Fall Research Symposium

November 17, 2023
8:30am - 1:00pm
HPNP G-101
Associations Between Social Support and Weight Change In Rural Adults During and After a Behavioral Weight Management Program

Presenter: Kelsey Layne Barrett
Faculty Mentor: Dr. Kathryn Ross
Internal Member: Dr. Rebecca Pearl
External Member: Dr. David Janicke

Background
Social support may help facilitate the behavioral changes necessary for successful weight loss; however, less is known regarding the role of social support in relation to long-term weight loss maintenance in rural communities.

Methods
The current study investigated whether social support predicted weight loss and longer-term maintenance in 445 adults with obesity (M±SD age = 55.38±10.27 years; BMI = 36.44±3.71kg/m2; 82.7% female, 73.7% Non-Hispanic White) who completed a 4-month, in-person behavioral weight management program followed by a 12-month remotely delivered extended care program and a 6-month no-contact maintenance period. Linear regressions were used to assess associations between social support (assessed via the Social Provision Scale [SPS]), weight change, and adherence to intervention goals (self-reported by participants throughout the intervention), with multiple imputation used to handle missing data.

Results
Participants lost an average of -8.46 ± 4.98% of their baseline weight at Month 4 and regained 3.03±6.66% from Month 4 to Month 22 (total Month 22 change = -5.43 ± 8.26%). Higher SPS scores at baseline significantly predicted greater weight loss at Month 4 (B=-0.05, p=0.027). Moreover, higher SPS scores at Month 4 significantly predicted less weight regain at Month 22 (B=-0.08, p=0.019).
Conversely, SPS scores did not predict adherence to self-monitoring or adherence to calorie intake or physical activity goals during either the initial intervention or the extended care/maintenance period (all ps>0.05).

**Conclusions**

Greater self-reported social support predicted less success at both initial weight loss and longer-term weight loss maintenance; however, the mechanism for this association is unclear given that social support only predicted adherence to recording calories during the extended care/maintenance period. Future studies should include more precise measures of eating and activity behaviors and investigate whether other factors may drive these associations.

**Source of Funding**

This work was supported by NHLBI grant R18 HL112720
Longitudinal Analysis of Protective Factors on Cognition Following Total Knee Arthroplasty

Presenter: Kara Eversole
Faculty Mentor: Dr. Jared Tanner
Internal Member: Dr.
External Member: Dr.

Background
Total knee arthroplasty (TKA) is the gold standard treatment for advanced arthritis. However, older adults are at increased risk of cognitive dysfunction post-surgery. This secondary analysis examined potential cognitive and brain resilience factors on cognition in older adults following TKA.

Methods
Data were collected from 67 older adults before surgery, and three weeks, three months, and one year post-TKA (Age = 69.49 ± 7.09; Education = 15.62 ± 2.83; 51% female; 90% non-Hispanic White, 10% non-Hispanic Black). Linear mixed effects models examined longitudinal effects of word reading (Wide Range Achievement Test-III), brain age gap, biological sex, ethnicity/race, pain interference (Brief Pain Inventory), and baseline depression (Beck Depression Inventory-II) on cognitive composites (i.e., memory, working memory/inhibition, reasoning, processing speed, language). Brain age gap (BAG) was calculated by subtracting chronological age from predicted brain age.

Results
Memory, working memory/inhibition, reasoning, and processing speed had curvilinear trajectories (p's < .05). Higher word reading associated with higher memory (β = 0.066, SE = 0.016, p < .001), working memory/inhibition (β = 0.070, SE = 0.016, p < .0001), reasoning (β = 0.099, SE = 0.020, p < .0001), and processing speed (β = 0.051, SE = 0.016, p < .01). Lower BAG associated with higher language
scores ($\beta = -0.040$, SE = 0.017, $p < .05$). Female participants had higher processing speed ($\beta = -0.285$, SE = 0.135, $p < .05$), and non-Hispanic White participants had higher memory scores ($\beta = 0.490$, SE = 0.225, $p < .05$). When pain interference was lower, processing speed ($\beta = -0.004$, SE = 0.002, $p < .05$) and language ($\beta = -0.007$, SE = 0.002, $p < .01$) scores were higher.

Conclusions

Cognitive and brain resilience measures may identify individuals at risk for cognitive dysfunction post-surgically. Future research increasing representation in underrepresented groups is warranted.

Source of Funding

NIH RO1 NR014181
Caregiver Stress in the Context of Pediatric Asthma: Impact on Parent-Child Communication Patterns and Youth Quality of Life

Presenter: Kylie Noriko Hill
Faculty Mentor: Dr. David Fedele
Internal Member: Dr. David Janicke
External Member: Dr. Kathryn Ross

Background
Caregivers of children with a chronic illness often experience stress that can impact the parent-child relationship dynamic and the child's health outcomes. Within a pediatric asthma sample, we aimed to examine the associations between medical factors and caregiver stress on parent-child communication patterns and youth quality of life.

Methods
Youth with asthma (n=55; Mage=13.18; 44% Female) and their caregivers (93% Female) were recruited from a pediatric pulmonary clinic. The sample of families was primarily White (46%), non-Hispanic (84%), and reported an annual household income of less than $50,000 (61%). At enrollment, caregivers reported on background and medical factors, caregiver stress, and parent-child communication patterns. Youth reported on their own quality of life. Hierarchical regression models examined the unique contributions of medical factors and caregiver stress on parent-child communication patterns and youth quality of life.

Results
On a scale of 42-210, in which higher scores indicate greater frequency or difficulty of problems contributing to caregiver stress, caregivers reported an average frequency score of 83.11 (SD=31.41) and an average difficulty score of 77.81 (SD=34.82). Predicting parent-child communication conformity, emergency room
visits in the past 12 months (b=-.193, p=.004) was the only significant predictor in the final model, explaining 21.1% of variance in communication conformity, F(2,50)=4.870, p=.003. Predicting youth quality of life, caregiving stress difficulty (b=-.014, p=.006) was the only significant predictor in the final model, explaining 14.8% of variance in youth quality of life, F(2,51)=13.617, p=.017.

Conclusions
Caregivers of youth with asthma reported generally low caregiver stress in both frequency and difficulty of problems faced. Nevertheless, caregiving stress difficulty was a predictor of their child's quality of life above and beyond medical factors. More longitudinal research is needed to examine how changes in caregiver stress throughout the illness trajectory may affect communication patterns in the family environment.

Source of Funding
Society of Pediatric Psychology
On The Same Page? An Examination of Adolescent-Caregiver Discordance on Reports Of Adolescent Sleep, Anxiety and Depressive Symptoms, and Family Functioning In Pediatric Inflammatory Bowel Disease

Presenter: Hailey Inverso
Faculty Mentor: Dr. David Janicke
Internal Member: Dr. David Fedele
External Member: Dr. Lori Waxenberg

Background
Adolescents with inflammatory bowel disease (IBD) are at an increased risk for disrupted sleep and negative psychosocial outcomes. Extant literature has demonstrated links between these outcomes. Previous literature has also shown that adolescent and caregiver proxy-reports are discrepant in many pediatric samples. However, less is known about discordance among adolescents with IBD and their caregivers, especially related to adolescent sleep. This study aimed to explore discordance among dyadic reports of adolescent sleep disturbances and psychosocial correlates of discordance.

Methods
64 adolescents (Mean age=15.5±2.4; 44% female, 69% Non-Latinx/Hispanic White, 11% Black, 6% Latinx/Hispanic, 5% Other) and their caregivers were recruited during routine IBD clinic appointments. Caregivers reported demographic characteristics and completed the Pittsburgh Sleep Quality Index (PSQI). Adolescents completed the PSQI, Patient Health Questionnaire, General Anxiety Disorder Questionnaire, and the Family Assessment Device. Intra-class coefficients (ICCs) were used to analyze discordance per dyad. Dyads were also dichotomized based on overall score directionality (higher caregiver-reports vs. adolescents-reports). Ordinal regression analyses assessed the contributions of each subscale on overall PSQI ICC.
Results

68.3% of adolescents reported clinically significant sleep disturbances (PSQI>5). On average, adolescent and caregiver dyads had an ICC of .49 (0.0=completely discordant; 1=completely concordant). 71% of caregivers reported lower scores (Mean=6.4±4.6) compared to adolescent reports (Mean=7.3±5.1). Sleep duration, quality, and drowsiness accounted for the most variance in dyadic discordance on the PSQI (all p<.001). Among dyads where caregivers reported lower scores than adolescent, adolescents endorsed significantly more anxiety and depressive symptoms compared to dyads with inverse elevation levels. Dyadic discordance was not significantly correlated with anxiety symptoms, depressive symptoms, or family functioning.

Conclusions

Findings suggest that there are discrepancies in perceptions of adolescent sleep disturbances among most adolescents with IBD and their caregivers. Future investigation into the mechanisms contributing to, and implications of, these discrepancies is warranted.

Source of Funding

Departmental Funds, Crohn's and Colitis Foundation Student Research Fellowship Award, American Psychological Association Dissertation Research Award
Pairing Transcutaneous Vagus Nerve Stimulation and Exposure and Response Prevention Therapy To Improve Symptoms of Obsessive Compulsive Disorder (OCD): Preliminary Physiological and Symptom Outcomes

Presenter: Laura Carolyn Jones
Faculty Mentor: Dr. John Williamson
Internal Member: Dr. Eric Porges
External Member: Dr. Carol Mathews

Background

Exposure response prevention therapy (ERP) is an evidence-based treatment for OCD. ERP works by decoupling neurophysiological arousal from a distressing thought. However, these ERP exposures can be unbearably distressing. Transcutaneous vagal nerve stimulation (tVNS) is a non-invasive neuromodulation technique that has the potential to make ERP more tolerable by fostering fear extinction learning and neuroplasticity. tVNS stimulates the auricular branch of the vagus nerve which has been shown to enhance fear extinction and decrease fearful behaviors in animal and human models of anxiety. Additionally, tVNS can improve symptoms of physiological arousal such as respiratory sinus arrhythmia (RSA) which is a sign of adaptive state regulation.

Methods

Participants between the ages of 18 and 55 were recruited as part of routine clinical care from University of Florida psychiatry clinics. To be included, participants had to meet DSM-V criteria for OCD, a Yale-Brown Obsessive Compulsive Scale (Y-BOCS) score of 15 or greater, be on a stable dose of medication two weeks prior to initiation of ERP, and without a co-occurring major neurological or psychiatric condition. The protocol includes 12 sessions of ERP, pre-and-post fMRI, heart rate variability (HRV) monitoring, and random assignment to either sham or active tVNS groups (goal of n=20 each).
Results

Preliminary results show reduction in but not statistically different Y-BOCS scores between groups. Additionally, no differences were observed in RSA over time between groups. Y-BOCS score at baseline was a significant predictor for Y-BOCS score reduction over time (p = 0.0457).

Conclusions

Thus far, the research protocol incorporating tVNS and sham stimulation and autonomic measurement within to a standard ERP protocol for OCD has proven to be tolerable. Data acquisition continues (target n = 40) with direction toward development of a larger RCT to further develop this treatment to achieve clinically significant and persistent reduction of symptoms of OCD.

Source of Funding

International Obsessive-Compulsive Disorder Foundation (IOCDF)
A Mixed Methods Study of Childhood and Adolescent Disability-related Maltreatment Experiences in Transition-Aged Youth

Presenter: Jiyoung Kim
Faculty Mentor: Dr. Joy Gabrielli
Internal Member: Dr. Brenda Wiens
External Member: Dr. Michael Marsiske

Background

Child maltreatment is an important public health concern given its association with negative outcomes across the lifespan. Individuals with disabilities experience higher rates of maltreatment compared to those without disabilities, and disability-specific factors can be targeted for abuse. Although disability-related abuse has been documented in adults, little is known about disability-related abuse in childhood. This study seeks to: 1) establish proof-of-concept of disability-related abuse in childhood and 2) develop and evaluate a measure of disability-related maltreatment.

Methods

Aim 1: We conducted secondary data analysis from an online survey of 48 adult participants with childhood-onset disabilities. We obtained descriptives on disability-related maltreatment reports. We also conducted independent samples t-tests comparing scores of participants who reported experiences of disability-related maltreatment versus those who did not on measures of anxiety (GAD-7), depression (CES-D), and PTSD (PCL-5). Aim 2: We plan to survey emerging adults (ages 18-25 years old) with disabilities about their childhood exposure to general forms of maltreatment (physical/sexual/psychological) and disability-related maltreatment. We will conduct a confirmatory factor analysis within a structural equation modeling framework to identify shared and unique variance across different types of maltreatment.
Results

Of participants who reported experiencing disability-related abuse, 12 out of 13 also reported physical and/or sexual. A statistically significant difference across groups was identified on the GAD-7 ($t(46) = -2.242, \text{Cohen's } d = -0.728$) and the PCL-5 ($t(29.138) = -4.128, \text{Cohen's } d = -1.258$). More specifically, participants who reported experiences of disability-related maltreatment had higher GAD-7 and PCL-5 scores than those who did not. The difference across groups on the CES-D was not statistically significant ($t(43) = -1.806, \text{Cohen's } d = -0.626$).

Conclusions

Disability-related abuse may happen in the context of other forms of abuse, but current measures are lacking in breadth of assessment. Additional research is needed to develop and test a more comprehensive measure of disability-related maltreatment.

Source of Funding

The study for Aim 1 was funded by a sub-award from start-up funds provided to Michael R. Nadorff by Mississippi State University.
The Impact of Patient Weight on Mental Health Providers' Diagnostic Accuracy and Symptom Perceptions of Bulimia Nervosa

Presenter: Dakota Leigh Leget Ms.
Faculty Mentor: Dr. Rebecca Pearl

Background
Weight-related stereotypes and biases may affect the detection and treatment of eating disorders in patients with a high body weight. This experimental vignette study evaluated the impact of patient weight on mental health providers' accuracy and confidence in diagnosing bulimia nervosa (BN) and their perceptions of patients' symptom severity and health risks.

Methods
Two hundred mental health providers (77% women, 84% white, M_{age}=43.51±12.36 years) were recruited from PsychologyToday.com and professional listservs to complete an online survey. Providers read two vignettes describing a patient with major depressive disorder (MDD) and BN, respectively. For the BN vignette, clinicians were randomly assigned to read about a patient whose weight status was described as "healthy weight" or "obesity." Providers were asked to diagnose the patients and rate their diagnostic confidence (0-100 scale), along with their perceptions of the patients' symptom severity and physical health risk (1-7 ratings). Comparisons were conducted between weight conditions for diagnostic accuracy (chi-square test) and for diagnostic confidence, perceived symptom severity, and perceived health risk (one-way ANOVAs). Within-subjects comparisons tested for differences in diagnostic accuracy and confidence between the MDD and BN vignettes (McNemar’s test and paired samples t-test).

Results
Most providers misdiagnosed BN (73%), with no significant differences in accuracy or confidence found between weight conditions. Providers perceived similar health
risks across weight conditions yet perceived greater symptom severity when the patient with BN was described as having obesity versus a healthy weight (5.14±1.02 vs. 4.96±1.17, \( p=.005 \)). Comparing within-subjects, fewer providers accurately diagnosed BN than MDD (27% vs. 74%, respectively, \( p<.001 \)), and providers were less confident in diagnosing BN versus MDD (68.47±20.45 vs. 73.13±17.84, respectively, \( p<.001 \)).

Conclusions

Additional training efforts are needed to improve BN detection among mental health providers.

Source of Funding

Funding for this project was provided by the College of Public Health and Health Professions at the University of Florida.
Cognitive Effects of a Combined Lifestyle Intervention in Older Women with Obesity

Presenter: Christian Walter McLaren
Faculty Mentor: Dr. Stephen Anton
Internal Member: Dr. Rebecca Pearl
External Member: Dr. Glenn Smith

Background
There is a growing population of older adults with obesity, placing them at high risk of cardiometabolic disease and functional decline. Compared to other populations, the rates of obesity are disproportionately higher in non-Hispanic black women. While lifestyle interventions have shown promise in improving health and physical function in this group, their impact on cognitive function remains less clear. Thus, this study investigated the impact of DR+E on cognitive function in a diverse group of sedentary, older women with obesity.

Methods
For this secondary analysis, 29 participants were randomly assigned to a 24-week intervention: (i) dietary-restriction plus exercise (DR+E; n = 15, mean age = 63.4 years [4.6]) or (ii) educational-control (EC; n = 14, mean age = 64.8 [6.8]). In the DR+E group, participants engaged in group-based weight management focused on calorie-restriction and three weekly supervised exercise sessions, including brisk-walking and lower-body resistance training. The EC group attended monthly health education lectures. Primary measures included the digit span substitution task (DSST) and controlled oral word association test (COWA).

Results
In the DR+E group, DSST scores significantly improved compared to both baseline (p<0.05) and the EC group (7.3 [8.8] vs. -0.64 [10.1]; p<0.05). There were no significant changes in COWA scores for either group compared to their baseline values (1.2 [6.1] vs. -3.2 [6.3]), but there was a trend for the DR+E group to improve
compared to the EC group (p=0.07). Changes in DSST or COWA scores were not significantly correlated with walking speed (r=0.02, p=0.9; r=0.05, p=0.8), and there was no significant correlation between changes in DSST and changes in SPPB scores (r=0.07, p=0.71). Interestingly, there was a significant correlation between changes in COWA and changes in SPPB scores (r=0.41, p<0.05).

Conclusions
This study demonstrates that a DR+E intervention can enhance some aspects of cognitive function in sedentary older women with obesity.

Source of Funding
Support provided by the National Institute on Aging predoctoral training grant T32 AG020499 for the work completed by Christian McLaren. The parent study was supported by the University of Florida's Claude D. Pepper Center (1 P30 AG028740-01).
Characterizing Physiological and Behavioral Associates Of Fluid Abilities in Patients with Chronic Remote Mtbi

Presenter: Samantha Penhale
Faculty Mentor: Dr. John Williamson
Internal Member: Dr. Eric Porges
External Member: Dr. Andrew Liu

Background

Traumatic brain injury (TBI), a heterogeneous neurological disorder, remains among the leading cause of death and disability worldwide. 75% of cases are categorized as mild, with most seeing symptom resolution within three months. However, some patients still experience symptoms and cognitive complaints well beyond this timeframe. In particular, our logical reasoning abilities (fluid intelligence [Gf]), have been found to decline with aging and TBI. Gf abilities heavily involve the Multiple Demand (MD) network of the brain. Blood based biomarkers have shown potential as a quick and affordable method for diagnosing TBI when compared to magnetic resonance imaging (MRI) or computed tomography (CT) scans.

Methods

In a sample of 105 individuals, those with mild TBI exhibited worse neurobehavioral outcomes compared to healthy controls. Subsequent analyses investigated 70 individuals with chronic, remote, mild TBI (>6 months ago). Using MRI, we assessed microstructural white matter (e.g., fractional anisotropy [FA]) in long white matter tracts vulnerable to TBI and involved in Gf, blood biomarkers, and self-reports of TBI-related symptoms (e.g. nausea, headaches).

Results

Higher Gf scores were associated with lower symptom reports and higher FA in several long white matter tracts in the MD. Blood biomarkers were associated with symptomology and neuroanatomy in varying directions and strengths.
Interestingly, the left dorsal cingulum bundle was implicated in all factors of interest: Gf, symptomology, and blood biomarkers.

Conclusions

This work replicates prior findings suggesting MD pathways are involved in Gf and reveals persistent symptoms even in those with mTBI. We see converging evidence supporting those who report symptoms have lower cognitive scores and have lower white matter integrity than those with higher scores. Further, our results suggest it is likely a complex profile of different TBI-related factors supporting persistent cognitive symptoms.

Source of Funding

Veterans Affairs (VA) and Department of Defense (DoD)
Longitudinal Associations between Internalized Weight Stigma, Physical Activity, and Weight Loss

Presenter: Miriam Sheynblyum
Faculty Mentor: Dr. Rebecca Pearl
Internal Member: Dr. Kathryn Ross
External Member: Dr. David Janicke

Background
Cross-sectional research has demonstrated that internalized weight stigma (IWS) is associated with less engagement in behaviors that promote weight loss, such as physical activity. However, limited research has explored longitudinal relationships between IWS, weight loss behaviors, and weight loss outcomes. This study examined longitudinal associations of changes in IWS, physical activity, and weight during a behavioral weight loss intervention and tested whether physical activity mediated the relationship between IWS and weight change.

Methods
Adults with obesity and high IWS (N=105) were enrolled in a 72-week behavioral weight loss intervention, with or without a weight stigma intervention. Measures of IWS (Weight Bias Internalization Scale [WBIS] and Weight Self-Stigma Questionnaire [WSSQ]), physical activity (accelerometry and self-report), and weight were collected at baseline and weeks 20, 46, and 72. Correlations examined relationships among changes in variables across time points (controlling for treatment condition). Mediation analyses tested whether IWS reductions during the first 20 weeks predicted greater weight loss at weeks 46 and 72 via increased physical activity.

Results
Greater decreases in WSSQ scores were associated with greater percent weight loss at week 20 ($r=.265, p<.05$). Greater decreases in WSSQ scores were also associated with greater increases in daily minutes of moderate-to-vigorous
physical activity (measured in bouts of 20 minutes or more) from baseline to week 46 ($r=-.338$, $p=.009$). Physical activity was not a significant mediator, but initial IWS changes were associated with greater week-46 percent weight loss when controlling for activity ($b=1.94$, SE=0.72, 95% CI=0.57, 3.36).

**Conclusions**

Changes in IWS, physical activity, and weight changes were significantly correlated at specific time points. Early reductions in IWS were associated with greater weight loss at 46 weeks. Further research is needed to investigate how reducing IWS early in treatment may impact physical activity and weight-related outcomes.

**Source of Funding**

K23HL140176 (PI: Dr. Pearl)