CT, 06516; patricia.rosenberger@va.gov

### **D-101g** **ASSOCIATIONS BETWEEN WEIGHT STATUS, CHRONIC HEALTH CONDITIONS, AND PERCEIVED HEALTH IN AFRICAN AMERICAN WOMEN**

Kara M. Goodrich, BS and Sara Wilcox, PhD  
Exercise Science, University of South Carolina, Columbia, SC.

Background: Overweight and obesity, as measured by body mass index (BMI), are associated with adverse health outcomes. African American women tend to underestimate their weight status, potentially reducing the perceived threat to health. We report the associations between weight status and perceived health in a large trial of African American women. Methods: Data were from 971 African American women from 74 churches in South Carolina. Measurements included objective measures of height and weight, self reported chronic health conditions, and perceived health. Participants were categorized as normal weight (<25.0 kg/m<sup>2</sup>), overweight (25.0-29.9 kg/m<sup>2</sup>), or obese (≥30.0 kg/m<sup>2</sup>). A multivariate regression analysis examined associations between BMI, chronic health conditions, and perceived health. The interaction between chronic health conditions and weight status was also examined. Results: The weight status of participants (mean age = 53.8) was 9% normal weight, 25% overweight, and 66% obese. Chronic health conditions were prevalent: hypertension=66%, high cholesterol=40%, arthritis=36%, and diabetes=23%. BMI and each health condition were all independently associated with perceived health (p<.03). The interaction between weight status and number of chronic health conditions was not statistically significant. It was notable that most overweight and obese women rated their health as "excellent," "very good," or "good," even in the presence of one (88%, 83%) or two or more (82%, 70%) chronic health

conditions. The percentage rating their health as "excellent" or "very good," however, was notably lower among overweight and obese women with one (44%, 34%) or two or more (26%, 15%) chronic health conditions. Conclusion: Most women in our sample were overweight or obese. The majority of these women rated their health as at least "good," even in the presence of chronic health conditions. Since overweight and obesity is normative in this population, there may be a misunderstanding about the health risk of an increased BMI.

CORRESPONDING AUTHOR: Kara M. Goodrich, BS, Exercise Science, University of South Carolina, Columbia, SC, 29201; goodricm@email.sc.edu

### **D-101h** **IS SUBSTANCE USE DISORDER SUBSEQUENT TO BARIATRIC SURGERY RELATED TO WEIGHT LOSS OUTCOME?**

Melissa E. Pulcini, BA, Karen K. Saules, PhD, Ashley A. Wiedemann, BA and Valentina Ivezaj, MS  
Psychology, Eastern Michigan University, Ypsilanti, MI.

BACKGROUND: Although bariatric surgery is the most effective treatment for morbid obesity, a substantial minority of patients fail to achieve or maintain a significant level of weight loss. It is unknown whether the development of or relapse to an alcohol or drug use disorder subsequent to bariatric surgery negatively impacts weight loss outcome. METHOD: 39 newly admitted inpatients at a Midwestern substance abuse treatment facility with a history of Roux-en-Y gastric bypass (RYGB) surgery were recruited for this study. Weight was measured upon admission. Preoperative weight and current alcohol and drug use disorder diagnoses were obtained through a chart review and a questionnaire. Surgical failure was defined as < 50% excess weight loss (EWL). RESULTS: Participants had a mean age of 45.9 ± 9.2 years and yielded an average EWL of 75.3 ± 23.8% (corresponding to a mean total body weight change of -37.5 ± 11.2%) at 6.4 ± 3.2 years post-surgery, a rate comparable to the 69-77% EWL reported in the general RYGB population literature. Six participants (15.8%) had an EWL < 50%, which is somewhat higher than the approximately 8% surgical failure rate reported in the literature. EWL did not differ significantly by gender (78.6 ± 25.5% vs. 67.4 ± 17.6% for females and males, respectively) or by relapsers/new onset user status (80.3 ± 28.2% vs. 72.4 ± 20.9%, respectively). There was a trend toward less EWL in participants with only alcohol diagnoses when compared to those with drug or mixed substance use diagnoses (68.4 ± 22.1% vs. 83.1 ± 24.5%, p < 0.07). CONCLUSIONS: The development or relapse of a substance use disorder subsequent to RYGB surgery does not seem to negatively impact weight loss outcome. Prospective or matched-controlled studies are needed to clarify the relationship between postoperative substance use disorder and weight loss outcome in bariatric surgery patients.

CORRESPONDING AUTHOR: Melissa E. Pulcini, BA, Department of Psychology, Eastern Michigan University, Ypsilanti, MI, 48197; mpulcini@emich.edu

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

## D-103a

### IMPLEMENTING A WORKSITE HEALTH PROMOTION PROJECT: LESSONS LEARNED

Kelly Flannery, RN, MS and Barbara Resnick, PhD, RN, CRNP  
University of Maryland, School of Nursing, Baltimore, MD.

Background: Minorities and low-income individuals are less likely to engage in cardiovascular disease (CVD) prevention behaviors and often have multiple CVD risk factors. Worksite health promotion is an effective way to reach this group and improve access and availability to health resources.

Population: We are testing a workplace health promotion program for the prevention of CVD among low-income minority female nursing assistants (NAs) working in long-term care (LTC). The sample exposed to treatment (n=24) was mainly middle aged (mean 43.3, SD 12.3) African American (n=18, 94.7%) women with additional training after high school (n=15, 78.9%) that have been employed in the setting for 80.6 (SD 78) months.

Purpose: The purpose of this ongoing study is to test the feasibility and explore the efficacy of our Worksite Heart Health Improvement Project (WVHIP) when implemented in LTC with low-income minority female NAs. We hypothesized that NAs who participate in WVHIP will: demonstrate stronger beliefs in exercise and heart healthy diets, increase time spent in exercise, improve adherence to heart healthy diets, improve health related outcomes (e.g. blood pressure) and improve work related outcomes (e.g. work ability) at both the three and six month follow-ups.

Design: This quasi-experimental study guided by the social ecological model and the theory of self-efficacy took place in two LTC facilities. The three-month WVHIP intervention includes three components: environmental assessment and policy change, education and ongoing motivation. The control site will receive education only. Measures are collected at baseline, three and six months.

Implication: During treatment activities we faced several barriers including administration and staff buy-in, staff coverage for participants to engage in the project, participants' motivation, co-worker support for healthy behaviors and sustainability. Creative solutions were implemented to reduce the impact of these barriers.

Acknowledgement: WVHIP was funded by Sigma Theta Tau International.

CORRESPONDING AUTHOR: Kelly Flannery, RN, MS, University of Maryland, Baltimore, MD, 21201; kelly.marie.flannery@gmail.com

## D-118a

### PHYSICIANS' RISK COMMUNICATION PREFERENCES DIFFER BY PERCEIVED AMBIGUITY AVERSION OF THEIR PATIENTS

David B. Portnoy, PhD, MPH,<sup>1,2</sup> Paul K. Han, MD, MA, MPH,<sup>3</sup> Rebecca A. Ferrer, PhD,<sup>2</sup> William M. Klein, PhD<sup>2</sup> and Steven B. Clauser, PhD<sup>2</sup>

<sup>1</sup>Cancer Prevention Fellowship Program, National Institutes of Health, Bethesda, MD; <sup>2</sup>Division of Cancer Control and Population Sciences, National Cancer Institute, Bethesda, MD and <sup>3</sup>Center for Outcomes Research and Evaluation, Maine Medical Center, Portland, ME.

In order to form accurate risk perceptions, individuals need to understand information about the benefits, harms, and other implications of the perceived threat. However, much medical risk-related information is far from certain. Discussing such uncertainty is critical to Shared Decision Making (SDM) between physicians and their patients. The vast

majority of physicians endorse SDM, however, there is variation in the degree to which physicians actually involve patients in decisions. This discrepancy may be related to physicians' attitudes regarding the communication and management of uncertainty and their perceptions of negative reactions to such information by their patients (ambiguity aversion). To test this, a nationally-representative sample of physicians (N = 1500) reported perceptions of their patients' ambiguity aversion and their own attitudes towards communicating medical uncertainty related to risk. Physician demographic factors (e.g., medical specialty) independently predicted risk communication preferences. More importantly, physicians' beliefs about their patients' ambiguity aversion significantly predicted these preferences, beyond physicians' demographic predictors. Physicians who thought their patients would have more negative reactions to discussing ambiguous information about risk were more likely avoid the discussion and make the decision for their patient ( $\beta = .065$ ,  $p = .013$ ), and more likely to withhold an intervention that had uncertainty associated with it ( $\beta = .170$ ,  $p < .001$ ). When faced with the task of sharing uncertain risk information, physicians' perceptions of patients' ambiguity aversion may be related to their attitudes and behaviors toward communicating those uncertainties, and subsequent use of SDM.

CORRESPONDING AUTHOR: David B. Portnoy, PhD, MPH, Cancer Prevention Fellowship Program, National Cancer Institute, Bethesda, MD, 20892; portnoydb@mail.nih.gov

## D-118b

### PREDICTORS OF STAGES OF CHANGE FOR SUN PROTECTION AND SUNSCREEN IN A HISPANIC SAMPLE

Cecilia Brooke Cholka, BA,<sup>1</sup> Dixie Hu, BS,<sup>2</sup> Megan Barnard, BA,<sup>1</sup> Alyn Rosales, BS,<sup>1</sup> José A. Cabriales, MA<sup>1</sup> and Theodore V. Cooper, PhD<sup>1</sup>

<sup>1</sup>Psychology, University of Texas at El Paso, El Paso, TX and

<sup>2</sup>Psychology, The Ohio State University, Columbus, OH.

Applying sunscreen, limiting sun exposure, and wearing protective clothing are all accepted ways to reduce the risk of skin cancer. These health behaviors have been studied in non-Hispanic Whites and Blacks, but data regarding Hispanics and sun safety behaviors are minimal. A total of 741 Hispanic college students (41% male) completed questionnaires assessing sociodemographic information, health indicators (e.g., weight), and sun protection (via the Stage of Change [SOC] form for Sun Protection and Sunscreen). Both for sun protection and sunscreen, approximately half of the sample were in Precontemplation or Contemplation stages, demonstrating lower rates of readiness toward protection. Two multinomial logistic regression models explored predictors of SOC for sun protection and sunscreen, respectively. In the model for sun protection, males had lower odds of being in the Preparation or Maintenance stages relative to the Precontemplation stage, OR = .359,  $p < .001$  and OR = .249,  $p < .001$ . Also, individuals who reported higher weight had higher odds of being in Maintenance relative to Precontemplation, OR = 1.007,  $p = .032$ . In the logistic model for sunscreen, males had lower odds of being in the Preparation, Action, or Maintenance stages relative to Precontemplation, OR = .425,  $p = .002$ , OR = .409,  $p = .02$ , and OR = .273,  $p < .001$ . Results suggest the need for sun exposure prevention for this group, the potential that increased weight is a protective factor for sun protection, and that females report higher levels of readiness toward sun protection and sunscreen use than males. Future efforts should explore the relationship between weight and sun protection, and although prevention efforts in Hispanic young adults must target both sexes, special efforts should focus on increasing sun

protective behaviors among Hispanic men.

This research was supported by NIMH-COR Grant No. T34 MH019978-05.

CORRESPONDING AUTHOR: Theodore V. Cooper, PhD, Psychology, University of Texas at El Paso, El Paso, TX, 79968; tvcooper@utep.edu

**D-118c  
DEVELOPING BEHAVIORAL MEDICINE AND PUBLIC HEALTH CAPACITY IN KAZAKHSTAN**

Allyn Aringazina, MD, PhD<sup>1,2</sup> and John P. Allegrante, PhD<sup>2,3</sup>  
<sup>1</sup>Public Health, Kazakhstan School of Public Health, Almaty, Kazakhstan; <sup>2</sup>Health and Behavior Studies, Teachers College, Columbia University, New York, NY and <sup>3</sup>Sociomedical Sciences, Mailman School of Public Health, Columbia University, New York, NY.

Over the last decade, a series of important government initiatives in the Republic of Kazakhstan have sought to build behavioral medicine capacity as one of the cornerstones of state policy to revitalize and strengthen the public health system and improve population health. Healthy People Kazakhstan outlines the development and delivery of public health services for 2011-2015 and has established quantifiable epidemiologic targets in order to address a wide range of population health problems and disparities in rapidly changing society. Achieving many of the targets will require increased capacity of the public health system's behavioral medicine and health promotion workforce and developing practice standards that are consistent with international Standards. This presentation will describe efforts now under way to meet the challenges of developing behavioral medicine and health promotion capacity in Kazakhstan and modernizing its public health workforce as part of broader public health policy, systems, and environmental change. The presentation will provide: 1) an overview of the demographic and epidemiologic profile of Kazakhstan; 2) the results from a population-based survey of public attitudes (N = 4,497) toward the health improvement process and opinions about the health care system in Kazakhstan, including respondent views on health-related social capital and critical issues in the development of intersectoral approaches; and 3) the results and an eight-dimension spidergram from a health promotion capacity mapping exercise. The results suggest that policy makers and public health specialists should work out new vision concerning understanding health promotion issues in the country to develop competency-based standards for professional practice. Implications of these findings for developing health promotion capacity and public health workforce competence in Kazakhstan will be discussed.

CORRESPONDING AUTHOR: Allyn Aringazina, MD, PhD, Public Health, Kazakhstan School of Public Health, Almaty, 050060; allyn.aringazina@gmail.com

**D-118d  
ASSOCIATIONS BETWEEN UNFORGIVENESS AND THE PREVALENCE OF ARTHRITIS AMONG A NATIONALLY REPRESENTATIVE SAMPLE**

Asani H. Seawell, PhD<sup>1</sup> and Loren Toussaint, PhD<sup>2</sup>  
<sup>1</sup>Psychology, Grinnell College, Grinnell, IA and <sup>2</sup>Psychology, Luther College, Decorah, IA.

Unforgiveness has been defined as a negative emotional experience that is directed towards a perceived offender. Research suggests that unforgiveness is both stressful and detrimental to well-being (Worthington & Scherer, 2004). Indeed, stress has been implicated in the

onset, maintenance, and recovery of many chronic physical illnesses and specifically rheumatic diseases (Agus, 1997). The purpose of the present study was to investigate associations between unforgiveness and the prevalence of arthritis. It was expected that higher levels of unforgiveness would be associated with greater likelihood of arthritic conditions. Data were from a nationally representative sample of over 43,000 adults residing in the United States. Participants completed measures of unforgiveness (i.e., difficulties forgiving many people, and taking a long time to forgive), anger, mental and physical health, as well as socio-demographic variables (e.g., age, income, education). Self- and physician-diagnosed arthritis within the past 12 months was also provided. Results indicated that unforgiveness was associated with 1.34 - 1.55 times greater odds of reporting self-diagnosed arthritis and 1.07 - 1.56 times greater odds of reporting physician-diagnosed arthritis (ps < .001). More specifically, those indicating problems forgiving many people showed the highest risk of arthritis (ORs ≈ 1.5, ps < .001). These associations remained even after controlling for the effects of anger, mental and physical health, and socio-demographic variables. The results of this preliminary work point to the potential role that unforgiveness and the stress associated with it may play in arthritis.

CORRESPONDING AUTHOR: Asani H. Seawell, PhD, Psychology, Grinnell College, Grinnell, IA, 50112; seawella@grinnell.edu

**D-118e  
RELATIONSHIPS OF SOCIAL RESOURCES WITH HEALTHFUL BEHAVIORS: DOES AGE MATTER?**

Kristina H. Lewis, MD MPH,<sup>1</sup> Matthew W. Gillman, MD,<sup>1</sup> Elaine Puleo, PhD,<sup>2</sup> Mary Greaney, PhD,<sup>1</sup> Gary Bennett, PhD<sup>3</sup> and Karen M. Emmons, PhD<sup>1</sup>

<sup>1</sup>Harvard University, Boston, MA; <sup>2</sup>Univ of Massachusetts, Amherst, MA and <sup>3</sup>Duke University, Durham, NC.

Background: Healthful eating and physical activity benefit people of all ages. While social resources are associated with these behaviors, it is not clear if associations differ by age. Methods: We analyzed baseline data on 2440 subjects, age 18-93 y, from "Healthy Directions 2", an urban primary care-based multiple risk behavior intervention trial. We used linear regression—overall and within 4 age groups—to examine cross-sectional relationships of social resources (neighborhood, friends and family, organizational) with physical activity (PA) level and fruit and vegetable (F&V) intake. To measure social resources, we used 9 items (5-point Likert scale) from the Chronic Illness Resources Survey (CIRS). We measured total PA with CDC's BRFSS questions and F&V intake with NCI's "5 A Day for Better Health." Results: 66% of subjects were female, 45% were non-white, 60% had a college degree and 14% were 65+y. The mean (SD) age was 49.4 (15) y. Mean total PA was 346 (304) min/wk, F&V intake was 3.4 (2.4) servings/d, and CIRS score was 9.8 (5.7) on a 0-36 point scale. Mean CIRS scores were slightly lower among older adults (10.5 for 18-34 y, 9.7 for 35-49 y, 9.6 for 50-64 y, 9.6 for 65+ y, p=0.04). In multivariable models adjusted for sex, race, age, education, income, BMI, and health status, CIRS score was directly associated with PA (14.8 min/wk per 1-point increment [95% CI 12.6-17.0]) and with F&V consumption (0.11 servings/d [95% CI 0.09-0.13]). We saw no effect modification of the CIRS-PA association by age group (interaction p=0.83), but the CIRS-F&V association did differ by age (0.06 for 18-34 y, 0.13 for 35-49 y, 0.11 for 50-64 y, 0.13 for 65+ y, p=0.04). Conclusions: Greater social resources were associated with higher PA level and F&V intake. At older ages, CIRS scores were lower and associations

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

of CIRS score with F&V intake were stronger. Thus a need may exist for more health promotion programs that improve access to social resources, especially in middle-age and older adults.

CORRESPONDING AUTHOR: Kristina H. Lewis, MD MPH, Department of Population Medicine, Harvard Medical School, Boston, MA, 02215; khlewis@partners.org

## **D-118f** **RELATIONSHIP BETWEEN ARTHRITIS SYMPTOMS AND PHYSICAL FUNCTIONING IN A SAMPLE OF ADULTS WITH ARTHRITIS**

Meghan Baruth, PhD, Sara Wilcox, PhD and Bruce McClenaghan, PED, PT

University of South Carolina, Columbia, SC.

Background: Arthritis and other rheumatic conditions are the leading cause of disability among adults in the United States. This study examines the relationship between arthritis symptoms and objectively measured physical functioning.

Methods: Participants (n=199) with doctor diagnosed arthritis enrolled in a self-guided exercise program. Participants completed a visual numeric scale of self-reported pain, fatigue, and stiffness in the previous 2 weeks, and completed objective measures of physical functioning: chair stands, 6-minute walk test, grip strength, and sit-and-reach. Linear regression models examined the relationship between physical functioning and pain, fatigue, and stiffness. All models controlled for age, gender, race (white, non-white), body mass index, and self-reported health status.

Results: A majority of the sample was female (87%), white (64%), married (59%), college graduates (61%), and overweight/obese (82%). The mean age was 54.4±10.3 and the mean BMI was 32.9±8.4. Performance on the chair stands was poorer for participants reporting higher levels of pain (p=.01) and stiffness (p=.003). Performance on the 6-minute walk test was poorer for participants reporting higher levels of pain (p=.001), fatigue (p=.002), and stiffness (p=.0002). Performance on the grip strength was poorer for participants reporting higher levels of pain (p=.03) and stiffness (p=.001). Performance on the sit-and-reach was not associated with any arthritis symptoms.

Conclusions: Functional declines are common in people with arthritis. Pain, fatigue, and stiffness, common symptoms of arthritis, were associated with poorer physical functioning. Physical activity has been shown to improve arthritis symptoms, and thus may be an important target for improving functional ability among people with arthritis.

Funded by CDC.

CORRESPONDING AUTHOR: Meghan Baruth, PhD, University of South Carolina, Columbia, SC, 29208; stritesk@mailbox.sc.edu

## **D-118g** **DEPRESSION PREDICTS PATIENT-REPORTED FATIGUE IN SYSTEMIC LUPUS ERYTHEMATOSUS (SLE)**

Feridey N. Carr, MS,<sup>1</sup> Perry M. Nicassio, PhD,<sup>2</sup> Mariko L. Ishimori, MD,<sup>3</sup> Ioana Moldovan, MD,<sup>4</sup> Emmanuel Katsaros, MD,<sup>4</sup> Karina Torralba, MD,<sup>5</sup> Shuntaro Shinada, MD,<sup>5</sup> Dilrukshie Cooray, MD,<sup>6</sup> Daniel J. Wallace, MD,<sup>3</sup> Stephanie Finck, BS,<sup>7</sup> Meenakshi Jolly, MD,<sup>8</sup> Alisa L. Wilson, PhD,<sup>3</sup> Thuy Bui, MS<sup>1</sup> and Michael H. Weisman, MD<sup>3</sup>

<sup>1</sup>Clinical Psychology, California School of Professional Psychology at Alliant International University, Alhambra, CA; <sup>2</sup>Department of Psychiatry, University of California - Los Angeles, Los Angeles,

CA; <sup>3</sup>Rheumatology, Cedars-Sinai Medical Center, Los Angeles, CA; <sup>4</sup>Rheumatology, Loma Linda University, Loma Linda, CA; <sup>5</sup>Rheumatology, University of Southern California, Los Angeles, CA; <sup>6</sup>Rheumatology, Harbor-UCLA Medical Center, Torrance, CA; <sup>7</sup>University of California - Los Angeles, Los Angeles, CA and <sup>8</sup>Rheumatology, Rush University Medical Center, Chicago, IL.

Fatigue is a common problem for patients with systemic lupus erythematosus (SLE) that can interfere with quality of life and lead to impairment in various areas of functioning. An important question is whether fatigue is a symptom of SLE, or the product of the psychological/behavioral adaptation of the patient. We addressed this question by assessing disease activity and psychological adaptation in a sample of 125 adult Hispanic and Caucasian SLE patients who were recruited from 4 health care settings in the greater Southern California area. After controlling for sociodemographic variables, hierarchical multiple regression findings revealed that self-reported disease activity predicted subjective fatigue, R<sup>2</sup> change = .11, F(2,118) = 8.95, p < .000, beta = .40, p < .000. The SLEDAI, an objective measure of disease activity, was not related to fatigue. Psychological factors, including helplessness, internality, and depression were highly significant in explaining fatigue when entered as a block, R<sup>2</sup> change = .26, F(3,115) = 20.39, p < .000, beta = .55, p < .000, after controlling for self-reported disease activity. However, of these psychological factors, only depression was uniquely related to higher fatigue scores.

Depression appears to be a better predictor of patient-reported fatigue than disease activity among patients with SLE. These findings underscore the importance of managing depression as a means of reducing fatigue in persons with SLE.

CORRESPONDING AUTHOR: Feridey N. Carr, MA, Clinical Psychology, California School of Professional Psychology at Alliant International University, Alhambra, CA, 91801; FCarr@Alliant.edu

## **D-125a** **WHAT PREDICTS PRIMARY CARE UTILIZATION AMONG VETERANS WITH CHRONIC PAIN?**

Gregory Beehler, PhD,<sup>1</sup> Amy Rodrigues, PhD<sup>2</sup> and Andrew Dunn, DC<sup>2</sup>

<sup>1</sup>Center for Integrated Healthcare, VA WNY Healthcare System, Buffalo, NY and <sup>2</sup>VA WNY Healthcare System, Buffalo, NY.

Background: Chronic pain has been linked to increased health care utilization. High rates of primary care utilization increases health care costs and may indicate the need for behavioral intervention consistent with a biopsychosocial approach to pain management. Purpose: This study examined how predisposing, enabling, and need factors (Andersen, 1995) predict utilization of primary care among Veterans with and without chronic pain. Methods: Demographic, health factor, and primary care utilization data were gathered from VA EMRs for Veterans in upstate New York from 2003-09. Cases (n=792) included those with musculoskeletal conditions of the hip, knee, or lower back lasting ≥3 months in 2003. Cases were matched by age to non-pain controls who utilized primary care services during the same 6 years. Results: On average, cases consistently utilized more care than controls during each year of the observation period and accrued 30.1 (SD=17.7) primary care encounters whereas controls accrued 22.2 (SD=13.3; t(1466)=10.0, p < 0.001). Using hierarchical multiple regression, predictors accounted for a moderate amount of variance in utilization (R<sup>2</sup>=0.33) with case status (β=0.16, p < 0.001), higher pain scores (β=0.17, p < 0.001),

and diagnoses of diabetes ( $\beta=0.17$ ,  $p<.001$ ), COPD ( $\beta=0.16$ ,  $p<0.001$ ), or hypertension ( $\beta=0.14$ ,  $p<0.001$ ) evidencing the largest effects. Having a service connected disability, depression, substance use disorder, and use of gabapentin were associated with higher utilization only among controls. In contrast, higher utilization among cases was uniquely predicted by White race, adjustment disorder, anxiety disorder, use of anxiolytics, and use of non-opioid analgesics. Conclusions: Chronic pain at baseline was associated with greater use of primary care services over a 6 year period. Providing early behavioral medicine interventions may better address patient self-management of pain and comorbid health conditions to stem unnecessary biomedical care.

CORRESPONDING AUTHOR: Gregory Beehler, PhD, Buffalo VA Medical Center, VA Center for Integrated Healthcare, Buffalo, NY, NY; gregory.beehler@va.gov

### **D-125b INTERPLAY OF PATIENT REPORTED SLEEP, DEPRESSION AND PAIN AMONG ADULTS WITH SICKLE CELL DISEASE**

Gwenyth R. Wallen, PhD, E. Eckes, MSN, ARNP, M. Krumlauf, BSN, M. Hildeshein, MS, D. Allen, BSN, J. Schulden, MD, J. G. Taylor, MD and C. P. Minniti, MD  
National Institutes of Health, Bethesda, MD.

Background: Sleep disturbance and depressive disorders are common among persons with sickle cell disease (SCD). Studies suggest a 28-44% prevalence of depressive disorders in adults with SCD. Depression and sleep disturbance have been associated with increased pain, greater distress from pain, lower quality of life, and poorer adherence to treatment regimens.

Methods: As part of an on-going pulmonary hypertension screening protocol, 136 adult patients with SCD were assessed for depression (Beck Depression Inventory II (BDII)), sleep disturbance (Pittsburgh Sleep Quality Index (PSQI)), and pain (0-10 Numerical Rating Scale (NRS)). Separate chi-square analyses were conducted to assess associations between depression, sleep disturbance, and self-reported typical SCD pain intensity during episodic pain ( $n=58$ ) as well as chronic pain intensity ( $n=63$ ).

Results: Participants were 50% male with a mean age 39 years. Thirty individuals (22.1%) reported depressive symptoms ( $BDII \geq 17$ ), and 102 (75%) reported global PSQI scores  $>5$  indicating severe difficulties in at least 2 areas affecting sleep quality or moderate difficulties in more than three areas. For those who reported typical SCD pain intensity no association was found between pain severity and depressive symptoms or sleep disturbance. However for those who reported whether or not they had chronic pain, a significant relationship was found between chronic pain severity and both depressive symptoms ( $p=.04$ ), and sleep disturbances ( $p=.02$ ).

Conclusions: A substantial proportion of participants in this sample reported symptoms consistent with depression and sleep disturbance. A positive significant association was found between the severity of depressive symptoms, sleep disturbances and chronic pain scores. As suggested by these findings, the screening and treatment of depression, sleep disturbances, acute pain, and chronic pain are important components of routine care for persons with SCD.

CORRESPONDING AUTHOR: Gwenyth R. Wallen, PhD, NIH Clinical Center, Olney, MD, 20832; gwallen@cc.nih.gov

### **D-125c PSYCHOSOCIAL HEADACHE MEASURES IN CAUCASIAN AND AFRICAN AMERICAN HEADACHE PATIENTS: ARE THEY CULTURALLY EQUIVALENT?**

Bernadette Heckman, PhD, Kristoffer Berlin, PhD and Arielle Campbell, BA  
Psychology, Ohio University, Athens, OH.

This study examined the psychometric properties and measurement invariance of four widely used psychosocial headache measures in racially-diverse headache patients. Measurement invariance is the extent to which scales have the same meaning across groups, a prerequisite condition before conducting between-group comparisons. Caucasians ( $n=173$ ) and African-Americans ( $n=114$ ) receiving treatment in four headache specialty clinics completed the Headache Disability Inventory (HDI), the Migraine-Specific Quality of Life (MSQL) measure, the Headache Management Self-Efficacy (HMSE) scale, and the Headache-Specific Locus of Control (HSLC) scale prior to initiating new preventive therapies. All measures demonstrated good internal consistency, most measures evinced good test-retest reliability, and adequate measurement invariance for all study measures was found across Caucasian and African American patients. Despite adequate measurement invariance, the recommended factor structure of the HMSE scale provided a poor fit for both African American and Caucasian patients. With perhaps the exception of the HMSE scale, contemporary psychosocial headache measures have good psychometric properties and can be used with both Caucasian and African American patients.

CORRESPONDING AUTHOR: Bernadette Heckman, PhD, Psychology, Ohio University, Athens, OH, 45701; heckmanb@ohio.edu

### **D-125d EVALUATING PREDICTORS OF PAIN RESPONSIVITY**

Anna H. Smitherman, BA, Julie Cunningham, MA and Beverly Thorn, PhD  
Psychology, The University of Alabama, Tuscaloosa, AL.

Psychological constructs, such as personality traits and cognitive appraisals, have been linked to pain responsivity, but there is little information regarding the interrelationship of these constructs as they relate to pain. The primary goals of this study were to 1) determine the relationships among four predictors of pain responsivity: catastrophizing, emotional vulnerability, and primary pain appraisals (threat and challenge); 2) determine the relationship among the four predictors and pain responsivity variables (intensity, unpleasantness, and tolerance); and 3) determine how much unique variance in pain responsivity is explained by each predictor. To our knowledge, this is the first study to simultaneously examine these psychological constructs in one study. One hundred and seventy-three students at The University of Alabama completed a cold pressor experimental pain task and a battery of questionnaires. Pearson correlations and regression models were calculated. Catastrophizing was positively related to emotional vulnerability and threat appraisals and emotional vulnerability was positively related to threat appraisals, but the size of the correlations did not suggest construct overlap among the measures. Regression analyses indicate that catastrophizing is a strong predictor of all three responsivity variables. The addition of emotional vulnerability and primary pain appraisals did not significantly add to the proportion of explained variance already accounted for by catastrophizing for any of the three responsivity variables. When all predictors were entered in one model, catastrophizing and threat appraisal were related to pain intensity ratings. For pain unpleasantness and tolerance, only

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

catastrophizing emerged as a unique predictor. These results indicate that for each pain responsiveness variable, catastrophizing was the most robust predictor of pain responsiveness among the four. Results also suggest that catastrophizing is not redundant with related personality or primary appraisal variables, but is a unique and important cognitive construct worthy of specific targeting in treatment.

CORRESPONDING AUTHOR: Anna H. Smitherman, BA, Psychology, The University of Alabama, Tuscaloosa, AL, 35487-0348; ahsmitherman@gmail.com

## D-147a

### EFFECTS OF YOGA ON BALANCE AND COGNITIVE FUNCTION IN OLDER ADULTS AT RISK FOR FALLS (OARF)

Kathryn Suslov, MD, MPH,<sup>1</sup> Patricia Bloom, MD,<sup>2</sup> Anna Rusiewicz, PhD<sup>3</sup>,<sup>1</sup> and Alexandra Oxnard, BA<sup>1</sup>

<sup>1</sup>Preventive Medicine, Mt. Sinai School of Medicine, New York, NY; <sup>2</sup>Geriatrics, Mt. Sinai School of Medicine, New York, NY and <sup>3</sup>Dept. of Veteran Affairs, East Orange, NJ.

Falls are a major threat to the independence and safety of older adults and often lead to self-imposed limitations on mobility, leading to further deterioration in physical, mental and psychological functioning. Substantial research has shown that the practice of tai chi chuan has beneficial effects in all these domains in older adults. There has been less research on the effects of yoga in this population. Several small studies suggest that yoga may improve balance and gait in older adults, but none to date have examined yoga's effects on cognitive and psychological aspects. We piloted an innovative yoga-based program and measured its effects on balance, fear of falling, and cognitive functioning in OARF.

Methods: 10 community-dwelling OARF were recruited from a university geriatrics practice and enrolled in a yoga-based program, which met for 1-hour twice weekly for 8 weeks. Pre- and post-intervention assessments included measures of balance (Berg Balance Test), fear of falling (Activities Specific Balance Confidence Test), and cognitive function (Immediate and Delayed Recall; Trail Making Test B; Stroop.)

Results: The sample consisted of all women and was predominantly Caucasian and well-educated, with a mean age of 84 years (range 77-95 years). After the intervention, scores on the Berg Balance Test improved, with a mean increase of 4.1 points (95% CI= -0.88, 9.10). Delayed Recall improved significantly, with a mean increase of 1.5 words on a 10-word list (95% CI= 0.18, 2.49). There was no change in fear of falling or other measures of cognitive function.

Conclusions: This yoga-based balance program for older adults had a good retention rate and high satisfaction ratings, demonstrating the feasibility of such an intervention for adults of advanced age and at high fall risk. The results suggest that yoga may improve balance and some aspects of cognitive function in older adults; future randomized controlled trials are needed to elucidate these findings.

CORRESPONDING AUTHOR: Kathryn Suslov, MD, MPH, Preventive Medicine, Mt. Sinai School of Medicine, New York, NY, 10128; kathryn.suslov@mssm.edu

## D-147b

### METHODS TO ASSESS WALKABILITY AND BIKEABILITY AT A MIDWESTERN UNIVERSITY

Karen R. Gallagher, MA, Sarah Hallsly, MEd, CHES and Lauren Maziarz, RN, MSN

Health and Recreation, University of Toledo, Toledo, OH.

The prevalence of obesity and inactivity in the United States has facilitated communities to examine new ways to get people more active. Building and reshaping communities' infrastructures to encourage walking and biking can make the Healthy People 2020 objectives for physical activity obtainable. Community assessments regarding the presence and quality of pedestrian infrastructure are slowly evolving. On college campuses there has been little research or validation of such assessments. The present study utilized an existing validated tool for campus grounds assessment. Researchers at a Midwestern University (n= 19,491 students) divided the main campus consisting of approximately three square miles into fourteen sections using the Emergency Walking and Eddy Bicycling Suitability Assessment Form. Preliminary results indicate campus roadways and pedestrian infrastructure such as sidewalks and buffers are in good condition; however, the campus significantly lacks posted speed limit and designated bikeways. Researchers noted several existing partial sidewalks and inadequate buffers, making pedestrian and bicycle travel potentially hazardous. Final results including impacts for active living within the campus community will be discussed during the presentation. Possible outcomes include expanded walking paths and designated bikeways throughout University grounds. Information such as overall project cost and plans to implement improvements will be included in the discussion.

CORRESPONDING AUTHOR: Karen R. Gallagher, MA, Health and Recreation, University of Toledo, Lincoln Park, MI, 48146; kgallagher77@gmail.com

## D-147c

### PROMOTING PHYSICAL ACTIVITY IN INDIVIDUALS AT HIGH-RISK FOR COLON CANCER

Kathleen Y. Wolin, ScD, Casey Fagin, MA, Aimee S. James, PhD and Dayna S. Early, MD

Dept. of Surgery, Washington University School of Medicine, Saint Louis, MO.

Background: Colon cancer is the third most commonly occurring cancer in men and women in the US. Observational evidence linking physical activity with a reduced risk of colon cancer is consistent and convincing. Given the wealth of observational data demonstrating the large risk reductions that can occur with participation in physical activity, randomized controlled trials of physical activity and colon cancer prevention are needed to refine the dose and understand mechanisms. Our aim was to pilot a brief two-phase walking intervention designed to increase physical activity in individuals recently diagnosed with colon polyps.

Methods: This pilot intervention enrolled individuals into a 12-week intervention delivered in two phases: once weekly group sessions for four weeks and then eight weeks of brief phone support. Phase one aims to build self efficacy and address barriers to physical activity through structured lessons and progressively longer group walks. On non-contact days participants walk on their own, monitoring progress using pedometers. In the second phase, participants walk entirely on their own. Physical activity was recorded by blinded pedometer and accelerometer.

Results: We enrolled and randomized 16 individuals in our pilot. Of these, 13 attended the weekly walking sessions and all 13 completed the study protocol. We found a significant pre-post change in physical activity as measured by accelerometer and blinded pedometer. Using blinded pedometers, participants recorded an average of 4381 steps per day, which increased to 5998 at the end of the 12 week intervention, a difference of 1617 steps per day. Participants recorded 96 minutes/day of moderate or vigorous physical activity via accelerometry at baseline, increasing to 200 minutes/day at follow-up for a mean change of 114 minutes/day.

Conclusion: The pilot intervention successfully increased physical activity in study participants justifying a larger study to better evaluate the effect on physiology, such as through serum biomarkers.

CORRESPONDING AUTHOR: Kathleen Y. Wolin, ScD, Dept. of Surgery, Washington University School of Medicine, Saint Louis, MO, 63110; wolink@wustl.edu

**D-147d**  
**FEASIBILITY AND PRELIMINARY FINDINGS OF A FAITH BASED STUDY TARGETING CORRELATES OF PHYSICAL ACTIVITY AMONG YOUNG LATINAS**

Elva Arredondo, PhD, Monica Morello, BS, Guadalupe "Suchi" Ayala, PhD, Nancy Espinoza, BS, Christina Holub, PhD and John Elder, PhD

San Diego State University, San Diego, CA.

Introduction: Physical activity (PA) rates in young Latinas are low compared to Latino boys and Caucasian youth. Youth who are inactive early in their development are at risk for leading sedentary lives as adults. Despite the benefits of PA, only a limited number of studies have focused on mother-daughter PA interventions, and even fewer have involved young Latinas. Informed by the Social Cognitive Theory, the current study examined the feasibility of implementing an 8 week mother-daughter faith based intervention targeting correlates of PA in young Latinas.

Methods: 12 mothers and their daughters participated in an 8 week faith based intervention promoting PA in youth. The intervention was delivered in a group format and targeted benefits of and barriers to PA, parenting skills, family communication, nutrition, and accessing community PA resources. Participants completed brief surveys prior to and following program activities. Separate focus groups were conducted with mothers and daughters assessing their experience in the program.

Results: Preliminary data suggest significant improvements in communication between mothers and daughters, increased frequency of TV monitoring by the mothers, and increases in family social support for PA for daughters and mothers ( $p < .01$ ). Qualitative data suggest that mothers and daughters benefited from receiving the intervention in a group format within a faith context.

Discussion: A faith based intervention promoting PA in Latina youth appears to be feasible as all participants who initiated the program completed it. Findings suggest that physical activity can be one venue for improving family communication and mother-daughter relations. A physical activity intervention may lead to short and long term physical and emotional improvements among young Latinas.

CORRESPONDING AUTHOR: Elva Arredondo, PhD, San Diego State University, San Diego, CA, 92104; earredondo@projects.sdsu.edu

**D-147e**  
**NEIGHBORHOOD ENVIRONMENT MODERATES THE RELATIONSHIP BETWEEN TRANSTHEORETICAL MODEL CONSTRUCTS AND STAGES OF CHANGE FOR PHYSICAL ACTIVITY**

Joey Lightner, BS, Elizabeth A. Fallon, PhD, Andrew T. Kaczynski, PhD, Paige Johnson, BS and Ann Pipes, BS

Department of Kinesiology, Kansas State University, Manhattan, KS.

Social ecological models suggest that multiple levels of influences interact to impact behavior. This study examines whether perceptions of one's neighborhood environment moderate the physical activity behavior change process as described by the Transtheoretical Model (TTM). Participants completed an online survey assessing neighborhood environment (IPAQ environment module summarized into a single neighborhood score) and TTM constructs (stage of change, barriers efficacy, processes of change, decisional balance, self-efficacy, and temptation). Regressions testing for moderation were conducted separately for men ( $n=289$ ) and women ( $n=470$ ). For men in action/maintenance stages, neighborhood environment moderated the relationship between self-efficacy and stage of change such that compared to men with more positive neighborhood environments, men with less positive neighborhood environments reported less barriers efficacy for physical activity [model 2(3)=12.71,  $p=0.005$ ]. For women in the action/maintenance stages, neighborhood environment moderated the relationship between competing demands temptation and stage of change such that compared to women with more positive neighborhood environments, women with less positive neighborhood environments reported greater competing demands temptation [model 2(3)=18.34,  $p < 0.001$ ]. No moderation effects were found for maintenance/termination stages of change. In conclusion, this study adds to the literature by revealing that poor neighborhood environment negatively impacts TTM constructs important for successful physical activity behavior change. Additionally, the relationships among neighborhood environment and TTM constructs differ by sex and stage of change. Future research will benefit from examining which neighborhood attributes are most influential for physical activity behavior change and from exploring possible mediating effects of perceived neighborhood environment on physical activity initiation and maintenance.

CORRESPONDING AUTHOR: Elizabeth A. Fallon, PhD, Department of Kinesiology, Kansas State University, Manhattan, KS, 66506; efallon@ksu.edu

**D-147f**  
**RELATIONSHIP AMONG TRANSTHEORETICAL MODEL CONSTRUCTS AND PERCEIVED FITNESS: IMPLICATIONS FOR PHYSICAL ACTIVITY MAINTENANCE**

Madelaine N. Ellison, BS,<sup>1</sup> Abby Banks, BS,<sup>1</sup> Elizabeth A. Fallon, PhD,<sup>1</sup> Brandonn S. Harris, PhD<sup>2</sup> and Paige Johnson, BS<sup>1</sup>

<sup>1</sup>Department of Kinesiology, Kansas State University, Manhattan, KS and <sup>2</sup>Department of Special Education, Counseling, and Student Affairs, Kansas State University, Manhattan, KS.

Physical activity maintenance rates are low, indicating the need to test novel relationships among psychosocial constructs important for maintenance. Thus, this study aimed to (1) examine associations between fitness perceptions and transtheoretical model (TTM) constructs (stage of change, temptation, decisional balance, barrier efficacy, and processes of change) and (2) determine if fitness perceptions moderate the relationship between TTM constructs and stage of change. An online survey assessed fitness evaluation, fitness

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

orientation, and the TTM constructs. Regression analyses were conducted separately for men (n=289) and women (n=470). For men and women in action/maintenance and maintenance/termination, fitness orientation was positively associated with stage of change, pros, barrier efficacy, and processes of change, and was negatively associated with temptation ( $p < .05$ ). For men and women in action/maintenance and maintenance/termination, fitness evaluation was positively associated with barrier efficacy ( $p < .05$ ). A moderating relationship emerged for women in action/maintenance, such that compared to women reporting higher fitness orientation, women reporting lower fitness orientation reported fewer experiential processes [model 2 (3)=28.610,  $p < .001$ ]. Additionally, for women in action/maintenance [model 2 (3)=12.355,  $p = 0.006$ ] and maintenance/termination [model 2 (3)=16.14,  $p = .001$ ] women reporting higher fitness evaluation reported less temptation to not exercise compared to women reporting lower fitness evaluation. In conclusion, fitness orientation and fitness evaluation are associated with TTM constructs proposed to influence physical activity maintenance. Prospective and randomized control methods are warranted to further clarify the mechanisms by which fitness perceptions influence physical activity maintenance among men and women.

CORRESPONDING AUTHOR: Elizabeth A. Fallon, PhD, Department of Kinesiology, Kansas State University, Manhattan, KS, 66506; efallon@ksu.edu

## D-147g PERCEPTIONS OF BEHAVING CONSISTENTLY WITH ONE'S EXERCISE IDENTITY: A LATENT CLASS GROWTH MODELLING ANALYSIS OF ASSOCIATED FACTORS

Shaelyn Strachan, PhD,<sup>1</sup> Shane Sweet, PhD candidate,<sup>1</sup> Lawrence Brawley, PhD<sup>2</sup> and Kevin Spink, PhD<sup>2</sup>

<sup>1</sup>University of Ottawa, Ottawa, ON, Canada and <sup>2</sup>University of Saskatchewan, Saskatoon, SK, Canada.

Identities are expectations associated with a role. According to Identity Theory individuals seek to behave consistently with endorsed identities. Individual perceptions that one has behaved consistently with identity expectations are seen as central to identity verification and are associated with positive psychological outcomes. In the context of exercise, concurrent studies suggest that consistency perceptions are associated with positive outcomes including self-efficacy and exercise frequency. The current research examines individuals' patterns in their perceptions of identity-behaviour consistency over time as well as psychological variables associated with these patterns. Measures of recent exercise, exercise identity strength, self-regulatory efficacy and perceptions of identity-behaviour consistency were completed by 314 exercisers at 3 time points each 4 weeks apart. Latent class growth modeling was used to statistically and objectively classify participants into different consistency, exercise, exercise identity and self-efficacy patterns and assess the relationship between these trajectories. Four consistency patterns emerged: low, medium-low, medium and high (7%, 39%, 47% and 7% of the sample per pattern, respectively). Multiple trajectories were found for strenuous exercise, exercise identity and self-efficacy (5, 5, and 4, respectively). Separate analyses showed that participants in the highest patterns for exercise, exercise identity, and self-efficacy had a greater probability of being in the high consistency group compared to other patterns of these constructs. Individuals in the low consistency group were more likely to be represented by those in the lower patterns of these same variables. Findings are consistent with Identity Theory and extent concurrent exercise identity research; perceptions

of exercise identity-behaviour consistency are associated with positive behavioural and psychological outcomes that may foster continued exercise adherence.

CORRESPONDING AUTHOR: Shaelyn Strachan, PhD, University of Ottawa, Ottawa, ON, K1N6N5; Shaelyn.Strachan@uottawa.ca

## D-147h THE INFLUENCE OF FUNCTIONAL PARAMETERS ON QUALITY OF LIFE IN SYSTOLIC HEART FAILURE PATIENTS

Alexandra Zavin, BS,<sup>1</sup> Kelly Allsup, BS,<sup>1</sup> Stewart Lecker, MD, PhD,<sup>3</sup> Jacob Joseph, MD,<sup>1,3</sup> Antonio Lazzari, MD<sup>1,2</sup> and Daniel E. Forman, MD<sup>1,3</sup>

<sup>1</sup>VA Boston Healthcare System, Jamaica Plain, MA; <sup>2</sup>Boston University School of Medicine, Boston, MA and <sup>3</sup>Harvard Medical School, Boston, MA.

While heart failure (HF) management focuses primarily on cardiac pumping performance and fluid dynamics, diminished functional capacity (FC) and quality of life (QOL) often dominate patient concerns and constitute principal determinants of clinical outcomes. Further analysis regarding FC and QOL is needed to better understand and treat the disease.

Purpose: An ongoing cross-sectional study to evaluate the relationship between FC and QOL measures in a HF population. We hypothesized that FC affects QOL among these patients.

Methods: 20 male adults (age range 50-86; mean age 66.8 years) with a diagnosis of systolic HF (left ventricular ejection fraction <40%) completed comprehensive FC and QOL assessments. FC was subdivided into aerobic and strength assessments. Aerobic capacity was evaluated using 6 minute walk (6MW) distance, Duke Activity Status Index (DASI), and cardiopulmonary exercise testing (to assess peak oxygen consumption [Peak VO<sub>2</sub>] and ventilatory anaerobic threshold [VAT]). Strength assessments included the timed up and go (TUG), sit to stand (STS), hand grip (hgrip), and 1 repetition maximum leg press (1RM). QOL was measured with the Kansas City Cardiomyopathy Questionnaire (KCCQ).

Results: Correlations were performed to assess levels of associations between KCCQ and FC. KCCQ correlated to most aerobic functional indices including DASI ( $r = 0.66$   $p = 0.002$ ), Peak VO<sub>2</sub> ( $r = 0.53$   $p = 0.02$ ), and VAT ( $r = 0.48$   $p = 0.04$ ). In contrast, strength measures and 6MW showed no significant correlations.

Conclusion: Aerobic capacity may be a key determinant of QOL that should be emphasized in HF management. Therapies to enhance aerobic performance may also provide relatively greater impact on QOL than strength-building efforts. Further research is needed to determine whether aerobic enhancing therapies would improve QOL.

CORRESPONDING AUTHOR: Alexandra Zavin, BS, VA Boston Healthcare System, Jamaica Plain, MA, 02130; alezavin@gmail.com

## D-147i THE EFFECTS OF IMPLEMENTATION INTENTIONS ON VOLUNTEER FIREFIGHTER EXERCISE BEHAVIOR: A RANDOMIZED CONTROLLED STUDY

Rodney Hammer, PhD<sup>1</sup> and Kerstin Schroder, PhD<sup>2</sup>

<sup>1</sup>Cache County Fire District, Logan, UT and <sup>2</sup>University of Alabama at Birmingham, Birmingham, AL.

The current study used a randomized controlled design to determine if an implementation intention intervention based on the Health Action

Process Approach (Schwarzer & Luszczynska, 2008) would increase exercise behavior in volunteer firefighters. The treatment group received a survey that prompted them to create exercise implementation intentions by answering "where," "when," and "how" they will exercise while the control group survey included a general exercise message.

We hypothesized (1) that the implementation intervention would increase exercise behavior over time while the general exercise message would have no effects; (2) that firefighters in Transtheoretical Model (TTM) Stages 1-3 would show greater increases in exercise than firefighters in TTM Stages 4 and 5; and (3) that there would be an interaction between the intervention and stage membership such that the intervention would be more effective in firefighters in TTM stages 1-3.

Negative binomial regression showed that the intervention was a statistically significant predictor of increases in exercise minutes over a 2-week interval ( $p = .03$ ,  $B = 0.24$ ,  $SEB = .11$ ), supporting the first hypothesis (treatment group: pre:  $M = 423.0$ ,  $SD = 499.3$ ; post:  $M = 439.0$ ,  $SD = 384.4$ ; control group: pre:  $M = 323.5$ ,  $SD = 378.9$ , post:  $M = 297.9$ ,  $SD = 267.9$ ).

Firefighters in TTM stages 1 - 3 showed an increase ( $M = 53.0$  min/2-weeks,  $SD = 435.4$ ) in exercise behavior while firefighters in stages 4 and 5 exhibited a decrease ( $M = -85.4$  min,  $SD = 481.6$ ); however, the effects of TTM stage on behavior change were not significant. Further, although there was a tendency towards a greater increase in exercise among firefighters in TTM stages 1 - 3, no significant interaction between TTM-stage and treatment group was found. In conclusion, this research suggests implementation intention formation increased exercise behavior in volunteer firefighters who do not exercise or are not regular exercisers. Future research with a stronger intervention is warranted.

CORRESPONDING AUTHOR: Rodney Hammer, PhD, Cache County Fire District, Logan, UT, 84321; rod.hammer@aggiemail.usu.edu

### **D-158a** **DISPARITIES IN HPV VACCINATION AND SOURCES OF INFORMATION ACROSS ETHNICALLY DIVERSE WOMEN**

Luz M. Garcini, MA,<sup>1</sup> Jessica L. Barnack-Tavlaris, PhD<sup>2</sup> and Elizabeth A. Klonoff, PhD,<sup>1,2</sup>

<sup>1</sup>SDSU/UCSD Joint Doctoral Program in Clinical Psychology, San Diego, CA and <sup>2</sup>SDSU/UCSD Cancer Disparities Partnership, San Diego, CA.

Although an unlikely consequence of the Human Papillomavirus (HPV), persistent infection with HPV can lead to cervical cancer (Cuschieri, Horne, Szarewski, & Cubie, 2006). Estimates show that over 50% of the U.S. population contract HPV in their lifetime (CDC, 2008). HPV vaccination has been found to be safe and highly effective in preventing HPV infection (CDC, 2008); however, rates of HPV vaccination are low (Kahn, et al, 2008), and limited information exists on the use of the vaccine and sources of HPV information across ethnic groups. The present study explored differences in HPV vaccination and sources of information among young adult women varying in ethnicity, from the 2007 California Health Interview Survey (CHIS, 2007). This includes responses from 2068 women aged 18 to 27 years ( $M=22.7$ ,  $SD=2.9$ ). Overall, the majority of women have heard about the HPV vaccine (71.8%), but only 12.8% had been vaccinated. Of those vaccinated, only 32% received all three necessary shots. Asian Americans and Latinas were less likely than Whites and African Americans to have heard about the vaccine ( $\chi^2$

(4,  $n = 2068$ ) = 128.7,  $p < .001$ , Cramer's  $V=.25$ . Regardless, no significant differences were found in the use of HPV vaccine across ethnic groups ( $\chi^2$  (4,  $n = 1484$ ) = 6.57,  $p = .16$ ), with all groups having low rates of vaccination. In terms of sources of HPV information, African Americans, Latinas, and Whites reported healthcare providers and TV ads as their primary sources of HPV information, whereas Asian Americans reported TV ads and school as their primary sources. None of the ethnic groups reported the internet as an important source of HPV information, nor did they report their family or friends to be sources of information. Further discussion of results will include consideration of findings in terms of implications for research and development of community interventions. Limitations of the study and directions for future research will also be discussed.

CORRESPONDING AUTHOR: Luz M. Garcini, MA, SDSU/UCSD JDP, SDSU/UCSD Joint Doctoral Program in Clinical Psychology, San Diego, CA, 92130; lgarcini@righttodream.org

### **D-158b** **"COWBOY UP?": ROCKY MOUNTAIN MALES HPV VACCINATION INTENTION**

Julie E. Angiola, MS<sup>1</sup> and Anne M. Bowen, PhD<sup>2</sup>

<sup>1</sup>Psychology, University of Wyoming, Laramie, WY and <sup>2</sup>Nursing, University of Wyoming, Laramie, WY.

Gardasil for use in males provides men with a means to prevent acquiring HPV, the most common STI in the U.S. This two-part study aimed to examine the HPV vaccination knowledge and behavior of frontier-state college men at pre- ( $N=101$ ) and post-approval ( $N = 134$ ) of the vaccine for males. Participants completed a vaccination survey to assess knowledge and factors that may influence their decision to vaccinate. Results indicated that all participants possessed low levels of HPV knowledge with mean knowledge scores of 8.56 ( $SD = 2.42$ , range = 0-14; pre) and 8.62 ( $SD = 2.13$ , range = 0-14; post). The majority of men had no intention of receiving the HPV vaccine. In the pre-approval group, 13 men and 8 men in the post-approval group seriously considered receiving the vaccine. A total of 5 men in the post-approval group had already received the vaccine. When asked about possible concerns regarding vaccine uptake, men in both groups provided qualitative data regarding manliness and "emasculatation." Using both the Health Belief Model and the Transtheoretical Model's Stages of Change, we then examined which factors might increase participant's decision to vaccinate. Intent to vaccinate was examined using logistic regression; tests of the full model with all four predictors against a constant-only model were found to be statistically significant in the pre-approval group,  $X^2$  (4,  $N=134$ ) = 49.30,  $p < .000$ , Nagelkerk  $R^2 = .76$ , as well as the post-approval group,  $X^2$  (4,  $N=101$ ) = 46.19,  $p < .000$ , Nagelkerk  $R^2 = .79$ . Overall correct classification was 90.3% and 89.6% respectively. Cues to action significantly predicted intention to receive the HPV vaccine in both groups. Men in the pre-approval group who were influenced by cues to action were 6.06 times more likely to receive the HPV vaccine ( $p < .000$ ) while men in the post-approval group were 3.18 ( $p = .028$ ) times more likely. Finally, men in the post-approval group who were likely to receive the HPV vaccine in the future were influenced by perceived expectations ( $p = .004$ ) and perceived threat ( $p = .01$ ).

CORRESPONDING AUTHOR: Julie E. Angiola, MS, Psychology, University of Wyoming, Laramie, WY, 82071; jangiola@uwyo.edu

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

## D-162a

### A FORGOTTEN SEXUALITY: CONTENT ANALYSIS OF BISEXUALITY IN MEDICAL RESEARCH

Christine E. Kaestle, PhD<sup>1</sup> and Adrienne Ivory, PhD<sup>2</sup>

<sup>1</sup>Human Development, Virginia Tech, Blacksburg, VA and

<sup>2</sup>Communication, Virginia Tech, Blacksburg, VA.

Background: Sexual minorities experience major health disparities and bisexuals may have special health concerns.

Methods: To describe current strengths, deficiencies, and trends over time in the medical literature on bisexual health we conducted a content analysis of full articles with census sampling to select all references listed in the PubMed database containing the term "bisexual" or "bisexuality" published over a period of 3 years (N= 348 articles).

Results: Methodological approaches favored cross-sectional surveys. Random sampling was uncommon. Frequently, articles simply merged data on bisexual subjects with other sexually minorities. Fewer than 20% of the articles that discussed bisexuality actually analyzed data for bisexuals as a separate group. Articles that analyzed data from bisexual subjects separately usually used self-reported identity in their operationalizations and rarely measured multiple dimensions of orientation. Study samples were demographically homogeneous, with poor representation of women, socioeconomic status, and minorities. The outcomes focused on a few common issues, including sexual risk behaviors, sexual health, illicit drug use, tobacco and alcohol use, and mental health problems. One fifth of the articles framed bisexuals as an infection-bridge between populations while about one sixth framed bisexuality as a legitimate identity. Over 90% of the bisexuality medical research was atheoretical.

Conclusions: The medical literature does not outline a clear agenda specific to bisexual health. Physicians and medical researchers can address the lack of representation in the medical literature by challenging assumptions and focusing more research on the needs of forgotten minority groups.

CORRESPONDING AUTHOR: Christine E. Kaestle, PhD, Human Development, Virginia Tech, Blacksburg, VA, 24061; kaestle@vt.edu

## D-162b

### SEXUAL PARTNER CONCURRENCY AMONG AFRICAN AMERICAN ADOLESCENTS

Cherrie B. Boyer, PhD,<sup>1</sup> Sarrah J. Reed, MA,<sup>2</sup> Audrey Bangi, PhD,<sup>1</sup>

Nicolas Sheon, PhD,<sup>1</sup> Gary W. Harper, PhD,<sup>3</sup> Joseph A. Catania, PhD,<sup>4</sup>

Kimberly Richards, PhD<sup>4</sup> and M. Margaret Dolcini, PhD<sup>4</sup>

<sup>1</sup>University of California, San Francisco, San Francisco, CA;

<sup>2</sup>Michigan State University, East Lansing, MI; <sup>3</sup>DePaul University, Chicago, IL and <sup>4</sup>OregonState University, Corvallis, OR.

African American adolescents have higher rates of sexually transmitted infections (STIs) than any other racial/ethnic group of adolescents; their sexual behaviors alone do not account for this high burden of STIs. Research suggests that social network characteristics such as sexual partner concurrency (overlapping in time) may help to explain the high rates of STIs. Few studies have examined the role of gender or cognitive and ecological factors associated with sexual partner concurrency. Thus, we examined gender differences and associations among cognitive (attitudes, beliefs) and ecological factors (peer, parental, other influences) regarding relationship dynamics, sexual behavior, and gender ideologies. A purposive sample of African American adolescents were recruited from youth-serving, community organizations in two urban cities for a study on gender and sexuality using gender-matched, semi-structured, audio-taped

interviews. We transcribed and coded interviews from sexually experienced males (n=12) and females (n=11) using a cross-case analysis to identify thematic patterns. Males and females reported similar descriptions of sexual behavior and dating relationships among peers, including use of comparable lexicon and terminology for the prevalence of sexual partner concurrency and inconsistent condom use during partnership concurrency. Gender differences were identified in the type of communication participants have with parents and other social network members about sexual partner concurrency. Males and females also held divergent beliefs about why sexual partner concurrency exists and had varying levels of knowledge about the consequences of sexual partner concurrency. Gender differences in participants' attitudes, beliefs, and behaviors related to sexual partner concurrency were identified. These findings hold implications for the development of gender-specific STI/HIV prevention interventions for African American adolescents.

CORRESPONDING AUTHOR: Cherrie B. Boyer, PhD, Department of Pediatrics, Division of Adolescent Medicine, University of California, San Francisco, San Francisco, CA, 94143-0503; BoyerC@peds.ucsf.edu

## D-162c

### FAMILIAL MESSAGES REGARDING DATING AMONG AFRICAN AMERICAN ADOLESCENTS

Gary W. Harper, PhD, MPH,<sup>1</sup> A. Timmons, MA,<sup>1</sup> D. H. Tyler, MA,<sup>1</sup>

D. N. Motley, BA,<sup>1</sup> J. A. Catania, PhD,<sup>2</sup> C. B. Boyer, PhD<sup>3</sup> and M.

M. Dolcini, PhD<sup>2</sup>

<sup>1</sup>Psychology, DePaul U., Chicago, IL; <sup>2</sup>Public Health, Oregon State U., Corvallis, OR and <sup>3</sup>Pediatrics, U. of California San Francisco, San Francisco, CA.

Since adolescent sexual risk behaviors typically occur within the context of dating, it is critical to understand the role that family members play in shaping health-promoting dating behaviors. This study examined the influence of multiple family members on adolescent dating among African American youth, and the implications this has for sexual health interventions. A purposive sample of 51 sexually active African American youth (male=32; female=19; aged 15-17) living in low-income neighborhoods in 2 cities with high rates of HIV/STIs was enrolled. Semi-structured qualitative interviews were conducted, digitally recorded, transcribed and entered into NVIVO to assist with analyses. Data were analyzed using a phenomenological framework. Messages from family members related to three temporal phases of dating: pre-relationship, relationship and post-relationship. Pre-relationship messages included those focused on: a) partner attraction (attraction through physicality, attraction through status); b) dating initiation (passive communication, active communication, dating strategies); and c) partner selection. Relationship messages included those focused on: a) maintenance of dating relationships (mutual independence, pleasing partner, respecting partner, showing affection, refraining from violence); b) recommended dating behaviors; c) self-care in a relationship (withholding trust, moderating commitment, maintaining familial communication); and d) outcomes of dating/relationships. Post-relationship messages included those focused on: a) consequences of infidelity; and b) termination of dating relationships. Results demonstrate that family members discuss an array of complex issues related to dating/relationships, reflecting a desire to protect adolescents and promote healthy dating relationships. Findings suggest that family members should be actively engaged in public health interventions focused on promoting sexual health among African American adolescents.

CORRESPONDING AUTHOR: Gary W. Harper, PhD, MPH, Psychology, DePaul University, Chicago, IL, 60607; gharper@depaul.edu

**D-164a**  
**PERCEIVED SLEEP-RELATED DISABILITY IN PATIENTS WITH OBSTRUCTIVE SLEEP APNEA PRESENTING FOR BARIATRIC SURGERIES: PREDICTORS AND ASSOCIATION WITH WEIGHT LOSS**

Megan M. Hood, PhD, Joyce Corsica, PhD and Stephanie Fitzpatrick, MS  
 Behavioral Sciences, Rush University Medical Center, Chicago, IL.

Obese patients with comorbid medical conditions who present for bariatric surgery often perceive themselves as being disabled with respect to one or more areas of functioning. Those with obstructive sleep apnea (OSA) frequently perceive some degree of disability around sleep, though factors that predict level of perceived sleep-related disability (PD-S) are unknown. 92 individuals with OSA presented for a psychological evaluation prior to bariatric surgery. Measures included the Beck Depression Inventory-II (BDI-II), the Personality Assessment Inventory (PAI), and the Perceived Disability Scale (PD). The PD is a self-report measure of the patient's current level of disability in ten areas, including sleep. Using standard multiple regression, demographic and psychological variables theoretically associated with OSA severity or perceptions of disability [age, gender, BMI, insurance status, BDI, somatic complaints, anxiety, PD total disability (excluding PD-S)] explained 38% of the variance in PD-S. Only depression ( $\beta = .46, p = .004$ ) emerged as a significant predictor. Weight loss outcome data was available for a small number of gastric bypass patients at 6 month ( $n = 13$ ) and 12 month ( $n = 10$ ) time points. PD-S scores significantly predicted percentage of excess weight loss (PEWL) at 6 months ( $\beta = -.56, p = .045$ ) and explained 32% of the variance. Even when controlling for depression, PD-S remained a significant predictor of PEWL at 6 months ( $R^2_{change} = .37, p = .04$ ). Although not significant, results indicate a similar relationship between PD-S and PEWL at 12 months ( $\beta = -.50, p = .14$ ). These results suggest that individuals who perceive their sleep as more disabled may be at risk for lower weight loss post-surgery. While greater depressive symptomatology is associated with poorer perceived sleep-related functioning, it does not explain the relationship between sleep-related disability and poorer weight loss outcomes. Therefore, sleep-related disability may be an important construct to evaluate in the preoperative evaluation.

CORRESPONDING AUTHOR: Megan M. Hood, PhD, Behavioral Sciences, Rush University Medical Center, Chicago, IL, 60612; meganmhood@gmail.com

**D-164b**  
**CROSS-SECTIONAL AND PROSPECTIVE RELATIONSHIPS BETWEEN SLEEP AND OBESITY IN RURAL LOUISIANA SCHOOL CHILDREN**

Jeanne M. Gabriele, PhD,<sup>1,3</sup> Robert L. Newton, PhD,<sup>2</sup> Corby K. Martin, PhD,<sup>2</sup> Hongmei Han, PhD,<sup>2</sup> Allison B. Davis, MA<sup>2</sup> and Donald A. Williamson, PhD<sup>2</sup>

<sup>1</sup>Mental Health, G.V. (Sonny) Montgomery Medical Center, Jackson, MS; <sup>2</sup>Pennington Biomedical Research Center, Baton Rouge, LA and <sup>3</sup>University of Mississippi Medical Center, Jackson, MS.

Short sleep duration has been associated with increased obesity in children. However, most studies were cross-sectional and assessed sleep via surveys. This study assessed cross-sectional and prospective relationships among objective measures of sleep duration, percent

body fat (PBF) and body mass index Z score (BMIZ) in a sample of rural, Louisiana children. Assessments were completed at baseline (T1) and 18 months (T2). In-person height, weight (Tanita 310), and PBF (Tanita 310) were measured. Physical activity and sleep duration (Actigraph GT1M) were accessed over 72 h. Energy intake at lunch (food photography) was assessed over three days. Participants ( $N = 262$ , T1 M age = 10.38 yrs; 68.9% female; 75.6% African-American (AA)) with accelerometer data for at least two nights were used in analyses. Repeated measures ANCOVA revealed a race-by-time interaction for sleep ( $p < .01$ ). At T1, AAs (8.13 h) and Caucasians (8.44 h) did not differ in sleep duration. At T2, AAs (7.78 h) had significantly ( $p < .01$ ) shorter sleep duration than Caucasians (8.19 h). Hierarchical regression analyses revealed that T1 sleep duration was related to obesity outcomes at T1 (BMIZ  $\beta = -.15, p < .05$ ; PBF  $\beta = -.16, p < .05$ ) and T2 (BMI Z  $\beta = -.19, p < .05$ ; PBF  $\beta = -.18, p < .05$ ). T2 sleep duration was not related to T2 obesity outcomes. Race moderated the relationship between sleep and change in BMIZ between T1 and T2. For Caucasians, T1 sleep duration was related to change in BMIZ ( $\beta = -.60, p < .05$ ). For AAs, there was no relationship between T1 sleep duration and change in BMI Z. Neither T1 sleep duration nor the interaction between T1 sleep duration and race were related to change in PBF. All analyses controlled for age, gender, race, physical activity, and lunch energy intake. Findings show partial support for a cross-sectional relationship and, in Caucasians, prospective relationship between sleep and obesity outcomes.

CORRESPONDING AUTHOR: Jeanne M. Gabriele, PhD, G.V. (Sonny) Montgomery VA Medical Center, Jackson, MS, 39216; JeanneGabriele@hotmail.com

**D-175a**  
**SMOKING CESSATION FOR COMMUNITY MENTAL HEALTH CONSUMERS WITH SEVERE MENTAL ILLNESS**

Marne L. Sherman, PhD<sup>1,2</sup> and David D. Barnum, PhD<sup>2,1</sup>  
<sup>1</sup>Dept. of Psychology, University of Missouri - Kansas City, Kansas City, MO and <sup>2</sup>The Guidance Center, Leavenworth, KS.

Individuals with severe mental illness (SMI) have higher rates of premature mortality from cancer than the general population, and are likely to have lifestyles that increase the risk for cancer. One behavioral risk factor is the high rate of smoking within this population. Community mental health centers (CMHC) provide a continuum of care addressing a broad spectrum of needs presented by those with SMI and may serve as particularly useful settings for implementing health behavior change programs for this population. However, little has been reported regarding the interest of those with SMI in interventions that promote healthy behaviors and reduce cancer risk. This study examines the interest of CMHC consumers with SMI in taking part in a smoking cessation program. The data were collected in a rural Midwestern CMHC from consumers in an Adult Psychosocial Program (APP) including 32 individuals, with an average age of 43.3 years ( $SD = 12.6$ ), who are primarily female (63%), White (78%), with at least a high school education (73%). In a phase one survey, rates of smoking reported were 55% for females and 66% for male consumers. A phase two survey was used to determine interest in wellness promotion programs, including a smoking cessation program, assessed on a 10-point visual analog scale. Overall, consumers with SMI who were also smokers were only moderately interested in a smoking cessation program ( $M = 5.54, SD = 3.42$ ). However, reported interest was higher for male consumers ( $M = 7.14, SD = 2.23$ ) than female consumers ( $M = 3.30, SD = 3.73$ ) and this difference was statistically significant ( $p < .05$ ) on t-test. Smokers were

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

also less interested in a smoking cessation program if diagnosed with Schizophrenia ( $M=4.80$ ,  $SD=3.77$ ) compared to Bipolar Disorder ( $M=7.93$ ,  $SD=1.28$ ); but this pattern was not statistically significant ( $p < .11$ ) and did not explain differences found between males and females. Discussion of differential motivating factors of those with SMI will be provided.

CORRESPONDING AUTHOR: Marne L. Sherman, PhD, Dept. of Psychology, University of Missouri - Kansas City, Kansas City, MO, 64110; shermanma@umkc.edu

## D-175b

### PARENTING STYLE PREDICTS LONG-TERM DAILY AFFECT IN ADOLESCENT SMOKERS

Melanie J. Richmond, MA,<sup>1</sup> Robin J. Mermelstein, PhD<sup>1</sup> and Lauren S. Wakschlag, PhD<sup>2</sup>

<sup>1</sup>Psychology, University of Illinois Chicago, Chicago, IL and <sup>2</sup>Medical Social Sciences, Northwestern University, Chicago, IL.

Negative affect (NA) and adolescent smoking are strongly linked. Factors that lead to better mood outcomes in adolescent smokers may reduce smoking escalation. Parenting is one important predictor of adolescent mood. This study used both ecological momentary assessment (EMA; to assess mood) and direct observation of parent-child interaction (to assess parenting style) to examine how parenting style differentially influenced changes in adolescent NA over time for smokers and non-smokers. Data come from the baseline, 6-, and 24-month waves of a study investigating the social-emotional contexts of adolescent smoking. Participants were 9th and 10th graders ( $N = 124$ ; 57.3% female; 53.2% white) who smoked at least once in the past year and were thus at risk for escalation. Parent-adolescent problem-solving interactions were video-taped in families' homes between baseline and 6-months. Independent raters coded each video segment using a global rating system from which we derived two factors: engaged (positive communication) and directive (assertive communication). NA was assessed at 6- and 24 months over 7-day EMA periods. EMA devices randomly prompted adolescents 5-7 times per day to rate their mood using adjective scales. The NA change outcome was created by subtracting the mean of the 6- and 24-month EMA reports. Moderated regression (separately for mothers and fathers) examined how engaged and directive styles and their interactions with baseline adolescent monthly smoking (yes or no; 38% smokers) uniquely predicted a change in NA from 6 to 24-months, controlling for adolescent gender, baseline depression (CES-D), and 6-month NA. Maternal and paternal engaged style predicted a decline in NA for smokers but not nonsmokers ( $p < .05$ ). Nonsmokers had overall lower NA than smokers. Maternal directive style predicted escalation in NA for all adolescents ( $p < .05$ ). These results provide guidance for parental interventions to reduce risk factors for adolescent smoking.

CORRESPONDING AUTHOR: Melanie J. Richmond, MA, Psychology, University of Illinois Chicago, Chicago, IL, 60608; MRichm4@uic.edu

## D-175c

### EFFECTS OF RACE ON ACUTE TOBACCO WITHDRAWAL

Cendrine Robinson, BS,<sup>1</sup> Andrew J. Waters, PhD,<sup>1</sup> Stephen Heishman, PhD,<sup>2</sup> Caryn Lerman, PhD<sup>3</sup> and Wallace Pickworth, PhD<sup>2</sup>  
<sup>1</sup>Department of Medical & Psychology, Uniformed Services University of the Health Sciences, Bethesda, MD; <sup>2</sup>National Institute of Drug Abuse, Baltimore, MD and <sup>3</sup>University of Pennsylvania, Philadelphia, PA.

The acute tobacco withdrawal syndrome is an important component of tobacco dependence. Little research has investigated racial differences in acute tobacco. We investigated whether Black ( $n = 104$ ) and White smokers ( $n = 99$ ) differed in abstinence-related changes on self-report measures, cognitive performance tasks, and physiological responses. Smokers not wishing to quit completed two counterbalanced experimental sessions. Before one session, they abstained from smoking for over 12 hours, and before the other they smoked normally. Blacks reported smoking fewer cigarettes per day than Whites ( $p < .01$ ), but the groups did not differ on scores on the FTND. Analyses of withdrawal data used repeated measures  $2 \times 2$  ANOVA, with race as a between-subjects factor and experimental state as a within-subject factor. A race by state interaction was observed for ratings on the Questionnaire for Smoking Urges (QSU) questionnaire and on the total scores of the Wisconsin Withdrawal Smoking Scale (WVSW). Inspection of the data revealed that Blacks tended to give higher ratings than Whites at the non-abstinent session, and that this difference was eliminated at the abstinent session. Thus, Blacks tended to report high levels of craving and withdrawal (assessed by the QSU and WVSW) when non-abstinent, but they experienced smaller abstinence-induced changes in craving and withdrawal. A main effect of race (in the absence of a race by state interaction) was observed for systolic and diastolic blood pressure and for performance on Rapid Visual Information Processing task. There were no consistent effects involving race on brain electroencephalogram measures. Overall, there was some evidence that Blacks reported smaller abstinence-induced changes in subjective craving and withdrawal than Whites, but there was little evidence that this pattern was observed on objective measures. In addition, Blacks did not report significantly lower levels of craving and withdrawal when abstinent.

CORRESPONDING AUTHOR: Cendrine Robinson, BS, Uniformed Services University of the Health Sciences, Washington, DC, 20002; crobinson@usuhs.mil

## D-175d

### THE ASSESSMENT OF TIME ORIENTATION AS A PREDICTOR OF SMOKING

Preeti Kalra, PhD,<sup>1</sup> William Satariano, PhD,<sup>2</sup> Alan Hubbard, PhD,<sup>3</sup> John Finney, PhD,<sup>5</sup> Scott Sherman, MD, MPH<sup>4</sup> and Philip Zimbardo, PhD<sup>6</sup>

<sup>1</sup>Kaiser Permanente, Division of Research, Oakland, CA; <sup>2</sup>Community Health and Human Development and Epidemiology, UC Berkeley, Berkeley, CA; <sup>3</sup>Biostatistics, UC Berkeley, Berkeley, CA; <sup>4</sup>Departments of Medicine (General Internal Medicine) and Psychiatry, New York University, New York, NY; <sup>5</sup>Psychiatry and Behavioral Sciences, Stanford University, Palo Alto, CA and <sup>6</sup>Department of Psychology, Stanford University, Palo Alto, CA.

Background: Studies have acknowledged the importance of time orientation as a predictor of success in smoking cessation programs but they have used proxy measures or focused only on a particular domain of time orientation. There continues to be a need to examine

the all domains of time orientation including present, past and future domains and to examine time orientation in the context of an intervention.

**Methods:** To begin to address these issues we identified the time orientation of participants (n=150) at entry into an ongoing project examining telephone-based smoking cessation care in the VA Sierra Pacific Healthcare Network, the Telephone Care Coordination Program for Smoking Cessation Project (TeleQuit), a primary care-based smoking cessation program and explored the relationship of time orientation to other potential predictors of smoking cessation. We examined whether time orientation was associated with number of cigarettes smoked at baseline. We also examined the relationship time orientation to a number of socioeconomic status variables.

**Results:** Across the five domains of the Zimbardo Time Perspective Inventory, we found a significant relationship between being present hedonistic and number of cigarettes smoked. We also utilized linear regression models describing the associations between each of the individual questions (n=56) from the ZTPI and number of cigarettes smoked. Three individual items had p-values of at or below 0.05. In addition, we found that being present orientated was associated with lower levels of education and income. In contrast, those with greater levels of education and income tended to be future oriented.

**Conclusion:** We found that heavier smokers were more likely to be present hedonistic, so focusing on long-term consequences may have little effect.

**CORRESPONDING AUTHOR:** Preety Kalra, PhD, Kaiser Permanente, Division of Research, Oakland, CA, 94612; Preety.X.Kalra@kp.org

## **D-175e** **SUPPORT PREFERENCES OF HOMELESS PERSONS ENGAGED IN SMOKING CESSATION TREATMENT**

Kathryn Goldade, PhD, Guy-Lucien Whembolua, PhD and Kolawole S. Okuyemi, MD, MPH  
Family Medicine and Community Health, University of Minnesota, Minneapolis, MN.

Among the 4 million homeless persons in the United States, the prevalence of cigarette smoking is an alarming 70%, three times the national average. Pervasiveness and socially normative patterns of smoking present great challenges to cessation for this underserved population. Limitations on health care access, availability and cost of pharmacotherapy, as well as daily challenges to securing food and sleeping quarters contribute to challenges. Quantitative data from an ongoing community-based randomized clinical trial support the role played by social influence on smoking; for respondents (n=428), the average number of "their 5 best friends" who smoke was 4.26; and the number of friends who smoke was positively associated with smoking levels (p < .05). Data from another survey of a comprehensive sample of homeless persons in Minnesota (n=6,090), showed that among homeless non-smokers (former and never smokers), 59% expressed a willingness to help others quit smoking. In order to effectively apply this community-based interest in supporting smoking cessation intervention among homeless smokers, it is important to qualitatively assess the meaning of quitting for homeless smokers. The meaning of quitting is defined as benefits and drawbacks to not smoking anymore, anticipated changes in social relationships as well as health status, as well as how much smoking figures into persons' self-concept, or their view of themselves. Further, it is important to understand preferences for the specific preferred format of community-based support. Preliminary qualitative analysis of motivational

interviewing (MI) counseling sessions (n=115) and semi-structured in-person interviews (n=10) conducted as a part of an ongoing multi-sited, community based randomized clinical trial show six overarching themes. Within an overarching theme of social concerns, three sub-themes are the most relevant to peer support intervention design: social risk, social identity, and social self-concept. Homeless smokers express preferences for empathetic and encouraging support.

**CORRESPONDING AUTHOR:** Kathryn Goldade, PhD, Family Medicine and Community Health, University of Minnesota, Minneapolis, MN, 55414; kgoldade@umn.edu

## **D-183a** **PERCEIVED STRESS SCALE CORRELATES WITH HEALTH CARE COSTS**

Michael J. Baime, MD,<sup>1</sup> Ruth Q. Wolever, PhD,<sup>2</sup> William Pace, PhD,<sup>3</sup> William M. Morris, BA<sup>3</sup> and Kyra J. Bobinet, MD MPH<sup>4</sup>  
<sup>1</sup>Penn Program for Mindfulness, University of Pennsylvania Health System, Philadelphia, PA; <sup>2</sup>Duke Integrative Medicine, Duke University Health System, Durham, NC; <sup>3</sup>Informatics, Aetna, Inc., Hartford, CT and <sup>4</sup>Health & Wellness Innovation, Aetna, Inc., Hartford, CT.

Stress relates to both health care cost and utilization, but the relationship has not been quantified with a widely available, psychometrically sound instrument that would allow estimation of the cost burden of stress or the cost-effectiveness of stress management interventions. We analyzed data obtained from a workplace stress management research protocol to determine the relationship between stress and health care costs. Subjects consisted of 458 eligible consenting employees (75% female, mean (sd) age = 44 (9.8), range 22-64) of a large insurance company. The Perceived Stress Scale (PSS), a 10 item Likert scale measure of subjective stress during the preceding month, was administered to all subjects. Cost data was calculated using total approved medical claims for the preceding twelve months. Total annual claims for a single individual were capped at \$30,000. Linear regression was used to model costs against PSS score, age, and gender. There was no collinearity among any of the three independent variables. The mean (sd) PSS score was 20 (6.3), and the mean 12-month capped health care cost was \$3,456.

There was a significant positive correlation between PSS scores and medical costs (p=0.017). Each 1-point PSS increase was associated with an annual increase of \$96.36 in costs (adjusted R<sup>2</sup>=0.048, CI=1.5-14.6). The regression model explained 4.8% of the cost variability among subjects, and the PSS score accounted for 20.9% of the total model explanatory power.

The PSS is brief, creates little subject burden, and has been validated in numerous populations. Further longitudinal study is warranted to determine if changes in PSS are associated with changes in health care cost and utilization. Use of the PSS in this manner may allow cost-effectiveness estimates in research with interventions that reduce PSS scores.

**CORRESPONDING AUTHOR:** Michael J. Baime, MD, Dept of Medicine, Abramson Cancer Center, University of Pennsylvania School of Medicine, Philadelphia, PA, 19104; baime@mail.med.upenn.edu

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

## D-183b

### THE ASSOCIATION BETWEEN RELATIONSHIP QUALITY AND PHYSICAL HEALTH ACROSS ETHNIC GROUPS

Jared R. McShall, MA and Matthew D. Johnson, PhD  
Psychology, State University of New York at Binghamton,  
Binghamton, NY.

This study sought to describe the strength and direction of the association between relationship quality and physical health across different ethnicities, both within and between and different races. To measure relationship quality and health, scales were developed from questions in three national surveys: the National Comorbidity Survey Replication (N = 2,284), the National Latino and Asian American Study (N = 3,000), and the National Survey of American Life (N = 3,391). Relationship quality was positively correlated with overall health across different races and ethnicities. The association was not as consistent for specific chronic health problems. Relationship quality and overall physical health are associated across different races and ethnicities, which has implications for applying couple interventions more broadly.

CORRESPONDING AUTHOR: Jared R. McShall, MA, Psychology,  
State University of New York at Binghamton, Binghamton, NY,  
13902; jmcshal1@binghamton.edu

## D-183c

### A PILOT FEASIBILITY STUDY FOCUSED ON POSTTRAUMATIC GROWTH

Patricia Tomich, PhD and Jennifer Moyer, BS  
Psychology, Kent State University, Warren, OH.

This research examines the feasibility of a recruitment method that seeks to shift current research regarding the way posttraumatic growth is conceptualized and measured. To date, nearly all studies assessing posttraumatic growth have relied on the recalled experience of growth. This pilot was designed to address limitations of previous research by comparing standings on growth dimensions pre- and post-diagnosis. This is the only way to determine whether genuine change has actually occurred. Of 30 women undergoing biopsies for yet undiagnosed breast masses who agreed to participate at Time 1 (pre-diagnosis), 22 completed baseline interviews. Of these 22, 4 were diagnosed with breast cancer. Of these 4, 3 completed Time 2 interviews (1-month later, post-diagnosis). Thus, 3 of 30 women initially recruited into the study (10%) were diagnosed with breast cancer, completed measures at Times 1 and 2, and were compared to age-matched controls with benign breast masses. Although the small sample size precludes definitive conclusions, within the context of this small pilot study, preliminary results suggest (a) self-reported growth following a diagnosis of cancer (perceived growth) is not associated with genuine positive change from pre- to post-trauma (actual growth) ( $r = -.39$ , ns), which suggests self-reported perceived growth may not be a true indicator of actual growth; (b) there were no group differences in perceived growth, but women diagnosed with breast cancer reported less actual growth than did controls ( $p < .05$ ), suggesting it may take time for true growth to be realized; and (c) more actual growth for women with breast cancer was related to less negative affect ( $p < .05$ ), but perceived growth was not related to physical or mental health. A full-scale study will be required to determine more reliable findings. Overall, use of a prospective recruitment procedure is feasible and may exert a sustained, powerful influence on posttraumatic research, because it would lead to a paradigm shift in the way posttraumatic growth is conceptualized and measured.

CORRESPONDING AUTHOR: Patricia Tomich, PhD, Psychology,  
Kent State University, Columbiana, OH, 44408; ptomich@kent.edu

## D-189a

### AFFECTIVE ASSOCIATIONS MEDIATE COGNITIVE INFLUENCES ON ADOLESCENT DRUG USE WILLINGNESS AND INTENTIONS

Erin M. Walsh, MS,<sup>1</sup> Marc T. Kiviniemi, PhD,<sup>1</sup> Carolyn R. Brown  
Kramer, PhD,<sup>2</sup> April L. Seifert, PhD,<sup>3</sup> Frederick X. Gibbons, PhD<sup>4</sup> and  
Meg Gerrard, PhD<sup>5</sup>

<sup>1</sup>University at Buffalo, Buffalo, NY; <sup>2</sup>Illinois Wesleyan University,  
Bloomington, IL; <sup>3</sup>unaffiliated, Minneapolis, MN; <sup>4</sup>Dartmouth  
College, Hanover, NH and <sup>5</sup>Dartmouth Medical School, Lebanon,  
NH.

Substance use and abuse often begins in adolescence, making understanding factors that influence adolescents' decisions to use drugs especially important. Much of the work on drug use and other adolescent health decision making focuses on cognitive factors (e.g., expected utility beliefs). In other domains, affective associations, the feelings and emotions individuals associate with a behavioral choice, have been shown to both influence behavior and mediate the influence of cognitive factors on behavioral choices. The purpose of this study was to examine whether behavioral affective associations predicted young adolescents' intentions and willingness to use marijuana and other drugs and whether affective associations mediated the influences of known cognitive factors on intentions and willingness to use. Adolescents ages 14 and 15 (N=128) self-reported their affective associations with marijuana and other drugs, expected utility beliefs concerning marijuana use, prototype perceptions of the type of person their age who uses drugs, and intentions and willingness to use marijuana and other drugs. More positive affective associations were associated with greater intentions and willingness to use drugs (intentions:  $b = 0.66$ ,  $p < 0.001$ ; willingness:  $b = 0.53$ ,  $p < 0.001$ ). Moreover, affective associations fully mediated the influence of expected utility beliefs and prototypes on both intentions and willingness (Sobel's  $z_s > 3.77$ ,  $ps < 0.001$ ). This demonstrates the utility of examining affective associations for understanding adolescents' substance use decisions. Incorporating affective factors into such intervention efforts may significantly increase their efficacy and effectiveness.

CORRESPONDING AUTHOR: Marc T. Kiviniemi, PhD, Community  
Health and Health Behavior, University at Buffalo, Buffalo, NY,  
14222; mtk8@buffalo.edu

## D-191a

### PERSONAL FAMILIARITY, BUT NOT KNOWLEDGE, PREDICTS WILLINGNESS TO CONSIDER ALTRUISTIC KIDNEY DONATION

Diane B. Bonfiglio, PhD,<sup>1</sup> Kristin K. Kuntz, PhD<sup>2</sup> and Nicolle R.  
Valentine, Bachelor's Candidate<sup>1</sup>

<sup>1</sup>Psychology, Ashland University, Ashland, OH and <sup>2</sup>Psychiatry, The  
Ohio State University Medical Center, Columbus, OH.

Several studies have investigated factors related to the decision to register as a cadaveric organ donor, but few have examined factors associated with living donation. This study investigated whether knowledge of the procedure and personal familiarity predicted willingness to become a living donor. Participants were 79 college students (mean age = 19.23 years) who were randomly assigned to the Education Condition (EC) or Control Condition (CC). EC participants read a packet of material from the National Kidney Foundation

regarding living donation. All participants then completed questionnaires assessing organ donation willingness, content knowledge, donation familiarity, and demographic information. Overall, participants were strongly supportive of organ donation. In the sample, 81% reported that they had already signed up to be a cadaveric donor. Moreover, 93.7% reported that they would be somewhat or very likely to be evaluated as a potential living organ donor for a family member, while 69.6% reported they would be somewhat or very likely to do so for a friend. Regarding altruistic donation, 20.3% reported they would be somewhat or very likely to volunteer to be a living donor for a stranger. After reading the packet, the EC demonstrated greater knowledge of living donation than did the CC ( $t(77) = 9.396, p < .001$ ). However, the EC did not report greater willingness to act as donors for family members, friends, or strangers (all  $p$ 's  $> .22$ ) than did the CC. There were no significant correlations between knowledge and willingness to act as a donor (all  $p$ 's  $> .28$ ). Interestingly, participants who personally knew a transplant recipient reported greater willingness to act as a potential altruistic living donor ( $t(77) = 2.193, p = .03$ ). This investigation was limited by the self-report nature of the outcome variables; thus, future investigations will assess participants' concern with social desirability and consider alternate means of assessing willingness to donate.

CORRESPONDING AUTHOR: Diane Bonfiglio, PhD, Psychology, Ashland University, Ashland, OH, 44805; [dbonfigl@ashland.edu](mailto:dbonfigl@ashland.edu)

#### D-191b

##### **A PILOT STUDY OF NEUROCOGNITIVE FUNCTIONING BEFORE AND FOLLOWING LUNG TRANSPLANTATION**

Benson M. Hoffman, PhD,<sup>1</sup> James A. Blumenthal, PhD,<sup>1</sup> Virginia F. O'Hayer, PhD,<sup>1</sup> Patrick J. Smith, PhD,<sup>1</sup> Michael A. Babyak, PhD,<sup>1</sup> R. Duane Davis, MD,<sup>2</sup> Martinu Tereza, MD<sup>3</sup> and Scott Palmer, MD<sup>3</sup>

<sup>1</sup>Department of Psychiatry and Behavioral Sciences, Duke University Medical Center, Durham, NC; <sup>2</sup>Department of Surgery, Duke University Medical Center, Durham, NC and <sup>3</sup>Department of Medicine, Duke University Medical Center, Durham, NC.

**Objective:** To characterize changes in neurocognitive functioning following lung transplantation and to examine predictors of change. **Methods:** Forty-nine adults with end-stage lung disease (COPD  $n = 22$ , cystic fibrosis  $n = 12$ , other  $n = 15$ ) completed tests assessing 2 domains of cognitive functioning: Executive Function (Stroop test, Animal Naming, Controlled Oral Word Association Test, Ruff 2&7 Test, and Trail Making Test) and Verbal Memory (Wechsler Memory Scale: Logical Memory, Digit Span, and Verbal Paired Associates), before and 6-months following lung transplantation. Alternate forms of the verbal memory tests were administered at each time point. Test scores were standardized into T-scores using demographically-adjusted normative data, and averaged within cognitive domains. Changes in domain scores were examined with paired  $t$ -tests. The General Linear Model was used to examine the effects of age, education, diagnosis, and baseline PCO<sub>2</sub>, 6-Minute Walk Test, depression (Beck Depression Inventory), and anxiety (State-Trait Anxiety Inventory) on post-transplant scores, controlling for pre-transplant scores. **Results:** Mean standardized test scores are considered within normal limits for Verbal Memory (pre:  $M = 48.6, SD = 6.2$ ; post:  $M = 50.8, SD = 4.8$ ) and for Executive Function (pre:  $M = 46.0, SD = 6.1$ ; post:  $M = 46.3, SD = 5.4$ ). Mean scores improved for Verbal Memory ( $M = 2.4, 95\% CI = 1.2, -3.6, p < .0001$ ), but not for Executive Function ( $p = .61$ ). Older age predicted lower post-transplant Executive Function scores after controlling for pre-transplant scores ( $b$  age =  $-0.13, 95\% CI = -0.23, -0.03, p = .03$ ). Hypothesized predictors

did not otherwise contribute to post-transplant scores. **Conclusions:** Memory may improve for patients following lung transplantation, whereas executive functioning may improve for younger patients and deteriorate for older patients.

CORRESPONDING AUTHOR: Benson M. Hoffman, PhD, Duke University Medical Center, Durham, NC, 27710; [Benson.Hoffman@Duke.Edu](mailto:Benson.Hoffman@Duke.Edu)

# 32<sup>nd</sup> Annual Meeting & Scientific Sessions

April 27-30, 2011 | Rapid Communications

## Author Index

Abrantes, Ana, A-146e  
Ahrold, Tierney, B-128d, C-162a  
Aigner, Carrie, A-117b  
Ainscough, Jessica, B-192b  
Alcaraz, Cassandra, C-175d  
Anderson, Derek, D-042a  
Angiola, Julie, D-158b  
Appelhans, Bradley, B-104f  
Aringazina, Altyn, D-118c  
Arredondo, Elva, D-147d  
Ayer, Lee Katherine, A-042c  
Baime, Michael, D-183a  
Baquero, Barbara, A-034c  
Baruth, Meghan, D-118f  
Beehler, Gregory, C-033c, D-125a  
Belanger, Lisa B-034h  
Bennett, Gary, B-104d  
Bevans, Margaret, A-192a  
Blake, Kimberly, A-156a  
Bleich, Sara, A-100a  
Boal, Emily, C-119d  
Bonfiglio, Diane, D-191a  
Bowen, Anne, A-190a  
Boyer, Cherrie, D-162b  
Boyer, Bret B-121d  
Boynton, Marcella, B-192c  
Branca, Alexis, C-065a  
Brintz, Carrie, A-042d  
Brode, Cassie, D-101c  
Bruce, Douglas, D-065b  
Buhi, Lori, A-100e  
Bussell, Valerie, B-034f  
Butler, Jorie, A-053c  
Buzaglo, Joanne, C-033h  
Campbell, Clare, B-167a  
Carr, Feridey, D-118g  
Cartreine, James, D-073d  
Ceglowski, Jennifer, C-042b  
Chait, Sari, B-104j  
Chatillion, Elizabeth, B-042b  
Chirinos, Diana, A-042b  
Choby, Alexandra, A-161a  
Cholka, Cecilia Brooke, D-118b  
Christy, Shannon, D-082b  
Clarke, Jennifer, B-177d  
Cobb, Nathan C-175b  
Cohn, Lawrence, A-117c  
Constantiner, Melissa, C-189c  
Cook, Andrew, C-126a  
Cooley, Mary, D-033f  
Cruess, Dean, B-034i  
Cukier, Yael, B-034e  
Cunningham, Julie, A-124b  
Davis, Catherine, C-148c  
DePalma, Mary, D-053c  
Der Ananian, Cheryl, D-042b  
Dindo, Lilian, A-074a  
Dolcini, M., B-164b  
Dominic, Oralía, D-053a  
Dominick, Gregory, A-146a  
Dubyak, Pamela, A-100g  
Ellison, Madelaine, D-147f  
Else, Heather, B-186b  
Errickson, Marissa, B-104g  
Escoto, Kamisha, B-104c  
Faseru, Babalola, B-177c  
Feliu, Miriam, B-128b  
Finan, Patrick, C-126b  
Flannery, Kelly, D-103a  
Floyd, Andrea, C-033b  
Forsythe, Laura, B-034a  
Fortier, Michelle, C-042d  
Frost, Stephanie, A-100b  
Fuemmeler, Bernard, B-073c  
Gabriele, Jeanne, D-164b  
Gallagher, Karen, D-147b  
Gamarel, Kristi, B-164a  
Gans, Kim, A-083a  
Ganuelas, Amy, A-100d  
Garcini, Luz, B-121c, D-158a  
Gaskins, Ronnesia, B-177a  
Gaston, Anca, B-154a, B-154b, C-148g  
Giesler, R., B-121h  
Gilliam, Wesley, A-124c  
Glenn, Beth, B-034b  
Goble, Layne, B-128e  
Goldade, Kathryn, D-175e  
Goldbacher, Edie, A-100c  
Goodrich, Kara, D-101g  
Grant, Christoffer, C-042c  
Griffin, Keri, A-161c  
Groer, Maureen, D-073c  
Grubina, Rozalina, D-053d, D-053e  
Guerin, Eva, C-148d  
Gyure, Maria, D-033d  
Hamann, Heidi, C-033a  
Hamilton, Jada, C-158a  
Hammer, Rodney, D-147i  
Harper, Gary, D-162c  
Harry, Kadie, A-034e  
Hartman, Sheri, C-148f  
Hartoonian, Narineh, C-101h  
Hayes, Rashelle, A-174f  
Haynie, Denise, D-082a  
Heckman, Bernadette, D-125c  
Hernandez, Felix, A-053a  
Hickman, Ronald, D-077a  
Hoffman, Benson, D-191b  
Holt, Peter, D-101b  
Hood, Megan, C-101a, C-101b, D-164a  
Hooker, Stephanie, B-104a  
Hopper, Glenna, B-192a  
Hortz, Brian, B-150b  
Hosey, Megan, C-101k  
Howell, Lisa, B-042c  
Hung, Man, C-119c  
Hunt, Barry, A-174c  
Irmier, Cheryl, C-101i  
Johnson, Paige, B-150c  
Johnson, Elizabeth, C-148a, D-033b  
Jones, Deborah, C-065b  
Joseph, Nataria, A-182a  
Kaestle, Christine, C-175c, D-162a  
Kaier, Emily, B-073d  
Kalokhe, Ameeta, D-065a  
Kalra, Preeti, D-175d  
Karayianni, Eleni, B-073b  
Kaufman, Annette, B-177e  
Kaye, Leanne, D-033a  
Kelleher, Sarah, C-033e, C-033f  
Kellerman, Quinn, B-121a  
Kelly, Scott, A-078a  
Kelsch, Courtney, A-065a  
Kibler, Jeffrey, C-078a  
King, L., B-034d

# SOCIETY *of* BEHAVIORAL MEDICINE

- Kitchen, Katherine, C-119e  
Kiviniemi, Marc, A-190b  
Klaus, Johanna, A-124a  
Ko, Linda, A-034h  
Kong, Angela, B-083b  
Kornfield, Sara, B-073a  
Kowalsky, Jennifer, C-101i  
Kristeller, Jean, C-101c  
Kwan, Matthew, B-150a  
LaCaille, Lara, C-101d  
Langer, Shelby, C-126c  
Larsen, Britta, B-042a  
Lattie, Emily, B-121j  
Ledoux, Tracey, B-104b  
Lewis, Kristina, D-118e  
Lightner, Joey, D-147e  
Linde, Jennifer, C-101g  
Lowery, Amy, C-033g  
Ma, Yunsheng, B-053d  
MacGregor, Kristin, B-128a  
Mack, Laurin, C-165a  
Mackey, Eleanor, B-104h  
Martin, Luci, C-189b  
Martin, Michelle, D-033i  
Martir, Allison, D-101d  
Mavandadi, Shahrzad, A-074c  
McCalla, Judith, A-083b  
McCormack, Lauren, D-033h  
McKenzie, Shannon, A-174e  
McShall, Jared, D-183b  
McWhorter, Linda, B-186a  
Merluzzi, Thomas, C-033j, C-033k  
Merz, Erin, C-183a  
Michie, Susan, B-078a  
Molina, Marisa, D-101a  
Moncrieff, Ashley, C-148h  
Moring, John, C-055b  
Morrow, Chad, C-119a  
Mosher, Catherine, D-033g  
Murray-Bachmann, Renee, C-165b  
Nagler, Rebekah, C-082a  
Nauta, Melissa, C-033i  
Newell, Kristen, D-101e  
Ochsner Margolies, Skye, C-073a  
O'Cleirigh, Conall, A-174d  
O'Neil, Adrienne, A-042a  
Pandey, Abhishek, A-163a  
Pandit, Anjali, C-053a  
Patidar, Seema, A-034f  
Pbert, Lori, D-053b  
Pearson, Melody, C-119b  
Perras, Melanie, A-146c  
Petosa, Rick, C-148e  
Pischke, Claudia, C-175e  
Pope, Michell, C-162b  
Portnoy, David, D-118a  
Power, Emily, D-033e  
Pulcini, Melissa, D-101h  
Quintiliani, Lisa, B-083a  
Rabin, Carolyn, A-034b  
Raichle, Katherine, D-073b  
Rasmussen, Kristen, B-034g  
Ravesloot, Craig, D-073e  
Repetto, Paula, C-055a  
Richard, Annette, D-073a  
Richmond, Melanie, D-175b  
Rini, Christine, C-033d  
Robinson, Cendrine, D-175c  
Ropka, Mary, A-034d  
Rosenberger, Patricia, D-101f  
Ross, Lindsey, B-160a  
Ruscio, Aimee, A-174a  
Rush, Taylor, A-074d  
Rusiewicz, Anna, B-105a, C-126d, D-147a  
Salmoirago-Blotcher, Elena, C-073b  
Scandrett, Karen, B-121i  
Schneider, Kristin, C-101j  
Schneider, Stefan, A-053b  
Scruggs, Stacie, A-034i  
Seawell, Asani, D-118d  
Seay, Julia, B-065c  
Shack, Lorraine, B-104i  
Shaffer, Carla, C-175a  
Shamaskin, Andrea, C-189a  
Sherman, Marne, D-175a  
Sklar, Marisa, D-073f  
Smith, Patrick, C-042a  
Smitherman, Anna, D-125d  
Snyder, Amanda, A-146b  
Spadaro, Kathleen, C-148b  
Spellman, Elizabeth, A-034a  
Spille, Sean, C-053b  
Spleen, Angela, D-033c  
Starosta, Amy, A-161b  
Stetson, Barbara, B-053b  
Stevens, Courtney, C-073d  
Strachan, Shaelyn, D-147g  
Streicher, Samantha, A-100f  
Sucala, Madalina, B-034j  
Sweet, Shane, A-146d  
Thomas, Jenifer, B-121g  
Thomas, KaMala, C-183b  
Thompson, Amy, B-121e, C-073e  
Thota, Anil, B-073e  
Todaro, Alyssa, B-121b  
Tomich, Patricia, D-183c  
Tong, A., B-034c  
Trost, Zina, A-124d  
Trudeau, Kimberlee, C-188a  
VanBuskirk, Katherine, B-128c  
Vasserman-Stokes, Elaina, B-121f  
Ver Halen, Nisha, A-117a  
Vilchinsky, Noa, D-042c  
Wahl, Sarah, B-053c  
Waldron, Elizabeth, A-034g  
Walker, Lorraine, C-101e  
Wallen, Gwenyth, D-125b  
Wallston, Ken, C-078b  
Walsh, Erin, D-189a  
Walter, Kimberly, A-117d  
Wardle, Jane, C-101f  
Weinrich, Shely, B-150d  
Wen, Kuang-Yi, B-177b  
Whembolua, Guy-Lucien, A-174b  
Whittaker, Robyn, A-074b  
Williams, Geoffrey, A-102a  
Wolin, Kathleen, D-147c  
Wood, Mary, C-073c  
Wyatt, Janan, B-065b  
Wykes, Thomas, B-053a  
Young, April, B-065a, C-162c  
Young-Hyman, Deborah, B-104e  
Zavin, Alexandra, D-147h

# **32<sup>nd</sup> Annual Meeting & Scientific Sessions**

April 27-30, 2011 | Rapid Communications

# SOCIETY *of* BEHAVIORAL MEDICINE

*Better Health Through Behavior Change*

---

**National Office**

555 E. Wells Street, Suite 1100 • Milwaukee, WI 53202-3823  
Phone (414) 918-3156 • Fax (414) 276-3349 • E-mail [info@sbm.org](mailto:info@sbm.org) • Website [www.sbm.org](http://www.sbm.org)