



Board 1

Associations between Perceptions of Cancer Risk, Cancer Family History and Health Protective Behaviors: Results from the Health Information National Trends Survey

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Background: Family history is a significant risk factor for many cancers. Interpretation of personal family history of cancer is complex; nevertheless, it is likely to influence people's perceived susceptibility to cancer and preventive behaviors. Perceptions of risk are shown to be critical motivators of preventive lifestyle behaviors including diet, physical activity, routine screening and smoking. We examined the influence of risk perceptions on preventive behaviors by family history status; with the hypothesis that a positive family history of cancer will be associated with preventive behaviors. **Methods:** Data for the analysis was from the 2014 Health Information National Trends Survey (HINTS), a national survey of US adults. Regression analyses were conducted after/by controlling for age, biological sex, education, income, and race; and using jackknife survey adjustments. Preventive behaviors assessed were diet, physical activity, smoking and routine screening. STATA 13 was used for analyses. **Results:** Risk perception was not associated with routine screening behaviors, for those with (CFH+) or without (CFH-) cancer family history. Those with a CFH+ consumed more fruits than those without ($\beta= 0.947$, $P<0.05$). Those with a CFH+ were more likely to exercise daily and for longer periods of time than those with a CFH- ($\beta=0.999$, $p<0.05$). There was a significant relationship between risk perception for cancer and smoking among CFH+ but not CFH- ($p<0.05$).

Conclusions: Our results indicated that risk perceptions appear to be associated with most preventive behaviors among those with personal history of cancer. Health education/promotion efforts need to consider family history status and develop programs aimed at increasing awareness of the importance of preventative behaviors particularly among individuals without a family history.

Board 2

Effect of Sleep Quality and Spiritual Beliefs on Sex-Specific Degree of Psychological Distress

Knowlden AP, Shewmake M

Purpose: Mental disorders are a leading cause of disability, accounting for 13% of the total Disability Adjusted Life Years (DALYs) lost in the world. Sleep complaints often accompany symptoms of mental disorders, particularly depression and anxiety. Spiritual beliefs also appear to impact mental health and may act as psychosocial coping mechanisms during stressful life events. The purpose of this study was to test a set of hypotheses suggesting sleep quality and spiritual beliefs differed according to degree of psychological distress and biological sex.

Methods: A 58-item, electronic questionnaire comprised of a demographic section as well as three primary scales: the Kessler-6 Psychological Distress Scale, the Pittsburgh Sleep Quality Index, and the Beliefs and Values Scale was administered to a cross-sectional convenience sample of participants. A factorial MANOVA was computed to determine if significant differences existed between the dependent variables of biological sex and psychological distress for the independent variables of sleep quality and spiritual beliefs. **Results:** The overall mean psychological distress score of the participants ($n=200$) was 6.080 ($SD = 4.456$), suggesting the overall sample was within the moderate range of psychological distress. The mean sleep quality score of the participants was 5.564 ($SD = 2.460$), suggesting the overall sleep quality of the sample was above the cut-point of 5.00, indicating poor sleep quality. Religious orientation of the participants included Christianity ($n=173$; 86.5%), no religious observation ($n=24$; 12.0%), and other religion ($n=3$; 1.5%). Multivariate analysis found higher sleep quality ($p = 0.003$; Cohen's $f = 0.247$) and greater spiritual beliefs ($p < 0.001$; Cohen's $f = 0.329$) were associated with lower levels of psychological distress. Women ($M=6.588$) exhibited

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lower sleep quality than men ($M = 5.342$). Spiritual beliefs were equivalent between both sexes ($p = 0.504$). **Conclusions:** To decrease psychological distress, interventions should improve sleep quality and increase spiritual engagement.

Board 3

The Impact of Mindfulness-Based Parenting (MBP) Intervention on the Quality of Parenting Behaviors of Mothers in Medically Assisted Treatment for Opiate Dependence

Gannon M, Abatemarco D, LaNoue M, Foss M, Reid L

Purpose: Present findings of a 12-week Mindfulness-Based Parenting (MBP) Program on quality of parenting (as measured through the Keys to Interactive Parenting Scale (KIPS) and Parenting Stress Inventory (PSI)) of mothers in medically assisted treatment for opiate dependence. **Methods:** Mothers are recruited for this mixed methods study between 28 weeks gestation and 3 years post-partum from Family Center, a comprehensive outpatient drug treatment services program. At baseline and follow up, participants complete the KIPS and PSI. At baseline, participants also complete a demographics questionnaire as well as the Adverse Childhood Experiences (ACE) questionnaire. The KIPS involves an observation (videotaped) of the mother/child dyad playing together and involves both qualitative and quantitative data. The MBP curriculum incorporates mother/baby dyad education, experiential mindfulness with mothers and babies, formal meditation, and informal practices. **Results:** Study participants were mostly Non-Hispanic (92.5%), unemployed (87.5%), Caucasian (80.0%), and unmarried (92.5%). The mean participant age was $M=29.8$ ($SD=3.7$). Results ($N=40$) show participants experienced an average of 3.5 ($SD=2.48$) ACE's. Mean baseline PSI score ($M=87.6$ ($SD=12.5$)) was higher than normative standards ($M=71.0$, $SD=15.4$), with high Defensive Responding ($M=17.6$, $SD=3.8$). Mean baseline KIPS scores indicated low quality parenting behavior ($M=2.52$ ($SD=.79$)). Qualitative baseline data points to challenges mothers face in physical play, reactivity, inappropriate modeling of emotions, as well as disparate sensitivity to baby than toddler cues. Linear regressions found statistically significant results for KIPS difference scores ($F(1,78)=8.70$, $p=.00$) yet not for PSI difference scores ($F(1,78)=.04$, $p=.83$). ACE was found to be a moderator in the relationship between group and KIPS difference score ($F(3,76)=5.91$, $p<.001$). **Conclusion:** Implications from this study show that MBP may improve the quality of parenting behavior of mothers in medically assisted treatment for opioid dependence.

Board 4

Obesity and Young Adults in New York State

Manganello J, Volpe E, Miller K, Pati S, Warner L

Objectives: Emerging adults engage in various risk behaviors, and those impacted by health disparities may face greater risks for negative, lifelong health outcomes. In particular, the rise in obesity among young adults (23%) is of particular concern as it increases stroke risk and can lead to heart disease and certain cancers later in life. This study examines racial, economic, and education disparities for obesogenic behaviors among emerging adults in New York State.

Methods: We analyzed New York State data from the 2013 Behavioral Risk Factor Surveillance System (BRFSS) and selected participants ages 18 to 25, resulting in a sample of 636 emerging adults. We conducted analyses using STATA 13. The diverse sample included 48% Whites, 11% Blacks, 25% Hispanics/Latinos; we compared responses by race (White vs. African-American), Hispanic/Latino ethnicity, income, and education. **Results:** Group differences were seen when looking at obesogenic behaviors. For BMI, 37% were considered obese, with obesity more likely among those with lower incomes ($p=.027$). Fourteen percent of the population reported no physical activity, with higher rates among those with lower education ($p=.018$) and Hispanic/Latino participants. While half of the sample (52%) consumed fruit one or more times per day; Hispanics/Latinos were less likely to do so ($p=.009$). Almost two-thirds of the sample (65%) consumed vegetables regularly (one or more times per day). Those with lower education

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($p<.001$), and those who were African-American ($p=.008$) or Hispanic/Latino ($p=.015$) were less likely to report eating vegetables on a regular basis. Regressions for multivariate analysis will also be presented. **Conclusions:** Obesogenic behaviors are common in emerging adults and disproportionately impact Hispanics/Latinos and those with lower incomes or education. Developing unique ways of addressing this disparity for this unique population is an important area for future research.

Board 5

Chronic Pain Management and Perceived Barriers/Motivations to Exercise for Older Adults Living with HIV

Nguyen AL, Lake J, Reed CM, Glasner-Edwards S, Moore AA

Purpose: Chronic pain and substance use are prevalent medical conditions in HIV-infected persons. Exercise and cognitive behavioral therapy (CBT) are effective non-drug therapies for reducing pain and substance use. We collected data on exercise perceptions and receptiveness to CBT to inform a pilot intervention using yoga/tai chi and group CBT.

Methods: We conducted 4 focus groups ($n=27$) with adults ages 50+ living with HIV.

Discussions were audiotaped and transcribed. Transcripts were analyzed using thematic analysis and summarized. **Results:** Participants demographics: mean age 52.3 years, 82% male, 48% Hispanic, 33% Black, 52% treated for substance abuse, mean pain severity of 6.9 (scale 1-10). Most participants have tried many home remedies and methods for pain management. Perceived barriers to exercise included: fear of pain exacerbation, low physical fitness (shortness of breath, fatigue, poor balance), intimidation over perceived difficulty, and lack availability of appropriate venues (ability appropriate instruction, safe spaces for HIV-infected persons). Overall, they were receptive to CBT because the group format with all HIV-infected persons was perceived as a safe space that would provide a form of social support as well as a "break from a long week". Most were willing to "try anything that works" for pain management. However, CBT for substance use reduction was met with less enthusiasm because "not everyone who drinks and uses drugs is a bad person." Some stated drug and alcohol use as a sleep aid or to "get knocked out" to manage pain. **Conclusions:** Self-reported pain severity was high in this group of participants. Yoga and tai chi are low-impact exercise modalities but modified techniques and poses are needed in the intervention to accommodate different ability and fitness levels and decrease intimidation for participation. Substance use reduction needs to be framed within the context of pain management for participants to be more receptive.

Board 6

Administrative and Food Service Perspectives of Salad Bar Operations in Public Schools

Andersen L, Myers L, O'Malley K, Rose D, Johnson CC

Purpose: Many adolescents are not meeting fruit and vegetable (F/V) recommendations.

School-based SBs are one proposed strategy for increasing consumption of F/V in the school. The Let's Move Salad Bars to Schools initiative has donated SBs to schools across the U.S., yet little research has been conducted on barriers and facilitators administrators and food service directors' (FSDs) face in adopting and implementing SBs. The purpose of this study was to explore administrative and FSD perspectives that influence the initiation and operation of school-based salad bars (SBs). **Methods:** Through the Let's Move Salad Bars to Schools initiative, 43 public schools in New Orleans, Louisiana received SB structures and 19 of those schools participated in the study. Self-administered questionnaires were distributed to FSDs, food service staff (FSS), and administrators. Modified questionnaires were developed for seven schools that were not currently operating SBs. Data were collected on barriers (keeping food fresh, financial support, lack of staff, storage space) and facilitators (strong support from staff, sponsorship from outside organization, kitchen infrastructure) for the SB, communication

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between administrators and FSDs, training and staff capacity, as well as attitudes toward the SB. Frequencies for all variables were reported. **Results:** Administrators in schools operating SBs reported more facilitators related to SB operation than administrators from schools not currently operating SBs. Food service directors from schools operating SBs also reported more facilitators, as well as more barriers and having staff capacity. The majority of FSDs from schools not currently operating SBs reported not having the kitchen infrastructure for storing SB items. The majority of FSS had positive attitudes toward the operation of school-based SBs.

Conclusions: Findings contribute to the understanding of the factors related to the initiation and operation of school-based SBs. Insight to the barriers administrators and FSDs face may help schools considering SB initiation.

Board 7

Marijuana, Alcohol, and Drug Impaired Driving among Emerging Adults: Changes from High School to One-Year Post High School

Li K, Simons-Morton B, Gee B, Hingson R

Objective: Examined the prevalence and predictors of driving while impaired (DWI) among emerging adults. **Methods:** The data (N=2052) from wave 3 (W3, high-school seniors, 2012) and wave 4 (W4, one year after high school) of the NEXT Generation Health Study with a nationally-representative cohort. W4 DWI (≥ 1 day of past 30 days) was specified for alcohol-specific, marijuana-specific, alcohol/marijuana-combined, illicit drug-related DWI. Multinomial logistic regression models estimated the association of W4 DWI with W3 covariates (perceived peer/parent influence, drinking/binge drinking, marijuana/illicit drug use), and W4 environmental-status variables (work/school/residence) adjusting for W3 overall DWI, demographic variables and complex-survey variables. **Results:** Overall DWI prevalence from W3 to W4 changed slightly (14% to 15%). W4 DWI consisted of 4.34% drinking-specific, 5.02% marijuana-specific, 2.41% drinking/marijuana-combined, and 3.37% illicit drug-related DWI. W3 DWI was significantly associated with W4 alcohol-related and alcohol/marijuana-combined DWI, but not other DWI. W3 marijuana use, binge drinking, and illicit drug use were positively associated with W4 marijuana-specific, alcohol/marijuana-combined, and illicit drug-related DWI respectively. W3 friend drunkenness and marijuana use were positively associated with W4 alcohol-specific and marijuana-related DWI respectively. W3 peer marijuana use was negatively associated with W4 alcohol-specific DWI. **Conclusions:** Driving under the influence of alcohol, marijuana, and illicit drugs is a persistent, threatening public health concern among emerging US adults. High-school seniors' binge drinking and marijuana/illicit drug use were independently associated with respective DWI one year after high school. Injunctive peer norms about getting drunk and smoking marijuana may usefully guide the development of prevention programs to reduce youth DWI.

Board 8

Type 2 Diabetes Family History and its Influence on Physical Activity Behavior among Adolescents: A structural Equation Model Analysis

Ann AO, Wura J

Background: Although Type 2 Diabetes (T2D) is considered the disease of the elderly, the incidence of T2D is on the rise in youths. Youths are increasingly at risk because the most rapid decline in physical activity (PA) occurs during adolescence and young adulthood. While PA is modifiable, having a T2D family history is a non-modifiable risk factor that increases an individual's susceptibility to T2D two to six times compared to those without a T2D family history. **Methods:** Based on the Theory of Planned Behavior and the Health Belief Model, a conceptual model to test what factors are associated with PA behaviors among college students based on their T2D family history status was hypothesized. 905 college students across 4 schools were surveyed using a web-based questionnaire; 12% response rate, 82% females and

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18% males. The average age of the students was 20 years (SD=1.36). Path models were evaluated to test the fit of the model for PA behavior among students with and without T2D family history. Mplus version 7.3 was used to model all analyses. **Results:** Risk perceptions of students with T2D family history influenced their attitude which influenced their intention to engage in PA; the model fit was good ($\chi^2 = p > 0.05$; RMSEA = 0.000; SRMR = 0.029; CFI = 1.00; TLI = 1.00). For students without T2D family history, only their risk perception influenced their PA behavior ($\chi^2 = p > 0.05$; RMSEA = 0.040, SRMR = 0.021; CFI = 0.982; TLI = 0.918).

Conclusion: Intervention efforts targeted at reducing T2D epidemic through PA should be specific and tailored based on T2D family history status as both groups are influenced to engage in PA via different mechanisms. This may be because both groups have varying illness representations of T2D as those who have family members diagnosed with T2D are in closer proximity to the disease.

Board 9

The Association of Multiple Health Risk Factors with Sunscreen Use among College Students

Merten JW, King JL, Moore MJ, Barr EH

Background: Skin cancer is the most common, yet highly preventable, form of cancer in the United States with melanoma rates steadily increasing. Limited research has been conducted examining the relationship between sunscreen use and other health risk behaviors.

Interventions aimed at multiple behavioral health risks, including sun protection, have shown great promise for health promotion and reduced healthcare costs. **Purpose:** The purpose of this cross-sectional study is to explore the relationship between sunscreen use and the health risk behaviors associated with mortality and morbidity among college students. Health risk behaviors examined include: lack of physical activity, substance abuse, smoking, risky sexual behavior, and unintentional injury. Mental health is included as an additional covariate given the substantial underlying influence on overall wellness. **Methods:** A convenience sample of 747 college students at a mid-sized southeastern university was surveyed about skin cancer prevention behavior and other health risk behaviors. Data were analyzed using SAS 9.2 and SPSS 19. **Results:** White, female, students over the age of 21 were more likely to use sunscreen. Texting while driving, low life satisfaction, and binge drinking predicted inadequate sunscreen use. **Conclusions:** The identification of associations between sunscreen use and other high-risk behaviors among college students provides the framework to develop multiple risk factor interventions.

Board 10

Diabetes Diagnosis and Nutrition Facts Label Use among U.S. Adults, 2005-2010

An R

Objective: To assess the role of diabetes diagnosis as a potential teachable moment in nutrition facts label use among U.S. adults. **Design:** Logistic regressions were conducted to examine the relationship between diabetes diagnosis status (diagnosed, undiagnosed, and no diabetes/prediabetes) and self-reported nutrition facts label use, adjusted by individual characteristics and survey design. Setting: Study sample from National Health and Nutrition Examination Survey 2005-2010 waves. **Subjects:** A total of 5,110 U.S. adults 20 years and older were included in the analyses. Diabetes/prediabetes was identified by fasting plasma glucose and A1c test. **Results:** People with diagnosed diabetes/prediabetes were substantially more likely to report nutrition facts label use when making daily food purchase decision compared to those without diabetes/prediabetes, whereas the prevalence of nutrition facts label use was similar between people with undiagnosed diabetes/prediabetes and those without diabetes/prediabetes. The odds of any and regular nutrition facts label use among people with diagnosed diabetes were 110% (adjusted odds ratio [AOR] = 2.10, 95% CI = 1.62, 2.73) and

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94% (AOR = 1.94, 95% CI = 1.55, 2.43) higher, respectively, than their counterparts without diabetes/prediabetes. In contrast, no difference in the odds of any (AOR = 0.86, 95% CI = 0.47, 1.59) and regular nutrition facts label use (AOR = 0.76, 95% CI = 0.40, 1.46) was found between those with undiagnosed diabetes and those without diabetes/prediabetes.

Conclusion: As a potential teachable moment, diabetes diagnosis may positively impact nutrition facts label use and motivate diabetic patients to manage their condition through making healthier food choices.

Board 11

Characteristics Associated with BMI Change Trajectories among African American Adults Receiving Minimal Health Promotion Guidance

Washington C, Reitzel LR, Childress S, Moisiuc A, Wetter DW, McNeill LH

Introduction: African-American adults are more likely to develop cardiovascular diseases (CVD) than adults of any other ethnicity in the United States. A 10 pound weight loss (~1.4 change in body mass index [BMI]) is sufficient to reduce risk of developing CVD. The current study examined sociodemographic characteristics associated with BMI change trajectories over three years among African-American adults who were participating in a longitudinal cohort study that provided minimal health promotion guidance including health promotion newsletters and classes on fitness and nutrition. **Methods:** Participants (N=1279; Mage=45; 75% female) were recruited from a church setting. Overweight/obesity was common (83%). Participants engaged in annual church-based data collections that included anthropometric assessments for three consecutive years. For this study, they were grouped based on BMI changes over that time as: not significantly changed (within -1.39 to 1.39 BMI change); BMI increased (increased ≥ 1.4); or BMI decreased (decreased ≥ 1.4). Chi-square analyses were used examine the relationships between sociodemographics (age, sex, partner status, income, and education) and these BMI groups. **Results:** Age, partner status, and income were associated with BMI change. Those with BMI decreases (18%) were older than those who had increasing BMI (23%) over time; and, relative to those with no change in BMI (59%), more likely to endorse low annual income ($<\$40,000/yr$). There was a greater likelihood of BMI increase (versus no change) among those who were not partnered. **Conclusion:** Although participants reported interest in receiving health-based materials and programming, only a minority of them experienced BMI decreases across time. Consequently, more intense interventions appear necessary to affect BMI decreases among the majority of this middle-aged, church-going group. Such interventions might be targeted toward younger (~late 30s/early 40s), un-partnered, and higher income individuals and, based on our longitudinal retention rates (>85%), will likely enjoy active reception when provided within the church setting.

Board 12

An Evaluation of Rehab Strategies for Older Adults with Rotator Cuff Disease

Robbins CB, Miller BS, Bedi A, Carpenter JE, Gagnier JJ

Purpose: Rotator cuff disease is common and it is accepted that an age-related prevalence of full-thickness tears exists. Studies have revealed that over 30% percent of individuals over the age of sixty will have a full-thickness rotator cuff tear, with a dramatic increase in the probability of disease. It is the intent of this research to examine the differences in functional outcome scores within four treatment groups for older adults that elected conservative treatment.

Methods: A convenience sample of participants (N=218) presenting to an orthopaedic clinic and identified as having full thickness rotator cuff tears were invited to participate in a prospective cohort study. Of these cohort patients those that selected conservative treatment (n=94) were stratified into one of four groups, home exercise program (HEP), physical therapy only, physical therapy and HEP, or no treatment. Participants completed pain VAS, the Western Ontario Rotator Cuff Index (WORC), and the American Shoulder and Elbow Surgeons (ASES)

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instruments at baseline, 4, 8, 16, and 32 weeks. **Results:** MANOVA results indicate there were no significant differences in outcomes between groups, $F(9, 168) = 1.28$, $p=0.250$; Wilk's $\Lambda = .851$, partial $\eta^2 = .051$. While there was no significant difference between groups, the combined group trended toward higher functional outcome scores compared to other groups. For WORC and ASES scores over time, the combined group had improvement greater than established minimally important clinical differences (MCID's). For pain VAS, no group surpassed existing MCID differences however the combined group and the PT only group both improved.

Discussion: The results indicate there was no statistical difference between groups. However, for the combined group there was clinical improvement based on MCID's from baseline to final follow-up for WORC and ASES outcomes. Overall, patients that elected both physical therapy and a home exercise program demonstrated long-term functional improvement.

Board 13

The Role of Positive Emotions in Promoting Healthy Dietary and Exercise Behaviors

Kon T, Wightman-Massey V, Dolphin KE

Purpose: Positive emotions have been shown to promote both physical and psychological health and well-being. The broaden-and-build theory of positive emotions suggests that positive experiences broaden one's thought-action repertoire, thereby resulting in more thoughtful decision-making and improved adaptation to adversity. Previous research has found that individuals who experience greater positive emotions are more likely to engage in healthier diet and exercise behaviors; however, as guided by the transtheoretical model, readiness to act on a new health behavior is a process involving a series of stages. Thus, the purpose of this study was to examine whether the relationship between positive emotions and health behaviors is dependent on stage of readiness for change. **Methods:** A convenience sample ($n = 265$) was recruited to complete an online survey assessing demographics, positive and negative emotions, stage of readiness to change diet and exercise behaviors, and current diet and exercise behaviors. Data were analyzed via step-wise multiple regression using SPSS.

Results: With regard to the demographic control variables, older ($p=0.041$) females ($p<0.001$) tended to make healthier diet choices. In terms of the main effects, higher levels of positive emotions were associated with greater participation in moderate to vigorous exercise ($p=0.003$), while readiness to change was associated with making healthier diet ($p<0.001$) and exercise ($p=0.023$) choices. The interaction between positive emotions and readiness for change was not significant for either of the health behaviors ($p>0.05$). **Discussion:** This study provided further support for the broaden-and-build theory of positive emotions and the transtheoretical model, as positive emotions and readiness for change were associated with healthier diet and exercise choices. The influence of positive emotions was seen regardless of readiness for change, suggesting that interventions designed to increase positive emotions may be beneficial across all stages in healthy behavior adoption.

Board 14

Systematic Review of Interventions Treating Musculoskeletal Disorders in Musicians

Burns NJ, Knowlden AP

Purpose: The purpose of this investigation was to systematically analyze the effectiveness of health promotion programs in musicianship to prevent and/or treat playing-related musculoskeletal disorders. **Methods:** Inclusion criteria for this review were (1) completed (2) interventions, (3) applying any quantitative design (4) published in English (5) between January 2000 and September 2015 (6) targeting musicians in (7) school or orchestral environments. Data were extracted from MEDLINE, Alt HealthWatch, SPORTSDiscus, Education Resources Information Center (ERIC), Psychology and Behavioral Sciences Collection, and Cochrane Central register of controlled trials (CENTRAL), and Cumulative Index to Nursing and Allied Health (CINHAL) databases. Given the novelty of this intervention domain, gray literature was

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also considered. **Results:** Twelve publications met the inclusion criteria. All but three of the identified studies indicated a positive change in at least one musculoskeletal outcome of interest. Of the identified studies, three utilized randomized control trial designs, one study utilized a quasi-experimental design, three utilized one-group pretest-posttest designs, two utilized a static-group comparison design, two utilized a cohort study design, and a single study utilized a one-shot case study design. The duration of the interventions ranged from 4 weeks to 2 years. **Conclusion:** Limitations of this intervention stream include a low number of interventions, use of less rigorous designs, smaller sample sizes, and lack of theory-based approaches. Strengths include the duration of the RCT study interventions. In order to promote a lifetime of health and wellness, it is essential the specific and unique needs of musicians begin to be more aggressively examined. Introducing health behavior modeling to this population encourages new heights of care previously unused. Findings from this systematic review are applicable to the continued development of health education and health promotion programs to facilitate the prevention and treatment of playing-related musculoskeletal disorders.

Board 15

Engaging the Underrepresented Sex: Male Participation in Chronic Disease Self-Management Education (CDSME) Programs

Smith ML, Ahn S, Towne SD, Mingo CA, Robinson K, Mathis J, Ory MG

Background: Disease management is becoming increasingly important amidst the growing aging population and rising prevalence of chronic conditions. It is well-documented that females outnumber males in the older adult population and are more likely to participate in evidence-based health promotion programs. Despite the widespread availability of Stanford's Chronic Disease Self-Management Education (CDSME) programs, and their known health-related benefits, participation remains extremely low among middle-aged and older adult males.

Objectives. This study: (1) compares personal characteristics between males and females who attended CDSME program workshops; (2) identifies male participant engagement by workshop delivery site type; and (3) examines personal and delivery site characteristics associated with successful intervention completion (attending 4+ of the 6 workshop sessions). **Methods:** Data were initially analyzed from 63,610 adults collected during a national dissemination of CDSME programs spanning 47 states and two territories. Then, logistic regression was performed with males only ($n=13,486$) to examine factors associated with workshop attendance. **Results:** Of the 63,610 adults who enrolled in CDSME programs, only 21.2% were male. Compared to female participants, male participants were younger ($t=-19.01$, $P<0.001$) and reported fewer chronic conditions ($t=-21.82$, $P<0.001$). Workshop attendance did not significantly differ between males and females. Among male participants alone, Asian/Pacific Islanders ($OR=1.66$, $P<0.001$) and those residing in non-metro areas ($OR=1.14$, $P=0.019$) were more likely to successfully complete the intervention. Compared to attending workshops in senior centers, males who attended workshops in healthcare organizations ($OR=0.84$, $P=0.001$), residential facilities ($OR=0.73$, $P<0.001$), and county health departments ($OR=0.60$, $P=0.004$) were less likely to successfully complete the intervention. **Conclusion:** Findings indicate that once engaged in CDSME programs, male participants obtain a similar intervention dose as their female counterparts. While most male participants were enrolled in senior centers, lower intervention completion at other delivery site types suggests opportunities to tailor CDSME program recruitment and retention strategies for men.

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Mental Health First Aid is having a Positive Impact on the Knowledge and Attitudes of Trainees in Ohio, Kentucky, and Indiana

Kinzeler NR, Kissell KM, Peters M, Firesheets K, Wilson JF

Purpose: One in four individuals struggle with a mental health problem in a given year. Mental Health First Aid (MHFA) is an evidence-based education program developed in Australia to teach people how to recognize, understand, and assist those with mental illness. To address the need for mental health education in our community and evaluate the effectiveness of the MHFA program, a regional initiative was launched in 2014 to offer and coordinate MHFA training courses in Ohio, Indiana, and Kentucky. **Methods:** Baseline and 3-month follow-up surveys were administered to assess the impact of the 8-hour course on trainees' knowledge of mental illness and treatment resources, confidence in helping an individual in distress, and stigmatizing attitudes toward individuals with a mental health problem. The follow-up survey also included questions about referrals made since taking the MHFA course. Paired samples t-tests were used to analyze change between the baseline and follow-up surveys. **Results:** The regional initiative has provided MHFA training to 374 individuals in the Greater Cincinnati area. At baseline, a majority of trainees (64%) were not confident that they could help an individual in distress, and only 55% stated that they would move next door to someone with a mental illness. Trainees demonstrated a significant increase in their confidence to help someone in distress, as well as an increase in knowledge of treatment resources ($p<.05$). Additionally, there were significant reductions in stigmatizing attitudes toward individuals with a mental illness ($p<.05$). At 3-month follow-up, trainees had referred an average of 8 individuals to treatment resources. **Conclusions:** The regional MHFA program has successfully helped trainees reduce stigma and provided them with the resources necessary to help individuals experiencing a mental health problem. By making MHFA as common as CPR/First-Aid, we can effectively change the way our region thinks about mental health.

Board 17

Income Inequality and Obesity among Low-Income Adults: Examining Social Determinants of Health

Towne SD, Li Y, Smith ML, Lopez M, Warren J, Ory MG

Background: Obesity has become a major public health issue affecting rising medical costs and contributing to morbidity and mortality. The purpose of this study was to identify factors that may play a role in obesity at both the individual and environmental/neighborhood levels.

Methods: We analyzed surveys from a sample of adults ($n=1206$) who were parents of individuals enrolled in a school-based health and wellness program. The major dependent variable was BMI. Income inequality was measured at the Census Tract and split into quartiles. The sample was restricted to those adults who did not report being told by their doctors that they needed to lose weight. **Results:** Of the total sample, the majority (65%, $n=741$) were not told by their doctor that they needed to lose weight representing 32% of obese, 81% of overweight, 98% of normal weight, and 94% of underweight individuals. Of this subset ($n=741$), 21% were obese, 37% were overweight, the median age of participants was 35 years, and the majority was female (87%) and married (78%). Participants who resided in a Census Tract with a higher relative income inequality (high, OR=2.15, CI 1.09-4.26; moderate-high OR=2.55, CI 1.29-5.02) versus those in the lowest, males versus females (OR=2.63, CI 1.34-5.15); those not married versus married (OR=1.77, CI 1.11-2.82); and those unemployed or retired versus employed (OR=1.91, CI 1.16-3.15) were more likely ($p<.05$) to be obese. **Discussion:**

Identifying both individual and neighborhood factors associated with obesity allows for a more targeted approach for obesity interventions at multiple ecological levels. The relationship between neighborhood characteristics and obesity provides evidence of the continued need to recognize the importance of health and place. Identifying effective strategies to engage

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communities and organizations in creating, implementing, adopting, evaluating, and sustaining weight loss and weight management interventions will be needed to combat the obesity epidemic.

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Translating Theory into Practice: The Development of an Innovative eHealth App to Promote Oral Health during Prenatal Care Visits

Vamos CA, DeBate R, Daley EM, Green S, Griner S, Jacobos T, Christiansen S

Background: Given the significant links between poor oral health during pregnancy and adverse outcomes across the lifecourse (e.g., preterm birth; early childhood caries), both medical and dental associations have co-endorsed oral health guidelines during pregnancy. The purpose of this study was to develop and pilot-test a theory-driven, innovative eHealth provider-centered app to facilitate prenatal providers' (PPs) ability to assess, advise and refer patients on oral healthcare. **Methods:** An eHealth app prototype was developed based on the Consolidated Framework for Implementation Research (CFIR), Information-Motivation-Behavioral Skills Model (IMB), Brief Motivational Interviewing (BMI) and Health Literacy constructs and principles. Formative research and eHealth methodology included semi-structured interviews, focus groups, and surveys with PPs, oral health providers (OHPs) and clinic staff ($n > 25$); and observations during patient-provider clinic interactions ($n = 4$ providers; $n = 10$ patients) at a community-based clinic. **Results:** Overall, PPs reported that the app was useful and effective at providing them with the information, motivation and behavioral skills needed to assess, advise and refer patients on oral healthcare (e.g., highlighted guidelines; was easy to use; provided cues to action, suggested scripts, and tailored education material; and documented findings into the patient's record). However, PPs suggested that time constraints and patient factors (e.g., low knowledge/priority) may limit the app's impact. **Discussion:** Findings suggest that an eHealth app can serve as an innovative mechanism to apply evidence-based theoretical constructs and principles and assist PPs in addressing oral health during prenatal care visits. Future research is needed to test the app in larger provider-patient dyads and practice settings (e.g., private practice; dental office) and to establish the effectiveness of true inter-professional practice behaviors between/among PPs, OHPs, and patients. This study demonstrates the utility of established theories to continue to facilitate provider behavior change and improve quality of care through the use of innovative technology to propel healthcare advancements.

Board 19

Learning from our Past: Improving Meal Planning and Healthy Grocery Shopping Behaviors among Low-Income, Rural Residents through Community-Based Nutrition Education

Griffin SF, Kenison K, Marvin AM, Williams J, Buckner M

Purpose: The purpose of this study was to assess the effectiveness of a skill-based nutrition education program on changing eating behaviors. **Methods:** Two hundred and thirty two adults participated in a six week skill-based nutrition education program. This program was completed in a rural, predominately low-income, minority community with an adult obesity rate over 40%. The program was held in local churches and low-income housing sites. **Results:** Over 75% of the participants completed both pre and post program surveys assessing shopping, cooking and eating behaviors. Results revealed that about 80% of the participants were female and 95% were African American. While over 50% of the participants were over 60 years of age, most reported feeding multiple family members regularly. No change was seen in reported cooking behaviors among the survey respondents. However, there were meaningful improvements in meal planning and healthy grocery shopping behaviors. There were only slight, non-significant, improvements in reported fruit and vegetable consumption. However, results revealed significant increases in the number of participants who regularly incorporated low-fat dairy,

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whole grains, low sodium, or lean meat foods into their diet. Results also revealed a negative relationship between younger age and confidence with planning and preparing healthy meals for a family at both pre and post program. **Conclusions:** A short skilled based nutrition education program can have short term impacts on eating related behaviors. While there was an emphasis on cooking as part of the program, the greatest impacts appear to be in meal planning behaviors and more regularly selecting healthier options of some food groups.

Board 20

Comparing Social Support among Recipients and Providers of Caregiving: Results from the Chronic Illness and Caregiving Study

Harvey IS, Spears-Laniox EC, Mkuu R, Brown JB

Introduction: Half of all U. S. adults have at least one chronic condition and women were more likely to be diagnosed with a chronic condition compared to men. Although it is the individual who is diagnosed with chronic disease, the entire family experiences life with the illness. Patients and family members are members of dynamic family systems in interaction with complex environmental systems. The response to chronic conditions in a family member may depend on the nature and course of the illness itself, as well as on the demands perceived by family members and individuals with chronic conditions. The objective of this study was to examine the perception of family support among women with chronic conditions and female caregivers. The study attempted to determine the sociodemographic characteristics of women who are more likely to perceive difficulty in familial support. **Methods:** The sample included 456 women at least 50 years of age, identified as chronically-ill or as a caregiver of a chronically-ill individual, who participated in the 2000 Chronic Illness and Caregiving (CIC) survey. Descriptive statistics, chi-square and logistic regression analyses were performed to evaluate perceptions of familial support among women with chronic illnesses (N=390) and caregivers of individuals with a chronic condition (N=66). **Results:** Logistic regression coefficients and odds ratios on perceived difficulty of familial support reflected that singles perceived less difficulty in familial support (1.4 [95% CI 0.53 – 3.47]). Individuals with higher education levels and caregivers were more likely to perceive difficulty in familial support (1.9 [95% CI 1.17 – 3.08] and (2.5 [95% CI 1.03 – 5.90], respectively). **Discussion:** Consideration of the relationship between type of support and potential sources of support can provide clinicians and public health investigators with a basis on which to assess potential support requirements and availability for individuals with chronic conditions and their familial support members.

Board 21

Does Place Affect Health? A Descriptive Study of the Influence of University Institutional Characteristics on Condom Use Behavior Among College Students

Griner S, Daley EM, Logan R, Thompson EL, Vázquez-Otero C, Vamos CA

Background: College students represent an at-risk population for unintended pregnancies and sexually transmitted infections due to risky sexual behaviors, such as inconsistent condom use. Subsequently, increasing consistent condom use serves as a national public health priority (Healthy People and Healthy Campus 2020). However, little research has explored the effect of contextual factors (e.g., political and geographical environments) on sexual health behaviors, such as condom use. The purpose of this study was to examine the impact of institutional characteristics on consistent condom use among college students. **Methods:** This secondary data analysis utilized the fall 2013 National College Health Assessment dataset (N=32,964). The outcome for this analysis was student self-report of consistency of condom use (consistent or inconsistent) during vaginal sex. Logistic regression was used to estimate the associations between institutional characteristics (e.g., geographic region; public/private; two-year/four-year; religious-affiliation; small/large campus size) and consistency of condom use. **Results:** University institutional characteristics were found to be associated with consistent use of

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condoms. Characteristics associated with higher likelihood of consistent condom use among students included a smaller campus size ($OR=1.47$, 95%CI 1.31-1.65), northeast region ($OR=1.36$, 95%CI 1.25-1.48), and religious-affiliation ($OR=1.52$, 95%CI 1.37-1.69). Characteristics associated with lower likelihood of consistent condom use among students included two-year colleges ($OR=0.70$, 95%CI 0.62-0.79) and public universities ($OR=0.63$, 95%CI 0.59-0.67). **Conclusions:** These findings demonstrate an association between institutional characteristics and consistency of condom use during vaginal sex among college students. Future research should explore how access to and availability of quality comprehensive health promotion outreach and clinical services impacts sexual risk reduction behaviors. Addressing contextual factors in sexual risk reduction interventions has the potential to significantly decrease unintended pregnancies and sexually transmitted infections among this priority population.

Board 22

Diagnostic Status of Hypertension on the Adherence to the Lifestyle Recommendations

Kim H, Andrade F

Background: Healthier dietary choices, weight control, regular physical activity, smoking cessation, and moderate alcohol consumption are important lifestyle behaviors that can be adopted to manage hypertension. Our goal is to determine the effect of hypertension diagnosis among individuals with hypertension on their lifestyle behaviors. **Methods:** The data come from the pooled three repeated cross-sectional waves of the National Health and Nutrition Examination Survey (NHANES) from 2007 to 2012 ($n=5,227$). Lifestyle behaviors in the analyses include smoking status, alcohol consumption and physical activity. The study considers multinomial outcomes to focus on an individual dimension of health behaviors, multinomial logistic regression models are used to estimate the relative risk (RR) with a categorical outcome variable that has three categories for each lifestyle behavior. **Results:** A diagnosis of hypertension is positively associated with an individual's past smoking status ($RR=1.21$, 95% CI: 1.00,1.47) whereas it is not significantly associated with current smoking status ($RR=1.14$, 95% CI: 0.90,1.45). The relative log-odds of binge alcohol consumption compared to non-consumption is lower among those with a diagnosis of hypertension, and a diagnosis of hypertension is negatively associated with an individual's binge drinking behavior ($RR=0.80$, 95% CI: 0.65,0.99). Among individuals with hypertension, a diagnosis of hypertension is not significantly associated with physical activity status. **Conclusion:** Based on the study results, diagnostic status of hypertension is important for healthy lifestyle behaviors such as quitting smoking and being less likely to binge drink, and additional efforts are needed for increase physical activity for individuals with hypertension. With higher prevalence of hypertension in the United States, efforts should be made to educate individuals with hypertension about the importance of healthy behaviors for their health management and to further increase the awareness of these behavioral recommendations in the context of improving healthy behaviors by using tailored and hypertension-specific messages.

Board 23

Cannabis Liberalization and Adolescent Cannabis Use: A Cross-national Study in 35 Countries

Shi Y, Lenzi M, An R

Aims: To assess the associations between types of cannabis control policies at country level and prevalence of adolescent cannabis use. **Setting:** Participants and Design. Multi-level logistic regressions were performed on 31,407 boys and 32,657 girls 15 year of age who participated in the cross-sectional 2009/2010 Health Behaviour in School-Aged Children (HBSC) survey in 35 European and North American countries. **Measures:** Self-reported cannabis use status was classified into ever use in life time, use in past year, and regular use.

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Country-level cannabis control policies were categorized into a dichotomous measure (whether or not liberalized) as well as 4 detailed types (full prohibition, depenalization, decriminalization, and partial prohibition). **Findings:** Considerable intra-class correlations were found in both boys (.076-.11) and girls (.18-.27). With respect to the dichotomized cannabis control policy, boys were more likely to use cannabis in past year (odds ratio (OR)=1.56, p=.040) and use regularly (OR=2.06, p=.007) if countries have liberalized cannabis use; regular use in girls was also associated with cannabis liberalization (OR=3.38, p=.002). With respect to detailed types of policies, only decriminalization was marginally correlated with past-year cannabis use in boys (OR=1.61, p=.050), and only depenalization was associated with past-year use in girls (OR=2.04, p=.045). Depenalization, decriminalization, and partial prohibition were all associated with higher odds of regular use in boys (OR=2.67, p=.002; OR=2.03, p=.010; OR=1.95, p=.025, respectively) and girls (OR=4.55, p<.001; OR=2.79, p=.010; OR=2.71, p=.015, respectively).

Conclusions: Cannabis liberalization with depenalization, decriminalization and partial prohibition policies was associated with higher levels of regular cannabis use among adolescents.

Board 24

Searching for Health Information Online: A Systematic Review of Evidence

Branscum P, Wallace L

Low levels of health literacy in the US is a national priority as approximately 80 million adults have limited health literacy, which can lead to poor health outcomes, low medication adherence, and higher health care costs. In today's health care system patients need to have and demonstrate various skills to protect and enhance their health. One skill that has emerged in the past decade that is becoming increasingly critical is finding and evaluating health information on the Internet. Currently, 58% of adults search the Internet for health information for themselves. While a number of studies have reported descriptive data pertaining to how many adults use the Internet to find health information, and who is most likely to search for health information (such as education level, gender, and income level), fewer studies have been published using observational methods, such as video and audio recording programs to observe how individuals actively search for health information online; therefore the purpose of this study was to systematically review the literature on how adults actively search for online health information. A comprehensive search was conducted using 9 databases (i.e. Medline and Academic Search Elite), from 2004-2015 using four sets of key words (example: "Internet" AND "information seeking" AND "health"). Thirteen articles were found to be acceptable and reviewed to summarize current evidence. Overall, most studies used a software program to track participants web-search, and the most commonly cited software was Camtasia. Studies also contained fairly small sample sizes (n=28 on average), and mostly used college students, as only one study specified using a low-literacy sample. Results indicate there is currently little research in area of study, especially among low-literacy populations. Implications for future research will be discussed.

Board 25

Perceived Drunkenness and Corresponding Breath Alcohol Concentration Levels

Rosshaim ME, Weiler RM, Thombs DL, Clapp JD, Reed MB, Croff JM, Ruderman D, Gonzalez-Pons K, Killion J

Purpose: To examine the correspondence between perceived drunkenness and alcohol intoxication. **Methods:** Nighttime data were collected from 3,411 individuals at 6 sites in 4 States. These sites included bars catering to college students (Florida, Texas), young adults (California), and sexual minorities (Oklahoma), as well as college parties (California) and intercept surveys conducted on sidewalks near college student housing (California).

Demographic data, breath alcohol concentration (BrAC) readings, and perceived drunkenness

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data were collected from participants at each site. Perceived drunkenness was measured by asking, "At this moment, my intoxication level is best described as...", with the response options of: "no buzz", "slightly buzzed", "a little drunk", and "very drunk". Analyses examined the relationship between perceived drunkenness and BrAC. Among the combined 3,411 participants, 58% were men, 72% non-Hispanic White, and 90% were under 26 years of age.

Results: Overall, the median BrAC level for each category was: 0.01 for "no buzz" (n = 822), 0.06 for "slightly buzzed" (n = 1,241), 0.10 for "a little drunk" (n = 996), and 0.13 for "very drunk" (n = 352). More than 6% of females and nearly 12% of males who reported "no buzz" were legally intoxicated for driving purposes ($\text{BrAC} \geq 0.08 \text{ g/210 l}$). In addition, 37% of participants who felt "slightly buzzed" and 68% of participants who felt "a little drunk" were legally intoxicated for driving purposes, compared to 76% of those who felt "very drunk." **Discussion:** Across diverse nighttime drinking environments, a large proportion of individuals who feel only "slightly buzzed" or "a little drunk" are legally intoxicated for driving purposes. Individuals who perceive themselves to be only moderately intoxicated may often be unfit to drive. These findings support and reinforce the need for the national buzzed driving campaign (<http://buzzeddriving.adcouncil.org/>), which admonish that "buzzed driving is drunk driving".

Board 26

Not so Sweet Summertime: An Evil Period for Childhood Weight Gain

Layton RM, Taylor ME, Jennette MP, Craig JA, Daphne HC

Purpose: This study compared changes in BMI z-scores and body fat percentage (%BF) throughout the school year and following summer vacation. **Methods:** Seventy-six school-aged children were recruited from a local elementary school. Height and weight were measured with a standard scale and stadiometer. BMI z-scores and classifications were calculated using age and gender normative data. A pediatric Tanita scale was used to calculate %BF and related classification. Paired sample t-tests were used to compare changes in BMI z-scores and %BF during the school year compared to the summer. **Results:** On average [$\bar{x}_{\text{age}} = 7 \text{ years}$ ($SD = 1.55$); 54% female], 25% (n = 19) of children were classified as overweight/obese 72% (n=55) normal weight, and 3% (n=2) as underweight. Thirty-eight percent (n = 29) of children were classified as overfat/obese, 54% (n = 41) as healthy fat, and 8% (n = 6) were underfat. Overweight/obese children exhibited greater changes in BMI z-scores over the summer compared to the school year ($\bar{x}_{\text{summer}} = .08$ vs. $\bar{x}_{\text{school}} = -.04$, $p < .05$); this relationship was not observed among normal weight children ($\bar{x}_{\text{summer}} = .17$ vs. $\bar{x}_{\text{school}} = .04$, $p = .17$).

Overweight/obese children exhibited greater increases in %BF during the summer compared to the school year ($\bar{x}_{\text{summer}} = 2.18$ vs. $\bar{x}_{\text{school}} = 0.12$, $p < .05$); normal weight children showed similar changes during the summer as the school year ($\bar{x}_{\text{summer}} = 0.72$ vs. $\bar{x}_{\text{school}} = 0.88$, $p = .73$). During the school year 5% of children increased their BMI by 1 category, and 7% increased their %BF by 1 category. During the summer, 12% increased their BMI by 1 category, and 13% increased their %BF by 1 category. **Conclusion:** Summer may be a critical time for weight gain among overweight/obese children. Retrospective health behaviors associated with summer weight gain are currently being collected. Results will be included in the AAHB poster presentation.

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Board 27

Resilience-Based Diabetes Self-Management Education (RB-DSME) Among African Americans: A Synthesis of Six Focus Groups

Steinhardt MA, Lehrer HM, Blake-Allick KA, Brown SA, Dubois SK

Purpose: Type 2 diabetes is a psychologically and behaviorally demanding chronic disease, requiring an emotionally and mentally healthy patient – that is, a resilient patient. We conducted six 2-hour focus groups for the purpose of enhancing our RB-DSME curriculum, increasing its cultural competence, building trust in the community, refining the recruitment process with an emphasis on recruiting those with poor diabetes control, and identifying strategies to enhance sustainability as a community-based intervention. **Methods:** Focus group participants (n=55) included 3 groups: individuals diagnosed with type 2 diabetes who participated in one of our pilot projects and their family members; pastors and deacons from churches in the community and members of the African-American Women's Health Ministry; and community health care providers, for example, nurses, physicians, certified diabetes educators, and certified health education specialists employed by local clinics, hospitals, non-profits, or government agencies. We held two focus group sessions for individuals from each of the three groups, for a total of six sessions. All sessions were audiotaped, and content analysis was used to identify core consistencies and meanings. The procedures of prolonged engagement, purposive sampling, triangulation, and member checking assured the quality of the data. **Results:** We following themes emerged and will be presented: Teaching with visuals; dealing with denial; family involvement; the beauty of incentives; a focus on the positive; the stigma of sugar; connection to the church and pastor involvement; and lack of foundational tools. **Conclusions:** Resilience-based diabetes interventions have the potential to address the negative impact of diabetes as a chronic stressor and improve participants' ability to self-regulate the disease.

Board 28

HPV Vaccine Decision-Making among Young Adult Women: Where are the Leverage Points?

Thompson EL, Vamos CA, Straub DM, Sappenfield WM, Daley EM

Background: HPV vaccination is available for women until age 26 for the prevention of HPV-related cancers and genital warts, yet vaccination rates continue to be sub-optimal with only 34% of 18-26 year old women receiving the vaccine. This study aimed to explore the information, motivation, and behavioral skills for HPV vaccine decision-making among young adult women. **Methods:** In-depth interviews were conducted in March/April 2015, stratified by recently HPV vaccinated (N=25) and unvaccinated (N=25) college women, ages 18-26. Guided by the Information-Motivation and Behavioral Skills Model (IMB), a semi-structured interview guide was utilized to elicit information, motivations, behavioral skills, and macro factors influencing HPV vaccination. Comparative thematic analysis was used to examine IMB factors between vaccinated and unvaccinated women. **Results:** Regardless of vaccination status, young adult women recognized the sexually transmitted nature of HPV, yet were unaware of specific transmission and prevention modalities. Women reported that their healthcare providers were the most trusted sources for HPV vaccine information. A primary deterrent for unvaccinated women to receive the vaccine was a perceived low risk for HPV. In contrast, vaccinated women often recalled a cue that increased their HPV risk perceptions and motivated vaccination decisions. While unvaccinated women did not have experience receiving the vaccine, they reported the same procedural knowledge for accessing and completing the vaccine series. Macro factors, such as cultural and media discourse surrounding the anti-vaccination movement, were discussed by all participants; however, women acknowledged the common myths disseminated through these venues. **Discussion:** These findings suggest that young adult women have the information and procedural knowledge for HPV vaccination, but have low HPV risk perceptions. Increasing HPV risk perceptions and soliciting assistance from

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key social agents, such as healthcare providers, may serve as important leverage points for future interventions that aim to motivate young adult women to receive the vaccine.

Board 29

Determinants of Health Information Seeking using the Internet, Traditional Media, or Healthcare Professional: Results from a U.S. representative Sample

Jacobs W, Amuta AO

Background: We live in a digital age and this has changed the landscape of health information. With the changing US demographic, “chronification” of otherwise acute diseases, and evolving health needs of the population, there is need for increase in availability and accessibility of health information. It is estimated that one in three US adults use the internet to diagnose or learn about a health concern, nevertheless, a nagging question is whether the Web is reducing or creating disparities in health information availability and use for making health decisions. This study examined factors associated with health information seeking from the internet, traditional media, and health care professionals among a diverse population of US adults. **Methods:** Data for the analysis was from the 2014 Health Information National Trends Survey (HINTS), a national survey of US adults. Controlling for age, race/ethnicity, gender, and socioeconomic status (SES), regression analyses were conducted. STATA 13 was used for analyses. **Results:** Determinants associated with seeking health information from the traditional media was increasing age (OR=1.02, p<.001), lower SES (OR=.85, p<.001), and lower internet skill (OR=.21, p<.001). Increasing age (1.03, p<0.001), lower education level (OR=.77, p<.001), gender (being male) (OR=.63, p<.001), and lower internet skill (OR=.4, p<.001) were associated with seeking health information from a healthcare professional. Younger age (.97, p<.001), higher education level (OR=1.32, p<.001), higher SES (OR=1.11, p<.001), and higher internet skill (OR=12.62, p<.001) was predictive of using the internet to seek health information.

Conclusions: Our results indicated that there is a possibility that while the Web might be a good source of health information there is a possibility that it could also create inequalities in health information accessibility. The Web should not be considered a substitute for using alternative health information sources. Doing so, might create disproportionate access to health information essential for health decisions.

Board 30

Disparities in Adolescent Misperceptions of Overweight and Obesity: An Analysis of National Data 2005–2012

Wenhua L

Background: Accurate perception of one's weight status has been linked to greater motivation to engage in healthy lifestyle behaviors. Yet few studies have examined sociodemographic disparities in adolescents' misperception of their weight status. **Purpose:** To examine the discrepancies between perceived and objectively measured weight status among U.S. adolescents, and to identify sociodemographic factors related to such discrepancies. **Methods:**

Data from the 2005-2012 National Health and Nutrition Examination Survey (NHANES) were used. Adolescents aged 11-19 (N = 5952) were asked whether they considered themselves as 1) overweight, 2) underweight, or 3) about the right weight. Based on their age and measured weight and height, adolescents were categorized as underweight (BMI < 5th percentile), normal weight (5th < BMI < 85th percentile), overweight (85th < BMI < 95th percentile), or obese (BMI > 95th percentile). Logistic regression was used to examine the effects of age, gender, race, citizenship, and poverty status on whether an obese or overweight adolescent misperceived their weight status. **Results:** Around 30.9% of obese (N = 1,283) and 65.1% of overweight adolescents (N = 976) misperceived their weight category. Compared with females, older adolescents, and Hispanics, obese males ($p < 0.01$, OR=2.12), younger adolescents ($p < 0.01$, OR=1.10), and Blacks ($p < 0.01$, OR = 1.51) were more likely to exhibit misperception. Similarly,

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among overweight adolescents, odds of misperception were higher in males ($p = <0.01$, OR = 3.18), younger adolescents ($p = <0.01$, OR=1.16), Blacks ($p = <0.01$, OR=2.09), and Whites ($p = 0.02$, OR = 1.59), compared with females, older adolescents, and Hispanics. No significant differences were found by survey year, adolescents' citizenship and poverty status.

Conclusion: Weight misperception is highly prevalent among U.S. overweight and obese adolescents, and more common among males, younger adolescents, and Blacks. Adolescents' weight misperceptions need to be considered in targeted weight loss efforts.

Board 31**Acculturation and the Nutritional Health of Caribbean Immigrants in the United States:
systematic review of the literature***Esther P*

The impact of acculturation on the health of foreign-born persons in the United States has been investigated in detail and is now considered an important explanatory factor for health disparities among minorities in the United States. Low-income, minority neighborhoods throughout the nation, face disproportionate rates of obesity and chronic disease, which has been associated with an over-abundance of fast-food restaurants and convenience stores and a noticeable lack of alternative positive food sources. Information is limited and widely dispersed on the impact of acculturation on the nutritional health of Caribbean immigrant populations in the United States. This research aimed to review the current literature for evidence specific to the impact of acculturation as it relates to the nutritional health of Caribbean immigrants in the United States. The limited amount of research available on the subject of Caribbean immigrants' nutritional health suggests the need for more studies that focus on the general health of that specific population. In addition, the varying correlations between nutritional health and length of stay in the United States among various Caribbean immigrant populations, suggests the need for more research that uses and discusses ethnically disintegrated data that will help reduce the negative health impacts of acculturation among various foreign immigrant populations.

Publications related to the effects of acculturation on the health of the Caribbean immigrant population were retrieved from three electronic databases (PubMed, Medline, and Health Business). Publications were included in the initial review if: any combination of the key words appeared in the publication or title; they were published during the period between 2000 -2015; and they were written in English. Results from this review will be used to help inform recommendations for future research studies and educational interventions that acknowledge culturally-bound eating practices and incorporate practical alternatives to improve family diet and community health overall.

Board 32**Association between Diabetes Self-Management with Social Support at Different Durations of Diabetes***Lee S, Towne SD, Ory MG*

Purpose: Diabetes diagnosis and the ongoing process of diabetes self-management not only affect those diagnosed, but also family, friends and caregivers. However, little is known about the relationship between diabetes duration and social support on chronic disease management behaviors. The purpose of this study was to assess the relationship between social support and diabetes self-management behaviors (SMBs) among populations with different diabetes durations. **Methods:** Secondary data from the 2007–2008 National Health and Nutrition Examination Survey, were used. Study participants ($n=705$) were diabetic and ≥ 40 -years old. Data was collected on time since diabetes diagnosis (diabetes duration), general and disease-specific SMBs, and multiple dimensions of social support. First, logistic regression was performed to examine the association between social support and each SMB (controlling for demographic factors, self-reported health status, and depression). Next, the association was re-

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examined after including diabetes duration in the models. **Results:** Social support was associated with diabetes-specific SMBs (blood sugar and foot checks) ($p<0.05$) but not with general SMBs (weight control, diet, exercise, having a disease-specific doctor). In both models, diabetes duration was associated ($p<0.05$) with diabetes-specific SMBs. After controlling for other variables in the model, a one-year increase in the diabetes duration resulted in higher frequencies of checking blood sugar (OR=1.036) and foot (OR=1.028). After incorporating diabetes duration, the availability of emotional or financial social support was no longer associated with blood sugar checks. **Conclusions:** The study suggests that effects of social support on diabetes-specific SMBs may change across different phases of diabetes self-management. However, due to the cross-sectional analyses, the study cannot provide a definitive conclusion. Longitudinal research is needed to understand the relationship between chronic disease management behaviors with social supports as well as other potential influencing factors over time.

Board 33

Caregivers Burden of Chronic Medical Illnesses in Elderly Patients

Hashim B, Qamar K, Rawan A, Sara A, Shorowk A, Alaa A

Objective: To address different aspects of burden placed on caregivers of chronic elderly patients. **Study Design:** Cross-sectional study. **Sampling Method:** A cross-sectional study was conducted on 150 adult caregivers of patients with chronic illnesses in three tertiary medical centers in Riyadh from January to March 2015. All caregivers from inpatient and outpatient settings, who fulfilled the inclusion criteria, were approached by consecutive sampling. Participants were interviewed using an Arabic version of the Montgomery Borgatta Burden Measure Scale. The burden scale measured the Subjective Burden (SB), Objective Burden (OB) and Stress Burden (StB). **Results:** Out of the 150 caregivers interviewed, there were 85 males and 65 females. The mean age was 35.4 years. The results showed that the SB, OB and StB were found to be mild in the sampled population (7.7 ± 3.7 , 14.2 ± 3.4 , and 9.05 ± 4.2) respectively. The StB was found to be higher in females than in males (9.86 ± 4.56 vs. 8.44 ± 3.89 respectively, $p=0.041$). Furthermore, a difference was found in the nature of relationship between the patient and the caregiver (i.e. nurses, household staff, relatives); where nurses were found to have a greater SB compared to relatives (11.4 ± 5.29 vs. 7.58 ± 3.34 respectively, $p=0.002$). Analysis also showed the caregivers who were employed elsewhere had lower StB, and OB ($p=0.004$, and 0.034 , respectively) compared to those who did not have any employment. No association was found between social status, education, duration of caregiving, caregiving hours and burden of caregiver. **Conclusion:** Caregivers of chronically ill patients experience a distinct level of burden while providing end-of-life care. Socio-demographic factors were predictors of the level of burden.

Board 34

Psychometric Validation of the Center for Epidemiological Studies Depression Scale in Head and Neck Cancer Patients

Chhabria KS, Carnaby G

Introduction: Rates of depression in head and neck cancer (HNC) are high. The Center for Epidemiologic Studies Depression scale (CES-D) is a 20 item tool developed and validated to screen for depression in the general population however it has not been validated for use with HNC patients. **Objective:** To psychometrically evaluate and validate the CES-D scale for use in HNC patients. **Methods:** The CES-D was applied to 130 subjects within a prior clinical trial at onset of radiation treatment and 3 months following treatment. Psychometric analysis was conducted via face and content validity using 2 expert raters, internal consistency was applied using Cronbach's alpha, and test retest reliability, concurrent validity was performed against the FACT-H&N and Pain disability Index (PDI), construct validity was conducted via exploratory

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factor analysis. **Results:** The sample was predominantly male (76.7%) receiving chemo radiation (76.2%). Face validity for measuring depression in HNC was strong ($\alpha=0.85$). A significant difference was found in the mean score ($t=-15.841$, $p=0.0001$) (95% CI= -17.18, -13.33) between depressed (CES-D cut point ≥ 16) vs. non-depressed. Internal consistency of the scale was high ($\alpha=0.840$). Test retest reliability showed moderate-strong correlations (0.512, $p=0.0001$), however was not sensitive to change across this time period. Strong inter-correlations ($r= -0.778$, 0.515) with FACT-H&N and PDI were noted. Factor analysis (at baseline) explained 54.92% of variance, with 3 distinct factors; depressed affect, somatic /retarded activity and positive affect. In contrast to general populations, the factor "disturbed interpersonal skill" was not retained. **Conclusion:** Results confirm the reliability and validity of the CES-D as a measure of depression in HNC populations.

Board 35

25-Hydroxyvitamin D [25(OH)D] Levels and Use of Mentholated Cigarettes among Smokers and Nonsmokers Living With HIV

Miguez-Perez MJ, Stanton CA

Purpose: The purpose of this study is to assess the differential effects of smoking mentholated versus non-mentholated cigarettes on vitamin D and risk of fractures among smokers living with HIV compared to smokers who are not HIV+. **Method:** In this longitudinal study, 200 patients without clinical disease or use of medications known to interfere with vitamin D metabolism were enrolled (2014 -2015) into one of four groups based on smoking and HIV serostatus (HIV+ smoker, HIV+ non-smoker, HIV- smoker and HIV- non-smoker). Vitamin D status measured as 25-OH-vitamin D in blood. Fracture risk was obtained using the WHO fracture risk algorithm (FRAX). Information regarding medical history, smoking, and food intake was also obtained.

Results: The prevalence of vitamin D deficiency (< 30 ng/mL) was 75%, and similar in HIV seronegatives and seropositives (79% and 75%, $p=0.5$). Smokers tended to have lower vitamin D levels than non-smokers (26.8 + 11 vs. 25.6 + 8 ng/mL, $p=0.09$). Users of mentholated cigarettes were more likely to have vitamin D deficiency than smokers of non-mentholated (OR= 1.2 95% CI 0.9-1.37, $p=0.03$) and non-smokers (OR=1.3 95% CI 1-1.8, $p=0.03$). The small differences in lifestyle between the groups could not explain these findings. Notably, vitamin D deficiency was associated with a small but significant increased risk of Fractures (4.5 ± 4.3 vs. 2.85± 2.3), $p=0.004$). **Conclusions:** Analyses indicated an association among the use of mentholated cigarettes and vitamin D levels, with particularly strong effects among HIV+ smokers. Vitamin D deficiency can increase the risk of skeleton associated diseases, as well as other detrimental health outcomes.

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Personal Religiosity and Problem Drinking among College Students

Young M, Penhollow T, Nnaka T

Purpose: Problem drinking continues to be a widespread issue on college campuses. Additionally, there is continued interest in research relative to the relationship of religiosity to health behavior. Therefore, the purpose of the study was to examine the relationship of personal religiosity to problem drinking behaviors in a sample of university students. **Methods:** Study participants, 462 single college students, ages 18-24 from two Southern universities, completed a on-line questionnaire concerned with religiosity and health behavior. Questionnaire items included a four-item personal religiosity scale (item dealt with participants degree of – religious feeling, attendance at religious services, belief in a close relationship with God, and belief they would have eternal life in heaven) and five problem-drinking items. Data were analyzed using factor analysis and two-way (gender x behavior) ANOVA. **Results:** All items comprising the religiosity scale loaded at .744 on a single factor. Alpha for internal consistency was .857. There were statistically significant ($p<.05$) main effects for behavior for four of the five problem drinking

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behaviors (ever drunk, times drunk in last year and last month, times, times drinking five or more drinks on one occasion in the last month, but not for ever drinking five or more drinks on one occasion). For each of the four statistically significant behaviors the participants who had not engaged in the behavior had the greater religiosity scores while those who had engaged in the behavior, or had engaged in the behavior more frequently, had scores indicating less religiosity. Effect size (partial eta squared) ranged from .024 to ..052. There were no gender x behavior interaction effects. **Conclusions:** There is a small, but statistically significant link between religiosity and measures of problem drinking used in this study. These results may be of value to campus health promotion staff seeking to reduce problem drinking.

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Do Patient Navigators Improve Health Care Utilization Behaviors? A Meta-Analysis

Ali-Faisal SF, Colella T, Benz Scott LA

Purpose: Patient navigation (PN) interventions are increasingly used in research and practice with unclear results. The purpose of this meta-analysis was to review the empirical evidence regarding PN effects on health care related behavioral outcomes. **Methods:** Medline, Embase, HealthSTAR, Cochrane Library, PsycInfo, CINAHL, and Joanna Briggs Institute databases were systematically searched for randomized controlled trials focused on PN (from years 1989 to 2015). Two authors screened titles and abstracts and independently assessed full text articles based on pre-defined inclusion/exclusion criteria. One author and one research assistant independently extracted data for meta-analysis and thereafter conducted quality assessments using the Downs and Black (1998) scoring tool. Analyses were conducted for three behavioral outcome categories: performance of recommended health screening, completion of diagnostic-related behaviors, and attended recommended treatment/rehabilitation services. Effect estimates were pooled using odds ratios and 95% confidence intervals were calculated through random effects models. The meta-analysis was completed using Review Manager software.

Results: The search identified 3984 articles, of which 20 targeted the three outcomes included in this analysis. PN interventions were mainly tested among cancer patient populations ($n=15/20$, 75%). Compared to usual care, PN interventions were found to significantly increase the likelihood of: 1) cancer screening behaviors (odds ratio 2.74, 95% confidence interval, 2.06 - 3.64, $P < 0.00001$); 2) obtaining a diagnosis (odds ratio 1.42, 95% confidence interval, 0.88 – 2.29, $P < 0.00001$); and 3) completing a recommended care event (odds ratio 1.79, 95% confidence interval, 0.71 – 4.50, $P < 0.00001$). **Conclusion:** This meta-analysis demonstrated that PN interventions are effective to improve the likelihood that individuals will complete recommended health care utilization behaviors. As the majority of evidence is found among cancer populations, more research is warranted to test navigation interventions among other populations and priority health behaviors.

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Gender Disparities in the Food Insecurity-Obesity Paradox among Aging Adults

Hernandez DC, Reesor L, Murillo RP

Purpose: Recent data suggest that there has been a significant increase in obesity among women aged 60 years and older. There has also been a significant increase in adults aged 60 and over that are food insecure, with a higher proportion of them being women. The purpose of this study is to assess the gender disparities in the association between food insecurity and obesity among adults 60 years and older. **Methods:** Using the 2011 and 2012 National Health Interview Survey, we focused on respondents 60 years and older and whose household income was $\leq 1.99\%$ Federal Poverty Line (FPL), which are households most at risk for food insecurity ($N = 6,021$). Respondents were considered to be food insecure if they responded affirmatively to 3 or more of the 10-items on the USDA Food Security Scale. Body mass index was calculated as outlined by the Centers for Disease Control and Prevention for adults based on

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self-reported height and weight. Covariates included age, race, marital status, education, employment, income, health insurance, number of children, and region. Controlling for a set of demographic characteristics, logistic regression models were stratified by gender to estimate the odds that adults were a) overweight (vs. normal weight), b) obese (vs. normal weight), c) overweight/obese (vs. normal weight). **Results:** In adjusted models, food insecurity predicted overweight [Odds Ratio (OR) = 1.38, 95% Confidence Interval (CI) = 1.10 – 1.72, p < .01] and overweight/obese (vs. normal weight) [OR = 1.31, CI = 1.07 – 1.59, p < .01] for females but not males. The results were particularly true for poor females (FPL ≤ .99%). **Conclusion:** Increasing awareness about negative outcomes associated with maintaining and gaining excessive weight through nutrition programs designed for older adults (e.g., Older Americans Nutrition Program) may assist aging food insecure females in the prevention of overweight/obesity.

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Activating Patients for Sustained Chronic Disease Self-Management: Thinking beyond Clinical Outcomes

Dye CJ, Williams JE, Evatt JH

Purpose: This paper describes the impact of a community-based program, Expanded Health Coaches for Hypertension Control (EHCHC), implemented by trained volunteers, on the hypertension self-management of Appalachian citizens aged 45 years and above. **Methods:** A total of 185 hypertensive participants, all of whom were under a physician's care, were batch randomized to group-based intervention or wait-list control groups. Hypertension-related knowledge, perceived competence for hypertension self-management, and motivational readiness to engage in hypertension-related lifestyle behaviors were measured at baseline and at eight weeks using validated measures. **Results:** Participants were predominantly female (67.6%) and Caucasian (87.0%). Approximately half had no co-morbidities; around one-quarter had been diagnosed with one or more hypertension-related condition, including: congestive heart failure (4.0%), kidney disease (6.1%), stroke (7.3%), myocardial infarction (9.3%), and diabetes (18.2%). During the study, there was a higher proportion of treatment group participants moving from the cognitive to behavioral stages of motivational readiness for being physically active ($P<.001$), practicing healthy eating habits ($P=0.001$), handling stress well ($P=0.001$) and living an overall healthy lifestyle ($P=0.003$). We observed a group by time interaction for perceived competence for hypertension self-management ($F(1.134)=4.957$, $P=0.028$, $\eta^2=.036$). Specifically, treatment group participants demonstrated a greater average increase in perceived competence for self-management compared to control group participants during the study. In addition, there was a group by time interaction for hypertension-related knowledge ($F(1.160)=16.571$, $P<0.0005$, $\eta^2=.094$). Specifically, treatment group participants demonstrated a greater increase in mean hypertension-related knowledge compared to control group participants. **Conclusions:** Optimal population health promotion requires more than clinical care and pharmacological intervention. Enduring lifestyle changes necessary for chronic disease self-management require that psychosocial determinants of health behavior are instilled, which is typically beyond standard medical practice. We recommend peer-led, community-based programs as a complement to clinical care and support the increasing health system interest in promoting population health beyond clinical walls.

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Poor Dietary Behaviors Associated with Increased Cardiovascular Disease Risk but Normal Cholesterol Values

Bridges C, McClendon M, Bowden RG, Wilson RL, Hebert S

Introduction: High cholesterol is associated with cardiovascular disease (CVD), yet counterintuitive findings have occurred with End-Stage-Renal Disease (ESRD) patients. These paradoxical findings have been called reverse epidemiology where normal cholesterol values are associated with higher mortality in patients with poor nutritional status and behaviors. The purpose of this study was to determine if reverse epidemiological associations exist between cholesterol levels, mortality, and dietary behaviors. **Methods:** Patients (N=117) were recruited from four dialysis units and tracked for 36-months until study completion or death. Patients were placed into dietary behavior groups based on dietary protein intake, as measured by albumin.

Results: ANCOVA revealed differences at posttest and reverse epidemiological effects for LDL ($p=.0001$), LDL size ($p=.038$), and large LDL ($p=.0001$), and an interesting trend for total cholesterol ($p=.051$). HDL was significantly different ($p=.045$) but did not have a reverse epidemiological effect. LDL particle concentration, large VLDL and triglycerides were not significantly different. A step-wise linear regression revealed weak predictors of mortality with total cholesterol (Beta=.263, $p=.017$) and LDL (Beta= -.177, $p=.045$). Finally, a Cox death hazard ratio revealed LDL size as a significant predictor of mortality. **Conclusions:** A reverse epidemiological effect for cholesterol variables was discovered. A nutrition behavior-inflammation complex associated with poor dietary behaviors is a possible explanation for these counterintuitive findings. Higher mortality rates from CVD in ESRD patients with normal cholesterol levels have been reported in previous studies, yet this relationship was not reported when patients had normal inflammation and albumin levels associated with healthier dietary behaviors. Identification of patients with normal cholesterol levels but high levels of inflammatory cytokines and poor dietary behaviors may help to better control CVD mortality. Elevated levels of cholesterol have been reported to be a good predictor of survival in other populations including chronic heart failure, chronic respiratory failure, HIV and cancer.