

## POSTER SESSION B

Thursday, April 14, 2005

8:30 AM-10:00 AM

Exhibit Hall

Poster Session B - Biological Factors in Health and Behavior Change; Translation of Research to Practice; Prevention and Treatment Across the Lifespan; Behavioral Medicine in Medical Settings

### B-132

#### INCREASING DEMENTIA OF THE CARE RECEIVER PREDICTS PROCOAGULANT RESPONSE IN SPOUSAL CAREGIVERS

Kirstin Aschbacher, B.A.,<sup>1</sup> Roland von Känel, MD,<sup>1,2,3</sup> Thomas L. Patterson, PhD,<sup>1,4</sup> Paul J. Mills, PhD,<sup>1</sup> Joel E. Dimsdale, MD,<sup>1</sup> Sonia Ancoli-Israel, PhD,<sup>1,4</sup> and Igor Grant, MD.<sup>1,4</sup>

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**Background:** Research in elderly caregivers (CG) suggests that mood disturbance and elevations in procoagulant factors such as D-dimer (DD) may be associated with increased cardiovascular risk. However, the effects of care-recipient (CR) dementia progression on CG health are poorly understood.

**Purpose:** Our hypotheses were: 1) Increasing CR dementia is associated with linear increases in DD at baseline and in reaction to acute stress in CG's, 2) CG mood symptoms mediate these associations. **Methods:** 71 spousal dementia CG's and 37 gender-matched non-caregivers (mean age: 71) were administered a speech stressor task. Plasma samples assayed for DD were drawn at baseline, immediately after, and 14 minutes following the stress test. Mood disturbance combined the Hamilton Rating Scales for depression and anxiety. The Washington Clinical Dementia Rating (CDR) provided a global assessment of dementia severity.

**Results:** Polynomial contrast tests within ANOVA revealed significant linear relationships between CDR and mood ( $p=.001$ ), DD at baseline ( $p=.01$ ), and DD reactivity to stress ( $p=.01$ ) while controlling for age. Regression analyses following the Baron and Kenny model revealed that mood significantly mediated DD reactivity to acute stress but not baseline DD.

**Conclusions:** Increases in CR dementia ratings were associated with concomitant increases in CG mood symptoms and procoagulant response, at baseline and in reaction to acute stress. CG distress may impact cardiovascular health more through procoagulant reactivity than through basal elevations.

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### B-133

#### CARDIOVASCULAR AND ENDOCRINE STRESS REACTIVITY AND MEASURES OF HEART RATE VARIABILITY IN CORONARY ARTERY DISEASE PATIENTS: RESULTS FROM THE PIMI STUDY

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Altered heart rate variability (HRV), a measure of cardiac autonomic balance, and heart rate and blood pressure reactivity to stress have both been shown to be predictors of adverse cardiac events in patients with CAD. We examined the relationship of heart rate variability to cardiovascular and neuroendocrine reactivity to stress in CAD patients. Data from 150 CAD patients from the Psychophysiological Investigations of Myocardial Ischemia (PIMI) study were used to examine relationships among time and frequency domains of HRV and acute changes in hemodynamic and neuroendocrine measures. Patients were subjected to a speech mental stress test. At rest, there were no significant associations between HRV measures and hemodynamic and plasma neuroendocrine measures (epi, norepi, cortisol). However, at peak stress levels, correlational analyses revealed that HR was significantly correlated with low frequency (LF) (-0.30,  $p<0.01$ ) and high frequency (HF) (-0.27,  $p<0.01$ ). SBP was significantly correlated with LF (-0.39,  $p<0.01$ ) and HF (-0.28,  $p<0.01$ ). Neither HR nor SBP were significantly correlated with time-domain HRV measures. Cortisol was found to be significantly associated with the LF to HF ratio (0.21,  $p<0.05$ ). Norepinephrine and epinephrine were each significantly correlated with LF (-0.27 and -0.28,  $p<0.01$ , respectively). The findings suggest that associations of vagal components of HRV are only revealed under mental stress conditions. In addition, the frequency domain of HRV appears to be a better indicator of cardiac autonomic stress reactivity than time domain measures.

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### B-134

#### OXIDIZED LOW DENSITY LIPOPROTEIN, SOCIAL ENVIRONMENT, AND DISEASE IN THE WHHL RABBIT

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Previously, we have demonstrated that social environment influences the progression of atherosclerosis in the Watanabe Heritable Hyperlipidemic Rabbit (WHHL). In addition to the existence of group differences, there is large individual variability in atherosclerosis. We are currently investigating potential mechanisms responsible for this variability, including the role of lipids. Oxidative stress has been shown to be an important mechanism of atherosclerosis in a number of human and animal studies. Oxidized low density lipoprotein (oxLDL) is one of the major byproducts of oxidative stress, and the current study examined the relationship between oxLDL, total cholesterol, and atherosclerotic lesion area. Blood samples of WHHL (N=73) were drawn from the marginal ear vein at three, five, and seven months of age. Aortas were removed at seven months of age, and the area of aortic atherosclerosis was measured in the aortic arch, thoracic aorta, and the abdominal aorta. Total cholesterol and oxLDL were positively correlated with lesion area in the aortic arch and abdominal aorta, but not in the thoracic aorta. The relationship between oxLDL and arch lesion area was especially strong in rabbits that had been housed in an individually caged, sedentary environment. These data suggest that oxidative stress may be a particularly important disease mechanism in isolated, sedentary rabbits. Future work will examine the role of oxidative stress in mediating the relationship between social environment and disease.

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**B-135****THE EFFECT OF SOCIAL ENVIRONMENT ON AORTIC AT1-RECEPTOR BINDING, NAD(P)H OXIDASE ACTIVITY AND ATHEROSCLEROSIS IN THE WATANABE HERITABLE HYPERLIPIDEMIC RABBIT**

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Our lab has shown previously that social environment can influence measures of atherosclerotic disease in the Watanabe Heritable Hyperlipidemic (WHHL) rabbit, a model that spontaneously develops lesions because of a genetic defect in lipoprotein clearance. There is evidence that the AT1-receptor for angiotensin II mediates NAD(P)H-oxidase activity and plays an important role in atherosclerotic lesion development in this model. Catecholamines have been shown to mediate many of the effects that behavior has on atherosclerosis and have also been found to influence oxidative stress and the renin-angiotensin system. The present study examines whether the influence of social environment on aortic atherosclerosis is mediated by these mechanisms in the WHHL model. WHHL rabbits were assigned to 1 of 3 social or behavioral groups: an unstable group, in which unfamiliar rabbits were paired daily, with the pairing switched each week; a stable group, in which littermates were paired daily for the entire study; and an individually caged group. AT1-receptor binding and NAD(P)H-oxidase activity were measured in homogenized aortic tissue. Results suggest that NAD(P)H-oxidase activity differs across social group and is related to measures of lesion area in the aorta. These data support the notion that social environment influences the progression of atherosclerosis through oxidative stress mechanisms. Supported by NIH grants HL 36588 and HL 04726.

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**B-136****DAY-TO-DAY VARIABILITY OF DIURNAL CORTISOL RHYTHM IN GYNECOLOGICAL CANCER**

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Prior studies have reported on temporal stability of cortisol rhythm, but little is known about its day-to-day variability in cancer patients. This study investigated relationships between cancer-specific distress, quality of life (QOL), and day-to-day variability in the diurnal cortisol rhythm in women with gynecological cancer. Participants (n=38) were diagnosed with ovarian (n=16) or endometrial (n=22) cancer. The typical patient was 57 years old, and has been diagnosed 11 months prior to assessment. Cancer-specific distress and QOL were assessed with Impact of Events Scale (IES) and Functional Assessment of Cancer Therapy-Ovarian (FACT-O) respectively. Participants were asked to collect salivary cortisol at waking, 16:00 and 21:00 hours on two consecutive days. Raw cortisol was log-transformed, and the regression of log-cortisol on collection time was performed for each individual on each day of collection. Day-to-day variability of cortisol rhythm was measured using the absolute difference between unstandardized regression coefficients on two days. Hierarchical regressions, controlling for age, cancer stage (1-4), and relevant medications, demonstrated that higher cancer-specific distress significantly predicted lower QOL ( $p < .01$ ), but failed to predict day-to-day variability of cortisol rhythm in this sample. The relationship between day-to-day variability of cortisol rhythm and QOL was not significant. The results suggest that health care providers would do well to attend to distress in women with gynecological cancer, because early identification and intervention may enhance quality of life. Future studies should further investigate these relationships with a larger sample and measure cortisol rhythms across several days.

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**B-137****SMOKING CUE-INDUCED HEART RATE DECELERATION AMONG CARRIERS OF THE SLC6A3 9-REPEAT AND DRD2-A1 POLYMORPHISMS**

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Smoking cues induce stronger self-reported cravings for cigarettes among smokers carrying the *SLC6A3* (dopamine transporter gene) 9-repeat and *DRD2* (dopamine D2 receptor) A1 polymorphisms. The present study examined the relationship between these genotypes and objective cardiovascular measures of response to smoking cues. We hypothesized heart rate [HR] decelerations among carriers based on previous literature on attentional processes and the role of dopamine. Previously genotyped smokers (33 male, 51 female, mean age=40.5+/-10.0) were experimentally exposed to classic sets of imaginal neutral (changing a lightbulb) and smoking cues, while an Ohmeda 2300 Finapres and a Tektronix EKG monitor provided continuous cardiovascular data. Results indicated that, compared to neutral cues, smoking cues induced significant decelerations in HR (-1.5 BPM), as well as increases in both systolic (+3.4 mmHg) and diastolic (+2.8 mmHg) blood pressure ( $p < 0.0001$ ). Consistent with the study hypothesis, there was a significant interaction by genotype; carriers of both the *SLC6A3* 9-repeat and *DRD2*-A1 polymorphisms (n=20) exhibited the greatest HR decelerations in response to the smoking cue (-3.01 BPM vs. neutral cue), while carriers of neither genotype exhibited no decelerations (+0.53 BPM) [ $p < 0.05$ ]. Effects remained significant even after covarying self-reported cravings and baseline resting HR. Findings suggest that smoking cues can induce significant changes in cardiovascular parameters, and that genetic factors account for some of these effects, independent of self-reported craving. Supported by NIH grants K07CA93387 and M01RR00071, and ACS grant #CRTG-01-153-01-CCE

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**B-138****HOME SWEET HOME? THE ROLE OF CONTEXT IN EXPRESSIVE WRITING INTERVENTIONS**

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Expressive writing about stressful experiences can produce beneficial outcomes when writing is conducted in controlled laboratory conditions. Researchers have extended this intervention to other contexts and settings, such as home-based writing, without regard for translational limitations. Contextual variables may influence responses to the intervention, particularly the location of writing and the researcher's "legitimate authority." This study experimentally manipulated the location of writing (home vs. laboratory) and the "legitimate authority" of the investigator (high vs. low authority). Student participants (n=76, mean age=19) were randomly assigned to one of four groups (two crossed conditions; high or low legitimate authority, and writing at home or in the laboratory). Participants wrote for 20 minutes on three consecutive days about stressful experiences and completed questionnaires at baseline and 2-month follow-up (assessing somatic symptoms, depression, stress, intrusions, avoidance, and hyperarousal). We predicted 1) writing in controlled settings is more productive than writing at home, and 2) writing in the context of a high authority researcher produces more benefit. Analyses used planned contrasts between contextual factors (laboratory/home and high/low authority), examining differences at follow-up controlling for baseline. Hypothesis 1 was supported—writing at home produced less beneficial outcomes than writing in the laboratory. Those writing at home had more somatic symptoms ( $p < .05$ ), more depressive symptoms ( $p < .05$ ), higher hyperarousal ( $p < .05$ ), and higher stress ( $p < .10$ ) at follow-up compared to those writing in the laboratory. Hypothesis 2 was unsupported—high or low authority did not produce differential responses to writing. Overall, these data suggest that greater attention should be paid to contextual variables and, in particular, that expressive writing interventions in home settings may be contraindicated.

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**B-139****HEALTH EFFECTS OF EXPRESSIVE LETTER WRITING**Catherine E. Mosher, M.A.,<sup>1</sup> and Sharon Danoff-Burg, Ph.D.<sup>1</sup><sup>1</sup>Department of Psychology, University at Albany, SUNY, Albany, NY

Few studies have explored interpersonal applications of the expressive writing paradigm, despite the fact that many traumatic events occur in the context of intimate relationships. This study is the first to examine the potential health benefits of expressive letter writing, which is widely recommended by clinicians. Compared to a control task, two expressive letter writing assignments were hypothesized to result in similar improvement in health outcomes. After consenting to participate and completing baseline questionnaires, 104 undergraduates (65.4% female) were randomly assigned to one of three letter-writing tasks. Experimental participants wrote a letter to a socially significant other who either (1) helped or (2) hurt them, and (3) control participants wrote a letter to a school official regarding an impersonal relational issue. Most participants were 17 to 19 years of age (86.7%) and European American (71.2%), Asian American (11.5%), or African American (8.7%). Analyses of covariance were conducted to examine the effects of group assignment on health outcomes at the one-month follow-up. A significant effect was found for sleep duration. Follow-up comparisons revealed that the experimental groups reported more hours of sleep ( $M = 7.1$  for both groups) at follow-up relative to the control group ( $M = 6.4$ ). No significant effect was found for upper respiratory symptoms. However, the experimental groups reported fewer days during which poor physical or mental health prevented them from engaging in routine activities at follow-up compared to the control group. Findings point to the potential health benefits of expressive letter writing. Consistent with prior research (e.g., Burton & King, 2004), results also suggest that positively-focused writing may improve health.

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**B-140****WEIGHT LOSS IMPROVES FUNCTIONAL MOBILITY IN OLDER OBESE WOMEN**Vanessa A. Milsom, B.A.,<sup>1</sup> Ninoska DeBraganza, MESS,<sup>1</sup> Katie A. Rickel, B.S.,<sup>1</sup> Mary E. Murawski, MS,<sup>1</sup> and Michael G. Perri, PhD.<sup>1</sup><sup>1</sup>Clinical and Health Psychology, University of Florida, Gainesville, FL

Among older adults, obesity represents an important risk factor for mobility disability, yet the effects of weight loss on functional mobility have received relatively little attention. In the present study, we examined the impact of weight loss on functional mobility in a sample ( $N = 89$ ) of older, obese women ( $mean$  age =  $58.9 \pm 6.3$  years;  $mean$  BMI =  $36.7 \pm 4.8$  kg/m<sup>2</sup>). Body weight and functional mobility, as measured by the 6-Minute Walk Test (6MWT), were assessed at baseline and after 6 months of obesity treatment. At posttreatment, the sample showed a mean weight loss of 9.1 kg ( $SD = 5.4$ ) and a mean increase on the 6MWT of 90.2 feet ( $SD = 134.5$ ). Improvements in mobility were significantly associated with weight loss ( $r = -.24$ ,  $p = .03$ ). An examination of 6MWT changes in participants with small (< 5%), moderate (5-9.9%), and large ( $\geq 10\%$ ) reductions in body weight was carried out using a 2 (pre- and posttreatment) X 3 (weight-loss category) repeated-measures ANOVA. The analysis showed a significant Time X Condition interaction effect ( $p = .034$ ). All three groups evidenced improvements in functional mobility. Compared with those who had "small" weight losses, participants who achieved "large" reductions demonstrated significantly greater improvements in mobility, ( $means = 8.5\%$  versus  $2.5\%$ , respectively,  $p < .03$ ). These findings highlight the beneficial effects of weight loss on functional mobility in older obese women. Supported by NHLBI R18HL073326

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**B-141****PHYSICALLY ACTIVE VERSUS SEDENTARY ADOLESCENT FEMALES: DIFFERENCES IN HEALTH CHARACTERISTICS AND BEHAVIORS**Lisa Bouchard, M.A.,<sup>1</sup> Margaret S. Jamner, Ph.D.,<sup>1</sup> Genevieve F. Dunton, M.A.,<sup>1</sup> and Dan M. Cooper, M.D.<sup>1</sup><sup>1</sup>University of California, Irvine, Irvine, CA

Physical activity is associated with an array of positive health outcomes among adults; less is known about how activity relates to health characteristics during adolescence. This study compared physically active ( $n = 40$ ) versus sedentary ( $n = 154$ ) adolescent females on a number of health indicators and health behaviors. The sedentary group ( $M = 15.08$  years, 57% Caucasian) participated in fewer than three 20-minute bouts per week of vigorous activity and fewer than five 30-minute bouts per week of moderate activity. The active group ( $M = 15.48$  years, 73% Caucasian) participated in a sports team or club. A maximal cycle ergometer test confirmed group differences in cardiovascular fitness ( $p < .001$ ). Percent body fat, whole body bone mineral content (BMC) and whole body bone mineral density (BMD) were assessed via dual x-ray absorptiometer. Perceived health, grade point average (GPA), cigarette smoking, and lifestyle activity were measured via self-report. Data were analyzed using ANCOVAs for continuous variables and logistic regression for cigarette smoking (scored dichotomously). After controlling for age and ethnicity, BMC and BMD were greater in the active group ( $ps < .001$ ). Percent body fat was higher in the sedentary group ( $p < .001$ ). The active group reported better health, a higher GPA, and more lifestyle activities ( $ps < .01$ ). The sedentary group was 7.31 times more likely to report some smoking ( $p = .01$ ). Results suggest levels of physical activity during adolescence are related to risk factors for a number of chronic diseases.

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**B-142****DO PARENTS RECOGNIZE WHEN THEIR CHILDREN ARE OVERWEIGHT?**Delia West, PhD,<sup>1</sup> Martha Phillips, PhD,<sup>1</sup> Zoran Bursac, PhD,<sup>1</sup> LeaVonne Pulley, PhD,<sup>1</sup> and Heath Gauss, MS.<sup>1</sup><sup>1</sup>College of Public Health, UAMS, Little Rock, AR

Parents play a critical role in efforts to curtail the alarming increase in childhood overweight and obesity. But do parents recognize when their children are overweight? The current study used statewide random digit dialing to identify and survey parents of children enrolled in Arkansas public schools (K-12). 1551 parents (81% female, 17% minority) were surveyed. Parents were asked the height (inches) and weight (pounds) of their child. Age and gender appropriate BMI percentile was calculated. Parents were also asked to identify whether they considered their child overweight, at risk for overweight, healthy weight, or underweight. Weight classification by BMI percentile was compared with parental perception of weight status. The majority (60%) of parents of overweight children (85<sup>th</sup> percentile or heavier) incorrectly identified their child as normal or underweight. Parents of younger children were more likely to incorrectly identify their overweight child as healthy or underweight than were parents of overweight adolescents (67% vs 50%,  $p = .004$ ). African American parents tended to incorrectly identify their overweight child as normal or underweight more often than Caucasian parents (70% vs 57%,  $p = .07$ ). These data indicate that parental underestimation of risk status among overweight children is a prevalent problem. Parents who do not recognize that their child is overweight may be less likely to institute or support appropriate health promotion efforts. Strategies to enhance accuracy of parental assessment of weight risk status might enhance obesity prevention efforts, and targeting parents of young children in whom overweight is most likely to go unrecognized would be recommended.

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**B-143****NEUROPSYCHOLOGICAL AND MOOD EFFECTS OF AN OSTEOPOROSIS EXERCISE PROGRAM FOR OLDER ADULTS**

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Prior research has fairly consistently demonstrated the beneficial role of exercise in improving the quality of life and, in some cases, the cognitive function of older adult participants (Emery & Blumenthal, 1991; Etnier et al., 1997; Hall et al., 2001). Osteoporosis is one of today's leading health care concerns, given patients' increased risk of debilitation due to fractures and falls. Prevention efforts are underway and exercise programs abound in many communities. However, the possible additional neuropsychological and quality of life benefits of such minimal impact exercise programs have not yet been investigated. The present study examined 18 older adults from the independent and assisted-living residences of a multilevel health care facility. Participants were randomly assigned to a three-week osteoporosis exercise program or a wait-listed group. Assessments of neuropsychological function (RBANS), mood (BDI, BAI, and GDS), and quality of life were collected both prior to and following the three-week period. We hypothesized that consistent with prior research, significant differences between groups would be found for working memory and depression. Repeated measures analyses revealed that compared with wait-listed participants, exercise participants experienced greater mood stability ( $p = .02$ ), a trend toward less depression over time ( $p = .07$ ), and a trend toward improved working memory ( $p = .07$ ). These findings suggest that a relatively brief and minimal impact osteoporosis exercise program can yield enhanced quality of life (e.g., mood stability) and perhaps also lead to lowered depression and improved working memory. Further research is needed to clarify these preliminary findings in a larger sample.

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**B-144****COGNITIVE VERSUS AFFECTIVE PREDICTORS OF FLU SHOT INTENTIONS**

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Research shows many links between beliefs and intentions to perform protective health behaviors. This study tested different possible cognitive and affective predictors of flu shot intentions. We anticipated that cognitive and affective factors would play a parallel role in predicting intentions. In Fall 2003, participants ( $n = 492$ ) from three different University communities completed a brief questionnaire assessing their thoughts and feelings about the flu. Participants were contacted the following semester between January-March 2004 and asked if they had received a flu shot during the flu season. The questionnaire included cognitive factors assessing perceived risk and perceived severity of the flu, and perceived barriers to vaccination. Affective factors included feelings of vulnerability, worry about the flu, and anticipated regret about getting the flu without a flu shot. There was a strong relationship between intentions to receive a flu shot and flu shot behavior ( $r = .60, p = .01$ ). Simultaneous multiple regression analyses showed the best predictor of flu shot intentions was anticipated regret ( $\beta = .40, p < .001$ ). Perceived severity of the flu ( $\beta = .17, p < .001$ ) and a dichotomous risk perception scale ( $\beta = .13, p < .01$ ) were also predictors of intentions to receive a flu shot. Our results suggest that when deciding whether to receive a flu shot, people not only take into account consequences of the disease but also more affective consequences associated with the behavior. Theorists may create more powerful theories of behavioral intentions if they include more affective factors.

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**B-145****CO-MORBIDITY, DIFFICULTIES IN PERFORMING TASKS OF DAILY LIVING AND PHYSICAL ACTIVITY IN INDIVIDUALS WITH TYPE 1 AND 2 DIABETES**

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Little is known about the relationship between co-morbidity, difficulties in performing tasks of daily living (TDL) and the ability to perform physical activity (PA) for individuals with diabetes. The aim of this study was to investigate: 1) the association between the above mentioned factors, and 2) if differences exist between type 1 (T1DM) and 2 (T2DM) diabetes mellitus on these factors. A population sample of 2318 (T1DM=697; T2DM=1621) completed a self-reported instrument on: co-morbidities (e.g. heart disease, cancer) difficulties to perform TDL (3 items) and PA (validated GLTQ) at baseline and 6 months. Individuals with T2DM reported more co-morbidities than those with T1DM ( $\chi^2=32.73; p<0.01$ ); whereas no differences were found in ability to perform TDL. Correlational analyses revealed similar associations between i) co-morbidities and ability to perform TDL ( $r=0.44$ ), and ii) the relationship between these factors and PA ( $r=-0.13$  to  $-0.23$ ) at baseline and six months independent of diabetes type. At both time points, differences between diabetes type were found for time since diagnosis: In T1DM only, time since diagnosis was significantly correlated with co-morbidity and difficulty to perform TDL ( $r=0.23$  to  $0.36$ ) as well as with PA ( $r=-0.17$  to  $-0.19$ ). Controlling for age, sex and BMI, time since diagnosis and co-morbidities did not predict PA, whereas a significant correlation remained between difficulties to perform TDL and PA (betas= $0.08$  to  $-0.14$ ;  $p=0.02$ ) for T1DM and T2DM. These findings suggest that when designing interventions, diabetes type, age and difficulties to perform TDL should be taken into consideration.

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**B-146****DO YOU SEE WHAT I SEE? BODY IMAGE PERCEPTIONS AMONG OBESE RURAL PRIMARY CARE PATIENTS AND THEIR PHYSICIANS**

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Despite evidence that obesity occurs with higher frequency in rural versus urban groups, body image perceptions of rural populations have not been extensively studied. This study describes body image perceptions of obese primary care patients and their physicians in non-metropolitan areas of a Midwestern state. Body image (9 figure drawings), overweight status, and anthropometric measures were administered to 456 patients (66% female) with a body mass index (BMI) of 30 or greater. Primary care physicians ( $n=30$ ) rated the body size and overweight status of these same patients after office visits. Figure selection was a linear function of patient BMI, whether that figure was chosen by the patient ( $p < .01$ ), or the physician ( $p < .01$ ). Gender differences emerged, such that physician figure and overweight status ratings were more similar for female patients than male patients ( $p$  values  $< .01$ ), with men choosing smaller figures than their physicians ( $p < .01$ ). Physicians and male patients share less concordant perceptions of body image and weight status than female patients. These perceptual differences could have implications for physician/patient communication and the treatment of obesity among men. Results support the potential utility and salience of assessing body image in obese primary care patients, particularly among rural men.

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## B-147

## UNDERSTANDING BARRIERS TO PHYSICIANS' PRACTICING BEHAVIORAL HEALTHCARE

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Patients with psychological problems present more often to primary care physicians than to mental health providers. Proper education of these physicians on available treatments and adequate understanding of their limitations as mental health providers has public health implications. Not only may physicians lack knowledge of behavioral medicine, but some may possess different psychological characteristics that could limit their ability to manage appropriately patients with complex psychosocial problems. For example, physicians who have limited introspective skills may be especially vulnerable to countertransference to certain patients, and thus more likely to act in professionally inappropriate ways. Given the reported prevalence of physician-patient sexual relationships is between 3 - 9%, it is important to identify what traits of physicians may put them at risk. A total of 43 physicians referred by state medical boards for boundary violations participated in a 3-day psycho-educational program targeted at increasing psychologically-relevant skills (e.g., empathy, introspection, emotional intelligence) for better management of their own behavior and that of patients. All participants completed a Millon Index of Personality Styles (MIPS), prior to and 3- and 6-months post-program completion. Means scores were significantly different ( $p < .05$ ) from the adult male norms published in the MIPS Manual on several subscales: Preserving, Introversing, Intuiting, Feeling, Dissenting, and Complaining. Three- and six-month follow-up data suggest prolonged change in select scale scores after program participation. As psychologists' presence in medical settings increases, understanding our colleague's different training may better prepare us to educate them on issues affecting patients' health and the public trust.

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## B-148

## RELATIONSHIPS BETWEEN DEPRESSION, ANXIETY, COPING, AND IMMUNITY IN PEDIATRIC HIV

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**Objective:** To examine the specific relationships between depression, anxiety, coping and immunity in pediatric HIV.

**Method:** Fifty HIV+ children reported coping strategies on the Coping Strategies Inventory (CSI), depressive symptoms on the Child Depression Inventory (CDI) and symptoms of anxiety on the March Anxiety Scale for Children (MASC). Absolute CD4 counts and viral load were retrieved from medical charts. Pearson correlations were conducted to determine the associations between the CSI scales, the CDI scales, the MASC scales, and absolute CD4 counts and viral load. Independent variables (depression, anxiety, and coping scales) that were significantly correlated with dependent variables (absolute CD4 and viral load) were then used as predictor variables in hierarchical multiple regression analyses.

**Results:** The hypothesis that HIV-infected children with higher symptoms of anxiety and/or depression would exhibit lower absolute CD4 counts and higher viral load was partially supported. Depressive symptoms were not significantly associated with lower immunity. Consistent with the hypothesis, anxiety and absolute CD4 counts and viral load were significantly correlated. Express Emotion Coping, a subscale of Emotion-Focused Engaged coping, was significantly negatively correlated with absolute CD4 counts, suggesting that children who used Express Emotion coping tended to have lower absolute CD4 counts and hence poorer immune function. This finding contrasts with the hypothesis that children who employ more engaged styles of coping would exhibit higher immunity.

**Conclusions:** Possible explanations for inconsistent and consistent findings and clinical implications of these findings will be further discussed.

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## B-149

## ANXIETY IN THE PREDICTION OF RATINGS OF CHRONIC PAIN AMONG PATIENTS WITH SICKLE CELL DISEASE (SCD)

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The role of negative affect in the experience of chronic pain has been a target of research interest for many years. A recent review of the literature revealed that there has been a much greater emphasis on the influence of depression and its relation to chronic pain than on anxiety. In the current study, we evaluated whether anxiety was predictive of the intensity, duration, and frequency of chronic pain reported by fifty patients, mean age 38.93 (13.51), with SCD. Anxiety, as measured by the Symptoms Checklist 90-items Revised (SCL-90-R), was found to be predictive of the Sensory and Affective indices of pain (VAS;  $p < .01$ ) but not the summary indices as measured by the Short-form McGill Pain Questionnaire. Increased anxiety was associated with increased sensory and affective reports of chronic pain. The authors discuss the need for continued psychological and psychiatric management of affect in the comprehensive treatment of chronic pain and the value of decomposing the pain experience into components (sensory and affective) that facilitate a wider range of effective treatment options. The authors lastly concluded that additional research is needed to better understand the role of affective experiences in ratings of chronic pain associated with SCD.

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## B-150

## PREVALENCE AND SEVERITY OF DEPRESSION IN TYPE II DIABETES: AN URBAN SAMPLE OF UNINSURED/UNDERSERVED PATIENTS

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Recent literature concerning rates of depression in individuals with Type II diabetes (DM II) yields mixed results. Rates have been estimated to range from 15-40%—far exceeding the 2-9% prevalence reported in DSM-IV. Additionally, this difference remained significant after controlling for gender, race/ethnicity, & age. Major depression is more common among women and Latinos, and prevalence increases with age. However, there is a paucity of research examining rates of depression in urban uninsured/underserved, minority patients of various cultural backgrounds with multiple medical problems. Our data was gathered through retrospective chart review in an outpatient diabetes clinic of a large public hospital in Chicago, Illinois and consisted of 84 persons diagnosed with DM II  $\geq 3$  months prior. Patients completed the Beck Depression Inventory – Fast Screen (BDI-FS; Beck, Steer, Brown, 2000). Only 9.2% scored in the moderate to severely depressed range—lower than rates and severities reported in previous studies. These findings suggest that using depression screens that include vegetative symptoms may result in erroneously elevated rates of depression among persons with diabetes or other chronic illnesses. There were no significant differences between genders ( $F = .196, p = .659$ ) or ethnic groups ( $F = 1.39, p = .220$ ) and age and depression were not significantly correlated ( $r = .067, p = .544$ ). While these are preliminary findings, they suggest that our population experienced lower rates of depressive symptoms than other samples and without expected group differences. However, more research is needed to explore both the prevalence and severity in uninsured/underserved patients

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**B-151****MEDICAL STUDENTS PREFERENCES AND THE PATIENT-PROVIDER RELATIONSHIP**

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Researchers and practitioners argue that a patient oriented care is preferred in medicine. They argue that this approach takes into account patients' preferences, involves them in the decision making process, and has been associated with better health outcomes. Consistently, medical schools have adjusted their curricula in order to incorporate this model in the medical education. However, some researchers and practitioners have found that despite these efforts, advanced medical students and physicians tend to adopt a more paternalistic approach. Researchers have also suggested that there might be cultural differences in the patient-provider relationship. By studying patient-provider relationship among different cultures we may be able to better understand the antecedents and factors involved in this relationship. In the present study we examined the attitudes and orientation preferences towards the patient-provider relationship in sample of 65 first year medical students in Chile. We used the Patient-Practitioner Orientation Scale (POPS, Krupat et al., 2000) which was translated and adapted to be used with this population. Among the results we found two main differences as compared to previous studies. First, we found a different factor structure to the ones described by the authors of the scale. We found four (sharing information, medical power, caring, communicating with patients) instead of two factors (sharing and caring). Second, although we did find a more patient oriented approach as the preferred one by the students, we did not find sex differences ( $t=1383$ , 65 d.f.). These and other results are discussed in terms of their implications to understand the patient provider relationship and for medical education.

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**B-152****EMOTIONAL DISTRESS AND BREAST SELF-EXAMINATIONS IN FDFRS OF BREAST CANCER PATIENTS**

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A relatively small literature exists on the determinants of health behavior change in first degree female relatives (FDFR) of women diagnosed with breast cancer. This study examined the long-term effects of emotional distress on breast self-examinations (BSE) in a community sample of 598 FDFRs, ages 18 - 76 years, at 10 weeks, and 6 and 12 months following a female relative's diagnosis. Emotional distress, measured with the POMS, was positively associated with FDFRs' overall intentions to change health behaviors 10 weeks post-diagnosis, such that the greater their distress, the more likely they were planning to make changes they believed would affect their health ( $\alpha = .001$ ;  $\beta = .135$ ). At all three timepoints, emotional distress was positively associated with having made some change in health habits since learning of the diagnosis ( $\alpha = .001$ ;  $\beta = .160$ ;  $\alpha = .001$ ;  $\beta = .139$ ;  $\alpha < .05$ ;  $\beta = .096$ , respectively). Specifically, emotional distress at baseline was positively associated with number of BSEs at all follow-ups ( $\alpha < .001$ ;  $\beta = .184$ ;  $\alpha < .001$ ;  $\beta = .210$ ;  $\alpha < .001$ ;  $\beta = .167$ , respectively) with the greater the distress, the greater the number of BSEs performed. These results suggest that the effects of emotional distress on certain health behavior changes of FDFRs of newly diagnosed breast cancer patients may be enduring. Further investigation into whether distress at certain levels leads to excessive self-examination, and in turn, exacerbates the FDFRs distress, is warranted.

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**B-153****CANCER-RELATED PTSD AND COMORBID MIXED ANXIETY AND DEPRESSION**

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Although comorbidity patterns of depression, anxiety and post-traumatic stress disorder (PTSD) are well documented in the general population, less is known about comorbidity in cancer survivors. The current study investigated comorbid symptoms of depression, anxiety, and mixed anxiety and depression in relation to symptoms of PTSD in cancer survivors. Participants were 125 cancer survivors who had received either a bone marrow or stem cell transplant (BMT/SCT) one or more years ago, and were screened for a pilot intervention trial of cognitive behavioral therapy to reduce PTSD symptoms. The Brief Symptom Inventory Anxiety and Depression subscales were used to create caseness of clinical impairment (case= $t$ -score $>63$ ). PTSD symptoms were measured by the PTSD Checklist-Civilian Version (PCL-C). 25% and 23% of the sample met case criteria for clinically significant depressive and anxiety symptoms, respectively; 14.3% of the sample met case criteria for both anxiety and depression (MAD). One-way ANOVA was used to test group differences in PCL-C total scores across four comorbid subgroups [ANXonly, DEPonly, MAD, and NEG ( $t < 63$  on both BSI-DEP and BSI-ANX)]. Overall differences in PCL-C scores were observed ( $p < .001$ ). Posthoc comparisons (Tukey HSD) revealed that the MAD group had the highest PCL-C scores ( $M=41.06, SD=9.55$ ) as compared with the ANXonly ( $M=34.45, SD=8.02$ ;  $p < .05$ ), DEPonly ( $M=31.00, SD=7.15$ ;  $p < .001$ ), and NEG ( $M=23.47, SD=4.97$ ;  $p < .001$ ) symptom groups. The current literature may underestimate the importance of mixed anxiety and depression in the experience of PTSD in BMT/SCT survivors. Future clinical interventions may benefit from tailoring treatment interventions specific to comorbid symptom presentations.

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**B-154****DELAYED BEHAVIORAL INTERVENTION FOR SMOKING CESSATION AND POSTCESSATION WEIGHT GAIN**

Theodore V. Cooper, Ph.D.,<sup>1,4</sup> Yvonne M. Hunt, Ph.D.,<sup>2,3,4</sup> Randy S. Burke, Ph.D.,<sup>2,3,4</sup> Patricia M. Dubbert, Ph.D.,<sup>2,3,4</sup> Shazia Mulkana, M.S.,<sup>3</sup> Colby J. Stoeber, M.A.,<sup>1</sup> and Michelle Resor, B.A.<sup>1</sup>  
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This pilot study explored the effectiveness of two individualized behavioral interventions on smoking cessation and postcessation weight gain following 4 weeks of cessation. Twenty veterans were randomly assigned, stratified based on medication use, to either of two minimal contact conditions: a weight control condition that promoted multiple bout lifestyle physical activity and healthy food, or an extended cessation condition that promoted relaxation and social support. Given the small sample size and pilot nature of this study, no group differences were statistically significant; however, multiple trends are noteworthy for future study. At the 3 month follow-up, relapse to smoking trended less in the weight control group (25% v. 42.9%) and physical activity change from baseline to follow-up trended higher in the weight control group (12.5 v. .5 hours/week). However, weight gain precessation to follow-up was higher in the weight control group (10.9 v. 1.6 lbs.). At follow-up, both groups reported reduced withdrawal and heightened positive mood. Reports of social support decreased for those in the weight control condition and increased for those in the extended cessation condition. These findings suggest the need for continued data collection and future studies to explore what interventions to include in a multicomponent delayed behavioral program that will minimize smoking relapse and postcessation weight gain and maximize increases in physical activity.

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**B-155****SUBJECTIVE DISABILITY, BUT NOT FEAR-AVOIDANCE BELIEFS, PREDICTS EXERCISE TESTING PERFORMANCE IN CHRONIC BACK PAIN PATIENTS UNDERGOING FUNCTIONAL RESTORATION**

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Recent cognitive-behavioral formulations of chronic pain and pain-related disability have suggested a central role of fear-avoidance beliefs. Fear of painful movement ("kinesiophobia") and pain catastrophizing are reliable predictors of subjective disability and avoidance on experimental pain tasks. The extent to which fear-avoidance beliefs predict physical activity outside of the laboratory is less clear. Accordingly, the goal of the present study was to examine the extent to which fear-avoidance beliefs and subjective disability relate to physical performance during clinical rehabilitation. Ninety chronic back pain patients (41 females, 49 males; Mean pain duration = 11.4 months, SD = 11.5) presenting for functional restoration at an interdisciplinary treatment centre completed the Tampa Scale for Kinesiophobia (TSK), the Pain Catastrophizing Scale (PCS), the Quebec Back Pain Disability Scale (QBD) and a Verbal Rating Scale (0=no pain, 100=worst pain) of their average clinical pain. Patients later completed a progressive treadmill test (modified-Bruce protocol) and a maximal lifting task (1-RM seated-row) to establish baseline levels of aerobic fitness and physical strength, respectively. Multiple regression analyses revealed that only subjective disability predicted unique variance in fitness test performance when controlling for initial levels of clinical pain severity for both treadmill ( $R^2 = .25, p < .05$ ) and 1-RM ( $R^2 = .15, p < .05$ ) testing. These results highlight the importance of subjective disability in understanding behavioral avoidance of physical activity and highlight the potential for differential outcomes in laboratory versus naturalistic testing.

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**B-156****DEPRESSIVE SYMPTOMS AMONG MEN AND WOMEN ENROLLED IN CARDIAC REHABILITATION**

Vicki DiLillo, Ph.D.,<sup>1</sup> Bonnie Sanderson, Ph.D., R.N.,<sup>2</sup> Vera Bittner, M.D., M.S.P.H.,<sup>2</sup> and Jennifer Jones, B.A.<sup>3</sup>

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Associations between depression and cardiovascular disease (CVD) have been well-documented, and research indicates that participation in cardiac rehabilitation (CR) may improve depressive symptoms among CVD patients. Despite these findings, relatively little data exist that address the prevalence of depressive symptoms in men and women enrolled in CR. This study examined gender differences in depression and associated factors in CVD patients enrolled in a university-based CR program. Participants (N=585) were 67% men, 33% nonwhite. On average, participants were 61 years old and obese (BMI=30). The mean depression score at program enrollment suggested minimal symptomatology (BDI-II=10.37). Women reported higher depression scores than men, even after controlling for age and medical comorbidities,  $F=9.17, p<.005$ . This gender difference persisted when items assessing somatic and cognitive symptoms of depression were examined separately,  $F_s>5.1, p_s<.05$ . Additionally, a greater proportion of women (36%) than men (27%) reported at least mild depressive symptoms (BDI-II>13),  $X^2(1)=4.42, p<.05$ . Women in this subgroup reported higher levels of both overall and somatic symptoms of depression than men, even after controlling for age and medical comorbidities,  $F_s(1, 170)>4.00, p_s<.05$ . Furthermore, depression scores were higher for participants of both genders who dropped out of CR than for their counterparts who completed the program,  $F(1, 538)=20.59, p<.0001$ . Results suggest that among CR patients, women may be at particular risk for depression. Further, depression may be a risk factor for dropout in both genders. Findings highlight the importance of depression screening and intervention in this population.

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**B-157****SELF-REPORTED DISTRESS AND SALIVARY CORTISOL IN WOMEN WITH A NEW DIAGNOSIS OF BREAST CANCER**

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A viable immune system is important in women with breast cancer. Although anxiety is understandable in women with a new diagnosis of breast cancer, anxiety may have a negative impact on immune functioning. Understanding the relationship between self-reported distress and physiological systems in women with disease may assist in the initiation of interventions to decrease distress and potentially positively impact immune functioning. This study investigated the relationship between cortisol, a hormone related to distress and thought to modulate immune functioning, and self-reported distress. Participants were 38 women with breast cancer, had an average age of 56 ( $SD = 10$ ), and were recruited after diagnosis, prior to treatment. Demographic and health behavior information, the Depression Anxiety Stress Scale (DASS), and cortisol samples were collected. Mean scores on the DASS in this sample were comparable to a normal sample (Depression = 6.3; Anxiety = 4.7; Stress = 8.8). The relationship between cortisol measurements and anxiety was significant ( $r = .43; p = .007$ ), while not significant for cortisol and depression or stress. Two groups were created using a median split based on anxiety report. There was a significant group difference in cortisol levels ( $t = -2.96; p = .005$ ). There was also a significant time by group interaction  $F(4, 144) = 4.21, p = .003$ , with cortisol levels being higher in the high anxiety group at the first sampling time of the day ( $t = -2.94; p = .006$ ). This study suggests that self-reported anxiety in women with a new diagnosis of breast cancer may be associated with immune functioning.

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**B-158****PERCEPTIONS AND PRACTICE MANAGEMENT OF INSOMNIA IN PRIMARY CARE**

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This descriptive study examined primary care prescribing providers' (PCPPs') perceptions of the safety, effectiveness and lasting effects of various medications and behavioral treatments for insomnia, as well as practices for prescribing and recommending each. Participants were 62 PCPPs (65% were physicians) in three military primary care clinics with integrated behavioral health psychologists. Non-benzodiazepine sleep aids were viewed as the safest (66.1% agreed or strongly agreed) and most effective (93%) medications, but not as having long-lasting effects (only 24.2% agreed). Respondents largely agreed that behavior therapy was safe (91.9%), effective (85.5%), and lasting (90.3%). Whereas most respondents (62.9%-90.3%) believed that patients were willing to take prescription medications, only 37.1% agreed that patients would participate in behavior therapy. Approximately half of the PCPPs reported "often" or "very frequently" referring insomnia patients to psychologists, and another 32% reported doing so "sometimes." A majority "often" or "very frequently" included recommendations for behavioral approaches such as decreasing caffeine (95%), setting a regular sleep schedule (95%), avoiding T.V. or reading in bed (87%), restricting time in bed (85%), exercising (76%), getting out of bed when unable to sleep (71%), and relaxation exercises (53%). Despite recommending these approaches frequently, 63% of PCPPs believed that patients are unwilling to try these behavioral treatments. In summary, PCPPs largely viewed behavioral treatments for insomnia as safe, effective, and lasting, and, even though they integrated behavioral recommendations into their own practices and made referrals to psychologists, they perceived patients as more likely to use medications than behavioral treatments.

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# POSTER SESSION C

Thursday, April 14, 2005

6:30 P.M.-8:00 P.M.

Exhibit Hall

Poster Session C - SBM/SOPHE Joint Day

## C-57

### PERCEPTIONS OF CONTROL OVER HIV PREVENTION AMONG AFRICAN AMERICAN MALES

Susan L. Davies, PhD,<sup>1</sup> Jill A. Ross, R.N., PhD,<sup>2</sup> Lonnie Hannon,<sup>1</sup> and Lucy Annang, PhD, M.P.H.<sup>1</sup>

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Focus groups and structured interviews were used to assess psychosocial barriers to HIV prevention among an underserved and understudied population of African American males (ages 19 to 24) living in resource-poor communities in the south. Five primary themes emerged from the data: 1) belief that AIDS is a form of genocide against minority groups; 2) belief that information about AIDS is being withheld from the public; 3) inherent distrust and skepticism toward the "system," including but extending beyond the public health system, resulting from egregious historical events; 4) widespread perceptions of hopelessness about their future, powerlessness to change their circumstances, and resentment toward society at large; 5) high overall concern about HIV in the African American community (exceeded only by poverty-related concerns); and 6) high awareness of HIV's disproportionate burden on minorities, though low level of knowledge of HIV prevention. Findings suggest that distrust fosters inaccurate beliefs about HIV transmission, reduces access to risk-protective information, and inhibits adoption of safer-sex behaviors. Attention to African Americans' pervasive lack of trust in public health and other institutions must become a national priority. Trust is a precious public health commodity, and lack of it within subsets of the population threatens the health and well-being of the entire population. Understanding and responding to the dearth of community-level trust among marginalized populations is essential in reducing HIV and other health disparities, as well as myriad social manifestations of apathy and poverty.

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## C-58

### DEPRESSION DURING THE MENOPAUSAL TRANSITION AMONG WOMEN WITH AND AT-RISK FOR HIV

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Women with or at-risk for HIV have a high risk for depression, and the menopausal transition may be a period of greater depressive symptomatology. However, few studies have investigated depression among mid-life women with or at-risk for HIV. Therefore, as part of a longitudinal study investigating menopause among HIV-positive and at-risk women (MS Study), we used cross-sectional baseline data from 598 women (54% HIV-positive and 46% at-risk for HIV, mean age of 44.7) to evaluate depressive symptoms during mid-life and assess a predictive model for depression in this population. At baseline, depressive symptomatology was high, with 58% of the women reporting symptoms indicative of clinical depression (i.e. a score above 16 on the CES-D). After controlling for demographic variables, a linear regression analysis indicated that perimenopausal status ( $\beta=.11$ ,  $p<.01$ ), perceived interpersonal mistreatment ( $\beta=.37$ ,  $p<.001$ ), physical or sexual abuse history ( $\beta=.15$ ,  $p<.01$ ), and drug use during the past six months ( $\beta=.09$ ,  $p<.05$ ) were all positive predictors of depressive symptomatology and accounted for 33% of the variability in depressive symptoms ( $R^2=.33$ ). The results of our study indicate that women with or at-risk for HIV should be screened and, if necessary, treated for depression as they transition through menopause. Interventions that focus on reducing drug use, coping with abuse, or negotiating interpersonal conflict may help to ease the stress of the menopausal transition among women with or at-risk for HIV.

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## C-59

### CHRONIC CARE IMPLICATIONS OF AN AGING HIV POPULATION

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The availability of potent antiretroviral medications has transformed HIV/AIDS into a chronic condition. Many people are living longer with HIV due to medical treatments that dramatically slow disease progression. One consequence is that a growing number of HIV+ persons in the U.S. are aged 50 or older. Issues of aging may compound the challenges of HIV care. To characterize the chronic health and mental health needs of older HIV+ persons, a community sample of 48 men and women aged 50-67 ( $M=56$ ) completed measures of comorbid chronic disease, substance use, depression, and medication use as part of a larger assessment battery. Total number of chronic illnesses ranged from 0 to 13, with a mean of 5.4 ( $SD=3.5$ ). Ninety-eight percent of the sample reported at least one comorbid chronic condition. Twenty-three percent endorsed heavy drinking on a brief alcohol screening scale (Audit-C  $\geq 4$ ). Depressive symptoms were elevated ( $M=21$ ,  $SD=12$ ), with 39.6% endorsing symptoms in the significant depression range (CES-D  $\geq 23$ ), and 25% endorsing symptoms in the probable depression range (CES-D=16-22). Participants reported a high prescription pill burden ( $M=12.6$ ,  $SD=9$ ; range=2-46). More than 30% of those prescribed medications for asthma or depression, and about 20% of those prescribed medications for heart disease or hypertension reported missing doses in the past 30 days. Management of comorbid chronic conditions including lung disease, heart disease, arthritis, Hepatitis C, chronic pain, hypertension, diabetes, and depression emerged as a significant challenge for this sample. The aging HIV+ population has broad needs for improving quality of life, prioritizing complex health concerns and improving chronic disease management.

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## C-60

## PESSIMISTIC EXPECTATIONS AND HIGH-RISK BEHAVIOR DURING THE WAITING PERIOD FOR HIV-TEST RESULTS

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The majority of diagnostic procedures require patients to undergo a waiting period before receiving test results. Little research has been conducted on the psychological experience of this waiting period and its impact on health behavior. The present study examined the relationship between pessimism/rumination about HIV-antibody test results and high-risk behavior while waiting for results. Fifty-two clients at a community based health center in Boston completed a self-report survey at both their pre- and post-test visit. Participants were divided into two cohorts: high-risk (individuals who reported at least one unprotected sexual encounter with a HIV-positive or HIV-status unknown partner in the past six months) and low-risk (no such encounter in the past six months). For both cohorts, high levels of rumination about test results during the waiting period were associated with higher rates of substance use during this period. For high-risk participants, pessimism about test results was associated with substance use immediately prior to sexual activity during the waiting period. For low-risk participants, extreme pessimism was associated with engaging in high-risk sex during the waiting period, even though these individuals had not engaged in high-risk sex in the six months prior to testing. These findings suggest that the psychological impact of pessimism/rumination may lead to increases in risk-taking behavior during the waiting period for medical test results. This research has important implications for the design of counseling and other interventions that might support patients during this critical period.

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## C-61

## PREDICTING DAILY SEXUAL RISK BEHAVIOR AMONG HISPANIC STUDENTS

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**Objective:** Daily self-reports of sexual risk behavior were analyzed as a function of emotional states and substance use in a sample of single, low-income Hispanic students.

**Method:** The *sample* included 21 women and 16 men (mean age 22.2). *Measures* included social-cognitive predictors of safer sex assessed by questionnaire and daily self-reports of sexual behavior, mood states, and substance use before sex collected by an interactive voice response system. The analyses focused on 933 days out of 3213 daily self-reports on which sexual intercourse was reported. The outcome was the daily frequency of unprotected intercourse ( $M=.81$ ,  $SD=.83$ , range 0-8). Hierarchical linear modeling was used to predict unprotected intercourse as a function of substance use and mood states (level 1) and social-cognitive predictors of safer sex (level 2). The analyses controlled for the number of sexual episodes per day.

**Results:** Among the Level-1 predictors, only positive mood states showed an effect on the outcome ( $t=2.57$ ,  $p<.015$ ). On Level 2, positive social norms towards safer sex predicted the Level-1 intercept of unprotected intercourse ( $t=-6.66$ ,  $p<.001$ ). Further, intentions appeared to inhibit the risk-enhancing effects of positive mood ( $t=-2.68$ ,  $p<.011$ ) but did not affect the slopes of negative mood and substance use.

**Conclusions:** The results indicate a lack of predictive power of both substance use and negative mood on event level. Perceived social norm appeared as the strongest negative predictor of unprotected intercourse, controlling for the frequency of sexual episodes. There is some evidence for risk-reducing moderator effects of intentions. Further research is warranted.

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## C-62

## METHAMPHETAMINE USE, GAY IDENTITY, AND HIGH-RISK SEXUAL BEHAVIOR AMONG MEN WHO HAVE SEX WITH MEN

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Use of methamphetamine has been linked with HIV transmission risk behavior, especially among men who have sex with men (MSM). Methamphetamine has increasingly been identified as a drug of choice among MSM engaging in substance use in conjunction with sexual activity in both organized (e.g., circuit parties) and informal settings. The present study examined relationships between methamphetamine use, gay identity, and high-risk sexual behavior in 586 MSM attending a gay pride festival in Atlanta, GA. One in 12 participants reported methamphetamine use in the previous 6 months. Methamphetamine users were younger than non-users, but did not differ on other demographic factors. Relative to non-users, participants reporting methamphetamine use scored higher on a measure of gay identity. Methamphetamine users reported significantly more sexual partners than non-users in the previous 6 months and higher rates of unprotected anal and oral sex. Methamphetamine users were also significantly more likely to use other substances that facilitate sexual arousal or functioning, including Viagra and cocaine. A stronger gay identity significantly predicted methamphetamine use and other high-risk behaviors. Interventions for MSM using methamphetamine may benefit from providing alternative frameworks for gay identity, and could combine substance use treatment and risk-reduction counseling.

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## C-63

## HEPATITIS C KNOWLEDGE AND ATTITUDES AMONG METHADONE MAINTENANCE PATIENTS: A BRIEF PSYCHOEDUCATIONAL INTERVENTION MAKES A POSITIVE DIFFERENCE

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**AIM:** To survey methadone maintenance patients, a high-risk group for hepatitis C (HCV), to identify and attempt to modify HCV knowledge and attitudes using a brief, psychoeducational intervention.

**METHODS:** Subjects (N=203) attended a 45-minute inservice and completed an anonymous pre-post survey. The 17-item survey included questions on HCV transmission, treatment, and attitudes.

**RESULTS:** Subjects tended to be female (55%), African-American (53%), and unemployed (65%). Mean age was 47.58±7.35 years. On average, subjects were on methadone 49±59 months, with a mean dose of 76±30 mg. Overall, 74% of subjects had been tested for HCV, with 51% HCV-positive. On pre-survey, only 6% of the sample correctly answered all 9 HCV knowledge questions. Except for needle sharing, transmission risk factors were poorly understood in over 30% of subjects. Pre-post survey comparisons showed significant ( $p<.05$ ) treatment effects for 7 of the 9 HCV knowledge items and 2 of the attitude questions. On post-survey, 36% of subjects answered all HCV knowledge items correctly. Gender, HCV status, and duration of methadone all failed to influence the intervention effects.

**CONCLUSION:** A brief, psychoeducational intervention was shown to significantly improve HCV knowledge and impact attitudes among methadone maintenance subjects. Future studies need to examine whether such potentially cost-effective interventions can positively impact infection rates and barriers to testing and treatment in this high-risk group.

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## C-64

## EATING PATTERNS AND WEIGHT RETENTION IN POSTPARTAL WOMEN

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Little research identifies food groups within the Food Guide Pyramid (FGP) that contribute to weight retention after childbirth. This study examines predictors of and differences in eating patterns among postpartum women who retain or do not retain weight. Women (N = 100; mean age 30.7, SD = 5.0) were 3-6 months postpartum (x = 4.6, sd = .7). 86 were Anglo, 6 were Black, and 8 were Hispanic. 60 women had gestational weight gains within the IOM recommendations while 40 gained more (p<.000); 56 women retained less than 3 kg at 3-6 months after childbirth while 44 retained more weight. 44 women consumed a diet that met recommendations from 2 or more of the five groups in the FGP. Breastfeeding and ethnicity were significant predictors; women not meeting the FGP recommendations were more likely to not breastfeed (odds ratio [OR] = 4.01, p = .004). Breastfeeding women consumed recommended number of bread (p=.04), vegetables (p=.008) fruits (p=.005), and milk (p=.001) servings than non-breastfeeding mothers. Anglo women met more food group recommendations (p =.03) and ate more fruits (p=.007) than others. No relationship between eating patterns and post-partum weight retention was noted. Postpartum weight retention was more likely in Hispanic women (OR=41.7, p= .006), women with excessive gestational weight gain (OR=33.69, p=.000), who consumed too much or too little meat (OR=4.97, p=.051) and ate too many sweets (OR=5.52, p=.018). These findings support the need for further research describing the quality of food intake during this critical transitional life period.

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## C-65

## EXAMINING PHYSICAL ACTIVITY ENJOYMENT AS A MODERATOR OF A TAILORED PHYSICAL ACTIVITY INTERVENTION

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Given the increased rates of morbidity and mortality associated with sedentary behavior, developing effective physical activity promotion programs and understanding the conditions that enhance their success is a priority. The purpose of the present study was to examine baseline enjoyment of physical activity as a potential moderator at 6 months into Project STRIDE, a randomized, controlled, clinical trial comparing individually tailored print and telephone interventions to a contact control intervention. Participants were 239 healthy sedentary adults of whom 90.3% were Caucasian, 82.0% were female, and the mean age was 44.5 (SD = 9.2). In the present analysis, the two treatment conditions were combined, as both were significantly different from the contact control at 6 months. Results indicated a significant interaction between physical activity as measured by the 7-Day Physical Activity Recall and physical activity enjoyment as measured by the PACES,  $t = 2.42$ ,  $p = .0167$ . Closer examination revealed that a one-unit increase in the standard deviation on the PACES at baseline resulted in a 55.50 minute increase in the treatment effect at 6 months. These results indicate that physical activity promotion programs may be more effective among individuals reporting enjoyment of physical activity at baseline, and suggest that attention be paid to designing programs that incorporate enjoyable physical activity options early in the program.

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## C-66

## WEIGHT, BODY ESTEEM, AND CALORIC INTAKE AMONG BREAST CANCER SURVIVORS

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The purpose of this study was to examine if previously sedentary breast cancer survivors who received a physical activity (PA) intervention (New Exercisers) appeared similar to breast cancer survivors who regularly engage in physical activity (Regular Exercisers) on weight, caloric intake, and body esteem. Forty-three sedentary breast cancer survivors (mean age=53.14 years, SD=9.70, Stages=0-II) randomized to an exercise intervention were assessed at baseline and post-treatment (12 weeks). The Regular Exercisers (n=40, mean age=54.57years, SD=9.0) were observed at identical time points. At baseline, there were no group differences in age, race, marital status, education, income, employment status, or disease stage (all Stage 0-II). At baseline and 12 weeks (end of the PA intervention) anthropometric data (BMI and percent body fat) were obtained from all participants; they also completed the Block Food Frequency Questionnaire and the Body Esteem Scale. At baseline, Regular Exercisers had significantly better Body Esteem scores than the New Exercisers on physical condition (F=20.96, p=.001), sexual attractiveness (F=5.28, p=.02), and weight concerns (F=4.08, p=.05). At post treatment, repeated measure ANCOVAs (with baseline values as a covariate) did not demonstrate any group differences for these three Body Esteem subscales. There were no significant differences between groups on daily caloric intake or percent body fat at baseline or post-treatment. Regular Exercisers (X= 25.21, SD=3.86) and New Exercisers (X=27.52, SD=5.04) participants were significantly different on BMI at baseline (F=5.40; p=.02), but not at post-treatment (F=1.24; p=.27). Findings suggest that participating in a PA intervention made New Exercisers similar to Regular Exercisers on BMI and body esteem.

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## C-67

## SELF-EFFICACY FOR COPING WITH BARRIERS HELPS STUDENTS STAY ACTIVE DURING TRANSITION TO UNIVERSITY

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Increases in health risk behaviors such as binge drinking, smoking, and physical inactivity, occur during transition from youth to young adulthood (Baranowski et al., 1997). Bray and Born (2004) recently found physical activity declines during transition from high school to first-year university. According to theory, self-efficacy beliefs may mediate this change in behavior (Bandura, 1997). The purpose of the study was to examine whether students' efficacy to cope with physical activity barriers mediated changes in activity from high school to first-year university. First-year university students (N = 160) completed measures of previous (8-month) physical activity (pre-transition) and coping self-efficacy during their first week at university. At the end of the spring semester, participants completed a second survey assessing their physical activity over the previous 7 months. A repeated measures ANOVA showed physical activity declined significantly,  $F(1,159)=5.66$ ,  $p=.02$ , from pre-transition ( $M=59.58+44.97$  MET hours/week) to first-year ( $M=51.36+41.38$  MET hours/week). Also, physical activity tracked moderately over transition ( $r = .52$ ). Hierarchical multiple regression revealed coping self-efficacy partially mediated the relationship between pre-transition and first-year physical activity (i.e., a 30% reduction in  $R^2$  from .23 to .16). Collectively, pre-transition physical activity and coping self-efficacy explained 29% of the variance in first-year physical activity ( $p<.01$ ). Results are consistent with Bandura's contention that self-efficacy beliefs mediate behavior change. Unfortunately, behavior change in this study was a general decline in physical activity. Coping self-efficacy may be modified via intervention and could be an influential mechanism to help curb declining physical activity levels during transition to university.

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## C-68

**ACCULTURATION, SOCIAL SUPPORT, AND COPING AMONG HISPANICS WITH HEART DISEASE**

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Acculturation is one of the most important factors that explains risk behavior among minority individuals. There is little knowledge concerning the relationship of acculturation to perceived social support and coping strategies. The purpose of this study was to explore the relationship of acculturation to perceived social support and coping among Hispanics who have had a myocardial infarction. Participants were 117 Spanish and English speaking men (n=86) and women (n=31) who completed a self-report survey that included the General Acculturation Index. The sample was composed of Cubans (60%), Caribbeans (8%), South Americans (6%), and individuals from other Central American countries (23%). Most participants had a partner (60%), 12 years of formal education, and an average age of 53 years. Average age of arrival in the U.S. was 37, and length of years in the U.S. was 18. The acculturation breakdown consisted of 76% low acculturated, 15% bicultural, and 1% high acculturated. A 2 (gender) by 3 (acculturation) MANOVA was conducted to investigate differences in perceived social support and coping. A significant interaction emerged for perceived social support, ( $p < .032$ ) with low acculturated men endorsing greater social support than low acculturated women, while bi-cultural women perceived greater social support than bi-cultural men. A main effect for gender emerged for coping strategies, with significantly more women using religion to cope than men ( $p < .03$ ), while men used more active coping skills than women ( $p < .02$ ). These results suggest that acculturation is differentially related to social support and coping for Hispanics suffering from heart disease.

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## C-69

**PREDICTORS OF CARDIAC REHABILITATION ATTENDANCE IN MINORITY AND CAUCASIAN WOMEN**

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Since 1984, mortality rates due to cardiovascular disease (CVD) have risen in women. It is well accepted that there is room for improvement in the management of CVD in women. One means of post-operative treatment is cardiac rehabilitation (CR; various combinations of prescribed exercise, diet, smoking cessation, pharmacotherapy, and psychosocial support). Numerous studies have shown CR to significantly decrease mortality and morbidity rates, however, only about 25% of eligible women participate. It is agreed upon that CR programs have not been consistent with women's needs and values. There is a paucity of studies examining reasons for non-participation in women, especially minority women who have the highest prevalence of, and morbidity from, CVD. This pilot study examined differences in experiences, expectations and perceptions between women who participated in outpatient CR following a cardiac event and those who did not. Women previously hospitalized for a cardiac event were recruited via local newspaper advertisements, and interviewed about their aftercare. Receiving information from a healthcare provider about CR ( $B=0.237$ ,  $p<0.001$ ), and perceiving one would benefit from CR ( $B=0.249$ ,  $p<0.001$ ) predicted CR attendance. Non-attendees cited lack of information as the most common reason for non-attendance. Non-attendees reported higher levels of depression than CR attendees ( $p<0.05$ ). Latina participants reported significantly higher state ( $p<0.02$ ) and trait ( $p<0.02$ ) anger scores than Caucasian women. Also, Latinas reported a significantly higher number of cardiac events than Caucasian women ( $p<0.001$ ) before being prescribed CR. Defining and understanding factors that may act as barriers to healthcare behaviors will inform future interventions that would improve CR utilization, and decrease mortality/morbidity from CVD in underserved populations.

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## C-70

**UNDERSTANDING THE RELATIONSHIP BETWEEN SOCIOECONOMIC STATUS AND UTILISATION OF PREVENTIVE HEALTH SERVICES RELATED TO CHRONIC DISEASE PREVENTION**

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Research in countries where the majority of citizens have good access to primary health care services has demonstrated that socioeconomically disadvantaged groups tend to have higher levels of medical consultations, but make less use of preventive care and screening services. The fact that lower SES groups are less likely to access and utilise preventive health services probably contributes to their poorer health outcomes, as diagnosis will typically occur later than for higher SES individuals, thus leading to poorer prognosis. More research is needed on why low SES individuals make less use of preventive care in order to develop appropriate intervention strategies. A conceptual model that incorporates a range of relevant sociodemographic, risk factor, and behavioural variables has been used to develop a new self-administered questionnaire to identify the key variables in this relationship for primary care patients. The questionnaire was pilot-tested and then reviewed by a panel of international experts in the field. The revised questionnaire was then used in a mailed survey of 800 randomly selected participants, aged 24-64 in Brisbane, Australia. The response rate was almost 65% and the sample was representative of the general population. Statistical description, bivariate analysis and multivariable modelling (logistic regression) are being used to investigate how sociodemographic, risk factor and behavioural variables influence the utilisation of preventive health services related to chronic disease.

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## C-71

**DISEASE BURDEN FOR DEPRESSION IN THE AIR FORCE MEDICAL SYSTEM: ANOTHER CALL FOR BEHAVIORAL HEALTH INTEGRATION IN PRIMARY CARE**

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Mental health (MH) disorders are a substantial public health concern. This study reports the disease burden for depression in the Air Force Medical Service (AFMS) in calendar year (CY) 2004. Depression is defined according to the HEDIS® criteria using ICD-9 codes from the Military Health System Management Analysis and Reporting Tool. The AFMS comprises 79 discrete medical treatment facilities (MTFs) with roughly 1.3 million enrollees. In CY 2004, 37,811 individuals had depression. Demographics included: 20% active duty and 80% non-active duty (e.g., retirees, family members), and 72% female and 28% male with a mean age of  $36.97 \pm 16.27$ . Fifteen percent had more than 10 visits. Co-morbid conditions included diabetes (6%), asthma (3%), dyslipidemia (20%), and hypertension (14%). In 2000, MH care provided outside of MTFs was one of the leading excess costs to the AFMS, totaling about \$8.3 million. During the past four years, over 36 MTFs have integrated behavioral health consultants (BHC) into primary care to better address behavioral health (BH) needs. Depression comprises the largest referrals to BHCs. Integrated BH care increases access, recognition, and intervention for BH problems for all types of enrollees which decreases network referrals. Given the depression disease burden, efforts should be increased to provide integrated BH care across the entire AFMS.

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## C-72

**BEHAVIORAL HEALTH CONSULTATION FOR PRIMARY CARE MEDICINE IN AN UNDERSERVED SETTING**Neftali Serrano, Psy.D.<sup>1</sup><sup>1</sup>Clinical Pastoral Care, Lawndale Christian Health Center, Chicago, IL

This program evaluation presents an integrated behavioral health service in a Federally Qualified Health Center (FQHC) in an underserved neighborhood of Chicago. Results of the evaluation include: population impact through improved provider productivity, clinical efficacy data, medical provider satisfaction, patient satisfaction, and cost-effectiveness review. The author argues that the Behavioral Health Consultant model is an effective service delivery tool for underserved communities. The model fully integrates the behavioral health professional into the primary care service through co-location with medical providers and by adapting the schedule and clinical interventions of the clinician to a primary care "style." The advantages of the model include improved acceptance and utilization by medical providers, easy access same-day patient care, reduced stigma for patients, and greater impact on the community population. Early results of this three-year-old program show reduced depression and anxiety scores at about two-month follow-up. Because underserved populations are more likely to visit a primary care physician than a mental health professional, the consultants were able to assist physicians with a wide variety of patient concerns including somatization issues, chronic pain, panic disorder, coping with chronic illnesses, and psychotropic medication utilization. Challenging aspects of the model include finding reimbursement strategies outside of Medicaid-funded patients, recruiting and training clinicians, and dealing with severe mental health issues without sufficient specialty mental health resources. More research into the efficacy of this type of consultation service needs to be done to assess its impact on overall medical costs as well as clinical efficacy.

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## C-73

**HEALTH PROMOTION IN PERSONS WITH CO-OCCURRING DISORDERS**Sandra M. Gallagher, Ph.D.,<sup>1</sup> Patricia E. Penn, Ph.D.,<sup>1</sup> and Marie Davila-Woosley, M.Phil.<sup>2</sup><sup>1</sup>Research and Evaluation, La Frontera Center, Inc., Tucson, AZ; <sup>2</sup>Psychology, George Washington University, Washington, DC

Persons with co-occurring mental illness, substance use and chronic medical disorders (P-COD) present complex treatment needs and the interactions of these disorders are rarely addressed in treatment practices or research. La Frontera Center, Inc. conducted a survey to assess the prevalence of physical health problems across a stratified sample of consumers. The results indicated that 74% reported at least one health problem, 79% reported pain, 66% smoke, 66% have BMI 25 or higher, and 62% are inactive. Importantly, 47% indicated interest in increasing exercise, 44% in learning stress management skills, 36% in improving their diet, and 49% wanted to quit smoking. Following these results, we conducted a pilot study of a cognitive behavioral (CB) skills intervention applied to health behavior change in P-COD. Groups were held weekly for 10 weeks and CB skills practice centered on healthful behavior changes including increasing exercise, improving diet, and relaxation skills. Ten P-COD enrolled. Complete pre, post, and follow-up data were available for six participants. Overall, the intervention was well received by those who participated and, in general, the pre to post-intervention results appear encouraging. There was significant improvement in overall BASIS-32 scores ( $t = 3.1, p < .04$ ), SF-12 physical functioning ( $t = 3.3, p < .03$ ) and social functioning ( $t = 4.0, p < .02$ ), less emotion-focused coping ( $t = 3.5, p < .03$ ), and improved working alliance ( $t = 2.7, p < .05$ ).

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## C-74

**EMOTIONAL VS. RATIONAL APPEALS FOR NATIONAL MARROW DONOR PROGRAM REGISTRATION: AN EXPERIMENTAL STUDY**Joshua L. Ruberg,<sup>1</sup> Sheri R. McGuffin,<sup>1</sup> Lynne M. Roetzer,<sup>1</sup> and Jamie L. Studts, Ph.D.<sup>2</sup><sup>1</sup>Department of Psychological and Brain Sciences, University of Louisville;<sup>2</sup>Department of Medicine, University of Louisville School of Medicine, Louisville, KY

Approximately 70% of individuals needing a stem cell transplant do not have a genetically matched family member who can donate. These individuals must rely on unrelated donors registered with the National Marrow Donor Program (NMDP). Effective measures to solicit NMDP volunteers are needed. This study tested the hypothesis that an emotional appeal would be more likely to motivate NMDP registration than a rational appeal. Participants were randomly assigned to a rational or emotional appeal and then asked to report if they would: (1) register with the NMDP; and (2) talk with family members about NMDP registration. Of the 47 participants receiving the emotional appeal, 40 (85%) agreed to register for the NMDP, while only 21 of 43 (49%) of the participants receiving the rational appeal agreed to register, a significant difference,  $\chi^2(1, N=90) = 13.53, p < .001, \Phi = .39$ . However, the emotional appeal (72%) and rational appeal (54%) groups did not differ in reported willingness to talk with their family about NMDP registration,  $\chi^2(1, N=90) = 3.44, p = .064, \Phi = .20$ . Results suggest that an emotional appeal was more effective in motivating participants to consider registering for the NMDP. Other factors precluded participants from discussing NMDP registration with family members. Including personal stories in promotional material soliciting registration with the NMDP may motivate individuals to register. These results might also have implications for solid organ and umbilical cord blood donation.

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## C-75

**A PILOT SMOKING CESSATION PROGRAM FOR LESBIAN, GAY, BISEXUAL, AND TRANSGENDER SMOKERS**Jack E. Burkhalter, Ph.D.,<sup>1</sup> Barbara Warren, Psy.D.,<sup>2</sup> Christopher Murray, MSW,<sup>2</sup> Jenna Daly, MSW,<sup>2</sup> and Jeannetta Bushey, R.N., CSW.<sup>2</sup><sup>1</sup>Psychiatry & Behavioral Sciences, Memorial Sloan-Kettering Cancer Center; <sup>2</sup>Lesbian, Gay, Bisexual, and Transgender Community Center, New York, NY

Smoking prevalence is greater among lesbian, gay, bisexual, and transgender (LGBT) persons than in the general population. Culturally appropriate, effective LGBT smoking cessation interventions are needed. We devised and evaluated a six-session group smoking cessation program called "Commit to Quit," (CTQ). All sessions were held at the LGBT Community Center (LGBTCC) in New York City. Demographic, smoking history, smoking outcomes, and program evaluation data were collected on 157 participants over nine rounds of CTQ. Program components included elements common to group programs (e.g., education about health effects of smoking, developing a quit plan) but also emphasized building motivation, stress management, and included one individual counseling session. Participants' mean age was 44, 65% were male, 84% gay or lesbian, 6% bisexual, 3% transgender, and 76% white. On average, participants smoked 17 (SD = 12) cigarettes/day and 76% smoked their first cigarette within 30 minutes of waking. Of the 89 (57%) who attended the last sessions, 63 (71%) reported that they had quit smoking and 10% had reduced smoking. Decisional balance shifted toward lower pros of smoking from pre- to post-program ( $p < .05$ ). All program components were rated by 75% or more of participants as very good to excellent. This program demonstrated the feasibility of attracting LGBT smokers to a safe venue and potential for achieving substantial short-term smoking abstinence. Supported by a grant from the American Legacy Foundation to the LGBTCC, where the first author was consultant.

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**POSTER SESSION D**

Friday, April 15, 2005

8:30 a.m.-10:00 a.m.

Exhibit Hall

Poster Session D - Spirituality; Quality of Life; Health Communication and Technology; Measurement and Methods; Adherence

**D-110****COLORECTAL CANCER SCREENING IN AVERAGE, MODERATE AND HIGH-RISK INDIVIDUALS**Lisa Madlensky, Ph.D.<sup>1</sup><sup>1</sup>Moore's Cancer Center, University of California, San Diego, La Jolla, CA

One of the strongest risk factors for colorectal cancer (CRC) is the presence of a family history of the disease. Risk increases with increasing number of relatives affected, and with decreasing ages of diagnosis in those relatives. Guidelines advise individuals with one or more first degree relatives with CRC to be screened by colonoscopy rather than other modalities. Using data from the Seattle and Ontario, Canada sites of the NCI-funded Cooperative Family Registries for Colorectal Cancer Studies (CFRs), we examined colonoscopic screening rates in those at increased risk due to family history. Age- and sex-stratified colonoscopy rates were used to compare ever-screening in groups at three levels of familial risk. For this preliminary study, we did not impose a time restriction on when the procedure had to occur (i.e. we used "ever-colonoscopy" as the outcome). Screening colonoscopy rates ranged from 0% in average-risk males aged <40, to 53% in high-risk females aged 50-59. For each age stratum, there was a clear pattern of screening rates where average-risk < moderate-risk < high-risk. Importantly, we distinguished between screening colonoscopy vs. symptomatic or follow-up colonoscopy. For example, among moderate-risk women aged 70+, the overall colonoscopy rate was 39%, but half of those scopes were not for screening purposes. These findings raise two important issues. First, while there are higher screening rates among those at the highest risk, at least 50% of those with very strong family histories of CRC are not being appropriately screened. Second, reports of CRC screening must exclude procedures done on symptomatic individuals, in order to avoid inflation of reported screening rates.

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**D-111****ADHERENCE TO ORTHOPEDIC BRACE WEAR: A SYSTEMATIC REVIEW**Teresa Lynch, MS,<sup>1</sup> Flora Hoodin, PhD,<sup>1</sup> and Elizabeth Kuhl, B.A.<sup>1</sup><sup>1</sup>Eastern Michigan University, Ypsilanti, MI

One of the greatest barriers to successful treatment outcomes for adolescents diagnosed with idiopathic scoliosis is poor adherence to orthopedic brace wear, yet the literature exploring the variables predictive of adolescents brace wear is sparse and disjointed. For instance, seven studies of psychosocial factors, and five studies of effectiveness of bracing relied on patient's self-reports or chart reviews, methods of questionable reliability. In contrast, five studies utilizing more rigorous objective methods piloting methodologies and instrumentation provided information about temporal patterns of wear, but ignored psychosocial influences. The purpose of this systematic review was to evaluate the findings from these three types of studies of adolescents' adherence to orthopedic brace wear and extrapolate implications for future research. Our review suggested adherence to brace wearing is a dynamic behavior, poorly captured by retrospective reports and cross-sectional studies. Importantly, findings across studies indicated that adherence consistently declined with age and over time, and reasons for not wearing the brace differed with age and across time. Additionally, females and males reported different reasons for poor adherence. Furthermore, daily concerns strongly influenced adolescents' adherence decisions. Nevertheless, findings suggest that adherence to brace wearing continues to greatly impact the effectiveness of brace treatments. However, the exact nature of the associations in many of the studies using self-reports are made suspect by the findings that actual adherence (59.6%) was substantially less than the self-reported adherence (88.6%). Overall, current studies provide only snapshots of the patterns of and influences on adolescent brace wear. Future studies should prospectively assess psychosocial factors and incorporate objective measures of adherence.

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**D-112****LONG-TERM ADHERENCE TO CHOLESTEROL-LOWERING AND/OR ANTICOAGULATION MEDICATIONS: RESULTS OF 12-MONTH INTERVENTION WITH PATIENT, PHYSICIAN, AND SYSTEM COMPONENTS**Cheryl Albright, Ph.D.,<sup>1</sup> Brian Oliveira, Ph.D.,<sup>2</sup> Nancy Houston-Miller, R.N.,<sup>2</sup> and Peter Rudd, M.D.<sup>2</sup><sup>1</sup>Prevention and Control, Cancer Research Center of Hawaii, Honolulu, HI; <sup>2</sup>Stanford University School of Medicine, Stanford, CA

Chronic preventive therapies, often taken for a lifetime, can be problematic for patients and physicians who are trying to maintain optimal adherence and achieve clinical outcomes (e.g., LDL-cholesterol). This study randomized outpatients on statin therapy, to reduce serum cholesterol, and/or warfarin treatment, to treat chronic conditions (e.g., dysrhythmia, valve replacement), to Intervention (INT) or Usual Care (UC) conditions. INT consisted of 3 levels: (a) theoretically-based behavioral strategies to increase patients' medication taking, (b) information for physicians on achieving national guidelines for clinical outcomes, and (c) reduction of system barriers. UC received print materials on general health topics. EDEM electronic monitoring caps were used to track all the patients' daily pill taking. Subjects (N=131, INT=64, UC=67, 60% men, 78% White, 66% married, 30% retired) returned at 3-month intervals over 12 months and at 6 months post-intervention. Subjects' mean age was 58 ± 11, 76% took statin, 40% took warfarin, and 16% took both. ANOVA analysis revealed a significant difference between conditions (p<0.03), a significant time effect (p<0.002), and a time x condition interaction (p<0.024). Adherence among INT patients remained high from baseline (96%), after 12 months of intervention (94%), and for 6-months after the intervention ended (96%), compared to UC (96%, 89%, 89% respectively). Predictors associated with adherence levels within INT will be presented. Interventions with components that address patient, physician, and system issues can facilitate long-term medication-taking adherence compared to usual care. Funding NIH Grant R01-HL66799.

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## D-113

**2001 AND STILL NOT SCREENED: HEALTH BEHAVIORS AND NON-ADHERENCE TO MAMMOGRAPHY GUIDELINES**

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Although progress has been made with regard to regular mammography adoption, research differentiating women who have never had a mammogram from intermittent users in reference to routine screeners is still needed. This study measured the association between lifestyle health choices and nonadherence to mammography guidelines for an often ignored group: intermittent users. We identified women with no personal history of breast cancer who participated in the 2001 California Health Interview Survey. Women aged 55-75 years (n=7,379) were categorized as: never had mammography (n=455); had mammography but off-schedule (n=1,235); and those adhering to biennial screening guidelines (n=5,689). Using SUDAAN to develop polytomous multiple logistic regression models, we evaluated BMI, alcohol intake, physical activity, and current smoking status. Seventeen percent of women were off-schedule from screening recommendations. Adjusting for age, income, race, usual source of care, and insurance status, we found that intermittent users of mammography, compared to regular screeners, were more likely to smoke (adjusted ROR = 1.58; 95% CI, 1.22-2.05), be obese (AROR = 1.44; 95% CI, 1.12-1.84) or be underweight (AROR = 1.90; 95% CI, 1.06-3.41), not routinely exercise (AROR = 1.28; 95% CI, 1.07-1.53) and not drink alcohol (AROR = 1.80; 95% CI, 1.33-2.45). They were less likely to drink heavily (AROR = 0.72; 95% CI, 0.53-0.98) and formerly smoke (AROR = 0.61; 95% CI, 0.48-0.78). Despite consistent breast cancer screening guidelines, a significant proportion of women are intermittent users. As uncovered by this study, women who are off-schedule share similar characteristics, in terms of health behaviors, to those who have never been screened.

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## D-114

**SELF-EFFICACY EXPECTATIONS AND MULTIPLE MEASURES OF ADHERENCE IN AN ADULT HEMODIALYSIS POPULATION**

Teri L. Bourdeau, Ph.D.,<sup>1</sup> Larry L. Mullins, Ph.D.,<sup>1</sup> and James E. Bourdeau, M.D., Ph.D.<sup>2</sup>  
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There is growing interest in the relationship between self-efficacy beliefs and adherence in the hemodialysis population (Brady, Tucker, Alfino, Tarrant, & Finlayson, 1997; Rosenbaum and Ben-Ari Smira, 1986; Schneider, Friend, Whitaker, & Wadhwa, 1991). Notably, this research has demonstrated that patients' perceptions of control and success (i.e., self-efficacy expectations/cognitions) appear to mediate fluid compliance. The present study aimed to further examine this relationship by adding self-efficacy questions related to dietary and medication compliance, dialysis attendance, and nephrologist office visits (NOV). Additionally, associated markers of adherence (i.e., phosphorus, potassium, and self-report of dietary intake, attendance, and NOV) were obtained. Participants were 82 adult hemodialysis patients ( $M_{age} = 59.7$ ; 37 females; 45 males) receiving in-center hemodialysis. Correlational analyses revealed significant relationships between both fluid compliance and fluid self-efficacy ( $r = 0.47, p < 0.01$ ) and dietary compliance and diet self-efficacy ( $r = 0.46, p < 0.01$ ). However, there was no relationship between medication adherence and medication self-efficacy. The results suggest that the belief one is capable of adhering to the fluid and dietary components of the regimen is positively correlated with fluid adherent and dietary adherent behavior, respectively. However, it also suggests that medication compliance is not mediated by this same health belief. Further examination of dialysis attendance and related self-efficacy beliefs yielded nonsignificant findings also suggesting that the domains of adherence must be analyzed and conceptualized independently.

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## D-115

**THE RELATIONSHIP BETWEEN NEPHROLOGIST OFFICE VISITS AND OTHER MEASURES OF ADHERENCE IN AN ADULT HEMODIALYSIS POPULATION**

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The hemodialysis medical regimen is multi-faceted, including dietary and fluid restrictions, ingestion of phosphate-binding medications, attendance at scheduled thrice-weekly dialysis sessions for a prescribed period of time, and quarterly visits with their nephrologist. Adherence studies have focused almost exclusively on fluid and diet (Christensen, Moran, Wiebe, Ehlers, & Lawton, 2002; Bame, Petersen, & Wray, 1993) with less attention given to medication (Bame, Petersen, & Wray, 1993) and little or no mention of the quarterly visits to the nephrologist. The present study examined the relationship between adherence markers and nephrologist office visits (NOV). Participants were 82 adult hemodialysis patients ( $M_{age} = 59.7$ ; 37 females; 45 males). Measurement of adherence included self-report measures (diet, fluid, medication use, dialysis attendance, NOV), medical record data (dialysis attendance, interdialytic weight gain), and laboratory values (postassium, phosphorus, urea reduction ratio). Canonical correlation analyses revealed significant relationships between NOV and diet ( $r = 0.50$ ;  $p < 0.01$ , controlling for age, gender, and affect), and NOV and fluid domains ( $r = 0.56$ ,  $p < 0.01$ ; controlling for age, gender, negative affect, and marital status). However, there was no relationship between NOV and medication adherence or NOV and dialysis attendance. This finding suggests that NOV may be a moderating variable that influences the extent to which patients adhere to the dietary and fluid components of the medical regimen, thereby meriting inclusion in future adherence studies.

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## D-116

**MEASURE DEVELOPMENT FOR SELF-EFFICACY FOR MEDICATION ADHERENCE**

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Hypertension disproportionately affects African-Americans who, like other hypertensives, have low levels of medication adherence. Research shows self-efficacy to be a powerful predictor of health related behaviors. Ogedegbe and colleagues used qualitative interviews to create 43 test items, which were administered to 72 subjects, resulting in a 26-item unitary scale. To correct for small sample size, further instrument development with a larger sample was undertaken. A set of 38 items, containing 36 original items and 2 new ones, was administered to 232 hypertensive African-Americans. Exploratory principal components analysis was done on the inter-item correlation matrix. Parallel analysis and the Scree criteria suggested either 2 or 3 factors. The 3-factor solution was chosen based on sub-scale face validity, scale psychometrics. The final 18-item instrument contains 3 subscales. The first, a 9-item scale (Cronbach's  $\alpha = .92$ ) measures barriers to medication taking such as fatigue, self-consciousness, and between-meal dosing. The second is a 4-item scale ( $\alpha = .83$ ) measuring situations in which respondents forget their condition (e.g. being busy at home) which might be especially important for a symptomless condition such as hypertension. The third is a 5-item scale ( $\alpha = .72$ ) that measures difficulties specific to the medication such as cost, side effects, and trouble swallowing. These scales are moderately to highly correlated (.51-.72). Initial validity evidence is provided by positive correlations with a self-report measure of medication adherence for the first and second subscales ( $r = .38$  and  $.40$ ) respectively. This multi-component instrument will be useful for studying medication adherence and tailoring interventions for hypertensive African-Americans with low medication adherence.

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## D-117

### INTERVENING TO IMPROVE UTILIZATION OF AND ADHERENCE TO ANTIRETROVIRAL THERAPY AMONG HIV-INFECTED DRUG USERS RECEIVING PRIMARY CARE IN METHADONE MAINTENANCE TREATMENT PROGRAMS

Nina A. Cooperman, Psy.D.,<sup>1</sup> Jeffrey T. Parsons, PhD,<sup>2</sup> Daniel Kaswan, MD,<sup>1</sup> and Julia H. Arnsten, MD,<sup>1,3</sup>

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We describe the preliminary results of an intervention to improve utilization of and adherence to antiretroviral therapy among HIV-infected, opioid dependent patients receiving primary care in their methadone maintenance treatment programs. The intervention consists of six, semi-structured, individual counseling sessions that focus on motivational interviewing and cognitive-behavioral skills training. To date, we have enrolled 182 patients in the intervention, and have collected both baseline and three-month follow-up data on 78 patients. Three months after beginning the intervention, a significantly greater proportion of patients were prescribed antiretroviral medications than at baseline (86% at follow-up vs. 70% at baseline,  $p < .05$ ). The mean viral load at follow-up (25,513 copies/ml) was significantly less than at baseline (100,255 copies/ml,  $t = 2.24$ ,  $p < .05$ ). Among patients taking antiretroviral medications, fewer antiretroviral doses were missed during the previous three days at follow-up than at baseline (.89 vs. .26 doses missed,  $t = 2.34$ ,  $p < .05$ ). Also among those prescribed antiretroviral medication, 49% reported using a pillbox for their medications prior to the intervention, and 69% reported using a pillbox at three month follow-up ( $p < .05$ ). Finally, more patients had feelings of depression during the previous week at the beginning of treatment than at follow-up (55% vs. 47%,  $p < .05$ ). These findings suggest that semi-structured antiretroviral adherence counseling can be effective for improving utilization of and adherence to antiretroviral medications, physical health, and well being among drug users.

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## D-118

### ADHERENCE TO WARFARIN SODIUM USING ELECTRONIC PILL-CAP MONITORING AND THE MILLON BEHAVIORAL MEDICINE DIAGNOSTIC INVENTORY

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Poor adherence to medication therapy is responsible for approximately 5% of all hospital admissions. Drugs with a narrow therapeutic window, such as warfarin, are particularly susceptible to adherence problems. Adherence can be assessed using various techniques, including electronic monitoring and psychosocial instruments that predict adherence; however, there is currently little research on whether results from these methods are comparable. In the current study, 44 patients (28 men, 16 women, mean age 51.5±14.7 years) attending an anticoagulation clinic completed two measures of adherence. Indications for warfarin included thrombosis, atrial fibrillation/flutter, embolism, and myocardial infarction. Participants completed the Millon Behavioral Medicine Diagnostic (MBMD) inventory, which produces a 'Problematic Compliance' index (mean score 63.11±28.5), and used electronically monitored pill-caps when taking prescribed warfarin. Pill-cap adherence was measured as percent of days on which the prescribed dose of warfarin was taken (mean 76.5%±26.4%). Both measures found similar percentages of non-adherent individuals: 38.6% had problematic compliance on the MBMD and 43.2% were non-adherent (using a 75% cutoff) according to pill-cap measurements. However, adherence outcomes on one measure did not correspond to outcomes on the other better than chance ( $X^2 = 0.17$ ,  $p = .68$ ). Additionally, the kappa value produced by this comparison was low ( $k = .062$ ). Results suggest that these two methods may evaluate distinct types of adherence. The MBMD inventory may assess general medical compliance, while pill-cap monitoring limits compliance to pharmacological regimens. Future studies should compare each method to biological measures of warfarin effects.

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## D-119

### DEPRESSION, SOCIAL SUPPORT, AND MEDICATION ADHERENCE IN HEART FAILURE FUNCTIONING

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Social support, depression, and treatment adherence have been shown to predict risk of mortality in cardiovascular patients. The goals of this study were as follows: 1) to test whether social support was associated with heart failure (HF), 2) to test whether medication adherence mediated the relationship between social support and HF functioning, and 3) to assess whether depression mediated the effect between social support and HF functioning. Patients with HF from the Cardiology Service of a Veterans Affairs or University-affiliated clinic (N=81) assessed with measures social support, medication adherence, depression, and HF level of functioning. Most of the patients were Black, male, and 44.4% were married. Multiple regression analyses indicated that age and the number of comorbid conditions were not related to HF functioning in the context of the model that included social support, depression, and treatment adherence. Medication nonadherence proved to be a significant mediator of the association between social support and HF functioning (partial  $r$  reduced from 0.29 to 0.23). Depression reduced the significance of both medication nonadherence and social support in this model. These findings suggest that depressive symptoms may mediate the role of social support in HF functioning, and that it is a highly important predictor of heart failure functioning (multiple R-squared = .20). Social support, depression and medication adherence are important factors in the patients' level of functioning. Caveats include the cross-sectional nature of the design, and the weakness of the measure of medication adherence.

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## D-120

### FAMILY SATISFACTION AND COMMUNICATION PATTERNS IN ADOLESCENT EATING DISORDER PATIENTS

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This study examines family satisfaction and communication patterns in eating disorder (ED) patients and their parents. Subjects were 100 women ages 12-22 across three ED populations: Anorexia Nervosa-Restricting Type (AN-R, n=59), Anorexia Nervosa-Binge-Eating/Purging Type (AN-B/P, n=16), and Bulimia Nervosa-Purging Type (BN-P, n=24). Patients and their parents completed adolescent and parent versions of the *Family Satisfaction Inventory* (FSI; Olson & Wilson, 1982) and *Parent-Adolescent Communication Inventory* (P-ACI; Barnes & Olson, 1982). Comparisons with normative data suggest low scores overall. Percentile FSI scores [Mean(SD)] were 61<sup>st</sup> [48.3(13.0)], 28<sup>th</sup> [40.0(12.1)], and 37<sup>th</sup> [42.6(2.5)] for AN-R, AN-B/P, and BN-P, respectively. P-ACI adolescent-mother percentile scores were 77<sup>th</sup> [74.6(15.6)], 28<sup>th</sup> [59.6(18.1)], 55<sup>th</sup> [66.5(15.1)]. P-ACI adolescent-father percentile scores were 48<sup>th</sup> [65.4(18.5)], 42<sup>nd</sup> [61.3(15.3)], and 34<sup>th</sup> [56.7(15.2)]. A series of one-way ANOVAs examined between-group differences among diagnostic categories and across raters. Results indicated that AN-R patients reported significantly higher levels of family satisfaction than AN-B/P or BN-P patients. Regarding communication, there were no significant between group differences in adolescent-father communication, but AN-R patients reported significantly better adolescent-mother communication than AN-B/P or BN-P patients. There was no significant main effect for rater on satisfaction or communication outcomes, but planned follow-up tests indicated that BN-P patient ratings of communication were significantly lower than BN-P parent ratings; this was not the case for AN-R or AN-B/P ratings. These results suggest different satisfaction and communication patterns across ED populations. It is thus more methodologically appropriate to maintain separate diagnostic categories in empirical studies, rather than collapse across groups.

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## D-121

**COMMUNICATING RISK FACTOR INFORMATION: IMPACT ON KNOWLEDGE AND OPTIMISTIC BIAS**

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Public awareness of colorectal cancer (CRC) is low in the UK, and surveys have identified a strong optimistic bias. Comparative optimism has also been shown to be associated with lower uptake of CRC screening. Communicating risk information so that people understand it and draw appropriate conclusions about their personal risk is difficult. The present study investigated whether giving simple risk information about CRC could increase awareness and reduce comparative optimism. All adults aged 45-66 years, registered with two general practices in South West England, were randomised to either risk factor information (n=1053) or to a control group (no information, n=1056). The risk information was a leaflet using simple sentences and graphs to describe the main risk factors. A questionnaire assessing knowledge of CRC risk factors, perceived risk, demographics, family history of CRC, and psychological wellbeing was mailed to both groups. Participants showed an overall optimistic bias. The risk information group became significantly more knowledgeable about CRC risk factors (4.9 vs. 8.4,  $p < 0.001$ ). There was no overall effect of risk information on mean perceived risk score, but the information group showed more polarized perceptions of risk, i.e. they were less likely to see their risk as 'the same' and more likely to see it as either 'lower' or 'higher' than average ( $p < 0.001$ ). In this study, risk factor information successfully increased CRC knowledge but failed to modify risk perceptions. Future research should examine cognitive processes that link general health knowledge with perceived vulnerability.

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## D-122

**WHICH ADOLESCENTS DO COMMERCIAL IMAGE BANKS PORTRAY AS BEING PHYSICALLY ACTIVE?**

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Promoting physical activity (PA) among adolescents is a public health priority and campaigns to increase adolescent PA are gaining popularity. Health communications and social marketing research suggest promising campaign strategies: tailoring for audience segments, adopting a consumer focus to make the product (PA) attractive, and modifying the look or "surface structure" of intervention materials to match "superficial" (observable) characteristics of the target population. Commercial image banks, to which a one-time fee is paid for unlimited use of royalty-free images, are the most common image source for campaign materials. The purpose of this study was to describe the types of images representing adolescent PA available in the most widely-used commercial image banks. Eighteen image banks were identified through search criteria and 8 (44%) have been systematically reviewed to date. Keyword searches using terms denoting adolescents OR physical activity OR eating yielded 91,346 images. Of those, 1,016 images (1.1%) portraying at least one adolescent (subject looks 10-25 years) representing PA or eating were identified and logged. Results for PA images (n=658) will be presented. Among these, 60% showed adolescents actually doing PA whereas 40% were "implied PA" (eg, studio shots of adolescents posing with PA uniforms/equipment). Approximately 27% of images included non-Anglo subjects and <1% included overweight youth (coded against BMI silhouettes) doing actual or implied PA. Images showed more females than males but activity types varied by gender. This ongoing study highlights unmet needs for images and provides possible insights about health disparities and public perceptions of PA.

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## D-123

**DEVELOPMENT OF A PROTOTYPE AGGREGATE-LEVEL REPORT FOR ASTHMA-CAT**

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Aggregate-, or group-level, reports are useful benchmarking tools in disease management. Such interpretation guidelines help inform treatment decisions, screen for co-morbid conditions, and support group monitoring efforts. We developed a prototype user-friendly aggregate-level report for a computerized patient-based assessment system of asthma impact and control (ASTHMA-CAT). This two-page report provides socio-demographics for the total sample and by sub-group; guidelines for interpreting Asthma Impact Survey (AIS), Asthma Control Test (ACT), and SF-8 Health Survey scores in relation to asthma and general U.S. population norms; a screen for asthma control and depression; and an indicator of work productivity. Pilot data were collected from 114 members of Kaiser Permanente's Care Management Institute via the Internet to populate the prototype report. The sample was primarily comprised of White, non-Hispanic, educated women with mild to moderate asthma, reporting an average age of 45 years. Overall, the report indicated that asthma is well controlled ( $M=19.8$ ) and has low impact ( $M=42.6$ ) on functional health and well-being in this sample. A small sample of clinician providers ( $N=3$ ) were asked to review the aggregate report with regards to its format, relevance, and usefulness in care planning and evaluation. Generally, feedback was very positive, suggesting that the report may be well accepted by the clinical community. More research is needed to evaluate practical application of the assessment and reporting system. Making aggregate reports available to care providers could radically enhance care management, inform decision-making, and improve our understanding of the nature of asthma.

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## D-124

**LONGITUDINAL MODELING OF PEDIATRIC HEALTH OUTCOMES USING GROUP-BASED TRAJECTORIES OF CHANGE**

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Differential patterns of change are often hypothesized. However, until recently no exploratory analytic approach existed for the creation of longitudinal subgroups. A relatively new statistical approach to longitudinal modeling, the SAS Trajectory Procedure created by Nagin and colleagues, creates homogeneous groups of individuals with similar trajectories. In this poster, the group trajectory approach is described, trajectories created with this method are compared to an average trajectory, and limitations and benefits compared to other methods are outlined. Level of symptoms in pediatric patients ( $N=132$ ), referred for unexplained abdominal pain, was assessed for 5 years after baseline. Using the Nagin SAS procedure we found three trajectories of symptom change. These trajectories were distinct from the average trajectory. The majority of subjects improved and remained improved but a significant subset of subjects, a high risk group, maintained high levels of symptom reporting. The high risk group had more females, reported more stressful events, and was more anxious and depressed than the other two trajectory groups at baseline. Describing the natural history of a disorder with an average trajectory may not adequately depict any individual. The limitations of this approach are its empirical and sample-specific characteristics. The benefits include the ability to create homogenous groupings of individuals with similar long-term profiles, to use trajectory membership as data in subsequent analyses, and to use trajectories for treatment and health services planning. This approach is particularly useful in the early stages of longitudinal research in an area.

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## D-125

## ONCE MORE WITH FEELING—EMA DOES NOT INCREASE REACTIVITY

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Ecological Momentary Assessment (EMA) has meaningful advantages as a measurement tool, but researchers are often concerned about its reactivity: the possibility that frequent daily assessments will change behavior. We designed a study using EMA to assess the thoughts and worries that smokers experience "online" on a daily basis over a 6-day period. The concern here is that by asking about thoughts and feelings, we would increase the frequency with which smokers had such thoughts and feelings. To test this reactivity hypothesis, we recruited 55 smokers from the University community. Forty-four of the smokers carried a personal desk assistant and recorded their thoughts about smoking 5 X day (EMA group). Smokers said whether they had certain thoughts (e.g., getting sick because of smoking), and how much worry they had about each thought. Eleven smokers did not carry a palm pilot (CONTROL group). Both groups returned 1 week later to complete a posttest. Compared to EMA participants, Control smokers reported more frequent negative thoughts about their smoking during the previous week,  $t(53) = 2.1, p < .05$ . Control smokers said they thought more about their addiction, about how they smell from smoking, and about the cost of cigarettes (all  $p < .01$ ). The data showed no hint of reactivity; instead, one could make the case that smokers given an opportunity to self-monitor are more in tune with their thoughts than smokers who are asked to estimate their thoughts on an infrequent basis.

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## D-126

## ECOLOGICAL MOMENTARY ASSESSMENT OF SEXUAL RISK BEHAVIOR AMONG INNER-CITY PUBLIC SEXUALLY TRANSMITTED DISEASE CLINIC PATIENTS II: RELATION TO RETROSPECTIVE SELF REPORTS

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**Background:** We developed and piloted ecological momentary assessment (EMA) procedures to research sexual risk behavior in a high HIV-risk community sample. In this study we compare behaviors reported using the EMA assessment with retrospective self reports.

**Participants and Method:** Twenty-four patients (M age 31.3, 50% female, 88% African American) were recruited at a public STD clinic. They provided informed consent, were trained in the use of handheld computers, and were prompted by computer to complete three assessments of sexual behavior per day for two weeks. Upon completion, participants self-administered a survey of their sexual behavior over the past two weeks.

**Results:** 22 (92%) participants returned usable data EMA data and 19 completed the post-EMA surveys. 15 of these 19 participants reported some sexual activity on EMA during the two week follow up period, whereas 18 retrospectively reported activity. On average, participants reported 2.2 (SD = 7.2) more vaginal and anal sex acts on the survey relative to EMA data. Men had larger average discrepancies (M=4.2) than women (-0.5). Concordance on other specific behaviors will be reported.

**Implications:** There may be meaningful mode and gender differences in reporting, especially given the brief follow-up period. However, the small sample size and pilot nature of the study preclude firm conclusions, and further research is needed to explain the observed discrepancies.

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## D-127

## ECOLOGICAL MOMENTARY ASSESSMENT OF SEXUAL RISK BEHAVIOR AMONG INNER-CITY PUBLIC SEXUALLY TRANSMITTED DISEASE CLINIC PATIENTS I: FEASIBILITY

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**Background:** We developed and piloted ecological momentary assessment (EMA) procedures to research complex within-person relationships between sexual risk behavior and psychological states, in a high HIV-risk community sample. In this initial study we describe the feasibility of the procedures.

**Participants and Method:** Twenty-four patients (M age 31.3, 50% female, 88% African American, Median income < \$8,000/year) were recruited from a public STD Clinic. During a 2-hour meeting, patients provided consent, were trained in the use of handheld computers, and informed that they would be prompted by the computer to complete three assessments per day over two weeks. Assessments inquired about sexual behavior and substance use since the previous assessment, positive and negative affect, perceived risk, behavioral intentions, and self efficacy.

**Results:** 22 (92%) participants returned usable data. Three computers were lost by two participants. Eleven participants responded to 100% of prompts with complete assessments. Eight participants responded to 80-99% of prompts and three responded to 60-79% of prompts. In total, 850 assessments (92% of prompts) were received from study completers. Participants reported the experience to be interesting, pleasant, and positive.

**Implications:** It is feasible to train adults at high risk for HIV, having little previous experience with technology, to use handheld computers to provide rich data on sexual behavior and other sensitive behaviors. These data may be helpful in developing and evaluating new theories and prevention strategies.

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## D-128

## OBJECTIVE MEASUREMENT OF ADOLESCENT SEDENTARY ACTIVITY TIME: ARE THE DATA SUPPORTED?

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Recently, accelerometer data has been used to objectively quantify amount of time spent in not only physical activity, but also sedentary activity. While there is some controversy over an appropriate cutoff value, 100 counts per min is commonly used with adolescents. This study sought to compare sedentary time objectively measured via accelerometer with self-reported data. Adolescents (n=878, mean age=12.7, SD=1.3; 54% female) completed questionnaires as part of a large health behavior trial. For both boys and girls, objectively measured sedentary time was not significantly different between BMI percentile categories (<85%, 85-95, >95%) or ethnicities (white vs. non-white), while self-reported sedentary time differed by BMI and ethnicity. Specifically, self-reported sedentary activity hours increased significantly with BMI category (girls:  $m = 7.8, 7.7, 9.7; p < .01$ ; boys:  $m = 6.7, 7.7, 8.6; p < .01$ ). In addition, non-white boys reported significantly more hours spent in sedentary activity compared to white boys ( $p < .01$ ). Although self-report data has limitations as a criterion, these results suggest that 100 counts per minute may not be informative as a cutoff value, masking group differences. Further research needs to explore additional cutoff points before accelerometer data can be used to accurately quantify time spent in sedentary activity.

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## D-129

## COST-EFFECTIVENESS ANALYSES OF A PHYSICAL ACTIVITY INTERVENTION TRIAL

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Physical inactivity is associated with a broad range of negative health consequences. In order to reach the large numbers of sedentary individuals, it is essential to find cost-effective ways of delivering efficacious interventions. Project STRIDE was a randomized clinical trial in which 239 healthy, sedentary adults (mean age =47.5; 82% women) received one of the following interventions: 1) telephone-based, individualized motivationally-tailored feedback; 2) print-based, individualized motivationally-tailored feedback; or 3) minimal contact wait-list control. Primary outcome assessments were conducted at baseline, 6, and 12 months, including the interviewer-based 7-day Physical Activity Recall (PAR). The objective of this current study is to examine, from a provider perspective, the incremental cost per incremental unit of improvement in outcomes for each intervention arm relative to the wait-list control. The cost of intervention activities included the value of interventionists' time, intervention materials, mailings, incentives, development of a computer-based expert system for provision of personalized feedback, telephone and overhead. Cost of the expert system was annualized over the course of the study. Other costs were adjusted for inflation using the medical care price deflators of the Consumer Price Index, and discounted annually at a rate of 5% to account for the time preference for money. Incremental effects at 6 and 12 months were determined using the 7 day Physical Activity Recall. Results on the full cost-effectiveness analysis, as well as implications for community-based programs will be discussed.

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## D-130

## NARRATIVES OF STRESS: ASSESSMENT AND CLASSIFICATION OF PREJUDICE RELATED LIFE EVENTS

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Within the social sciences there is an emerging interest in the study of prejudice as stress. A minority stress hypothesis suggests that a minority identity (e.g., sexual, gender, and/or ethn racial) brings exposure to additive stressors associated with that identity. Studies using close-ended discrimination measures are limited in coverage of potential areas of discrimination, cannot distinguish between perception of discrimination and objective assessment of the occurrence, and focus on singular identity-specific exposures. Adjusting a previous life event measure (Dohrenwend et al.), we tested exposure to discrimination and prejudice by examining subjective versus objective notions of prejudice, everyday stressors versus major life events, and distinguishing motives for the prejudice. A cross-sectional study of prejudice and health of sexual minorities in New York City, Project Scope had 149 respondents with similar proportions of women and men, and of Blacks, Latinos and Whites interviewed in the spring of 2003. 57 participants (38%) provided 81 narratives of prejudice. An independent rater objectively assessed the narratives utilizing pre-established criteria to classify event group category and prejudice type. Nearly half (49%) of the narratives were under the category of 'Crime & Legal Matters.' Of them, 24 (60%) were regarding 'being verbally harassed or insulted' with corresponding prejudice type relating to the individual's sexual orientation. Findings showed that non-Whites reported greater incidences of race related prejudice, and women cases of gender discrimination. We discuss the importance of probing events nominated by respondents, and the need for independent evaluation of respondents' narrative to arrive at better estimate of the type and severity of exposure to prejudice and discrimination.

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## D-131

## THE DEVELOPMENT OF A HEALTH NEEDS ASSESSMENT INVENTORY FOR COLLEGE-EDUCATED AFRICAN AMERICANS

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The African American population in the U.S. is disproportionately overrepresented in many of major physical and mental disease outcomes. While several studies have focused on Socioeconomic Status (SES) and lack of education as variables that may contribute to these disparities, almost no data has been collected on well-educated, college graduate African Americans. A survey instrument was developed for African Americans who have graduated from Historically Black Colleges and Universities to assess the relationship between SES, age, gender, and health risk factors associated primarily with the development of cancer and cardiovascular diseases. The survey was developed based upon a modified version of the Behavioral Risk Factors Surveillance System (BRFSS) survey and includes the assessment of: Social support, religious affiliation, residential environment, healthcare utilization, smoking, physical activity, alcohol intake, dietary pattern, John Henryism, stress, racism, depression, cancer attitudes/behaviors/screening behaviors, anger, hostility, obesity, and cardiovascular reactivity. The several pilot and validity studies that lead to the development of the survey will be described. With the information gathered from the proposed study, our research team has developed a research agenda so that research projects can be prioritized to better address health needs, including but not limited to cancer and cardiovascular concerns, among college-educated African Americans

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## D-132

## VALIDATION OF A SELF-REPORT OVEREATING ASSESSMENT WITH OVERWEIGHT WOMEN

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Overweight and obesity are major health problems in America. Strategies to detect overeating are critical for the prevention and treatment of obesity. More efficient measures are needed. This study tested the validity of a self-report overeating assessment on a subsample of participants from the PACE+ Women in Balance study. Subjects were 103 overweight women (63% White, M age 41.2 (range 20-55), BMI= 25.0-39.9). Participants completed a 16-item Eating Habits questionnaire and three 24-hour dietary recalls during baseline measurement. Principal component analyses reduced the 16 items to 3 subscales: "Frequency", "Social", and "Portions", with good internal consistencies ( $r=.87$ ,  $r=.83$ ,  $r=.71$ , respectively). The subscales accounted for 40% of the total variance. Residual regression analysis was used to adjust nutrient components (grams of total fat, total carbohydrates, sucrose and fiber) for total calories. Average total calories was positively correlated with the Social ( $r=.22$ ,  $p<.05$ ) and Portion ( $r=.27$ ,  $p<.01$ ) subscale. Total calories was related to the total Eating Habits score ( $r=.24$ ,  $p<.05$ ). Adjusted individual nutrients were unrelated to the Eating Habits subscales or total score. Participants were then classified as overeaters (30%) or non-overeaters (70%) on the Eating Habits questionnaire. Overeaters tended to consume more calories per day than non-overeaters (1808 (608) Kcal vs. 1596 (608) Kcal,  $F=3.84$ ,  $p=.053$ ). This difference in caloric consumption could account for a 22-pound weight gain over one year, all else remaining equal. This study gives preliminary support to the utility of this brief, self-report overeating assessment.

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## D-133

## VALIDATION OF THE SMOKING CESSATION PROCESSES-OF-CHANGE-SCALE FOR ADOLESCENTS

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**Problem/Objective:** Identifying processes of change help researchers and interventionists to develop effective strategies to effectively assist individuals in their smoking cessation efforts. The present study assesses the processes of change among adolescents, with the goal of replicating the 10 processes of change previously identified in adults.

**Methods:** This sample consisted of 798 ninth-grade students of 22 Rhode Island high schools who were regular smokers. Students completed a computer-based smoking questionnaire as part of a multiple-risk intervention program. The majority of the sample was white (87.2%), split approximately evenly in regards to gender (48.1% female), with an average age of 14.3 (SD=0.6) years of age. To establish internal validity of the hypothesized 10 processes of change, a confirmatory factor analysis was performed to replicate the hierarchical factor structure for the 10 processes of change as first order factors with two second order factors (behavioral and experiential processes).

**Results:** The model fit was good (RMSEA=0.08, CFI=0.92) supporting this hypothesized structure. External validity was established by testing for stage differences in the use of the ten processes through a MANOVA ( $F(4,793)=14.84, p<.001$ , multivariate (Wilks) eta-squared=0.19).

**Conclusions:** Use of all ten processes of change for smoking cessation increased across the stages, as predicted by the transtheoretical model of behavior change. Individual processes demonstrated moderate to large effect sizes across the stages of change, supporting their importance in the behavior change process.

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## D-134

## MIDDLE SCHOOL STUDENTS' READINESS FOR PHYSICAL ACTIVITY: VALIDATION OF A STAGE OF CHANGE MEASURE

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As part of the development of a Transtheoretical Model-based obesity prevention program for middle school students, data were collected to develop a stage of change measure for physical activity. Participants were 451 sixth, seventh, and eighth grade students (50% male, 72% White, mean age=12.2). The mean BMI for the sample was 20.2 and 29% were either overweight or at risk. Sixty-percent of participants were in Action or Maintenance for getting at least 60 minutes of physical activity on 5 or more days of the week, while 15.2% were in Precontemplation, 8.1% in Contemplation, and 16.4% in Preparation. The number of days of getting at least 60 minutes of exercise increased significantly across stages, ( $F(4,434) = 298.2, p=.001, \eta^2=.74$ ). The stage measure was validated by assessing the number of total minutes spent exercising on a typical day ( $M=102.6, SD=74.1$ ), exercising daily in gym class ( $M=17, SD=15.3$ ), and exercising voluntarily outside of school ( $M=88.9, SD=71.1$ ). Each of these increased significantly across the stages. The measure was further validated by examining responses to three YRBS questions. Students in later stages reported doing activity that made them sweat and breathe hard ( $F(4,387) = 34.3, p=.001, \eta^2=.26$ ), activity that did not make them sweat or breathe hard ( $F(4,386) = 9.6, p=.001, \eta^2=.09$ ), and strengthening exercises ( $F(4,386) = 21.8, p=.001, \eta^2=.19$ ) on significantly more days than students in earlier stages. These results provide strong validation for this stage of change measure, which is being used to assess students' readiness to exercise and to develop stage-appropriate interventions targeting physical activity. This project was conducted in collaboration with Channing Bete Company, Inc.

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## D-135

## APPLYING THE TRANSTHEORETICAL MODEL TO DRUG USE PREVENTION AMONG HIGH SCHOOL STUDENTS

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Although the proportion of high school students who report using drugs has declined, percentages are still high. The Transtheoretical Model (TTM) can be used to develop prevention interventions for students. This study develops the TTM measures of decisional balance, self-efficacy and processes of change (POC) to avoid substances in a sample of 658 high school students (mean age 15.9; 40.0% White, 31.0% Hispanic or Latino; 56.5% female). The distribution across the stages of change for students who have used drugs was 30.9% Precontemplation, 11.3% Contemplation, 11.7% Preparation, 17.4% Action, and 28.7% Maintenance. For each measure, principal components analyses were conducted in half of the sample and confirmatory factor analyses were conducted on the other half. The best-fitting model for decisional balance was a correlated 2 factor model (4 items each) representing the pros (Alpha=.89) and cons (Alpha=.70), Chi-square(19)=83.84, CFI=.939, AASR=.034. A one factor model (6 items) was retained for self-efficacy (Alpha=.93), Chi-squared(9)=50.33, CFI=.969, AASR=.019. A 10 factor hierarchical model (3-items per factor) indicated for POC, Chi-squared(361)=1534.15, CFI=.900, AASR=.032. The internal consistency for POC subscales ranged from .74 to .84. MANOVAs and follow-up ANOVAs indicated that the pros and cons, self-efficacy and POC varied significantly across the stages ( $p<.05$ ) in the expected direction. The results support the internal and external validity of these measures that are being used as the basis for innovative stage-based interventions to be delivered online in schools. Developed in partnership with the Channing Bete Company.

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## D-136

## PRELIMINARY ASSESSMENT OF ONLINE STRESSOR PROGRAMS FOR CARDIOVASCULAR REACTIVITY RESEARCH

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Lack of standardization among laboratory stressors is a limitation in cardiovascular reactivity research. We developed online versions of two commonly used stressors, Stroop Color Word Conflict (CWC) and mental arithmetic (MA) in attempt to standardize instructions and methodology. This study assessed reactivity to these programs and compared responses with existing versions of CWC and MA. Participants were 23 healthy women. Each version of stressors was completed on separate days in a counterbalanced order. Sessions were conducted during the follicular menstrual phase at approximately the same time of day. Baseline, stress, and recovery measures for heart rate (HR) and blood pressure (BP) were obtained, and change scores were calculated. Subjective perceptions also were assessed. Differences were assessed using paired samples t-tests. HR ( $p=.25$ ), systolic (SBP;  $p=.78$ ), diastolic (DBP;  $p=.97$ ), and mean arterial pressure (MAP;  $p=.79$ ) reactivity were similar between versions of CWC. The online version of MA did not significantly increase SBP ( $p=.93$ ), DBP ( $p=.42$ ), or MAP ( $p=.32$ ), whereas the older MA produced significant increases in HR ( $p<.001$ ) and all BP measures ( $p<.05$ ). Additionally, participants had higher state anxiety after the older MA ( $p=.05$ ) and rated it as more difficult ( $p<.001$ ) in relation to the online MA. These findings provide initial support for our online version of CWC, but more testing with larger, diverse samples is needed to establish validity and reliability. Although the online version of MA was not a potent stressor, the findings support the need for standardization of stressors and assessment of subjective responses in reactivity research.

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## D-137

## VALIDATION OF PARENTAL ESTIMATE VERSUS OBJECTIVE MEASURES OF CHILD TV WATCHING AND COMPUTER USAGE

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Television watching is associated with obesity, attention problems, and sleep disturbances in young children. Research suggests parents overestimate child television watching. This study compared parental estimate via questionnaire of television and computer time of 82 overweight or at risk for overweight ( $90.7 \pm 6.9$  BMI percentile) 4-7 year old ( $6.0 \pm 1.2$  years) children over three weeks with an objective measure obtained from a TV Allowance<sup>TM</sup>. We used correlation coefficients to determine a relationship, a one way ANOVA to depict over/under estimation, and the Bland-Altman technique to determine agreement of the two measures. Parental estimates were correlated with the average hours recorded by the TV Allowance<sup>TM</sup> ( $r = 0.44$ ,  $p < 0.001$ ) and a one way ANOVA showed parental overestimation of  $3.04 \pm 13.23$  (27.9 versus 24.9 hours),  $F(1,81) = 4.32$ ,  $p < 0.05$ . The Bland-Altman plot showed a large 2 SD limit of agreement (parental underestimation of -23.4 hours to an overestimation of 29.5 hours). In addition, four cases lie outside these large limits indicating that the two measures do not agree. The plot also showed that parental overestimation did not depend on the amount of television and computer usage. In conclusion, parents overestimate child TV and computer usage and future studies should consider utilizing more objective measures.

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## D-138

## COST EFFECTIVENESS OF RECRUITMENT METHODS IN A PREVENTION TRIAL FOR YOUNG CHILDREN

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Recruitment of participants for clinical trials requires considerable effort and cost. There is no research on the cost effectiveness of recruitment methods for a prevention trial of young children. This study determined the cost effectiveness of recruiting 70 children aged 4 to 7 ( $5.9 \pm 1.3$  years) from urban, suburban, and rural locations, for a two year randomized obesity prevention trial to reduce television watching in the home. Of the 70 participants randomized, 62.9% ( $n = 44$ ) were obtained through targeted direct mailings, 24.2% ( $n = 16$ ) were acquired through newspaper ads, 8.5% ( $n = 6$ ) from other sources (ie. word of mouth), and 2.9% ( $n = 2$ ) through posters and brochures. Costs of each recruitment method were computed by adding the cost of materials, staff time (at a rate of \$10/hour), and media expenses. Cost effectiveness per participant differed by recruitment method totaling \$0 for other sources, \$226.57 for targeted direct mailing, \$578.48 for newspaper ads, and \$2,742.49 for posters and brochures. Thus, targeted direct mailings were the most effective in yielding the greatest number of participants at a minimal cost per participant. Future studies recruiting young children from an area of varying population density may benefit from focusing recruitment efforts on the more cost effective strategies.

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## D-139

## ASSESSING TREATMENT FIDELITY OF COACHING PRETEENS TO AVOID SECOND HAND SMOKE EXPOSURE

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Treatment fidelity is a measure of how well the independent variable (e.g., an intervention) was implemented, according to the original design of a research study. Fidelity directly impacts the internal validity of the research being performed. Fidelity can be increased if critical aspects of the intervention are measured. This study seeks to develop a measurement tool to assess the quality of implementation of behavioral coaching sessions in a randomized community trial. An instrument was created to rate audio recordings of coaching sessions. Results from the first 8 families to be randomized to this condition served as pilot data to estimate the psychometrics of the instrument. Content validity was assessed by the examination of the instrument by experts in measurement and psychometrics. Distributions of items and scale scores were examined for variability and normality. Test-retest reliability was assessed by computing Cohen's Kappa coefficient on ratings repeated 4 weeks apart. Construct validity was estimated with correlations between scores on the instrument and levels of urine cotinine levels, and self reported exposure to secondhand smoke. Results suggest adequate test-retest reliability, modest inter-rater reliability, and adequate criterion and construct validity. Feedback from session ratings has resulted in immediate improvements in delivery of the intervention. Ongoing participant recruitment (increased n-size) will aid further development of the measure.

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## D-140

## EVALUATING THE LINEARITY OF A RATING SCALE MEASURING HEALTH PREFERENCES

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Several prominent methods for estimating Quality Adjusted Life-Years (QALYs) require preference weights for wellness scenarios. A crucial assumption is that the preferences are measured on an interval or ratio scale. However, the scale properties are rarely evaluated. We applied functional measurement theory to evaluate the interval scale properties of preference measures for the Quality of Well-being Scale (QWB). In two experiments, 309 subjects who were patients in health clinics or undergraduate students rated a series of health scenarios. In the construction of the scenarios, three factors were systematically manipulated in a factorial experimental design: symptoms, physical activity limitations, and social activity limitations. The functional measurement method was used to determine the linear properties of the response scale through the examination of the interaction terms in the ANOVA models. Analysis of covariance, controlling for age and gender, indicated significant main effects in preference for physical activity limitations and social activity limitations but not for symptoms. The interactions were non-significant in the first experiment but were statistically significant in the second experiment. Models for estimating QALYs require interval-level preference data. However, the scale property is typically assumed rather than confirmed. Factorial analysis of variance can be used to evaluate the model, where the absence of significant interactions provides support for equal interval properties. Our data were inconclusive with regard to the scale property. We offer suggestions for evaluation of scale property in future studies.

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## D-141

## THE INTERDEPENDENCE OF MENTAL AND PHYSICAL HEALTH IN PATIENTS AT RISK FOR DIABETES

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Several studies have demonstrated that both mental and physical health symptoms can impact individual perceptions of overall health. This study examined the complex interplay between mental and physical health problems endorsed on the self-administered version of the Quality of Well-Being Scale (QWB-SA) in determining self-ratings of overall health on a 0 to 100 visual analog scale from the same measure. Participants were members of a national sample at risk for diabetes ( $N=3026$ ). Correlation analyses showed that self-perceived overall health was inversely related to both mental health symptoms,  $r=-.306$ ,  $p<.01$ , and physical health symptoms,  $r=-.383$ ,  $p<.01$ . Linear regression was used to control for the other symptom type in comparing the relative contributions of mental health symptoms,  $Beta=-.183$ ,  $p<.0005$ , and physical health symptoms,  $Beta=-.310$ ,  $p<.0005$ , to perception of overall health. These relationships were independent of age, sex, ethnicity, and education. Path analysis suggested that part of the effect of physical health on self-perceived overall health is mediated through mental health symptoms and vice versa. This provides further evidence that the greatest promotion of overall health occurs when both mental health and physical health symptoms are treated concomitantly and collaboratively. By additionally recognizing the indirect influence that physical illnesses exert on overall health through consequent mental health symptoms, we can provide the best evidence-based treatment to enhance quality of life in patients at risk for diabetes.

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## D-142

## QUALITY OF LIFE IN RURAL SCHOOL-AGED CHILDREN WHO HAVE ASTHMA

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**Purpose:** To describe rural school-aged children's asthma-related quality of life (QOL).

**Background:** Asthma is the most common chronic illness of childhood with 87 of every 1000 children under 17 years having asthma (CDC, 2001). Health-related QOL reflects the health status of children with chronic conditions, including the impact of illness on daily life and perceptions of how well (or poorly) the child is functioning (Levi & Drotar, 1998).

**Sample, setting:** Sample includes 94 children in grades 2-5, with a physician diagnosis of asthma: with 58 boys (62%), 36 girls (38%); and 24% African American, 27% White, and 49% Hispanic. Families live in non-metropolitan rural areas.

**Methods:** Exploratory analysis of baseline data to determine what factors are associated with children's asthma-related QOL. The 23-item Pediatric Asthma Quality of Life scale (Juniper et al., 1996) has three subscales for measuring symptom burden (SBQOL), emotional functioning (EFQOL), and activity limitations (ALQOL). Demographic and asthma risk variables were also measured.

**Findings:** QOL was not related to children's absenteeism, asthma severity, asthma triggers, nor family socioeconomic status. Subscales were significantly correlated with children's coping-better ( $r = .27$  to  $.37$ ) and frequency of coping ( $r = .25$  to  $.36$ ). Self-efficacy was significant correlated with EFQOL ( $r = .21$ ) and ALQOL ( $r = .27$ ). EFQOL was significantly higher in the Hispanic children ( $F = 3.27$ ,  $p = .043$ ) than the other children, indicating they had greater emotional distress. 16% of the variance in EFQOL was accounted for with children's coping and with being a Hispanic ( $F = 8.418$ ,  $p < .001$ ).

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## D-143

## A PROSPECTIVE EXAMINATION OF PATIENT THREAT APPRAISAL AND SPOUSAL CONSTRAINTS IN CANCER SURVIVORS

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Although predictors of socially imposed constraints on expression of emotion (i.e. social constraints) are not fully understood, existing research suggests that longterm caregiving for ill individuals may engender a deterioration of support provision, especially if the patient who is cared for exhibits high levels of worry about his/her illness (i.e. perceived threat of recurrence, threat of death). These findings lead to the hypothesis that contrary to what research typically suggests, threat appraisals may be an *antecedent*, rather than a consequence, of social constraints on emotion expression. The present longitudinal study sought to test this reverse causality hypothesis. Married prostate ( $n = 47$ ) and gynecologic ( $n = 28$ ) cancer patients completed questionnaires that assessed cancer-related threat appraisals and perceived social constraints from their spouse at both an initial assessment (Time 1) and a 3-month follow-up (F/U). Using a cross-lagged panel design, a significant Time 1 patient appraisal and F/U social constraint ( $p<.01$ ) and a nonsignificant Time 1 social constraint and F/U patient appraisal ( $p = .16$ ) correlation emerged. Hierarchical regression analyses revealed that after controlling for T1 constraints and F/U appraisal, Time 1 patient appraisal accounted for significant variance in F/U social constraints ( $p<.05$ ). These findings support our hypothesis that initial levels of patient threat appraisal may predict later levels of perceived spousal constraints, not vice versa. This underscores the need for psychosocial interventions aimed at minimizing worry about their prognosis in cancer patients.

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## D-144

## SLEEP DEBT BUT NOT SLEEP QUALITY RELATED TO LOWERED SENSE OF MEANING AND INCREASED MENTAL HEALTHCARE UTILIZATION

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Sleep debt and sleep quality have been shown to affect mood, physical health, cognitive functioning, pain tolerance and healthcare utilization. Less is known as to how sleep debt and/or sleep quality affect a person's sense of meaning and purpose and use of mental health services. In this study, 190 undergraduates (85 males, 105 females; mean age = 20.04, range 18 to 24; 81.7% Caucasians) were asked to report on their sleep quality, their average hours of sleep in the last two weeks and number of hours of sleep needed to feel rested. They were assessed on mood (Center for Epidemiologic Studies Depression Scale), affect (Positive and Negative Affect Scale), existential well-being (subscale from Spiritual Well-Being Scale), physical symptoms, general health (SF-8), absenteeism and physical and mental health care utilization. Bivariate correlational analyses provide support for the relationship of sleep debt and sleep quality on mood ( $r=.29$ ,  $p<.001$ ;  $r=.33$ ,  $p<.001$  respectively), negative affect ( $r=.21$ ,  $p=.004$ ;  $r=.25$ ,  $p<.001$ ), physical symptoms ( $r=.34$ ,  $p<.001$ ;  $r=.42$ ,  $p<.001$ ), general health summary ( $r=-.30$ ,  $p<.001$ ;  $r=-.34$ ,  $p<.001$ ), and absenteeism ( $r=.15$ ,  $p=.046$ ;  $r=.19$ ,  $p=.01$ ) but not on health care utilization. Sleep debt and sleep quality are also correlated ( $r=.52$ ,  $p<.001$ ). Hierarchical multiple regression analyses reveal that only sleep debt predicts mental health care utilization ( $R^2$  change =  $.06$ ,  $F$  change (1,182)=10.82,  $p=.001$ ) and existential well-being ( $R^2$  change =  $.05$ ,  $F$  change (1,183)=5.61,  $p=.004$ ). These results suggest that sleep debt may have an impact on one's sense of meaning and on mental healthcare utilization. This study extends earlier findings on the effects of sleep quality and sleep debt on quality of life.

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## D-145

**GIRL MEETS BOY: THIRTY YEARS OF OVERALL HEALTH RATINGS SUGGEST DISAPPEARANCE OF MORBIDITY GENDER GAP**Andrew J. Sarkin, PhD.<sup>1</sup><sup>1</sup>Family and Preventive Medicine, University of California, San Diego, La Jolla, CA

Women tend to live longer than men, but longitudinal studies on quality-adjusted life expectancy have reduced this female advantage by adjusting lifespan for morbidity, which tends to be higher in females. The purpose of this study was to evaluate the time trend of the gender difference in a general index of health-related quality of life (HRQOL) from 1972 to 2002. Every one or two years, a different group of the 33,506 participants in the representatively sampled General Social Survey rated their health as excellent, good, fair, or poor. Regression analyses were used to determine the effects of gender and time on these health ratings, controlling for age. Results showed that over the thirty years, females usually reported significantly worse health than men,  $\text{Beta} = .036$ ,  $p < .0005$ , as has been reported elsewhere. Overall health across genders was rated slightly better as time went on,  $\text{Beta} = .003$ ,  $p < .0005$ . However, a significant orthogonalized linear interaction between gender and time indicated that the difference between males and females is disappearing after a steady decline,  $\text{Beta} = .024$ ,  $p < .0005$ . These results remained similar whether or not controlling for age. Follow-up analyses revealed that while male health ratings changed little from 1972 to 2002,  $r = .009$ ,  $p = .295$ , female ratings have improved linearly over time,  $r = .047$ ,  $p < .0005$ . This suggests that the longstanding gender gap favoring males in HRQOL may be disappearing as female health improves, and the magnitude of the gender gap in quality-adjusted life expectancy that already favored females is likely to grow back towards the larger unadjusted differences if there is equality of morbidity.

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## D-146

**DOES CHEMOBRAIN EXIST PRIOR TO CHEMO? A DESCRIPTION OF COGNITIVE FUNCTIONING IN WOMEN WITH BREAST CANCER PRIOR TO CHEMOTHERAPY AND COMPARISON WITH AGE-MATCHED CONTROLS**Marne L. Sherman, PhD,<sup>1,2</sup> Mary Sheridan,<sup>1</sup> Shelly Peterson,<sup>1</sup> Laura Martin,<sup>1</sup> and John Shook, MD.<sup>2</sup><sup>1</sup>Department of Psychology, University of Missouri; <sup>2</sup>Center for Breast Care, The Cancer Institute, Kansas City, MO

Chemotherapy for early-stage breast cancer has been associated clinically with cognitive deficits in women who have been exposed to these systemic treatments. Retrospective cross-sectional studies have suggested that women who have undergone chemotherapy demonstrate impaired cognitive functioning when compared to women who have not undergone such treatments. However, there is a lack of empirical evidence establishing the baseline level of cognitive functioning in women prior to receiving chemotherapy. The present ongoing study is part of a longitudinal examination of cognitive functioning in women who will undergo chemotherapy for breast cancer treatment compared to women who will not undergo such treatment (i.e., healthy women and women undergoing non-systemic breast cancer treatments). Self-report measures of subjective cognitive functioning and objective measures of performance in the cognitive domains of attention, memory, language, motor, and executive functions are provided by study participants. This presentation will provide preliminary findings to characterize the baseline (pre-chemotherapy) cognitive function of women who will undergo chemotherapy compared to women who will not undergo this treatment. To date, baseline data have been collected from 14 women and we expect to have data from 25 women below the age of 70 years at the time of presentation. These data will allow for one of the first descriptive and statistical analyses of the cognitive functioning of women with early stage breast cancer prior to chemotherapy compared to age-matched controls.

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## D-147

**EXAMINING AGE AND OTHER COVARIATES IN THE HEALTH-RELATED QUALITY OF LIFE OF BREAST CANCER SURVIVORS**Lara Dhingra, Ph.D.,<sup>1</sup> Patricia Mumby, Ph.D.,<sup>2</sup> Sheryl Gabram, M.D.,<sup>2</sup> and Kathy Albain, M.D.<sup>2</sup><sup>1</sup>Psychiatry and Behavioral Sciences, Memorial Sloan-Kettering Cancer Center, New York, NY; <sup>2</sup>Cardinal Bernardin Cancer Center, Loyola University, Chicago, IL

Previous studies have examined the health-related quality of life (HRQL) of breast cancer survivors (BCS), however, findings regarding the association of age with HRQL in BCS have been mixed. Some research suggests physical function is more impaired among older BCS, yet other studies have found no risk of decline associated with age. Few studies examining age effects have controlled for medical comorbidity. We evaluated 257 BCS to determine whether age accounted for greater variance in HRQL than comorbidity and other hypothesized covariates. Participants (MD = 59.9 years; 88.1% White) were BCS diagnosed with non-metastatic disease  $\geq 1$  year post treatment. Participants completed the Short Form-36 Health Survey (SF-36), self-efficacy (SE) measures, and Charlson Comorbidity Index. Univariate regression analyses showed a weak negative relationship between age and physical HRQL ( $R^2 = 0.10$ ,  $p < 0.05$ ) and weak positive relationship between age and emotional HRQL ( $R^2 = 0.01$ ,  $p < 0.05$ ). Hierarchical regression analyses were conducted with demographic variables entered first, medical/treatment variables entered second, psychosocial variables entered third, and age entered last. Mastectomy, comorbidity, and radiation were stronger negative predictors of physical HRQL than age ( $ps < 0.05$ ). SE and tamoxifen were stronger positive predictors of emotional HRQL than age ( $ps < 0.05$ ). Findings suggest the adjustment of elderly BCS in this sample approximates that of younger BCS. Further, age had limited impact on HRQL after accounting for other variables. These results have potentially positive implications for the growing population of elderly BCS.

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## D-148

**ANOREXIA/CACHEXIA RELATED QUALITY OF LIFE FOR PEDIATRIC CANCER PATIENTS**Jin-Shei Lai, PhD,<sup>1</sup> and Stewart Goldman, MD.<sup>1</sup><sup>1</sup>Northwestern University, Evanston, IL

**Background:** Anorexia/cachexia (AC) is a common symptom in children receiving cancer treatment. It can lead to deterioration in muscle mass and body composition and subsequent weight loss and malnutrition. Currently, there is no instrument measuring AC outside of other treatment-related side effects. The purpose of this study was to create the Functional Assessment of the Anorexia/Cachexia Therapy for pediatric cancer patients (peds-FAACT).

**Methods and Results:** Twelve items revised for age appropriateness from the adult-FAACT were administered to 96 patients (51 children aged 7-11 and 45 teenagers aged 12-17; 50% girls; 60.4% white; 42.7% leukemia; ) receiving cancer treatment at Children's Memorial Hospital in Chicago (CMH). The psychometric properties of the items were examined using both traditional (item-total correlations, alpha coefficients, confirmatory factor analysis and logistic regression) and Rasch (mean square fit statistics, MnSq) methods to examine item quality. Six items exhibited acceptable item-total correlations ( $>.3$ ) and overall alpha ( $>.7$ ) for all patients. Four additional peripheral items were identified as age-appropriate for older patients (age  $\geq 10$ ) using the same criteria. Unidimensionality of the 6-item scale (core items) was confirmed with acceptable fit indexes (CFA: GFI=1, AGFI=1, non-normed fit index=0.99, normed fit index=0.90; Rasch: MnSq fit  $< 1.4$ ). Using logistic regression, none of the items exhibited differential item functioning (DIF) between genders, ages, cancer type or race, suggesting the measurement stability of these items across these conditions.

**Conclusion:** The core peds-FAACT demonstrated good psychometric properties using both classical test and Rasch analytic methods. An optional 10-item version was also created for use only when older patients are surveyed. Clinical applications will be discussed.

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## D-149

**DEPRESSED MOOD, SOCIAL SUPPORT, AND RELIGIOUS INVOLVEMENT PREDICT CHRONICALLY ILL WOMEN'S QUALITY OF LIFE**

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Because chronic medical illness is often associated with physical pain, disability, and mood disturbance, promoting effective coping may help chronically ill patients improve their quality of life. We examined social support and religious involvement and how their relationship to depressed mood predicts chronically ill women's quality of life. Participants ( $N = 58$ ) were chronically ill women 40 years of age or older with scores of 11 or higher on the Abbreviated Mini-Mental State Exam. Participants completed the Functional Assessment of Chronic Illness Therapy – General (measuring social/family well-being, emotional well-being, and functional well-being), the Geriatric Depression Scale – Short Form (measuring depression), the Social Support Questionnaire (measuring number of and satisfaction with social supports), and questions about religious involvement. Analyses revealed that religious involvement directly predicted emotional and social well-being. Depression significantly mediated the positive relationship between number of social supports and overall emotional well-being. Depression also significantly mediated the positive relationships between satisfaction with social support and both emotional and functional well-being. In contrast, satisfaction with social support significantly mediated the negative relationship between depression and social well-being. The results highlight the complex interplay of social support and depression in severely ill patients, and the need to address both. Health care providers must also identify and make appropriate referrals for patients who depend on religion to cope with their illnesses. Interventions that foster coping through social support and/or religious involvement may significantly improve quality of life in women with severe medical illness.

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## D-150

**SPIRITUALITY AND HEALTH BEHAVIORS**

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Appreciation for the role of spirituality in relation to health benefits has grown within recent years. Investigators speculate that the health benefit may be associated with healthy lifestyles. The present study examines the relationship between spirituality and health and wellness factors based on the Lifestyle Assessment Questionnaire and a spirituality measure based on Kelly's RepGrid. Higher scores indicate that spirituality is central to self-identity as opposed to being alienated from self-identity. One hundred and twelve healthy men and women of mixed ethnic backgrounds ( $M = 42.2$  years of age  $SD = 6.8$ ) were recruited from a large company in southwestern United States. Concurrent validity was established between RepGrid spiritual identity and LAQ spirituality ( $r = .21$ ). Individuals for whom spirituality was more central to self-identity report frequent utilization of preventative and early detection health behaviors ( $r = .18$ ) but not other health maintenance behaviors such as exercise, nutrition and drug usage. Concerning wellness behaviors, these individuals reported greater contribution to community welfare, others and nature ( $r = .22$ ), increased social support networking ( $r = .22$ ), experienced increased awareness and acceptance of feelings, specifically positive feelings and enthusiasm about self and life ( $r = .17$ ) and exhibited greater ability to manage expression of feelings while engaging in effective, related behaviors ( $r = .17$ ). Individuals who implement routine self-examination behaviors would access health-care resources earlier yielding a health benefit. Previous research has implicated both social support and emotional management skills as stress buffers that also provide a health benefit.

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## D-151

**SPIRITUAL MODELS PREDICT HEALTH BEHAVIORS IN COLLEGE UNDERGRADUATES**

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**Background:** Increasing evidence links religious and spiritual (RS) factors with health and longevity. Bandura's social cognitive theory suggests that beneficial behaviors associated with RS involvement may be learned by observing persons who function as spiritual exemplars, a process termed spiritual modeling. We explore associations of health beliefs and behaviors with an index of spiritual models.

**Methods:** Psychology students ( $N=813$ ) at three universities completed questionnaires. Perceptions of spiritual models in domains of family, school, faith community, and media were assessed using the Spiritual Modeling Inventory of Life Environments (SMILE). Overall perceived availability of spiritual models was constructed as weighted sums of numbers of models in each domain.

**Results:** Modest but significant ( $p<0.05$ ) nonparametric correlations existed between spiritual models and physical exercise, nonsmoking, wearing seat belts, adequate sleep, self-perceived health (independently predicts longevity), and life satisfaction (predicts less suicidal ideation). Associations remained significant after adjusting for socially desirable responding and demographics (gender, year in school, ethnicity, parents' education). Adjusting for denomination and frequency of attending religious services eliminated the exercise association and reduced diet and self-perceived health associations to marginality ( $r=0.07$ ,  $p=0.06$  each). Independent associations remained small but statistically significant for seat belt usage ( $r=0.08$ ,  $p=0.02$ ), adequate sleep ( $r=0.08$ ,  $p=0.04$ ), and life satisfaction ( $r=0.15$ ,  $p<0.0001$ ).

**Conclusions:** Perceived availability of spiritual models predicts salutary health behaviors independently of demographics, religious denomination and service attendance. Further exploration of spiritual modeling approaches for understanding/improving young adult risk profiles appears warranted.

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## D-152

**WHO ARE THE DRINKERS?: PROFILE ANALYSIS OF BINGE DRINKING IN COLLEGE**

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Binge drinking is a serious problem across most universities. This study examined factors associated with this behavior to determine how non-drinkers, drinkers, and binge drinkers differ. Specifically, parental alcohol use, peer influence, and religiosity were examined. Different dimensions of religiosity were examined to better understand its relation to binge drinking. Profile Analysis was used to compare undergraduate non-drinkers, non-binge drinkers, and binge drinkers ( $N=328$ ). The parallelism hypothesis was rejected ( $F_{(10, 642)}=12.63$ ,  $p<.0001$ ,  $\eta^2= 0.52$ ) indicating differences between the groups. Pairwise comparisons revealed significant differences between non-drinkers (mean= 4.18,  $SD=3.62$ ) and binge drinkers (mean= 6.43,  $SD= 3.48$ ), and between non-drinkers and drinkers (mean=5.73,  $SD= 3.0$ ) in parental alcohol use. Binge drinkers (mean=22.85,  $SD=6.55$ ) perceived more peer pressure than drinkers (mean= 20.58,  $SD= 6.12$ ). Non-drinkers (mean= 10.10,  $SD= 2.64$ ) engaged in private religious practices (e.g., private prayer) more frequently than drinkers (mean= 11.03,  $SD= 2.71$ ). Differences in participation in organized religious practices were found between drinkers (mean= 5.91,  $SD= 1.57$ ) and binge drinkers (mean= 6.64,  $SD= 1.11$ ), and between non-drinkers (mean=5.39,  $SD= 1.86$ ) and binge drinkers. Differences in overall religious self-ranking were found between non-drinkers (mean=19.70,  $SD= 5.97$ ) and drinkers (mean=22.40,  $SD= 5.68$ ), and between non-drinkers and binge drinkers (mean=23.85,  $SD= 5.17$ ). Non-drinkers (mean= 10.82,  $SD=1.10$ ) used religion and spirituality to cope more than drinkers (mean= 10.33,  $SD= 1.13$ ). Results suggest that more frequent parental alcohol use and higher levels of peer pressure are related to more drinking. Surprisingly, higher levels of religiosity across all dimensions may not be related to lower levels of drinking as previously thought.

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**D-153****BREAST CANCER SURVIVORS RELY ON SPIRITUALITY FOR PSYCHOLOGICAL WELL-BEING**Jason Q. Purnell, M.A.,<sup>1</sup> and Barbara L. Andersen, Ph.D.<sup>1</sup><sup>1</sup>Department of Psychology, The Ohio State University, Columbus, OH

While much of the literature documents negative consequences of breast cancer, several studies have noted positive outcomes, including a deepened religious and spiritual perspective. Responding to the call for more research on such positive factors, this study examined the relationship between religion and spirituality and quality of life (QoL) and stress for breast cancer survivors. A sample of 130 women were assessed 24 months post-surgery. Religious affiliation, frequency of attendance, and importance of religion data were collected as was a measure of spirituality (FACIT-Sp) with two subscales: Meaning/Peace and Faith. Psychological QoL (SF-36 Mental), perceived stress (PSS), and cancer-related traumatic stress (IES) were also assessed. Demographic, disease/treatment, and social desirability variables (Marlowe-Crowne) were used as controls. The sample was predominantly Caucasian (92%), with an average age of 51 (range 28-84). Preliminary correlational analysis revealed that none of the religious variables was significantly associated with either quality of life or stress, whereas correlations were significant with spirituality. Hierarchical multiple regression models revealed significant associations between QoL and both Meaning/Peace (21% of variance) and Faith (3% of variance) components of spirituality. Regression models also revealed significant Meaning/Peace and Faith associations with both perceived stress (Meaning/Peace: 39% of variance; Faith: 6%) and traumatic stress (Meaning/Peace: 18% of variance; Faith: 6%). These findings suggest that spirituality should be separated from religion in health research. They also point to the potential relevance of assessing spirituality in cancer patients, many of whom appear to benefit from this perspective in terms of post-treatment QoL and stress.

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**D-154****DIMENSIONS OF SPIRITUALITY AND QUALITY OF LIFE IN YOUNG TO MIDLIFE CANCER SURVIVORS**Crystal L. Park, Ph.D.,<sup>1</sup> Thomas Blank, Ph.D.,<sup>2</sup> Juliane Fenster, M.P.H.,<sup>1</sup> Kristine McGuinn, M.A.,<sup>2</sup> Rachel Santorelli,<sup>1</sup> Michael McGarrity,<sup>1</sup> and Thomas W. Robertson<sup>1</sup><sup>1</sup>Psychology, University of Connecticut; <sup>2</sup>Human Development and Family Studies, University of Connecticut, Storrs, CT

Relations between spirituality and cancer have received increasing research attention. Findings suggest that spirituality is unrelated to cancer incidence aside from affiliation differences based on lifestyle prescriptions, that spiritual well-being may be an important quality of life domain, and that cancer survivors often become more spiritual. However, little research has examined the influence of spirituality on mental and physical health-related quality of life (HRQOL) in cancer survivors (Laubmeier, 2004). Importantly, spirituality encompasses multiple distinct dimensions of beliefs, behaviors, and experience. The present study examined relations of several spiritual dimensions with mental and physical HRQOL in 131 young and middle-aged adults (age 19-50; 29% male; 86% White) who were assessed, on average, 18 months post-treatment. Spiritual and religious dimensions were assessed with the Fetzer/NIA BMMRS; HRQOL was assessed with the SF-12. Results indicated that sense of meaning in life was related to mental ( $r = .31, p < .001$ ) and physical ( $r = .17, p < .05$ ) HRQOL. Interestingly, belief in God was unrelated to HRQOL, but belief in life after death was related to both ( $r_s > .22, p_s < .01$ ). Religious comfort was unrelated to HRQOL but religious struggle was related to mental HRQOL ( $r = -.24, p < .01$ ). Frequency of service attendance or private prayer were unrelated to HRQOL but meditation was related to mental HRQOL ( $r = .17, p < .05$ ). These results suggest that dimensions of spirituality are quite differentially related to HRQOL.

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# POSTER SESSION E

Friday, April 15, 2005  
6:30 p.m. – 8:00 p.m.  
Exhibit Hall

Poster Session E - Health Systems, Policy and Advocacy; Diversity Issues; Environmental and Contextual Factors in Health and Behavior Change

## E-69

### ASSOCIATIONS BETWEEN PERCEPTIONS OF PUBLIC POLICY AND PHYSICAL ACTIVITY

Holly A. Escudero,<sup>1</sup> Melissa Napolitano, PhD,<sup>2</sup> Jessica Whiteley, PhD,<sup>2</sup> and Bess Marcus, PhD.<sup>2</sup>

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Public policies that promote healthy living have the potential to affect population health. In order to involve research findings in the legislative process, evidence of a significant problem must be provided as well as support from the public. The purpose of this study was to examine women's perceptions of physical activity promoting policies in both the community and the workplace. Participants, sedentary women (n=280; mean age=47.1; 94.6% Caucasian), completed a number of questionnaires and health assessments including: (1) a physical activity self-report, (3) Stages of Change (Marcus, Rossi, et. al., 1992), and (4) Policy and Workplace Attitudes. Results showed that 41.2% of participants supported government funding toward physical activity promoting policies. Those participants who already had physical activity promoting public policies implemented in the community were more physically active ( $r^2=.19$ ) and were more likely to be in the preparation stage of change than precontemplation/contemplation ( $p<.013$ ). Participant level of physical activity correlated ( $r^2=.16$ ,  $p<.05$ ) with support for workplace policies promoting physical activity. Stage of Change did not correlate with support ( $r^2=.08$ ,  $p=NS$ ). Additionally, 84.1% of participants did not have any workplace policies supporting physical activity or health promotion. Results suggest participants support public policies pertaining to physical activity and health in both their communities and workplaces. Implications of these findings, including examining the effect of existing physical activity promoting policies, will be discussed.

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## E-70

### DEMOGRAPHIC DIFFERENCES IN SUPPORT FOR SMOKING POLICY INTERVENTIONS

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The Smoking Policy Inventory (SPI) is a 35-item scale, which measures attitudes towards tobacco control policies. The five dimensions of the SPI are Advertising and Promotion, Public Education, Laws and Penalties, Taxes and Fees, and Restrictions on Smoking. The SPI has been applied to different samples, both in the USA and internationally. However, no one has investigated if there is differential support for policy intervention among subgroups within the USA. This study investigated subgroup differences on five demographic variables (gender, age, race, ethnicity, and education) across the five dimensions of the SPI. A random digit dial sample of 506 adult participants from the United States was analyzed with five MANOVAs with follow-up ANOVAs. Men (N=188) had significantly ( $p < .05$ ) less favorable attitudes towards tobacco control policies than women (N=317) on all five scales. Blacks (N=52) had significantly ( $p < .05$ ) more favorable attitudes than whites (N=410) on increasing Public Education. There were no significant differences between Hispanics (N = 21) and non-Hispanics (N = 469). Older people were significantly ( $p < .05$ ) more supportive of restrictions on Advertising and Promotion, increasing Public Education, and increasing Environmental Restrictions. More educated people were significantly ( $p < .05$ ) more supportive of increasing Taxes and Fees and increasing Environmental Restrictions. These subgroup differences could be employed to guide the targeting of changes in policies and interventions to the specific concerns of the various groups.

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## E-71

### GENDER AND RACIAL BIAS IN MEDICAL SCHOOL TEXTBOOKS

Lauren J. Mutz,<sup>1</sup> Gabrielle R. Chiamonte, M.A.,<sup>1</sup> Mark Rzeznik,<sup>1</sup> and Ronald Friend, PhD.<sup>1</sup>

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Evidence of gender/racial disparities in the diagnosis/treatment of patients, as well as medical students' greater difficulty diagnosing females when compared to males, prompted us to examine illustrations/photographs included in current editions of six widely used medical school textbooks for the presence of bias. For gender, images were coded as male, female, or gender-neutral, with classifications based on primary and secondary sex characteristics. For race, images were coded as white, African-American, other, or neutral. In standard (nonreproductive) chapters, out of N=6380 images, 85.6% were neutral and 14.4% were gendered. Of the N=921 gendered images, 66% were males and 34% females, showing a significant underrepresentation of females ( $X^2=94.49$ ,  $p<.001$ ). In reproductive chapters, out of N=1383 images, 20.7% were neutral and 79.3% were gendered, with males and females equally represented. Of the N=7311 images coded for race, most (N=6339; 86.7%) were race-neutral. Of the N=972 images where race was identifiable, 85.7% were whites and 14.3% were non-whites (African-American/other). Since nonwhites make up approximately 25% of the United States population, our results show a significant underrepresentation of racial minorities ( $X^2=69.10$ ,  $p<.001$ ). Neutral images in medical textbooks have increased significantly over the past 20 years, suggesting that editors/publishers may have addressed the issue of bias by reducing the number of race/gender specific images. Unfortunately, when gender (in standard chapters) or race was specified, females and racial minorities were significantly underrepresented. To ensure that medical students receive unbiased training, publishers/editors should be encouraged to revise textbooks to include a percentage of images that better approximate current population demographics.

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## E-72

## MINORITY PARTICIPATION RATES IN A BREAST CANCER PREVENTION PROGRAM

Lisa Madlensky, Ph.D.,<sup>1</sup> Leslie Barbier, B.S.,<sup>1</sup> Laura Chu, B.S.,<sup>1</sup> Vicky Newman, MS,<sup>1</sup> Eric Rosenthal, Ph.D.,<sup>1</sup> Georgia Sadler, Ph.D.,<sup>1</sup> and Linda Wasserman, MD, PhD.<sup>1</sup>  
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**Goal:** To develop and implement a program in breast cancer risk assessment, education and prevention for medically underserved women of San Diego. The program provided women with a personalized breast cancer risk assessment, then offered preventive and early detection services including: Clinical breast exam (CBE), mammography, telephone-based nutrition counseling, and genetic counseling (where appropriate). Recruitment efforts were directed toward African American, Hispanic and Filipino communities.

**Results:** A total of 551 women completed the initial risk assessment: 35% were African-American, 20% were Asian (predominantly Filipino), 20% Hispanic, 17% were White non-Hispanic and 8% were Other. There were differences in the participation rates across ethnic groups: White women were twice as likely to participate in nutrition counseling compared to any other group while Asian women were least likely to utilize the CBE and African-American women were least likely to utilize genetic counseling. White women had higher ratings of perceived breast cancer risk, but were more likely to report risk factors. Higher education levels were associated with participation in each component.

**Conclusions:** While white women were underrepresented in the overall program, they were proportionally more likely to participate in the program components. There may be a self-selection bias as most of the white participants had more risk factors and higher perceived risk of breast cancer. Future recruitment efforts may benefit from incorporating methods appropriate for individuals with lower levels of education into existing ethnically-targeted community outreach.

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## E-73

## ETHNIC DIFFERENCES IN THE EFFECTS OF PERSONALITY ON CARDIOVASCULAR REACTIVITY

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Poor health has been associated with 'at risk' personality profiles. One such profile, the combination of high Neuroticism (N) and high Agreeableness (A), reflects individuals who become angry quickly but are reluctant to express it. The present study assessed ethnic differences in the role of N and A in cardiovascular reactivity to mental and emotional stress in an Asian population. **METHOD:** Heart rate, blood pressure and hemodynamic measures were taken in 114 Indian, Malay and Chinese male patrol officers from the Singapore Police Force, while they performed a mental arithmetic and anger recall task. Neuroticism (N) and Agreeableness (A) were assessed using the NEO PI-R and dichotomized using median splits. **RESULTS:** There was a significant A by ethnicity interaction for MAP during the mental arithmetic task. Low A Indians had higher MAP reactivity during mental arithmetic than all other groups ( $p=.01$ ). When we examined only subject's high on N, there was a significant A by ethnicity interaction for MAP reactivity during mental arithmetic ( $p<.01$ ) and reactivity during anger recall for MAP and CI (both  $p<.02$ ). High N/high A Indians had significantly higher reactivity during both mental arithmetic and anger recall than all other groups. **CONCLUSION:** This evidence suggests that the high N/high A profile shows a different relationship to stress reactivity for different ethnic groups. The fact that high N/high A Indians showed the most reactivity is consistent with evidence showing particularly high CHD rates among Indians.

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## E-74

## ETHNIC DIFFERENCES IN SYMPTOMS OF INSOMNIA AMONG ADOLESCENTS

Robert E. Roberts, Ph.D.,<sup>1</sup> Catherine R. Roberts, Ph.D.,<sup>2</sup> and Wenyaw Chan, Ph.D.<sup>3</sup>  
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**Objective:** To provide data on the prevalence of symptoms of disturbed sleep, particularly insomnia, and to ascertain whether there are differentials attributable to ethnic culture or ethnic status.

**Methods:** Data were collected from youths (age 11-17) and adult caregivers from a community-based sample of households. The sample consisted of 4,175 youths and their caregivers (37.8% European, 35.0% African, 25.4% Latino, and 1.8% Other American). Data were collected on a broad array of indicators drawn from four domains: status attributes, personal and social resources, stressors, and sleep disturbance. **Results:** The overall prevalence of insomnia in the past month was 4.18%. Females were more likely to report insomnia, as were lower income youths. Prevalence of overall insomnia for European American youths was 4.58%, 3.18% for African American, and 5.28% for Latino American youths ( $p<0.001$ ). **Conclusions:** After adjustments for covariates, some ethnic differences remain, suggesting that ethnic culture may be one explanation. For most comparisons (11 of 18 contrasts), however, the multivariate analyses indicate no significant ethnic difference, supporting the hypothesis that observed ethnic differences are due primarily to social status effects, not ethnic culture effects.

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## E-75

## ACCULTURATION, STRESS, BIOBEHAVIORAL RISK, CRH, AND BIRTH OUTCOMES IN HISPANICS

Christyn L. Dolbier, Ph.D.,<sup>1</sup> Joseph F. Lucke, Ph.D.,<sup>2</sup> Lorena Guerrero, M.S.N.,<sup>2</sup> and Roberta J. Ruiz, Ph.D.<sup>2</sup>

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**Background:** Preterm birth (PTB) and its correlate infant low birth weight are the leading cause of neonatal mortality in the U.S., however, few studies examine this problem in Hispanics. Hispanics and Caucasians have similar PTB rates, however, the rate worsens for Hispanic immigrants the longer they stay in the U.S. Acculturation and stress remain important variables for investigation as explanatory factors in such ethnic differences.

**Objective:** To estimate the effects of acculturation on stress, biobehavioral risk, CRH, and birth outcomes.

**Methods:** In this prospective, observational study, pregnant low SES Hispanic women ( $N=106$ ) were recruited from a prenatal clinic in San Antonio, Texas. Measures of stress (Perceived Stress Scale), biobehavioral risk (modified Creasy Risk Appraisal), and acculturation (language-based acculturation scale) were administered. Blood samples were taken to assess CRH. Medical record reviews for neonatal outcome data were completed. A path analysis was conducted to test a proposed conceptual model of the relationships among the variables. Insignificant paths were deleted to produce a more parsimonious model, and the model was re-evaluated.

**Results:** The more parsimonious model fit the data [ $X^2(6)=6.9, p=.33$ ], with the following paths: acculturation to biobehavioral risk to gestational age at delivery; and acculturation to stress to CRH.

**Conclusions:** These results indicate that increases in acculturation to American culture are detrimental for Hispanics with regard to stress, biobehavioral risk, CRH, and gestational age at delivery, suggesting that retaining aspects of the Hispanic culture may serve a protective function.

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## E-76

**BREAST CANCER TREATMENT DECISION MAKING: DOES THE SISTERHOOD OF BREAST CANCER TRANSCEND CULTURE?**

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Disparities in health care for underserved populations have led to the concern that there may be problems in the quality of care and the opportunity for shared decision making available to these patients. We examined whether a decision aid for breast cancer patients should be targeted for different ethnic/racial groups. We analyzed the appropriateness of a video tape entitled *Early Stage Breast Cancer: Choosing Your Surgery*. We conducted 8 focus groups (from March to October 2004) with breast cancer patients who could evaluate the video by reflecting back on their experience of making this decision. These patients came from four demographic groups: African American, Hispanic, and rural women, and a comparison group of white women with some college education. All groups were audio-taped and transcribed, and thematic content analysis was performed by 3 coders. Across demographic groups, we were struck more by similarities than differences. Every group had concerns about getting information that they could trust and that was easy to understand. In general, when differences appeared in how women coped with cancer, sought support, experienced treatment, or responded to the testimony of patients and physicians in our decision aid, individual characteristics were more prominent than group characteristics. One exception was the recognition that translating our tape into Spanish would be of enormous value for Hispanic women whose first language is not English, regardless of their education level.

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## E-77

**PERCEIVED RACISM, STRESS, AND ETHNIC IDENTITY IN A SAMPLE OF AFRICAN AMERICANS AND CARIBBEAN AMERICANS**

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Perceived racism may be a stressor and an important factor in the psychological and physical health of African Americans, yet little research has examined perceived racism among Caribbean Americans, another Black ethnic group with a strong presence in the United States. In this preliminary investigation, we examined the relationship between ethnicity, ethnic identity, perceived racism, and the stressfulness of perceived racism. Twenty-nine African American and 29 Caribbean American participants completed questionnaires assessing ethnic identity, and frequency and stressfulness of recent and lifetime racist events. Both ethnic groups reported strong ethnic identity. Both ethnic groups also reported similar experiences with and stressfulness appraisals of perceived racist events, and correlation analyses revealed strong associations between recent and lifetime racist events and stressfulness appraisals. These results may have implications for the mental and physical health of Black Americans of both ethnicities. Implications for health research and suggestions for future study are discussed.

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## E-78

**SOCIOECONOMIC STATUS AND BODY MASS INDEX: THE MEDIATING ROLE OF PHYSICAL ACTIVITY AND SEDENTARY BEHAVIORS DURING ADOLESCENCE**

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Approximately 22 million children in the US under the age of 5 are currently overweight, and \$92.6 billion were spent on obesity-related health care in 2003. Given the strain that obesity places on individuals and society, studying body mass index (BMI) during adolescence is important because it is a life stage in which health behaviors as well as weight trajectories are established. For this study, we assessed the impact of socioeconomic status (SES) on BMI in teens and the potential mediation of physical activity and/or sedentary behaviors in this relationship. 112 adolescents between the ages on 16 and 19 (average 16.85; 62 % female, 42 % White, 58% Black/Other) were assessed on height and weight, and asked to report their physical activity and sedentary behaviors. For SES data, caregivers provided information on the family's education, occupation, and financial resources. Analyses showed that Black/Other and low SES teens had higher BMI scores. Physical activity was found to mediate the relationship between SES and BMI in males, and race and BMI in the total sample. Sedentary behaviors mediated the SES-BMI relationship in the total sample, and the race-BMI relationship for females. Findings from this study suggest that both physical activity and sedentary behaviors play a role in adolescent obesity, but the impact varies by SES, race, and gender. Interventions aimed at curbing teen obesity would be most effective by increasing physical activity in low SES males and minority teens, and decreasing time spent in sedentary activities in low SES teens and female minorities.

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## E-79

**HIV RISK BEHAVIORS IN MEN ON VACATION**

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Previous research suggests that people engage in heightened levels of risk behavior while on vacation. Relative to their day-to-day lives, travelers have more free time to pursue sexual activities and are likely to engage in higher rates of substance use. This issue has not been thoroughly examined in men who have sex with men (MSM), a key group at risk for HIV. The present investigation examined substance use and sexual risk behaviors in MSM on vacation in two popular gay resort destinations. Participants were 268 MSM travelers recruited from gay-identified venues who completed a brief anonymous questionnaire. Overall, 24% of MSM travelers reported unprotected anal sex since arriving on vacation. Around half (56%) of the respondents reported consuming alcohol since arriving to the resort community, and 16% reported illegal substance use. Alcohol and other substance use was associated with higher rates of sexual risk behaviors, including unprotected anal sex ( $p < .01$ ). Findings suggest that some MSM travelers are placing themselves at risk for HIV and other STDs. Most traditional HIV prevention interventions do not readily lend themselves for use with transient populations. New intervention approaches are needed to work with MSM on vacation.

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## E-80

## DECREASING HOUSEHOLD TV TIME: A PILOT STUDY OF BEHAVIORAL AND ENVIRONMENTAL MANIPULATIONS

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Excessive TV viewing is associated with weight gain across the lifespan; thus developing strategies to decrease household viewing time may be an effective obesity intervention. To date, TV interventions have targeted children and adolescents. In contrast, the present study examined the feasibility and short-term impact of a behavioral/environmental approach designed to reduce TV time in the entire family. Seven families, with children ages 2-14, participated in the 8-week pilot study. To modify the environment, families had TV Allowances placed on all TVs in the home and the devices were programmed to turn off power after family members had watched 75% of their baseline hours. In addition, a kit with behavioral strategies for reducing TV time (e.g., setting TV goals together) was sent to the home each week and family members self-monitored their TV viewing. TV viewing was objectively assessed with the TV Allowances over a 4-day period at both baseline and at 8-weeks. A significant decrease in objectively measured TV viewing hours was observed,  $t=3.1$ ,  $p=.03$ ,  $29.8 \pm 10.3$  vs.  $14.9 \pm 6.0$  hours. Moreover, 43% of families reduced their viewing time by  $\geq 50\%$ . The acceptability of the intervention was high, with 100% of families reporting that they would recommend the TV Allowances to others. Further research is needed to test the long-term efficacy of the program, its impact on weight, and the relative effectiveness of the behavioral vs. environmental intervention components in decreasing household TV time.

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## E-81

## THE BUILT ENVIRONMENT MAY BE CONTRIBUTING TO ADULT AND ADOLESCENT OBESITY RATES

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**Purpose:** The obesity epidemic is challenging health professionals from many fields. From the urban planning and transportation literature, there is growing evidence of a relationship between the built environment and obesity in adults. There is little research which has investigated this relationship in adolescents. In this study, the walkability of the local environment and body mass index (BMI) were assessed in 691 adolescent and parent pairs.

**Methods:** A walkability index describing a half-mile radius around each participants home was calculated from Geographic Information System data using residential density, mixed land use, retail floor area ratio, and street connectivity. Adolescents (aged 11-15 years old) and their parents were recruited for a physical activity and dietary behavior change intervention. The current data are drawn from the baseline measurements. Height and weight were directly measured. A linear regression model adjusting for gender, age and parent education assessed the relationship between walkability and BMI.

**Results:** Mean BMI was 27.7 for adults and 23.3 for adolescents. The walkability score was significantly associated with adolescent (Beta =0.8,  $p=0.04$ ) and parent BMI (Beta=0.12,  $p=0.001$ ). Age and gender were also significantly associated with adolescent BMI. Gender and education level were significantly associated with adult BMI.

**Conclusion:** Elements of the proximal built environment may contribute to adult and adolescent BMI. The effect appears to be stronger in adults. Obesity prevention strategies which include the built environment should be considered.

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## E-82

## USING FOCUS GROUPS TO CREATE A CULTURALLY-TAILORED OBESITY PREVENTION PROGRAM FOR FAMILIES

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**Objective:** To determine culturally-specific family parenting and behavioral intervention needs, concerns, and preferences for intervention channels and modalities to address childhood obesity.

**Methods:** Formative research methodology was employed. We conducted eight focus groups (2 Latino, 3 African American, 3 white) each comprised of parents/caregivers of 5-8 year olds.

**Results:** Our findings showed that parents are concerned about their children's weight, related to both health and self-esteem. Parents attribute feelings of blame and guilt to their health care provider. Barriers to effective weight management include the school environment, specifically related to the lunchroom and unhealthy teacher rewards, time pressures on parents, and generational differences in what foods young children should eat. Parents want messages that are framed in a positive tone and delivered through multiple channels.

**Conclusions:** Parents are concerned about child overweight. Based upon this preliminary formative research, a multi-level, positive prevention approach, incorporating family, media, and community resources, needs to be created. Messages need to address family structure, the school environment and parenting skills specific to nutrition and physical activity choices.

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## E-83

## ETHNIC DIFFERENCES IN RISK FACTORS FOR SMOKING OVER THE COURSE OF ADOLESCENCE

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Research has shown that cigarette smoking onset is typically later for African American teens than for Caucasians. The reasons for this delay are unclear. One possibility is that African Americans are protected from known risk factors for smoking until later adolescence. The purpose of this study was to explore changes in risk factor exposure over the course of adolescence using a large, biethnic sample. Data were drawn from the Memphis Health Project (MHP), a longitudinal study of smoking onset using a cohort of 6,967 predominantly African American (80%) seventh graders. Participants completed an annual survey about their smoking behavior and risk factors theoretically related to smoking. Such risk factors included social support, parental modeling, peer smoking, rebelliousness, perceptions of smoking norms, the instrumental value of cigarettes, and parental acceptance of teen smoking. Retention over the life of the project was strong, and this report focuses on the period from seventh to twelfth grades. To explore the possibility of differential changes in risk factors during adolescence, we conducted a repeated measures ANOVA for each risk factor, with time and ethnicity as the independent variables. The results did indicate significantly lower risk exposure for African American youth at baseline. Since risk factors rose at a comparable rate for both ethnicities, African American teens continued to score lower than Caucasians. These results help explain what protects African American children from early smoking. Further research is needed to understand why smoking rates rise later in adulthood.

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## E-84

### THE NEIGHBORHOOD BUILT ENVIRONMENT INFLUENCES SUBSTITUTION OF PHYSICAL ACTIVITY FOR SEDENTARY BEHAVIOR IN YOUTH

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The neighborhood built environment may influence the choice of youth to be sedentary or physically active. The purpose of this study was to determine the influence of the neighborhood built environment on the substitution of physical activity for sedentary behavior in youth. Fifty-eight 8-16 year-old youth were studied in a within-subject crossover design with three three-week phases: baseline, increasing and decreasing targeted sedentary behaviors by 25% - 50%. Physical activity was measured by an accelerometer, and the built environment was assessed using GIS methods. Reliable changes in targeted sedentary behavior from baseline were observed during the increase (96.4 min/day,  $p < 0.001$ ) and decrease (-113.1 minutes/day,  $p < 0.001$ ) phases. Controlling for subject characteristics using hierarchical regression, youth who lived in older homes had higher z-BMI values and lower physical activity, the number of home televisions were positively related to sedentary behavior, and access to parks was positively related to increases in physical activity when sedentary behaviors were reduced ( $p < 0.05$ ). No neighborhood built environment variables predicted the decrease in physical activity when sedentary behaviors were increased ( $p > 0.05$ ). Neighborhood built environmental variables, such as age of housing and access to parks in the neighborhoods of youth predict z-BMI, baseline levels of sedentary behavior and physical activity, and changes in physical activity controlling for subject characteristics and the home environment.

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## E-85

### GENDER AND ETHNICITY MODERATE RELATIONSHIPS BETWEEN PERCEIVED NEIGHBORHOOD DISORDER AND BLOOD PRESSURE LEVELS

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Previous research on neighborhood stressors and cardiovascular health outcomes has focused on objective indicators of neighborhood stressors. Although subjective perceptions of neighborhood stressors have not been examined with regard to physical health, perceptions of neighborhood stress have been associated with emotional health (e.g., anger and depression). The present study examined associations between perceived neighborhood stressors and blood pressure. Healthy African American and European American men and women (N=108), with a mean age of 24.2 years (SD=5.27), completed the City Stress Inventory, a measure of perceived disorder and violence in the participants' neighborhoods. Blood pressure levels were measured during resting phases that preceded three discussions. Hierarchical regression tested the contributions of gender, ethnicity, and perceived neighborhood disorder and violence, along with their interactions, to blood pressure levels. Controlling for age, a significant interaction of neighborhood disorder X gender X ethnicity emerged for systolic ( $F(11,96)=5.46$ ,  $p<0.0001$ ,  $R^2=.38$ ,  $Beta=.40$ ,  $t=2.14$ ,  $p=.03$ ) and diastolic ( $F(11,96)=2.99$ ,  $p<0.01$ ,  $R^2=.25$ ,  $Beta=.55$ ,  $t=2.66$ ,  $p=.01$ ) blood pressure levels. Tests of simple slopes for these 3-way interactions revealed that among African American men, higher levels of perceived neighborhood disorder were associated with higher systolic ( $t(107)=3.03$ ,  $p=.003$ ,  $Beta=.66$ ) and diastolic ( $t(107)=2.63$ ,  $p=.01$ ,  $Beta=.63$ ) blood pressure levels. This suggests that gender and ethnicity moderate relationships between perceived neighborhood stressors and blood pressure, and that for African American men perceptions of high levels of disorder in their neighborhoods are related to higher blood pressure levels. More generally, subjective perceptions of neighborhood stress are important to understanding connections between neighborhood stressors and blood pressure. Supported by NHLBI grant R29HL58528.

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## E-86

### RURAL ECOLOGY AND COPING WITH HIV STIGMA

Sondra E. Solomon, Ph.D.,<sup>1</sup> Susan E. Varni, B.A.,<sup>1</sup> Carol T. Miller, Ph.D.,<sup>1</sup> and Rex L. Forehand, Ph.D.<sup>1</sup> Psychology,<sup>1</sup>

<sup>1</sup>Psychology, University of Vermont, Burlington, VT

Findings are part of a 3 three year NIMH funded project testing a theoretical model of how the stigma associated with HIV disease affects the risk behaviors of people with HIV in Vermont. The model proposes that the social and physical ecological characteristics of rural communities make HIV/AIDS particularly stigmatizing in rural areas, and that rural people with HIV/AIDS are aware that they are stigmatized. The current project describes perceived HIV/AIDS stigma, perceived barriers to care and fear of disclosure in 71 adults with HIV in metropolitan, micropolitan and rural Vermont communities. Results indicate that residency in a rural area did not influence stigma consciousness or fear of disclosure. Regardless of location, people in Vermont living with HIV mildly agree that they feel personally stigmatized and rarely or sometimes fear disclosure. Vermont residents differed on their perception of personal resources as a barrier to care ( $p<.05$ ). Specifically, people living with HIV in rural settings perceived a greater lack of employment opportunities ( $p<.05$ ) and a supportive and understanding work environment ( $p<.05$ ) than those living in metropolitan areas. Residents of both micropolitan and rural areas of Vermont reported more concerns about personal finances than did metropolitan residents, but this finding was only marginally significant ( $p=.09$ ). The preliminary findings also indicate that being a member of another stigmatized group (e.g. women, people of color) does not increase the stigma consciousness of having HIV. While rurality does not appear to influence stigma consciousness and fear of disclosure, barriers to care that involve personal finance and employment are affected by this factor.

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## E-87

### ASSOCIATION OF PERCEIVED NEIGHBORHOOD ENVIRONMENT AND SOCIAL SUPPORT WITH ADULT WALKING BEHAVIOUR

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<sup>1</sup>Physical and Health Education, Queen's University, Kingston, ON; <sup>2</sup>Canada; <sup>3</sup>Canada

Promoting regular walking to sedentary adults has the potential to address the recognized public health burden of physical inactivity. To develop effective community-based interventions aimed at increasing walking, it is important to have an encompassing understanding of individual- and community-level correlates of walking. Researchers have suggested that environmental factors (physical and social) may be related to patterns of walking.

**PURPOSE:** To determine whether perceived social support and perceived neighborhood environment are associated with adult walking behaviour.

**METHODS:** One-hundred and five sedentary male (n=52) and female (n=53) community-dwelling adults (mean age =26.9 years, SD= 4.5) self-reported weekly walking behavior (Castro, 1999), social support for walking (adapted from the Family/Friend Support for Exercise Habits Scale; Sallis et al., 1987), and perceived neighborhood environment, including aesthetics, access to local commercial resources, convenience and traffic (Humpel et al., 2004). Multiple regression analysis was used to assess the relationship between neighborhood environment and social support on weekly walking behaviour.

**RESULTS:** Both social support ( $p=0.026$ ) and access ( $p=0.034$ ) were found to be significant correlates of walking behaviour among sedentary adults. Aesthetics, convenience and traffic scores were non-significant.

**CONCLUSIONS:** These findings suggest that social support and access to local commercial resources should be considered when designing community-based interventions to increase walking in sedentary adults.

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# POSTER SESSION F

Saturday, April 16, 2005

8:30 AM-10:00 AM

Exhibit Hall

Poster Session F - Complementary and Alternative Medicine;  
Psychological and Person Factors in Health and Behavior Change

## F-171

### CAN THE QUALITY OF THE PATIENT-PROVIDER RELATIONSHIP PREDICT WELL-BEING IN PATIENTS SEEKING COMPLEMENTARY & ALTERNATIVE MEDICINE FROM PROFESSIONAL PROVIDERS?

David T. Eton, Ph.D.,<sup>1,2</sup> Leslie Mendoza Temple, M.D.,<sup>1</sup> and Karen Koffler, M.D.<sup>1,2</sup>  
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Significant numbers of patients in the U.S. and abroad use complementary and alternative medicine (CAM). Today, many patients are including the services of CAM providers as part of an integrative treatment regimen that combines CAM with conventional medicine. We studied the CAM patient-provider relationship to determine whether it predicts perceived health outcomes. We had 50 CAM-receiving patients (mean age=56.4 years; 72% female) complete a battery of measures including the Functional Assessment of Chronic Illness Therapy-Spirituality, the Brief Profile of Mood States, the Brief COPE, and the Patient Reactions Assessment (PRA), a measure of patient-provider relationship. Associations between the PRA and patient-reported well-being and coping were determined. Patient outcomes of high and low PRA groups were compared. Patients who reported receiving more information about treatment from their providers (i.e., high information) reported better physical and functional well-being than patients who reported receiving less information (i.e., low information) ( $ps < .05$ ). High information patients also reported less negative mood than low information patients ( $ps < .05$ ). Coping behaviors differed in high and low information patients. High information patients reportedly used more positive coping (e.g., taking action) than low information patients ( $ps < .05$ ). Taken together, these findings suggest that informational exchanges between CAM providers and patients regarding treatment are important and may promote better patient outcomes.

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## F-172

### MECHANISMS OF ACTION IN THE INVERSE RELATIONSHIP BETWEEN MINDFULNESS AND DEPRESSIVE SYMPTOMATOLOGY

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Mindfulness-based interventions have been found to be effective for a variety of physical and mental health disorders, including depression; the mechanisms by which they exert their effects remain unclear, however. The present study collected correlational, self-report data from a non-clinical sample of 197 male and female undergraduates (64.5% female). Structural equation modeling was then used to investigate three possible mediating mechanisms by which mindfulness might impact depressive symptomatology. The three mechanisms were self-management, or the ability to manage one's internal life and external interactions with the world; non-attachment, or the extent to which one's happiness is independent of specific outcomes and events; and rumination. Results confirmed a significant, inverse relationship between mindfulness and depressive symptomatology, and indicated that self-management, non-attachment, and rumination fully mediated the impact of mindfulness on depressive symptomatology. Specifically, mindfulness exerted direct effects on self-management and rumination, which both directly affected depressive symptomatology, and non-attachment mediated a portion of self-management's influence on rumination. Self-management appeared to be a particularly important mediator in this model. These findings suggest that mindful attention to the present moment might facilitate the development of other skills, which in turn influence the development of depressive symptomatology.

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## F-173

### WORK STRESS, HEALTH BEHAVIORS AND SATISFACTION WITH LIFE IN SCOTTISH POLICE OFFICERS

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High levels of stress can affect the health and well-being of emergency services workers. Little research has been conducted into work-related stress in police officers in the UK. The current study is a cross-sectional survey of 250 randomly-sampled full-time employees of Lothian and Borders Police Force, Scotland. Questionnaires were distributed by the Human Resources division of the Police Force and were returned directly to the University. The survey booklet contained questionnaires on: work stress (relationships and support at work and critical incident stress); the *Satisfaction with Life Scale*; the *Reported Health Behaviours Checklist*; and the *International Personality Item Pool* 50-item personality scale assessing Agreeableness, Openness, Extraversion, Intellect and Neuroticism. Satisfaction with Life scores ranged from 9-34 (possible range 7-35), with a mean of 20.3 (higher scores indicate greater satisfaction). Work stress scores ranged from 0-38 (possible range 0-40) with a mean of 17.8 (higher scores indicate greater stress). There were associations between higher stress and: lower Satisfaction with Life ( $r=-.22$ ;  $p<0.05$ ); higher Neuroticism ( $r=.21$ ;  $p<0.05$ ); and higher Intellect ( $r=.21$ ;  $p<0.05$ ). More exercise was associated with lower Neuroticism ( $r=-.28$ ;  $p<0.01$ ) and higher Extraversion ( $r=.39$ ;  $p<0.01$ ). Avoidance of smoking was correlated with lower Neuroticism ( $r=-.20$ ;  $p<0.05$ ) and higher Extraversion ( $r=.30$ ;  $p<0.01$ ). Multiple regression showed that Satisfaction With Life was significantly independently predicted by Neuroticism (accounting for 14.2% of the variance) and Intellect (1.5% of the variance) but not by health behaviours or stress. Personality traits may be an important root of health behaviours and experience of stress at work, all of which interrelate to affect quality of life.

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## F-174

**EXTRAVERSION PREDICTS CARDIOVASCULAR REACTIVITY OF SINGAPOREAN POLICE OFFICERS DURING AN ANGER RECALL TASK**

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Extraversion has been shown to have an effect on physiological reactivity to mental stress and emotional stimuli. We hypothesized that Extraversion would predict negative emotionality. This study aims to examine the effect of Extraversion on cardiovascular reactivity (CVR) during anger recall. **METHOD:** Heart rate, blood pressure and hemodynamic measures were taken in 114 Singaporean male patrol officers from the Singapore Police Force, while they performed a mental arithmetic and anger recall task. Extraversion was assessed using the NEO PI-R as a continuous variable. **RESULTS:** Extraversion did not have an effect on mean baseline measures. However, during the mental arithmetic task, lower Extraversion scores were associated with greater change in SBP from baseline ( $p=.02$ ). During the anger recall task, lower Extraversion scores were associated with a greater change from baseline for SBP ( $p<.01$ ), DBP ( $p=.01$ ), HR ( $p<.01$ ), and mean arterial pressure (MAP;  $p<.01$ ). Furthermore, there were significant task by Extraversion interactions for SBP ( $p=.03$ ), DBP ( $p<.01$ ), and MAP ( $p<.01$ ). Extraversion had effects on reactivity during anger recall but not during mental arithmetic. **CONCLUSIONS:** Extraversion may have more pronounced effects on CVR during emotion provoking tasks than during cognitive tasks; and may play a role in the expression and experience of anger, a component of anger that has not been previously examined. Low Extraversion possibly predicts elevated CVR by way of suppressed anger, a pre-disease pathway that potentially contributes to the development of CHD.

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## F-175

**THE IMPACT OF PRENATAL MATERNAL STRESS AND HEALTH BEHAVIORS ON BIRTH OUTCOMES**

Dolores T. Cannella, M.A.,<sup>1</sup> Marci Lobel, Ph.D.,<sup>1</sup> and Jennifer E. Graham, Ph.D.<sup>1</sup>

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Previous research has demonstrated that prenatal maternal stress is a contributor to adverse birth outcomes such as low birth weight and preterm delivery. The purpose of this study was to examine the hypothesis that unhealthy behaviors in pregnancy, including smoking and poor eating habits, would mediate the association between stress and birth outcomes. A socioeconomically and ethnically diverse sample of pregnant women ( $N=328$ ) were interviewed during routine visits to a university-affiliated prenatal clinic. Stress and health behaviors were assessed at three time points over the course of pregnancy. Prenatal maternal stress was operationalized using six indicators: number of life events, life event distress, pregnancy-specific distress, chronic stress, state anxiety, and life strain from employment, partner, childcare, or finances. The Prenatal Health Behaviors Scale (PHBS), adapted from prior research, was used to examine a broad range of self-reported health behaviors in pregnancy, including nutrition, exercise, smoking and substance abuse. Medical history, birth weight and gestational age were obtained from medical chart abstraction. Structural equation modeling was used to test the adequacy of study constructs and to test hypotheses. Results confirm that stress predicts lower birth weight and earlier delivery, and that this association is mediated in part by cigarette smoking. Other health behaviors such as unhealthy eating were associated with stress, but did not mediate its impact on birth outcomes. These findings illustrate the role of behaviors in explaining deleterious effects of stress on health and they confirm the value of interventions that reduce stress and promote healthful behaviors, particularly smoking cessation, in pregnant women.

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## F-176

**PERSONALITY AND COPING RESPONSE; A COMPARISON OF FEMALES WITH OSTEOARTHRITIS AND FIBROMYALGIA SYNDROME**

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Few studies have examined the role of personality and the effects of personality factors on coping. This study was designed to determine whether personality factors are differentially related to coping styles when women with osteoarthritis (OA) and fibromyalgia syndrome (FMS) respond to the stress of their condition. The OA group ( $n=107$ ) had a mean age of 69 years ( $SD=6.01$ ). The FMS group ( $n=322$ ) had a mean age of 52 ( $SD=10.81$ ). Participants were administered the Ways of Coping Questionnaire and the NEO Five-Factor Personality Inventory Scale. A MANOVA revealed significant differences between the groups for openness, agreeableness, conscientiousness, and extraversion ( $F(7, 421)=13.08, P<.01$ ). The OA group scored higher on all variables. Two multiple regressions for each group were conducted to predict coping styles, using personality factors while controlling for age, education, income and length of symptoms. For OA, neuroticism and conscientiousness significantly predicted emotion-focused coping ( $F(9,97)=2.64, P<.01$ ), while none of the personality variables predicted problem-focused coping. For FMS, neuroticism and extraversion significantly predicted emotion-focused coping ( $F(9,312)=2.13, P<.05$ ). Neuroticism significantly predicted problem-focused coping ( $F(9,312)=2.05, P<.05$ ). Knowing how personality variables are related to coping strategies among people with a specific chronic illness may help in customizing interventions that could lead to improved self-management and better health outcomes.

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## F-177

**NICOTINE-DEPRIVATION, ALCOHOL-INTOXICATION, AND SMOKING-RELATED OUTCOME EXPECTANCIES**

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Interventions often promote smoking cessation by targeting beliefs about the consequences of smoking. Yet it is unclear how these beliefs vary across internal and external contexts, such as when smokers are drinking alcohol while nicotine-deprived. We examined the separate and combined effects of nicotine-deprivation and alcohol-intoxication on smoking-related outcome expectancies. In Experiment-1, smokers ( $n=126$ ; 48% male; 79%-Caucasian; 17%-African-American; age(mean)=24.7) were 12-hr nicotine-deprived or nondeprived. In Experiment-2, smokers ( $n=137$ ; 50% male; 82%-Caucasian; 11%-African-American; age(mean)=23.5) were all 12-hr nicotine-deprived, and consumed alcohol or placebo. Participants reported their urge to smoke and estimated their alcohol intoxication on 0-100 scales, and then completed a brief version of the Smoking Consequences Questionnaire-Adult. Nicotine-deprived participants in both experiments reported a relatively strong urge to smoke (mean=59.4). Participants administered alcohol reached mean blood-alcohol-levels of .073%. Those administered placebo reported drinking alcohol and feeling intoxicated (mean subjective-intoxication(SI)=11.0), although less so than those drinking alcohol (mean SI=36.4). Results of Experiment-1 indicated that nicotine-deprivation increased positive reinforcement(PR) expectancies ( $p<.01$ ), but not negative reinforcement(NR), or negative consequences(NC). Results of Experiment-2 indicated that beyond nicotine-deprivation, alcohol consumption increased PR expectancies, and certain social NC( $ps<.02$ ). Interestingly, alcohol consumption also increased NR expectancies among tobacco chippers ( $p<.02$ ), such that they became more similar to those of heavy smokers as tobacco chippers' SI-level increased, while NR expectancies among heavy smokers remained uniformly high regardless of drink content. These data demonstrate that nicotine-deprivation and alcohol-intoxication can alter the way smokers evaluate the consequences of smoking. Findings suggest that these momentary internal contexts moderate the association between expectancies and behavior, providing insight into the link between nicotine-deprivation, alcohol consumption and the maintenance of smoking behavior. Supported by NIDA-DA10605 to Michael Sayette.

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## F-178

### THE ASSOCIATION BETWEEN RELIGIOSITY AND ILLNESS UNCERTAINTY IN PATIENTS WITH CANCER OF UNKNOWN PRIMARY

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Patients with cancer of unknown primary (CUP) may have heightened uncertainty regarding their illness. This uncertainty may be related to various aspects of their illness including diagnosis, treatment, or prognosis. One factor that may influence uncertainty is a patient's spiritual or religious beliefs (religiosity). We examined the association between religiosity and uncertainty in patients with CUP. We hypothesized that higher religiosity would be associated with less uncertainty. Eighty-four patients with CUP were recruited following initial outpatient visits. They completed measures of uncertainty (Mischel Uncertainty in Illness Scale) and religiosity (Systems of Belief Inventory). Patients ranged in age from 40 to 86 years ( $M = 60.6$ ;  $SD = 10.6$ ). Most patients were male (61%), Caucasian (87%), married or living with a partner (85%), and had a college degree or higher (46%). The majority were Protestant (67%) and indicated that religion/spirituality guided them either quite a bit or a great deal in their daily activities (67%). Overall, uncertainty and religiosity were not significantly associated ( $p > .05$ ). However, one dimension of religiosity, social support derived from religion, was significantly negatively associated with uncertainty ( $r = -.22$ ,  $p = .05$ ). Importantly, this effect remained after controlling for ethnicity, age, and gender ( $b = -.23$ ,  $p = .05$ ). These results suggest that the benefit of religiosity/spirituality on reducing illness uncertainty may be due to the support that is found within individuals' religious communities rather than from their beliefs and practices.

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## F-179

### THE IMPACT OF ILLNESS CENTRALITY FOR PEOPLE WITH DIABETES

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In two studies of people with diabetes, we examined how illness centrality (i.e., how central illness is to one's self-concept) and illness valence (i.e., how positively or negatively one views the illness) are associated with quality of life, self-care behavior, and metabolic control. We expected centrality to interact with valence, such that valence would be more strongly associated with outcomes when centrality was high. This hypothesis was tested in Study 1 through surveys of 112 adults with type 1 or type 2 diabetes and in Study 2 through interviews of 132 children with type 1 diabetes. Both studies revealed potential negative consequences of illness centrality. In Study 1, centrality was associated with lower self-esteem and more episodes of hypoglycemia and hyperglycemia. In Study 2, centrality was associated with poorer quality of life, lower self-esteem, and worse metabolic control. However, significant interactions between centrality and valence appeared in both studies. In Study 1, centrality interacted with valence to predict positive affect, such that positive valence was more strongly associated with positive affect at high rather than low levels of centrality. Centrality and valence also interacted to predict metabolic control, whereby positive valence was more strongly associated with better metabolic control at low rather than high levels of centrality. In Study 2, centrality interacted with valence to predict self-care behavior, such that positive valence was more strongly related to better self-care behavior when illness centrality was high rather than low. These findings suggest that the effect of people's views of diabetes on their mental and physical health depend on how central it is to their self-concept.

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## F-180

### GOOD FOODS AND BAD FOODS: THE ROLE OF RESTRICTION IN CHILDREN'S EATING HABITS

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Parents provide substantial influence on children's eating behaviors. The current research examined the role of parental food restriction in children's eating habits. Participants were 320 Hispanic families (1,038 children) with at least 1 overweight child. Children were served a dinner providing 50% of their daily energy requirements and were then given unrestricted access to 10 palatable snack foods (e.g., chips, ice cream), after which they were interviewed. Mothers reported child feeding practices during a separate session. Multilevel models controlling for the nonindependence of data coming from people within the same family revealed several interesting findings. Mothers who were more restrictive had children who (1) thought their parents would be upset with them for eating the snack foods ( $t(437) = 3.78$ ,  $p < .001$ ) and (2) would feel guilty if their parents found out what they ate during the snack session ( $t(442) = 1.92$ ,  $p = .05$ ). Additionally, children's expectations of a negative parental reaction to food consumed during the snack session was associated with children's self-assessment of eating too much during the snack session ( $t(423) = 3.03$ ,  $p < .01$ ) and sneaking these foods at home ( $t(430) = 3.06$ ,  $p < .01$ ). This suggests that food sneaking and eating in the absence of hunger may be driven by an avoidance motive – in this case, a motive to avoid feeling bad or making their parents upset. Thus, parents' restrictive feeding patterns do not curtail children's intake of these foods and may actually encourage them to sneak foods and eat more than they need when opportunities to eat these foods arise.

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## F-181

### PERSONALITY & HEALTH BEHAVIORS IN BREAST CANCER PATIENTS

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Several studies have suggested that conscientiousness-related traits are associated with reduction in negative health behaviors, e.g., smoking (Hampson et al., 2000), and increase in positive health behaviors, e.g., exercise (Rhoades et al., 2001). This study examines personality traits as predictors of health behaviors in 112 women with Stage II-III breast cancer who served as the control group in a randomized psychosocial intervention (Andersen et al., 2004). The average subject was 51 years old, Caucasian (90%), living with a romantic partner (71%), with an average household income of \$41,200. The initial assessment occurred following surgery and prior to adjuvant therapy. Follow-up data were collected at 12-, 24-, and 36-months. At initial and follow-up, health behaviors including dietary habits, alcohol, tobacco, and caffeine use, habitual physical activity, and sleep habits, were assessed. Personality factors were assessed at initial using the Goldberg factor markers: agreeableness (A), conscientiousness (C), extraversion (E), and neuroticism (N). A series of hierarchical multiple regression models tested the four personality markers as predictors of health behaviors at follow-up. The hypothesis that C would be a significant unique predictor of health behavior was not supported. In fact, E emerged as a consistent unique predictor of overall physical activity and participation in vigorous sports, while N predicted fat intake at follow-up. On the whole, these data do not provide support for the hypothesis that health behavior is predicted by personality factors. As suggested by Paunonen (1998), use of personality traits, rather than factor markers might result in better predictive accuracy.

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## F-182

**"SIMPLE" AND "COMPLEX" PTSD: ASSOCIATION WITH SOMATIC COMPLAINTS**Erika J. Wolf, M.A.,<sup>1,2</sup> Mark W. Miller, Ph.D.,<sup>1,2,3</sup> and Patricia A. Resick, Ph.D.<sup>1,2,3</sup><sup>1</sup>National Center for PTSD, VA Boston Healthcare System; <sup>2</sup>Department of Psychology, Boston University; <sup>3</sup>Department of Psychiatry, Boston University, Boston, MA

Individuals who have experienced trauma may exhibit a broad array of psychological and physical pathology. "Simple" PTSD, as defined by the DSM-IV, is the prototypical pathological response to trauma and is associated with increased rates of physical symptoms and illness. Beyond simple PTSD, post-traumatic psychopathology also includes internalizing and externalizing variants of "complex" PTSD, i.e., comorbid disorders and personality disturbance. Problems such as depression and anxiety cohere along an internalizing dimension of complex PTSD, while substance use and impulse-based personality disorders align with the externalizing dimension. The aim of this study was to examine which aspects (i.e., simple, internalizing, externalizing) of post-traumatic psychopathology are most associated with somatic complaints. The sample included 143 female rape survivors (mean age = 32, range = 18 – 70; 69% White, 27% Black). Pearson correlations demonstrated that measures of simple, internalizing, and externalizing PTSD were significantly associated with physical symptoms ( $r = .30, .32, .36$ , respectively; all  $p < .001$ ). However, regression analyses showed that simple PTSD was no longer associated with somatic complaints (standardized beta =  $.14, p = .15$ ) when internalizing and externalizing were included in the analysis. Internalizing and externalizing demonstrated significant independent contributions to somatic complaints (standardized betas =  $.26$  and  $.32$ , respectively, all  $p < .005$ ). These findings suggest that the association between simple PTSD and physical health complaints may be confounded by the more complex variants of the disorder. They underscore the importance of assessing complex PTSD in studies of the association between trauma and somatic complaints.

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## F-183

**EMOTIONAL INTELLIGENCE: A NOVEL CONSTRUCT IN PREDICTING POST-TRAUMATIC GROWTH**John E. Schmidt, MS,<sup>1</sup> Kristi D. Graves, PhD,<sup>1</sup> and Michael A. Andrykowski, PhD.<sup>1</sup><sup>1</sup>Department of Behavioral Science, University of Kentucky, Lexington, KY

Traumatic experiences are life-changing events that often result in long-term distress. For some, the process of recovering from trauma leads to psychological and emotional growth. In this preliminary analysis of an ongoing web-based study, a sample of 52 trauma survivors completed an on-line survey (mean age 38.0 years,  $SD=11.6$ ). Measures included demographics, social support (DUKE-SSQ), social constraints (SCS), emotional intelligence (TMMS), depression (HADS-D), PTSD-symptomatology (PCL-C), and posttraumatic growth (PTGI). Participants reported experiencing a mean of 2.5 ( $SD=1.3$ , range 1-5) traumatic events. The most commonly reported traumatic events included violent attack/sexual abuse ( $n=40$ ), family member hurt/killed ( $n=17$ ), and observed someone hurt/killed ( $n=13$ ). The majority of the sample ( $n=45$ , 82%) met PCL cut-off criteria for clinically significant PTSD-symptomatology according to Blanchard et al (1996). Hierarchical regression analyses were conducted to evaluate predictors of posttraumatic growth. Variables in the model included demographics, social-environment, mood, emotional intelligence, number of traumatic events, and PTSD-symptomatology. The final model accounted for 55.2% of the variance in the PTGI total score. Significant predictors included employment status ( $\beta=-.289, p<.05$ ), depression ( $\beta=-.430, p<.01$ ), emotional intelligence ( $\beta=.431, p<.01$ ), PTSD-symptomatology ( $\beta=.572, p<.01$ ), and number of traumatic events ( $\beta=.239, p<.05$ ). Consistent with previous findings severity of trauma, as measured by PTSD-symptomatology and number of events, predicted posttraumatic growth. Unique to the present study was the finding that emotional intelligence, or the ability to recognize and appropriately regulate emotions, also predicted post-traumatic growth. The construct of emotional intelligence may serve as an important addition to theoretical models of trauma adaptation and further guide the development of clinical interventions for trauma survivors.

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## F-184

**HOSTILITY AND AMBULATORY BLOOD PRESSURE: DOES AMBULATORY MOOD OR COPING MEDIATE THIS RELATIONSHIP?**Mekayla Castro,<sup>1</sup> Christine Marco, PhD,<sup>1</sup> Joseph Schwartz, PhD,<sup>2</sup> and Arthur Stone, PhD.<sup>2</sup><sup>1</sup>Psychology, Rhode Island College, Providence, RI; <sup>2</sup>Psychiatry, SUNY Stony Brook, Stony Brook, NY

Hostility has long been related to cardiovascular risk. Stress-related mood and coping efforts may mediate the effect of hostility on cardiovascular outcomes. This study examined how Cook-Medley hostility scores predicted ambulatory coping, mood, and blood pressure (BP). The mediating effects of mood and coping were tested using Baron and Kenny's mediator model (1986). 175 healthy adults (mean age = 43) reported stress, coping, and mood approximately every 3.0 hours for three days using a hand-held computerized diary. BP was assessed with the SpaceLabs ambulatory monitor. Data were analyzed with hierarchical regression models (SAS PROC MIXED) while covarying age, gender, BMI, and posture. Higher Cynicism and Hostile Affect predicted higher systolic and diastolic BP at all times ( $p < .05$ ). Hostile Attribution predicted higher diastolic BP following a stressor only ( $p < .05$ ). Regarding the mediators, hostility was associated with increased negative mood and decreased energy/arousal ( $p < .05$ ); however, mood did not mediate the HO-BP relationship. For coping, both higher Hostile Attribution and higher Cynicism predicted increased use of denial ( $p < .05$ ). Higher Social Avoidance scores predicted increased use of distraction and decreased use of problem-solving strategies ( $p < .05$ ). None of the coping strategies mediated the HO-BP relationship. Overall, this study found links between hostility, coping, mood, and BP at the momentary level, but failed to find a mediating effect of mood or coping. The discussion includes methodological considerations, such as difficulties assessing transient processes and appropriate time frames to see effects of coping and mood at the time that these processes are occurring.

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## F-185

**ASSOCIATION OF INTERVIEW CONTENT AND STYLE RATINGS WITH CARDIOVASCULAR REACTIVITY AND RECOVERY**Anthony Austin,<sup>1</sup> Cary Sears,<sup>1</sup> Elizabeth Cascarilla, M.A.,<sup>2</sup> James Elek,<sup>1</sup> Julie Gramlich,<sup>3</sup> Tiffany Mackie,<sup>1</sup> Donald Hester,<sup>1</sup> and Keith Kline, Ph.D.<sup>1</sup><sup>1</sup>Psychology Department, Cleveland State University; <sup>2</sup>Psychology Department, University of Akron; <sup>3</sup>Department of Nutrition, Case Western Reserve University

The cardiovascular reactivity hypothesis assumes lab-field generalizability. Review papers question this assumption and recommend using interpersonal stressors and recovery data. While cardiovascular responses have been related to psychosocial variables, most investigations employ self-report measures. Systolic (SBP) and diastolic (DBP) blood pressure, heart rate, cardiac output (CO), and total peripheral resistance (TPR) were assessed during and following a stress interview in 90 undergraduates and related to content and style ratings obtained using an original coding system. Interrater reliabilities ranged from .58 to 1.0. Expression to others correlated with increased TPR reactivity ( $r=.27, p<.05$ ). High stressor importance was associated with less DBP ( $r=-.32, p<.01$ ) and TPR ( $r=-.22, p<.05$ ) recovery. High self-efficacy ( $r=.27$ ) and task-engagement ( $r=.24$ ) correlated with less SBP and enhanced CO recovery, respectively ( $p < .05$ ). Others' awareness of the problem was associated with greater TPR reactivity and less SBP recovery ( $p < .05$ ). Expression and others' awareness accounted for 7.4% of the variance in TPR reactivity. Expression was the significant predictor ( $\beta=.27, p<.05$ ). Self-efficacy and others' awareness accounted for 10% of the variance in SBP recovery. Self-efficacy was the significant predictor ( $\beta=.55, p<.05$ ). Associations of expression and stressor importance with vascular reactivity and recovery, respectively, suggest venting to others and potent stressors lead to escalated or prolonged threat responses. Self-efficacy reflected ability to cope with similar problems, potentially leading to anticipatory responses and delaying recovery. Conversely, task-engagement indicated momentary involvement, and, perhaps, an efficient response, including rapid recovery.

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## F-186

## RELATIONSHIP BETWEEN PSYCHOLOGICAL FUNCTIONING AND SMOKING STATUS IN LUNG CANCER PATIENTS AND THEIR SPOUSES

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Disease-associated distress may obstruct smoking cessation in lung cancer patients; spouses who continue to smoke may further hinder abstinence. We examined psychological functioning, smoking status, and intentions to quit in 90 lung cancer patients and 85 spouses. Patients were mostly white (86%) and male (59%); mean age was 62. Patient smoking status was: 7% current, 29% recently quit, 50% former, and 12% never. Spouse smoking status was: 23% current, 2% recently quit, 30% former, and 45% never. Brief Symptom Inventory (BSI) data indicated 41% of patients and 44% of spouses experienced psychological distress. Univariate ANOVAs on patients indicated current smokers had higher BSI Phobic Anxiety than the other three categories ( $p < .001$ ); current smokers had higher Paranoid Ideation than recently quit and former smokers ( $p < .05$ ). Among spouses, recently quit smokers had higher Phobic Anxiety than former smokers ( $p < .05$ ). Although current smokers had higher BSI global distress than the other three categories, results were not significant ( $p = .15$ ). All current smoking patients reported considering quitting in the next month; mean BSI global distress scores indicated psychological distress. Only 44% of current smoking spouses considered quitting in the next month. There was a trend for those not considering quitting to have higher Depression and Obsessive-Compulsive scores ( $p = .09$ ) than those considering quitting. Though based on small and unbalanced cells with regards to smoking status, results suggest further exploring the association of patients' and spouses' smoking status, intentions to quit, and psychological functioning.  
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## F-187

## PSYCHOSOCIAL CORRELATES OF PHYSICAL ACTIVITY AFTER MENOPAUSE

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**Introduction:** Following menopause, leisure physical activity declines for reasons not completely understood. We studied associations between activity and psychosocial factors in postmenopausal women.

**Methods:** Subjects included 504 women from the Women on the Move through Activity and Nutrition study. Activity was assessed with the Past-Year Modifiable Activity Questionnaire. Participants reported activity lapses, decision-making and exercise self-efficacy. Psychosocial measures included Beck Depression Inventory, State Trait Anxiety Index, Cohen Perceived Stress Scale, and SF-36. Spearman correlations were used to determine associations between PA and psychosocial variables.

**Results:** Mean age was 56.8 years and median PA was 11.4 MET-hrs/week. Women without activity lapses had higher activity levels (19.7 MET-hrs/week) than regularly active women with lapses (16.6 MET hrs/week) or occasionally active women with lapses (9.8 MET-hrs/week) ( $p < 0.0001$  for trend). Most frequently cited reasons for lapses were lack of motivation (29%), lack of time due to work (18%), and weather change (13%). Women with significantly higher activity levels ( $p < 0.001$ ) had higher exercise self-efficacy ( $r = 0.31$ ), greater perceived benefits for physical activity ( $r = 0.22$ ), and better physical quality of life ( $r = 0.16$ ). Women with higher activity also reported better general health and emotional well-being and less fatigue and pain on SF-36 subscales. No significant relationships were seen between activity and perceived stress, anxiety or depression.

**Conclusions:** Higher activity levels were associated with fewer lapses, higher self-efficacy, greater perceived benefits, and better self-reported quality of life. Future interventions should target self-efficacy and decision-making skills and address common causes for lapses.

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## F-188

## DAILY AND MOMENTARY MOOD AND STRESS IN BULIMIA NERVOSA PATIENTS PREDICT BINGING AND VOMITING IN THE NATURAL ENVIRONMENT

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Mood is thought to be a trigger for bingeing and vomiting in bulimia nervosa (BN) patients, largely based on clinical observation and retrospective reporting. This study examined the relation of stress and mood to bingeing and vomiting in patients' normal environments, using real-time data collection. Women ( $n = 131$ ; mean age = 25.4) meeting DSM-IV criteria for BN carried a PalmPilot for two weeks and completed ratings of positive affect (PA), negative affect (NA), anger/hostility (AH), stressor severity (STRS), and indicated binge and vomit episodes six times each day. Mixed models were used to determine 1) differences between days with a BN-event (binge or vomit) and non-event days, and 2) mood and stress changes preceding a BN-event. BN-event days showed less PA, higher NA, higher AH, and greater STRS than non-event days ( $p < .001$ ). BN-events within a day were predicted by decreasing PA, increasing NA, increasing AH, and increasing STRS ( $p < .0001$ ). Ancillary analyses suggested AH and STRS changes are due primarily to the BN-event itself, whereas PA/NA changes are more robust predictors of BN-events. These data provide strong evidence that mood and stress are related to bingeing and vomiting in women with BN. BN events are more likely to occur on dysphoric days, and mood becomes increasingly more negative leading up to a BN event. Demonstration of the temporal sequencing of stress, mood, and BN-events with a large BN population holds great potential to advance theory and clinical practice in eating disorders.

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## F-189

## IMPACT OF BENEFIT FINDING ON PSYCHOLOGICAL ADJUSTMENT AND HEALTH BEHAVIOR ADAPTATION AMONG HIV+ WOMEN

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People with chronic medical conditions often report positive changes or benefit finding (BF) in response to illness, but few studies have addressed this phenomenon among HIV+ women. We sought to (a) characterize the prevalence of BF and (b) test the hypothesis that BF would be associated with positive psychological adjustment and health behavior adaptation in a clinic-based sample of HIV+ women. Participants ( $N = 87$ ; 47% African-American,  $M$  age = 40) completed standardized measures of benefit finding, depressive symptoms, medication adherence, physical activity, and sexual functioning during a routine clinic visit. Overall, participants expressed moderate to high levels of BF ( $M = 3.8$  on 5 point scale). BF was more commonly reported among African-American women ( $p < .05$ ), but did not vary as a function of other demographic or health status indices. Patients reporting high levels of BF reported fewer depressive symptoms ( $p < .03$ ), higher levels of physical activity ( $p < .05$ ), and better sexual functioning ( $p < .01$ ) relative to low BF participants. However, medication adherence was not associated with BF. In a multivariate analysis, depressive symptoms, physical activity level, and sexual functioning remained as significant correlates of benefit finding even after controlling for ethnicity (Adjusted  $R^2 = .21$ ,  $p < .0001$ ). Results confirm that HIV+ women attribute a wide range of positive changes to the experience of having HIV. Furthermore, BF may reduce patients' vulnerability to depressed mood and improve motivation to remain physically active and engaged in satisfying relationships. Prospective studies are needed to clarify the directionality and clinical significance of these findings.

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## F-190

## SOCIOEMOTIONAL CHARACTERISTICS ARE RELATED TO MENSTRUAL CYCLE IRREGULARITY

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Retrospective reports of irregular menstrual functioning are linked to biological indicators of cardiovascular risk in cross sectional studies, while women reporting very irregular cycles and assessed years later show increased risk for myocardial infarction in prospective longitudinal studies. Additionally, relationships between behavioral indicators of dominance/submission, menstrual functioning, and cardiovascular disease (CVD) have been observed in female cynomolgus macaques. The present study replicates previous findings of positive associations between submissiveness and cycle irregularity and extends this research by: 1) assessing lifetime irregularity rather than irregularity over the past year, thereby enabling inclusion of peri- and post-menopausal women and women currently using oral contraceptives; 2) employing a measure of menstrual irregularity that has shown predictive validity with respect to CVD risk; and 3) employing multiple measures of socioemotional characteristics. A community sample of 113 African American and European American women completed measures of socioemotional characteristics, including the Anger-Expression Questionnaire Anger-In subscale (i.e., the tendency to inhibit expression of angry feelings), and two questions regarding lifetime menstrual cycle functioning. A principal components analysis of the socioemotional measures yielded 3 factors: dominance, hostile submissiveness, and friendly submissiveness. There was a significant point biserial correlation between hostile submissiveness and reports of lifetime menstrual cycle irregularity,  $r = .20, p < .04$ . Disaggregation of the hostile submissiveness factor highlighted Anger-In as a prominent correlate of menstrual cycle irregularity,  $r = .28, p < .003$ . These results are consistent with the idea that menstrual functioning is sensitive to socioemotional processes involving social hierarchies and highlight potential gender-specific biobehavioral pathways of cardiovascular risk.

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## F-191

## HEALTH PRACTICES AND RISK PERCEPTION IN EVERYDAY LIFE

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As the rates of unsafe sex, illegal drug use, and binge drinking increase among college students, it becomes increasingly important to research college student health behaviors. During this time, individuals will begin to adopt health practices that will likely continue throughout their lifetime. Health practices have typically been conceptualized into two categories: health enhancing (i.e., behaviors that improve health and overall functioning) and health compromising (i.e., behaviors that impair or harm an individual's health). However, little is known about perceptions of risk associated with these health practices. The following study assessed health practices and risk perception in college students. Undergraduate participants ( $N=235$ ) indicated what they considered to be risks associated with their daily living and rated their perception of the risk of each event (1=not at all risky to 7=extremely risky). Participants' responses were reviewed in order to create 15 risk behavior categories. Exercise, the most frequent health enhancing behavior reported by participants ( $N=111$ ; 47% of sample), was perceived as a moderate risk ( $M=3.35, SD=1.66$ ). Walking, another health enhancing behavior, was rated by participants ( $N=55$ ) as less risky ( $M=2.46, SD=1.67$ ). Participants ( $N=33$ ) reported activities related to health concerns (e.g., lack of sleep, overeating, getting piercings) as moderately risky ( $M=4.78, SD=1.90$ ) whereas participants ( $N=83$ ) rated health compromising activities (e.g., drunk driving, unsafe sex, taking illegal substances) as more risky ( $M=5.66, SD=1.81$ ). Alarmingly, 35% of participants engaged in these behaviors on a daily basis. Future research should investigate how risks associated with health practices impact frequency of occurrence in longitudinal studies.

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## F-192

## ANGER EXPRESSION, EMOTIONALITY, AND CARDIOVASCULAR REACTIVITY

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Risk factors for the development of cardiovascular disease include clear behavioral components. Previous research has implicated individual patterns of emotional management. Seventy-six men and 35 women ( $M = 42.3, SD = 6.7$ ) participated in the present study to examine the relationship between anger expressions (Spielberger - State-Trait Anger Expression Inventory (STAXI)), and the emotionality (neuroticism) cluster of the JPI-R. Anger expression-out was positively related to triglycerides ( $r = .31, p < .01$ ), low density lipoproteins (LDL) ( $r = .25, p < .05$ ), and cardiovascular risk ratio ( $r = .27, p < .01$ ). When controlling for anxiety, anger expression-in was positively related to hemoglobin ( $r = .21, p < .05$ ) and hematocrit ( $r = .21, p < .05$ ). Empathy and anxiety were negatively related to hemoglobin ( $r = -.38, p < .01$  and  $r = -.34, p < .01$ ), and hematocrit ( $r = -.36, p < .01$  and  $r = -.32, p < .01$ ). Anxiety and cooperativeness were both negatively related to cardiovascular risk ratio ( $r = -.21, p < .05$  and  $r = -.21, p < .05$ ). Cooperativeness also negatively related to LDL ( $r = -.32, p < .01$ ) and total cholesterol ( $r = -.32, p < .01$ ). The findings link anger expression with risk factors that are associated with cardiovascular reactivity. Contrary to expectations, emotionality or neuroticism factors are associated with lower cardiovascular risk indices. Future research needs to investigate this seeming paradox in order for behavior to be redirected towards positive health outcomes.

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## F-193

## A QUALITATIVE STUDY OF VETERANS WITH HEPATITIS C: ADAPTING A SELF-MANAGEMENT INTERVENTION

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Chronic hepatitis C (HCV) infection affects 4 million people in the U.S. and causes liver problems, reduced longevity, and reduced quality of life. Our objective was to better understand the health challenges faced by HCV-infected veterans and to adapt a self-management intervention to their needs. Thirteen HCV-infected veterans and 8 HCV providers completed qualitative interviews. Patients were recruited through flyers and via VA HCV clinic providers. Patients were asked about their experiences living with HCV and efforts to self-manage it. Health care providers described their experiences in treating people with HCV. Both patients and providers were asked for suggestions for integrating self-management strategies into HCV care. Patients interviewed were male, and averaged 52 years of age. All patient interviewees reported some history of substance abuse; 77% had used IV drugs, 62% were active in 12-step programs, and 69% reported a history of psychological problems. Patients reported an increased interest and active role in HCV self-management when participating in substance abuse recovery. Being diagnosed with HCV was more troubling to non-IV drug users. Fatigue, fitness, and treatment decisions were listed as self-care concerns by patients. All patients expressed interest in attending a HCV self-management workshop. Health care providers emphasized the need for an individualized approach to each patient and gave varied suggestions for improving HCV self-management. In conclusion, interviewees expressed interest in learning to self-manage their HCV and an intervention of this type should address substance abuse recovery, psychological problems, fatigue, fitness, and treatment decision making.

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## F-194

**CARDIOVASCULAR AND SUBJECTIVE RESPONSES TO LABORATORY STRESSORS IN HIGH AND LOW MATH AND SPEECH ANXIOUS INDIVIDUALS**

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Math (MA) and speech (SA) anxiety are prevalent forms of anxiety. These traits are neglected within the cardiovascular reactivity literature despite math and speech stressors being commonly employed. To our knowledge, no studies have examined reactivity in individuals varying in both MA and SA. Using median-splits, 146 undergraduates were divided into high/low MA x high/low SA groups and compared on reactivity, appraisals, and affect. Systolic (SBP) and diastolic (DBP) blood pressure and heart rate were monitored during rest periods and mental arithmetic, speech, and interview tasks. Data were examined using mixed ANCOVAs. High MA participants showed less SBP and DBP reactivity across tasks than low MA individuals ( $p < .05$ ). Conversely, high SA students exhibited greater DBP than low SA individuals ( $p < .05$ ). High MA participants reported less ability to cope with math, appraised all tasks as more threatening, and reported greater negative affect at baseline ( $ps < .05$ ) and during math ( $p < .01$ ) than low MA individuals. High SA students reported less positive affect at baseline ( $p < .05$ ) and during all tasks (women only) ( $p < .001$ ), less control over all tasks ( $p < .05$ ), and less ability to cope with speech ( $p < .001$ ) and math ( $p < .05$ ) than low SA individuals. Effects of MA and SA on reactivity were nonspecific to stressors salient to these traits. Speech anxiety may be related to vascular reactivity reflecting passive coping, whereas, reduced reactivity associated with MA may reflect withdrawal of effort.

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## F-195

**THE IMPACT OF FAMILY COMMUNICATION AND SELF-EFFICACY ON ADOLESCENTS WITH DIABETES**

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Previous literature has documented the importance of family communication during the challenging period of adolescence. Communication between parent and child may be especially critical when the child is diagnosed with a chronic illness, such as diabetes. We reasoned that good family communication may instill a sense of self-efficacy in adolescents with diabetes which would then lead to good psychological and physical health outcomes. In other words, self-efficacy would explain the links between family communication and health outcomes. The present study examined the impact of family communication and personal self-efficacy with respect to managing diabetes for adolescents' mental health, self care behaviors and metabolic control. We interviewed 37 children with type 1 diabetes, 22 male and 15 female, with a mean age of 14.2, at a routine clinic appointment. A better relationship with parents was associated with greater self-disclosure to parents ( $p < .05$ ). Child self-disclosure was correlated with lower levels of depression ( $p = .06$ ), reduced anger ( $p = .01$ ), and better self-care behaviors ( $p < .05$ ). Child self-disclosure also was associated with greater diabetes self-efficacy ( $p = .005$ ), and self-efficacy completely mediated the relation of self-disclosure to mental health outcomes and self-care behavior. Although self-care behavior was marginally associated with better metabolic control ( $p = .08$ ), family communication and self-efficacy were not associated with metabolic control. Our findings suggest that family communication might empower adolescents to take better care of themselves and improve their mental health.

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## F-196

**NEUROTICISM, DAILY HASSLES, AND IMMUNE FUNCTION**

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Previous research presents mixed results regarding how psychological and personality factors influence immune function and immune system-mediated diseases, especially Epstein Barr Virus (EBV). The present study investigated connections between neuroticism, daily hassles, and immune function. One-hundred fourteen individuals (age:  $M=42.2$ ,  $SD=6.9$ ) were given the JPI-R Emotionality (Neuroticism Cluster), its component scales, and the Daily Hassles Inventory. Hassles intensity, but not hassles frequency, was positively related to total lymphocyte ( $r=.31$ ), absolute CD4 ( $r=.30$ ), absolute CD8 levels ( $r=.34$ ), and inversely correlated with absolute monocyte levels ( $r=-.33$ ). Neither hassles frequency nor intensity were correlated with EBV measures. Neuroticism subscales were examined with daily hassles. Anxiety but not empathy or cooperativeness subscales was positively related to hassles frequency ( $r=.28$ ), and intensity ( $r=.40$ ). Multiple regression revealed that stress intensity and not neuroticism subscales accounted for a significant portion of the variance with respect to immune functioning for absolute CD4 counts ( $F(1,55)=5.35$ ), absolute monocyte levels ( $F(1,55)=6.84$ ), absolute CD8 counts ( $F(1,55)=6.60$ ), and total lymphocyte levels ( $F(1,55)=5.93$ ). Only Empathy also contributed significantly to the variance for absolute monocyte counts ( $F(1,89)=4.05$ ). Higher empathy levels were associated with lower absolute monocyte counts ( $r=-.21$ ). The present study adds to literature supporting a relationship between minor stress levels and immune function in terms of different immune parameters. Intensity, rather than frequency of daily hassles, plays a significant role in immune function. Individuals who are more anxious about social interactions reported more frequent stressors and more intense stress levels in their immediate life. Nonetheless, stress levels, rather than predisposition to emotional reactivity, emerged as the best predictor of immune response.

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