THE WARREN ALPERT
Medical School
BROWN UNIVERSITY

Clinical Psychology Training Programs at Brown

Research Accomplishments of Pre-doctoral Training Program Residents 2022-2023

Samuel Acuff *(Brown Research Advisors: **Robert Miranda & Hayley Treloar Padovano**)*

Publications

Carpenter, R., **Acuff, S. F.**, & Meshesha, L. Z. (in press). The Role of Environmental Context and Physical Activity in Prescribed Opioid Use and Pain in Daily Life among Patients With Chronic Low Back Pain. *Annals of Behavioral Medicine*. Online ahead of print.

Acuff, S. F., MacKillop, J., Murphy, J. G. (in press). A contextualized reinforcer pathology approach to addiction. *Nature Reviews Psychology*. Online ahead of print.

Vuchinich, R., Tucker, J. A., **Acuff, S. F.**, Reed, D.D., Buscemi, J., Murphy, J. G. (in press). Matching, Behavioral Economics, and Teleological Behaviorism: Final Cause Analysis of Substance Use and Health Behavior. *Journal of Experimental Analysis of Behavior*. Online ahead of print.

Acuff, S. F., Strickland, J. C., Aston, E., Gex, K. S., Murphy, J. G. (in press). The Effects of Social Context and Opportunity Cost on the Behavioral Economic Value of Cannabis.
Psychology of Addictive Behaviors. Online ahead of print.

Copeland, A., Jones, A., **Acuff, S. F.**, Murphy, J. G., Field, M. (in press). Meaning in life: Investigating protective and risk factors for harmful alcohol consumption. *Addiction Research & Theory*. Online ahead of print. https://doi.org/10.1080/16066359.2022.2134991

Copeland, A., Stafford, T., **Acuff, S. F.**, Murphy, J. G., Field, M. (in press). Behavioral economic and decision-making constructs that discriminate current heavy drinkers versus people who reduced their drinking without treatment. *Psychology of Addictive Behaviors*, Online ahead of print. https://doi.org/10.1037/adb0000873

Acuff, S. F., Boness, C. L., McDowell, Y., Murphy, J. G., Sher, K. J. (in press). Contextual decision making and Alcohol Use Disorder criteria: Delay, loss, and probabilistic discounting. *Psychology of Addictive Behaviors,* Online ahead of print. https://doi.org/10.1037/adb0000867

Gex, K. S., **Acuff, S. F.**, Campbell, K. W., Mun, E., Dennhardt, A. A., Borsari, B., Martens, M. P., Murphy, J. G. (2022). Change in alcohol demand following a brief intervention predicts change in alcohol use: A latent growth curve analysis. Alcoholism: Clinical & Experimental Research, 46(8), 1525-1538. https://doi.org/10.1111/acer.14887

Halladay, J., MacKillop, J. **Acuff, S. F.**, Amlung, M. T., Munn, C., Georgiades, K., *Early substance use initiation and school environment: A multilevel latent class analysis in a large population-representative sample*. Manuscript under review.

Acuff, S. F., Belisario, K., Dennhardt, A. A., Amlung, M. T., Tucker, J. A., MacKillop, J., Murphy, J. G. *Applying Behavioral Economics to Understand Changes in Alcohol Outcomes during the Transition to Adulthood: Longitudinal Relations and Differences by Sex and Race*. Manuscript under review.

Strickland, J. C., **Acuff, S.F.**, *Role of Social Context in Addiction Etiology and Recovery.* Manuscript under review.

Presentations

Halladay, J., MacKillop, J., **Acuff, S.**, Amlung, M., Munn, C., Farag Alla, J., Ogrodnik, M., Sunderland, M., Slade, T., Georgiades, K. (2023, March). Adolescent substance use and the school environment: A series of latent profile/class analyses. In J. Cristello (Chair), *Online and offline social influences on adolescent substance use: Implications for prevention*. 2023 Collaborative Perspectives on Addiction Annual Meeting, Albuquerque, New Mexico, USA.

Acuff, S. F., Strickland, J. C., Aston, E., Soltis, K. E., Murphy, J. G. (2022, August 4-6). The Effects of Social Context and Opportunity Cost on the Value of Cannabis. In J. Strickland (Chair), *Behavioral Economic Methods to Inform Cannabis Public Policy*. 2022 meeting of the American Psychological Association, Minneapolis, MN, United States.

Acuff, S. F. (2022, August 4-6). Securing the National Institutes of Health National Research Service Award (NIH NRSA) F31 fellowship. In S. Acuff (Chair), *If you give a graduate student a grant: how to write a grant as a graduate student and why it matters*. 2022 meeting of the American Psychological Association, Minneapolis, MN, United States.

Acuff, S. F., Strickland, J. C., Tucker, J. A., Murphy, J. G. (2023, March 30). Contextual Changes Leading to Harmful Alcohol Use: A Systematic Review and Meta-analysis of changes in alcohol use during COVID-19. Presented at the 2023 Annual Mind Brain Research Day, Brown University, Providence, RI, USA.

Grant Submissions

National Institute on Alcohol Abuse and Alcoholism Grant (withdrawn due to change in postdoctoral institution) Title: Exploring Differential Effects of Social versus Solitary Drinking Occasions on Subjective Effects and the Efficacy of Naltrexone using Ecological Momentary Assessment.

Honors & Awards

University of Memphis Morton Dissertation Award, 2023

CONTEXTUAL CHANGES LEADING TO HARMFUL ALCOHOL USE: A SYSTEMATIC REVIEW AND META-ANALYSIS OF CHANGES IN ALCOHOL USE DURING COVID-19

SAMUEL F. ACUFF, JUSTIN C. STRICKLAND, JALIE A. TUCKER, JAMES G. MURPHY

In early 2020, governments worldwide instituted varying degrees of stay-at-home orders in response to the growing COVID-19 pandemic. Behavioral economics suggests that substance use is inversely related with the availability of substance-free reinforcers and predicts that these critical measures to reduce viral transmission may result in increases in substance use. The COVID-19 pandemic has resulted in job loss, disconnection from family and friends, and diminished access to natural rewards. At the same time, the instability and uncertainty of the pandemic increases the value of alcohol, which provides immediate pleasure and relief from negative affect. A great deal of empirical studies have examined this since the start of the pandemic, and results suggest a wide heterogeneity of drinking estimates. Studies also explored contextual and individual difference factors predicting changes in use. The outcomes of these studies provide a real-world event for testing the impact of context-related changes in alcohol consumption. We identified peer-reviewed and pre-print articles in PsycINFO, PubMed/MEDLINE, and pre-print archives sites (published or posted by December 20, 2020) that examined changes in alcohol or predictors of alcohol related to the COVID-19 pandemic during the initial lockdowns instituted worldwide. Eighty-nine studies were included with data across 27 countries (mean n=2595.24; median n=1346; range =25- 45,161; aggregate sample n=230,976). Across studies, 26% reported increased, and 24% decreased, alcohol consumption. There was not a significant change in reported consumption (Cohen's d=.06, p=.09). Studies found that children in the home, a *decrease* in income, working remotely, depression, anxiety, ordering alcohol online, low levels of social support, greater duration/intensity of stay-at-home orders, and being a female or in young adulthood was associated with greater likelihood of reporting increases in alcohol consumption. These results highlight the influence of contextual factors on increasing alcohol consumption that should be considered in planning for future crisis events.

Alaa Alhomaizi *(Brown Research Advisor: **Cynthia Battle**)*

Presentations

Alhomaizi, A., Brick, L., Alhomaizi, D., Rossi, R., & Battle, C. (March, 2023) *Investigating the Comorbidity of Depression and Anxiety in Pregnant Women: A Network Analysis.* Poster presented at Mind-Body Research Day, Providence, RI.

Alhomaizi, A. & Alhomaizi, D. (June, 2023) *Connecting the Dots: Using Network Analysis to Investigate the Comorbidity of Depression and Anxiety in Pregnant Women.* Presentation at the Brown University Working Group on Applied Methodology in Psychiatry, Human and Social Behavior and Neurosciences, Providence, RI.

Investigating the Comorbidity of Depression and Anxiety in Pregnant Women: A Network Analysis

Alaa Alhomaizi, MA, Leslie Brick ScD, Dalal Alhomaizi, MSc, Cynthia Battle, PhD.

Introduction: Up to three-quarters of women with perinatal depression have comorbid anxiety, with higher rates of comorbidity typically reported during pregnancy vs the postpartum period. Further, compared to perinatal women dealing with only anxiety or depression, those dealing with both disorders often face a worse prognosis and report more functional impairment and higher rates of suicidality. There are still many unknowns regarding how comorbidity between perinatal depression and anxiety develops and is maintained. In the current study, we aim to use network analysis, which conceptualizes comorbidity as the result of mutually-causal relationships between the symptoms of each disorder, to investigate the nature of comorbidity of antenatal depression and anxiety. Network analysis is an apt approach for the study of comorbidity, as it can identify both how symptoms connect to one another *within* disorders, but also *across* disorders via the identification of "bridge" symptoms. Bridge symptoms, those that connect symptoms from one disorder to the other, can illustrate how one disorder may "spread" to the other to elucidate illness pathways.

Method: Our study is a secondary analysis of baseline data from two randomized controlled trials investigating physical activity and wellness-based interventions for antenatal depression (R01NR014540; R01HD081868). Both targeted pregnant women with healthy singleton pregnancies who were experiencing elevations in symptoms of depression. In light of the similar baseline assessment, we combined the baseline data for a total sample of 326 women. We included three symptom scales: the State-Trait Anxiety Inventory, the Edinburgh Postnatal Depression Scale, and the Patient Health Questionnaire-9. The Statistical Package for the Social Sciences (SPSS) Version 28 was used for descriptive analyses. We will use the statistical software RStudio Version 2022.02.3 to conduct network analysis to investigate the structure of a comorbidity network that includes symptoms of antenatal depression and anxiety. Before estimating the network, we will use network item selection methods (i.e. *goldbricker)* to identify redundant items across our three scales (STAI, EPDS, PHQ-9) to ensure that only theoretically and statistically unique items are included. Next, we will estimate a comorbidity network using a regularized partial correlation network. Finally, we will calculate bridge indices to identify symptom pathways between the two disorders.

Results: Three hundred and twenty-six participants (Mean age = 30.3, SD = 5.13) were included in the analysis. The majority of participants were partnered (73.9%), White (65.3%), non-Hispanic (76.4%) women. Half of the participants were employed (53.4%) and had completed college/bachelors or higher (56.8%). All of the participants were in their second trimester of pregnancy (Mean obstetric weeks = 17.4) and the majority (42.6%) were first time mothers. We completed preliminary *goldbricker* analyses that resulted in reducing the total items in the network from 39 to 23, specifically 10 items were removed from STAI, 6 from the EPDS, and none from the PHQ-9. The next step in the analysis is to run the comorbidity network, the results of which will be presented in the poster.

Implications: Not all symptoms of perinatal mental disorders are equally impactful on maternal functioning and outcomes, with some symptoms associated with more severe outcomes. Network analysis can elucidate specific symptom targets for prevention and treatment. Further, while most evidence-based treatments are focused on one disorder, there is a recent movement towards transdiagnostic treatment approaches— particularly due to high rates of comorbidity across mental disorders. Thus, the bridge symptoms between antenatal depression and anxiety may be pertinent targets for future studies on transdiagnostic interventions with pregnant women.

Shari Brightly-Brown *(Brown Research Advisor: **Megan Pinkston-Camp**)*

Presentations

Brightly-Brown, S. (2023, March). *Resilience to Stressful Life Events in Middle Aged and Older African Americans.* Poster presented at Mind Brain Research Day at Brown University, Providence, RI.

Brightly-Brown, S. (2022, October). *Ethnic and Intersectional Identity as Resilience to Discrimination in LGBTQ+ BIPOC People.* Symposium presentation at the 50th annual meeting of the Association for Behavioral and Cognitive Therapies, New York, NY.

Honors & Awards

Second Place, Diversity Research Category, Mind Brain Research Day, 2023

Diversity Research Award for Proposed Dissertation, University of Hawaiʻi at Mānoa, Diversity Committee, 2023

Resilience to Stressful Life Events in Middle Aged and Older African Americans Shari Brightly-Brown, MA and Frank Floyd, PhD

Abstract

African Americans in later-life have had a lifetime of exposure to both typical stressful life experiences and racial discrimination and are at risk for exposure to stressors related to old age. Religiosity and a sense of purpose in life are potentially two useful protective resources for this community. This study analyzed data from the Health and Retirement Study to test a main effects model and a double moderation model of the relationship between stress, discrimination, protective factors, and later-life well-being, using a series of four-step linear regression analyses. In line with the hypotheses, both stressful life events and discrimination showed negative main effects on later-life well- being. There also was support for a two-staged moderation effect in which high levels of discrimination exacerbated the negative effects of stressful life events on depression, but people with moderate and high levels of religiosity demonstrated resilience to these effects. Purpose in life was associated with positive well-being but was not supported as a moderator.

Catherine Dion *(Brown Research Advisor: **Louisa Thompson**)*

Publications

Dion, C., Tanner, J. J., Formanski, E. M., Davoudi, A., Rodriguez, K., Wiggins, M. E., Amin, M., Penney, D., Davis, R., Heilman, K. M., Garvan, C., Libon, D. J., & Price, C. C. (2022). The functional connectivity and neuropsychology underlying mental planning operations: data from the digital clock drawing test. *Frontiers in Aging Neuroscience, 14*, 868500–868500. https://doi.org/10.3389/fnagi.2022.868500

Thompson, L. I., Kunicki, Z. J., Emrani, S., Strenger, J., De Vito, A., Britton, K., **Dion, C.,** Harrington, K. D., Roque, N., Salloway, S., Sliwinski, M. J., Correia, S., Jones, R. N. (Under Review) Using remote and in-person digital cognitive screening tools to distinguish cerebral amyloid status in cognitively healthy older adults in comparison with the standard MoCA test.

Dion, C., Tanner, J. J., Libon, D. J., Price, C. C. (Under Review) Contributions of Cardiovascular Burden, Peripheral Inflammation, and Brain Integrity on Digital Clock Drawing Performance in Non-Demented Older Adults.

Tanner, J. J., Amin, M., **Dion, C.,** Parvataneni, H.K., Mareci, T., Price, C.C. (Under Review) Perioperative Extracellular Brain Free-Water Changes for Older Adults Electing Total Knee Arthroplasty with General versus Spinal Anesthesia: A Pilot Study.

Frank, B. E., Bandyopadhyay, S., **Dion, C.,** Amini, S., Penney, D., Davis, R., O'Connor, M., Au, R., Rashidi, P., Tighe, P. J., Libon, D. J., Price, C. C. (Under Review) A Network Analysis of Digital Clock Drawing Features for Command and Copy Conditions.

Presentations

Dion, C., Kunicki, Z., Emrani, S., Strenger, J., De Vito, A., Britton, K., Harrington, K., Roque, N., Salloway, S., Sliwinski, M. J., Correia, S., Jones, R., Thompson, L. I. (2023, January) *Remote and in-clinic digital cognitive screening outperforms the MoCA to distinguish cerebral amyloid status among cognitive healthy older adults.* Submitted for presentation at the 2023 annual meeting of the AAIC.

Dion, C., Tanner, J.J., Hernaiz, C., Parvataneni, H.K., Price, C.C. (2023, March) Intra-individual Variability in Processed EEG (Bispectral Index Monitor) *Under General Anesthesia Predicts Postoperative Cognitive Change in Older Adults after Total Knee Arthroplasty.* Poster presentation at 2023 the Mind Brain Research Day.

Dion, C., Tanner, J.J., Libon, D.J., Price, C.C. (2023, February) *Contributions of Cardiovascular Burden, Peripheral Inflammation, and Brain Integrity on Digital Clock Drawing Performance in Non-Demented Older Adults.* Journal of the International Neuropsychological Society: JINS, S1.

Joffe, Y., **Dion, C.,** Matusz, E., Amini, S., Tighe, P.J., Robinson, M.E., Price, C.C. (2023, February) *A Preliminary Investigation of Digital Clock Drawing in Fibromyalgia Patients versus Non-Fibromyalgia Peers.* Journal of the International Neuropsychological Society: JINS, S1.

Matusz, E.F., Frank, B.E., **Dion, C.,** Holmes, U., Joffe, Y., Bandyopadhyay, S., Rashidi, P., Tighe, P.J., Libon, D.J., Price, C.C. (2023, February) *Educational Differences in Digital Clock Drawing for the Command Condition: A Bayesian Network Analysis.* Journal of the International Neuropsychological Society: JINS, S1.

Matusz, E.F., Frank, B.E., **Dion, C.,** Holmes, U., Joffe, Y., Bandyopadhyay, S., Rashidi, P., Tighe, P.J., Libon, D.J., Price, C.C. (2023, February) *Educational Differences in Digital Clock Drawing for the Copy Condition: A Bayesian Network Analysis.* Journal of the International Neuropsychological Society: JINS, S1.

Honors & Awards

Stephanie Nicole Ross Foundation – Award Winner ($1,500) - 2022

Office of Graduate Diversity Initiatives Retention Scholarship (tuition remission) - 2022, 2023

Intra-individual Variability in Processed EEG (Bispectral Index Monitor) Under General Anesthesia Predicts Postoperative Cognitive Change after Total Knee Arthroplasty

Authors: Catherine Dion, M.S.[1], Jared J. Tanner, Ph.D.[1], Carlos Hernaiz, B.S.[1], Hari Parvataneni, M.D.[1], Catherine C. Price, Ph.D.[1]

University of Florida, Gainesville, FL[1]

Background: Previous research shows that clock drawing performance slows for older adults after total knee arthroplasty (TKA; Hizel et al., 2018), and that there are brain-behavior associations with intra- individual variability on a two-channel electroencephalography (EEG)-derived depth of anesthesia monitoring index (bispectral sedation index; BIS; Rampil, 1998) during TKA (Hernaiz et al., 2019). The current study expanded upon these findings by examining how preoperative cognition and intraoperative responses to anesthesia may predict postoperative clock drawing performance. The command condition, where participants are asked to *"draw the face of a clock, put in all the numbers, and set the hands for 10 after 11"*, is a cognitively complex task relying on a wide array of cognitive functions. We hypothesized greater intraoperative intra-individual variability on BIS monitoring would explain a significant portion of variance in four primary latencies on the command condition at 3-weeks postoperatively.

Methods: The present study was conducted at the University of Florida. The final sample included 54 prospectively recruited non-demented patients age 60+ receiving TKA under general anesthesia. All surgeries were performed by the same surgeon using the same anesthesia protocol. Consistent with Hernaiz et al., (2019), BIS variability was studied from tourniquet inflation to tourniquet release, thereby establishing a consistent period of examination. Intra-individual variability was calculated as the squared deviation from the mean BIS value over the duration of measurement. Clock drawing was recorded with digital pen technology and scored with semiautomatic rater-guided software (Souillard-Mandar et al., 2016). Outcome latency variables of interest: 1) total time to completion in seconds (TCT), 2) time prior to setting the first hand in seconds (pre-first hand latency; PFHL), 3) seconds after drawing the clock face to next pen stroke (post-clock face latency; PCFL).

Results: The final participant sample (n=54) was on average 69.81 ± 7.63 years of age, 46.3% female, 11.10% non-white, with 15.19 ± 2.50 years of education, and a Charlson Comorbidity Index (CCI) of 0.53 ± 0.82. At 3-weeks postoperatively, participants took, on average, 6 seconds longer to complete the drawing compared to baseline performance, and 2 seconds longer to set the first clock hand. Correcting for baseline performance, separate hierarchical regressions showed intra-individual EEG-derived variability explained an additional 4.3% of variance in postoperative command TCT [$F(2, 51) = 28.30$, $p < .038$, $R^2 = .54$, $\Delta R^2 = .043$, small effect size], such that those with greater intraoperative BIS variability took longer to complete the drawing to command.

Conclusion: In non-demented older adults undergoing TKA, higher intra-individual BIS variability significantly contributed to post-operative total clock drawing time for the command condition. Our findings are consistent with findings from Hizel et al., (2018), showing clock drawing performance slows for older adults after TKA. This slowing was primarily observed on total time to completion, a measure sensitive to numerous cognitive domains (i.e., processing speed, language, working memory, and declarative memory; Dion et al., 2020). Our findings also show intraoperative BIS fluctuations may partly explain pre-post-operative slowing on clock drawing at 3-weeks post-surgery. Overall, our findings highlight the relevance of 1) pre-surgical cognitive screeners for older adults, a unique service offered at the University of Florida, for post-operative cognitive performance comparison, and the importance of 2) monitoring intra-individual fluctuations during general anesthesia, recorded on an EEG-derived index, as a potential predictor of post-operative cognitive functioning.

Erick Fedorenko *(Brown Research Advisor:* ***John McGeary)***

Publications

Kibbey, M. M., DiBello, A. M., **Fedorenko, E. J**., Farris, S. G. (Under Review). Testing a brief, self-guided values affirmation for behavioral activation intervention during COVID-19. *Journal of Contextual Behavioral Science*

Primack, J., Quinn, M., Carskadon, M., Holman, C., Nazem, S., Kelsey, M., **Fedorenko, E.**, McGeary, S., Brick, L., McGeary, J. (Accepted). Longitudinal assessment of the sleep suicide link in veterans: Methods and study protocol. *Sleep Advances*

Barnwell, P., Rattigan, J.A., Brennan, K., **Fedorenko, E. J.**, Contrada, R. J. (Accepted). Exposure to Conflicting COVID-19 Information in Undergraduates: Implications for Pandemic- related Information-seeking and Concern, Attention, and Cognitive Workload. *Journal of American College Health*.

Fedorenko, E. J., Barnwell, P., Selby, E. A., Contrada, R. J. (2023). Associations Between the Late Positive Potential and PTSD, Anxiety, and Depressive Symptoms Among Trauma-Exposed Undergraduates. *Biological Psychology, 177*. https://doi.org/10.1016/j.biopsycho.2023.108499

Brinkman, H. R., Hoyt, D. L., **Fedorenko, E. J.**, Mendes, W. B., Leyro, T. M. (2023). Cardiac Vagal Control Among Community Cigarette Smokers with Low to Moderate Depressive Symptoms. *Applied Psychophysiology and Biofeedback*. https://doi.org/10.1007/s10484-023- 09580-8

Presentations

Fedorenko, E. J., Barnwell, P., Selby, E. A., Contrada, R. J. (2023, March). *Associations Between the Late Positive Potential and PTSD, Anxiety, and Depressive Symptoms Among Trauma-Exposed Undergraduates.* Poster presented at the 25th Annual Brown University Mind- Brain Research Day, Providence, RI.

Grant Submissions

Center for Neurorestoration and Neurotechnology (CfNN) Seed Project, 2023-2024 Title: Pilot Study of Neurocognitive Markers of Emotion Dysregulation,
Sleep Disruption, and Suicidal Ideation Among Veterans Discharged from Inpatient Psychiatric Care [Funded]

Brown University Clinical Psychology Predoctoral Seed Money Research Grant, 2022-2023 Title: Sleep, Emotion Dysregulation, and Suicidal Ideation Following
Inpatient Psychiatric Hospitalization Among Veterans [Funded]

Honors & Awards

Military Suicide Research Consortium Training Travel Award, 2022

Associations Between the Late Positive Potential and PTSD, Anxiety, and Depressive Symptoms Among Trauma-Exposed Undergraduates

Erick J. Fedorenko, Patrick V. Barnwell, Richard J. Contrada

Background: Trauma exposure can contribute to the maladaptive attentional processes (e.g., less attention to positive stimuli and more attention to negative stimuli) that are associated with symptoms of anxiety, depression, and PTSD (Bar-Haim et al., 2007; Cisler & Koster, 2010; Kimble et al., 2010). Event-related potentials, such as the late positive potential (LPP), can measure the brain's allocation of attention to emotional stimuli using EEG. A greater LPP amplitude to a particular stimulus indicates more attention to that stimulus (Hajcak et al., 2010). The evidence of associations between the LPP and PTSD symptoms has been mixed, with some studies finding an association between PTSD symptoms and greater LPP amplitude to negative stimuli (e.g., Sandre et al., 2018), others finding one between PTSD and reduced LPP amplitude to negative stimuli (e.g., DiGangi et al., 2017), and still other studies finding no association (e.g., Fitzgerald et al., 2016). Studies have largely found evidence the LPP is reduced to all stimulus types (e.g., Sandre et al., 2019), however, a few have found no associations among individuals who experienced trauma (e.g., DiGangi et al., 2018). Research on the LPP and anxiety has predominantly found that anxiety symptoms are associated with greater LPP amplitude to negative stimuli (e.g., MacNamara et al., 2016), but with some failures to replicate these findings (e.g., Weinberg et al., 2016). Notably, across these studies, the relaitonship between psychopatholgy and LPP amplitude to positive and neutral stimuli has remained understudied.
Clarifying these relationships can allow for a better understanding of the etiology of these disorders and possibly assist in treatment development and identification of predictors of treatment response.
Method: Seventy-three trauma-exposed undergraduates (M_{age} = 19.1; 56.2% female) with a range of clinical symptoms (i.e., from subclinical to meeting diagnostic threshold) participated in this study. Self-report measures assessed recent PTSD, anxiety, and depressive symptoms. Based on clinical cutoffs, 26% of participants had a likely PTSD diagnosis, 27.4% of participants had anxiety symptoms of moderate or higher in severity, and 60.3% of participants had a likely depressive disorder diagnosis. Participants viewed a series of negative, positive, and neutral images while EEG data were recorded. The amplitude of the late positive potential (LPP) was quantified for each stimulus type to assess attention to each stimulus type. Hierarchical linear modeling tested valence and symptom main effects, as well as valence by symptom interactions on LPP amplitude, wherein a significant interaction would indicate an association between the LPP amplitude to a specific image valence and psychopathology symptoms.
Results: We found a main effect of valence, F (2, 574) = 4.506, p = 0.011, such that that the LPP amplitude to negative images was higher than that to neutral images, b = 0.699, SE = 0.233, t = 2.999, p = 0.003; however, there were no differences between LPP amplitude to positive and neutral images, b = 0.321, SE = 0.233, t = 1.376, p = 0.169, nor between negative and positive images, b = 0.378, SE = 0.233, t = 1.622, p = 0.105. We also found a valence by depressive symptoms interaction, F (2, 574) = 4.307, p = 0.014, such that greater depressive symptoms were associated with higher LPP amplitude to neutral images, b = -0.223, t = -2.896, p = 0.005, but not to negative images, b = 0.124, t = 1.391, p = 0.169, nor positive images, b = 0.116, t = 1.342, p = 0.184. We found no main effects or interactions for anxiety and PTSD symptoms.
Conclusion: Depressive symptoms might be related to diminished attention to neutral stimuli among trauma-exposed undergraduates. Further investigation of the relationship between the LPP and psychopathology is needed.

Alicia Fenley *(Brown Research Advisor: **Joshua Kemp**)*

Publications

Davis, B. J., **Fenley, A.,** Sanders, A., Ipekci, B., Thibeau, H., Khan, T., ... & Kline, E. (2023). Development of the motivational interviewing for loved ones skills assessment (MILO-SA). *Early Intervention in Psychiatry*.

Hudson, K., **Fenley, A. R.,** Pincus, D. B., & Leyfer, O. (2023). Intensive Cognitive-Behavioral Therapy for Anxiety Disorders in Adolescents: A Case Study. *Clinical Case Studies*, *22*(2), 99- 119.

Kline, E. R., Thibeau, H., Davis, B. J., **Fenley, A.,** Sanders, A. S., Ipekci, B., ... & Keshavan, M. S. (2022). Motivational interviewing for loved ones: Randomized controlled trial of brief training for first episode psychosis caregivers. *Schizophrenia Research*, *250*, 43-49.

Presentations

Fenley, A.R., Langer, D.A., & Pincus, D.B. (2023, April). *Investigating the feasibility, acceptability, and preliminary efficacy of a brief, telehealth-delivered treatment for youth injection phobia.* Poster presented at the annual Mind-Brain Research Day meeting of the Department of Psychiatry and Human Behavior, Brown University, Providence, Rhode Island.

Farley, A.M., Merson, R., Dantowitz, A., Sanchez, A., Hudson, K.E., **Fenley, A.R.,** & Pincus, D.B (2022, November). *What to Do When Worries Ring True: How CBT Clinicians Can Address Realistic Worries Among Youth With Anxiety During Our Challenging Times*. Clinical Roundtable held at the annual meeting of the Association for Cognitive and Behavioral Therapies, New York, New York.

Investigating the feasibility, acceptability, and preliminary efficacy of a brief, telehealth- delivered treatment for youth injection phobia

Alicia Fenley, M.A., David Langer, Ph.D., and Donna Pincus, Ph.D.

Injection fear is one of the most common fears amongst youth and if left untreated, can interfere substantially with youth's medical care, preventing them from being able to receive needed vaccinations, shots, blood tests, and other medical or dental procedures. Treatment for this fear has received comparatively little research attention when compared to other phobias. Preliminary evidence supports the use of an in-person, intensive intervention approach to the treatment of blood-injection-injury (BII) phobia in youth, but such an approach comes with various barriers that limit its overall accessibility, such as the requirement for face-to-face meetings, geographic distance between a family's home and the clinic, and the necessity for collaboration with a nurse or healthcare professional. Telehealth utilizing a video- conferencing platform holds promise in being able to overcome these barriers, but this approach has not yet been tested in samples of youth with BII. The current study used a non-concurrent multiple baseline design to investigate the acceptability, feasibility, and preliminary efficacy of a novel, telehealth- delivered, intensive treatment for youth BII phobia within a clinical sample of 10 youth (M_{age} = 12.5, SD = 2.72) between the ages of 8 and 16. The telehealth-delivered treatment included two sessions: one psychoeducation session and one intensive exposure session, delivered over the course of two weeks. Results strongly supported this combined intervention as being both acceptable and feasible to deliver. The intervention showed a large effect size on injection fear (d= -2.02, CI = -3.12 to -.92) and avoidance (d = -2.30, CI = -3.49 to -1.11) ratings by two-week follow-up. Promisingly, 70% of participants successfully received a vaccine within three months of study completion. Overall, these results show that a combined intensive and telehealth treatment approach appears to be a viable and effective delivery format for treating injection fear in youth.

Erin Ferguson *(Brown Research Advisor: **Lisa Uebelacker**)*

Publications

Ferguson, E., Lewis, B., Teitelbaum, S., Reisfield, G., Robinson, M., & Boissoneault, J. (2022). Longitudinal associations between pain and substance use disorder treatment outcomes. *Journal of Substance Abuse Treatment*, *143*, 108892. https://doi.org/10.1016/j.jsat.2022.108892

Bush, N. J., **Ferguson, E.**, Boissoneault, J., & Yurasek, A. M. (2022). Reliability of an adaptive marijuana purchase task. *Experimental and Clinical Psychopharmacology. 31*(2), 491–497. https://doi.org/10.1037/pha0000606

Ferguson, E., Busch, A.M., Anderson, B., Abrantes, A. M., Pinkston, M.M., Baker, J.V., Stein, M.D., Uebelacker, L.A. (under review). Avoidance/rumination as a predictor of substance use, mental health, and pain outcomes among PLWH. Submitted to *Behavior Therapy*.

Presentations

Ferguson, E. & Boissoneault, J. (2023, March). *Daily pain and negative affect variability as predictors of alcohol and cannabis use following an experimental musculoskeletal pain induction* [Poster presentation]. Brown University Mind-Brain Research Day, Providence, RI.

Ferguson, E. & Boissoneault, J. (2023, June). *Daily pain and negative affect variability as predictors of alcohol and cannabis use following an experimental musculoskeletal pain induction* [Poster presentation]. To be presented at Research Society on Alcoholism Annual Meeting, Bellevue, WA.

Gonzalez, J.C. & **Ferguson, E**. (2023, June). *Making the most of doctoral training: A supportive roundtable for diverse trainees* [Roundtable presentation]. To be presented at Research Society on Alcoholism Annual Meeting, Bellevue, WA.

Honors & Awards

RSA Translational Mechanisms of Behavior Change Satellite Meeting Travel Award, 2023

DAILY PAIN AND NEGATIVE AFFECT VARIABILITY AS PREDICTORS OF ALCOHOL AND
CANNABIS USE FOLLOWING AN EXPERIMENTAL MUSCULOSKELETAL PAIN INDUCTION

Authors: E. Ferguson, J. Boissoneault

University of Florida, Department of Clinical and Health Psychology, Gainesville, FL, 32610, USA

Alcohol and cannabis use are common to manage pain and relieve distress, and co-use of these substances is associated with adverse consequences. Growing evidence suggests that pain can act as an antecedent of substance use, yet understanding of the proximal effects of pain on alcohol and cannabis co-use remains limited. Greater understanding of how pain may motivate co-use is critical, as co-users with pain may be more susceptible to heavier substance use over time and increased rates of negative consequences compared to single substance users. The present study investigated whether variability in daily pain and negative affect predicted alcohol and cannabis use among co-users following an experimental musculoskeletal pain induction (i.e., delayed onset muscle soreness; DOMS) in the biceps. Non-treatment seeking individuals (N=51) reporting alcohol and cannabis use at least twice per week were recruited. Participants were assigned to a DOMS (high-intensity eccentric exercise; n=26) or sham DOMS control condition (low-intensity concentric exercise; n=25) and completed nightly surveys assessing pain with elbow extension and flexion, pain-associated negative affect, and quantity of alcohol (standard drinks) and cannabis (hits) consumed. Surveys were administered for 7 days following the pain induction. The majority of this sample was female (56.9%), White (58.8%), and aged 27.08 years (SD=10.02) on average. Multilevel models using full maximum likelihood were conducted. For alcohol, analyses revealed significant fixed Level 2 effects for mean pain intensity with extension (b= -.08, SE= .03, p=.003) and with flexion (b= .14, SE=.03, p <.001), and significant random effects of Level 1 daily pain intensity with flexion (b= .006, SE= .003, p=.02) and pain-related negative affect (b= .001, SE= .0003, p=.04). No significant fixed and random effects of pain intensity and pain-related negative affect were observed for cannabis (ps>.05). Results suggest that greater pain intensity with flexion predicted heavier alcohol consumption, while greater pain intensity with extension predicted reduced alcohol consumption. There was person-level variation in the effects of daily pain intensity with flexion and negative affect on alcohol consumption. However, DOMS-related pain and negative affect did not meaningfully predict cannabis use over a 7-day period. Future research is needed to consider additional predictor variables and allow for other cannabis units of measurement.

Katlyn Garr *(Brown Research Advisor: **Daphne Koinis-Mitchell**)*

Publications

Garr, K., McQuaid, E. L., Kopel, S. J., Boergers, J., Molera, G., & Koinis-Mitchell, D. Family and child responses to asthma symptoms and associations with sleep in urban children with asthma: Does child weight matter? Manuscript under review at *Children's Health Care.*

Odar Stough, C., Rabin, J., Gates, T., **Garr, K.,** Combs, A., Edwards, Z., Summer, S. S. et al. (in press). Infant obesity prevention programs for underrepresented mothers in a home visiting program: A qualitative and community-engaged needs assessment. *Community Health Equity Research & Policy.*

Combs, A., **Garr, K.,** Bolling, C., Gates, T., Mehl, V., Adams, T., Turner, K., & Odar Stough, C. (in press). Maternal feeding beliefs and behaviors relate to infant diet and appetite. *Maternal and Child Health Journal.*

Presentations

Garr, K., McQuaid, E. L., Kopel, S. J., Boergers, J., Molera, G., & Koinis-Mitchell, D. (2023, March). *Family and Child Response to Asthma Symptoms and Associations with Weight and Sleep Outcomes in Urban Children with Persistent Asthma.* Poster presented at the Society of Pediatric Psychology Annual Conference (SPPAC), Chicago, IL.

Garr, K., McQuaid, E. L., Kopel, S. J., Boergers, J., Molera, G., & Koinis-Mitchell, D. (2023, March). *Family and Child Response to Asthma Symptoms and Associations with Weight and Sleep Outcomes in Urban Children with Persistent Asthma.* Poster presented at Mind Brain Research Day, Brown University, Providence, RI.

Honors & Awards

Mind Brain Research Day, Brown University, Clinical Psychology Resident Award (2nd place), 2023

Family and Child Response to Asthma Symptoms and Associations with Weight and Sleep Outcomes in Urban
Children with Persistent Asthma

Katlyn Garr, MA, Elizabeth McQuaid, PhD, Sheryl Kopel, MSc, Julie Boergers, PhD, Grace Molera, BS, &
Daphne Koinis-Mitchell, PhD

Introduction: Urban children with comorbid asthma and obesity may be at a higher risk for poor sleep. How children and their families' respond to asthma symptoms can contribute to children's sleep health. This study examined associations between family and child response to asthma symptoms and sleep, and differences by race/ethnicity and weight in children.

Methods: Data were collected as part of a larger study (R01HD057220, Koinis-Mitchell, PI), including a 4-week monitoring period with 156 children (ages 7-9; 51.6 % Latino, 33% Black, 15.4% non-Latino White [NLW]). Family/child response to asthma symptoms were assessed by the Family Asthma Management System Scale. Objective sleep was assessed via actigraphy. Asthma and weight were assessed through a clinic visit (42% overweight/obese).

Results: Examples of findings include NLW children having ***longer sleep onset latency*** compared to Latino children, $F=2.81$, $p=.06$. Families from Latino backgrounds were found to have ***more optimal responses to child symptoms*** than Black families ($F=3.00$, $p=.05$). Family and child response to asthma symptoms did not predict sleep outcomes in simple linear regressions. However, ***weight*** moderated associations between 1) ***children's response to asthma symptoms*** and sleep onset latency ($b=-.79$, $p=.05$), and 2) ***overall family asthma management*** and sleep onset latency ($b=-1.20$, $p=.05$) such that for children with higher BMIz in both models, more optimal responses and management of asthma symptoms were related to shorter sleep onset latency.

Conclusions: Children from urban backgrounds with overweight/obesity took a shorter amount of time to fall asleep compared to NLW and healthy weight peers. Optimal child response to asthma symptoms is critical to improve sleep health; this may be particularly important for those with higher BMIs. Interventions that consider children's weight and approaches to responding to children's asthma prior to and during bedtime, may be more effective for improving specific sleep outcomes.

Linda Guzman *(Brown Research Advisors: **Rani Elway & Hannah Frank**)*

Publications

Bridges, A.J., Steggerda, J. C., **Guzman**, L, E., & Ledesma, R. J. (accepted).
Tele-Behavioral Health at a Federally Qualified Health Center Pre- and Peri-COVID-19.
Psychological Services.

Wallace, D. D., Hale, K. L., **Guzman, L. E.,** Stein, G. L., Pérez Jolles, M., Sleath, B. L., & Thomas, K., C.
(revise and resubmit). Facilitators and Barriers to Shared Decision-Making Communication between Latina
Mothers and Pediatric Mental Healthcare Providers. *Health Communication.*

Guzman, L, E., Bridges, A. J., Diaz Benitez, D. E. & Hovey J. D. Acculturation and Depression Help-Seeking
Intentions in Latinx College Students. (under review).

Mapes, A. R., Scafe, M, J, **Guzman, L. E.** & Bridges, A. J. Depression Screening of Integrated Primary Care
Adolescent Patients: Five-Year Results from a Quality Improvement Initiative. (under review).

Presentations

Guzman, L. G., Bridges, A. J. & Hovey, J. D. (2023, March). *Stigma and Mental Health Utilization in a Latinx
and non-Latinx White College Sample.* Presented at the Carney Institute for Brain Science and the Department of
Psychiatry and Human Behavior 25th Annual Mind Brain Research Day.

Honors & Awards

Substance Abuse and Mental Health Services Administration (SAMHSA) fellow of the Month (September 2022)

Elected Student Representative Board Office for the Society for Implementation Research Collaboration (SIRC;
2023-2025)

Stigma and Mental Health Utilization in a Latinx and non-Latinx White College Sample

Linda E. Guzman, M.A.[1] Joseph Hovey, Ph.D. [2] Ana J. Bridges, Ph.D. [3]

The Warren Alpert Medical School of Brown University[1]
The University of Texas at Rio Grande Valley[2] The University of Arkansas[3]

Introduction: Stigma may partially explain why many needing mental health treatment do not seek care (Clement et al., 2015). Studies suggest greater stigmatizing attitudes about help- seeking and lower mental health (MH) service use in minority populations (Alegria et al., 2002; Clement et al., 2015). Among college students, MH needs have risen (Pedrelli et al., 2015), making this a high-needs population. In this study, Latinx and non-Latinx undergraduate students were surveyed to test four hypotheses. Specifically, when compared to non-Latinx White students, we hypothesized: 1) stigma would be higher in Latinx students; 2) Latinx students would have lower rates of MH service use; 3) students who used MH services in the past would have lower rates of stigma; and 4) Differences in MH utilization rates in Latinx vs. non-Latinx students would be mediated by stigmatizing attitudes towards MH help-seeking. **Method:** Participants were 508 students ages 18 and older (112 Latinx and 396 Non-Latinx White).
Participants completed the six-item Stigma-Related Attitudes Questionnaire (Vidourek et al., 2014), answered demographics questions, and responded to an item assessing past year MH service use (yes/no). **Results:** There was no significant difference in stigma scores for Latinx (M = 1.48, SD = .78) and non-Latinx White (M = 1.38, SD = .62 students; t (506) = 1.42, p = .157). An estimated 29.5% of Latinx and 33.7% of non-Latinx White students had used MH services in the past year. MH service utilization rates in the two groups were not significantly different, χ^2 = .70, p = .402. There was a statistically significant difference in stigma scores for students who did (M = 1.30, SD = .54, n = 166) and those that did not (M = 1.45, SD = .70, n = 341) use MH services in the past, t (505) = 2.43 p = .015. The fourth hypothesis was not evaluated because groups did not differ significantly on variables of interest. **Discussion:** A relatively large proportion of students had sought help for a MH concern in the past, and stigmatizing attitudes towards help-seeking were uniformly low in the sample. Furthermore, stigmatizing attitudes and MH service use did not differ by ethnic group membership. This is encouraging, suggesting prior differences in Latinx and non-Latinx groups on stigma and MH service use are decreasing over time with younger generations. On the other hand, holding more stigmatizing attitudes was significantly associated with a reduced likelihood of having previously sought MH care.
Targeting stigma is still critical to increasing MH service utilization.

Anthony Hitch, M.A. *(Brown Research Advisor: **Kirsten Landon, Ph.D.**)*

Publications

Twitty, T.D., **Hitch, A.E.**, Marais, L., Sales, J.M., Sharp, C., Cloete, J., Lenka, M., Kholisa, R., Gause, N.K., Brown, J.L. (2023). Pregnancy and STI/HIV prevention intervention preferences of South African adolescent girls: findings from a cultural consensus modelling qualitative study.
Culture, Health & Sexuality. Advance online publication. http://doi.org/10.1080/13691058.2023.2194357

Hitch, A.E., & Brown, J.L. (2023). Sexual orientation concealment and mental health among Black, Indigenous, and people of color men who have sex with men: A systematic review. (revise-and-resubmit).

Langdon, K.J., **Hitch, A.E.**, Collins, A. B., Becker, S., Beckwith, C., Tashima, K., & Rich, J. (2023). Integrating long-acting injectable treatment to improve medication adherence among persons living with HIV and opioid use disorder. (under review).

Brown, J.L., Capass, A., Revzina, N., Boeva, E., Rassokhin, V., Gutova, L.V., Khalezova, N.B., **Hitch, A.E.**, Twitty, T.D., DiClemente, R.J. (2023). Concordance of ethyl glucuronide, blood alcohol content, and self-reported alcohol use in Russian women with HIV and hepatitis C virus co-infection. (under review).

Presentations

Brown, J.L., Capasso, A., Revzina, N., Boeva, E., Rassokhin, V., Sales, J.M., **Hitch, A.E.,** Twitty, T.D., & DiClemente, R.J., (2022, August*). Comparison of EtG, Blood Alcohol Content, and Self-Reported Alcohol Use in Russian Women with HIV/HCV*. [Poster presentation].
American Psychological Association Convention, Minneapolis, MN.

Confirmatory Factor Analysis of the Drinking Context Scale for Use with African American Young Women who Use Alcohol

Anthony E. Hitch[1], Jennifer L. Brown[2], Ralph J. DiClemente[3]
[1] *Department of Psychology, University of Cincinnati, Cincinnati, OH*
[2] *Addiction Sciences Division, Department of Psychiatry & Behavioral Neuroscience, University of Cincinnati College of Medicine, Cincinnati, OH*
[3] *Department of Social and Behavioral Sciences, New York University, New York, NY*

The Drinking Context Scale (DCS; O'Hare, 1997) was developed to measure one's expectancies concerning the likelihood of excessive alcohol use across various situational contexts. This 9- item questionnaire was validated in a majority White (93.3%) undergraduate sample, which yielded three subscales: a) convivial drinking, b) negative coping, and c) intimate drinking.

While high prevalence of heavy alcohol consumption is a major health concern among young women, alcohol use behaviors among African American women differ from women with different racial identities. The aims of the current study were to a) confirm the factor structure of the DCS in a community-based sample of African American young women who drink alcohol and b) assess concurrent validity with a measure of heavy alcohol consumption (AUDIT-C; Saunders et al., 1993). This study analyzed baseline data from the N-LITEN study, an STI/HIV prevention intervention for African American young women. Participants were women who self-identified as African American ($N = 560$), were 18-24 years old (M age = 20.58, $SD = 1.89$), consumed alcohol ($\geq$ 3x) in the past 90 days, and reported condomless vaginal or anal sex with a male partner in the past 90 days. Confirmatory factor analysis assessed the goodness of fit of the three-factor model. Normed-fit index (NFI), Tucker Lewis index (TLI), comparative fit index (CFI), root-mean-square error of the approximation (RMSEA), and standardized root-mean- square residual (SRMR) were employed. AUDIT-C total score was included as a dependent variable in the final structural equation model (SEM) to determine concurrent validity. A one-, two-, and three-factor model were fitted to the data in the same manner as the original validation study. The three-factor model showed the best model fit, χ^2 (25, $N = 560$) = 103.13, $p < .001$, NFI = 0.97, TLI = 0.96, CFI = 0.98, RMSEA = 0.07, SRMR = 0.04. The SEM model displayed good model fit, χ^2 (51, $N = 560$) = 150.40, p < .001, NFI = 0.96, TLI = 0.97, CFI = 0.97, RMSEA = 0.06, SRMR = 0.04, such that higher DCS score was associated with greater severity of heavy alcohol consumption, $B = 0.56$, $SE = 0.04$, $p < .001$, accounting for 61.6% of the variance in AUDIT-C scores. This study confirmed the three-factor structure of the DCS and moderate concurrent validity with the AUDIT-C was found within this sample suggesting appropriateness for use among African American young women.

Natalie Keirns *(Brown Research Advisor: **Elena Salmoirago-Blotcher**)*

Publications

Keirns, N.G., Ouaddi, S., Dunsinger, S., Locatelli, G., Gathright, E.C., Black, E., Tripolone, J., Breault, C., Riegel, B., Cohen, R., & Salmoirago-Blotcher, E. (in press). Mind Your Heart-II: Protocol for a behavioral randomized controlled trial of mindfulness training to promote self-care in patients with co-morbid heart failure and cognitive impairment. *Contemporary Clinical Trials*.

Layman, H.M., **Keirns, N.G.**, Hawkins, M.A.W., & Nagata, J.M. (2022). Does seeking the brawns impact the brain?: An investigation of muscularity-oriented disordered behaviors and cognitive function. *Body Image*. *42*, 307-314.

Keirns B., **Keirns N.**, Tsotsoros C., Sciarrilo C., Medlin A., Teague K., Hawkins M., & Emerson S. Adverse childhood experiences and obesity linked to indicators of gut permeability and inflammation. (under review).

Presentations

Keirns, N.G., Ouaddi, S., Black, E., Gathright, E.C., Lee, S.Y., Tripolone, J., Breault, C., Burg, M., & Salmoirago-Blotcher, E. (2023, March). *Psychological distress and stress reactivity in women with takotsubo syndrome.* Poster presentation at Annual Conference of American Psychosomatic Society, San Juan, Puerto Rico.

Keirns, N.G., Ouaddi, S., Black, E., Gathright, E.C., Lee, S.Y., Tripolone, J., Breault, C., Burg, M., & Salmoirago-Blotcher, E. (2023, March). *Psychological distress and stress reactivity in women with takotsubo syndrome.* Poster presentation at Annual Mind-Brain Research Day, Providence, Rhode Island.

Psychological Distress and Cardiovascular Responses to Acute Mental Stress in Adults with Takotsubo Syndrome

Natalie Keirns, MS, Sara Ouaddi, Emma Black, BS, Emily Gathright, PhD, Sharon Lee, PhD, Janice Tripolone, MS, Christopher Breault, BS, Matthew Burg, PhD, Elena Salmoirago-Blotcher, MD, PhD

Abstract Body

Takotsubo syndrome (TS) is an acute, reversible systolic heart failure often triggered by stress in post-menopausal women. Psychological distress has been associated with altered cardiovascular stress reactivity in healthy populations, but no study has examined this relationship in women with TS. This is an exploratory analysis of data collected for an ongoing prospective study of patients with a new validated diagnosis of TS Because of the small sample size, our goal was to examine the direction of each association and effect sizes, rather than hypothesis testing. We predicted that TS women with higher (vs. lower) symptoms of psychological distress would show an altered blood pressure (BP) response to stress.

At baseline, participants (N=27) self-reported symptoms of depression and anxiety (Hospital Anxiety and Depression Scale; >7=high), PTSD (PTSD Checklist-Civilian; >30=high), and stress (Perceived Stress Scale- 10; median split). At a second visit 2 weeks later, participants underwent a standardized mental stress protocol. BP (mmHg) was measured at baseline and every 5 minutes during mental stress (ie, reactivity; 10 minutes) and recovery (20 minutes) periods according to standard procedures. The area under the curve-increase (AUCi) of systolic (SBP) and diastolic (DBP) over 7 measurements including reactivity and recovery periods was calculated as an indicator of the cardiovascular stress response. Differences in SBP and DBP AUCi between those with high vs. low scores on each psychological distress measure were analyzed using ANCOVAs (adjusting for age).

Participants were older (64±9 years), mostly white (93%) adults (96% women) with a new TS episode. All analyses were non-significant (p's>.05). For SBP, greater AUCi was observed in participants with high (vs low) symptoms of anxiety (η_p^2=.02) and stress (η_p^2=.04), with small effect sizes. For DBP, greater AUCi was observed in those with high (vs low) symptoms of anxiety (η_p^2=.01) and PTSD (η_p^2=.06), with small-to-medium effect sizes. No meaningful effect sizes were observed for differences in SBP AUCi between those with high vs low symptoms of depression or PTSD, or for differences in DBP AUCi between participants with high (vs low) symptoms of depression or stress.

These preliminary findings suggest that greater psychological distress may be associated with impaired cardiovascular recovery following acute stress in women with TS, as evidenced by greater AUCi and sustained BP elevations over recovery timepoints. This exploratory finding, which is novel in the TS literature, should be confirmed in larger studies. Future research should additionally examine the clinical implications of differential cardiovascular responses to stress in women with TS and high psychological distress.

Sin-Ying Lin *(Brown Research Advisor: Mark Zimmerman)*

Publications

Zimmerman, M., & **Lin, S. Y.** (2023). Nonresponder Does not Mean Not Better: Improvement in Nonsymptom Domains in Complex Depressed Patients Who are Not Symptomatic Responders to Intensive Treatment. *Psychiatry Research*, 115162.

Zimmerman, M., & **Lin, S. Y.** (in press). 50% Improvement: Should Treatment Response Go Beyond Symptom Improvement When Evaluating the Treatment of Depression? *Journal of clinical psychiatry*

Zimmerman, M., & **Lin, S. Y.** (in press). Better than we think: Is the treatment of depressed patients more effective than we think? *Annals of Clinical Psychiatry*

Lin. S.-Y., Khoo, S., & Zimmerman, M. (under review). Does Borderline Personality Disorder Affect Treatment Trajectories of Patients with Major Depressive Disorder?

Presentations

Lin. S.-Y., Khoo, S., & Zimmerman, M. (2023, April 21-22). *Does Borderline Personality Disorder Affect Treatment Trajectories of Patients with Major Depressive Disorder?* [Conference poster]. North American Society for the Study of Personality Disorders 2023 Conference, Waltham, MA.

Lin. S.-Y., Khoo, S., & Zimmerman, M. (2023, April 21-22). *Does Borderline Personality Disorder Affect Treatment Trajectories of Patients with Major Depressive Disorder?* [Conference poster]. Mind-Brain Research Day, Brown University, Providence, RI.

Khoo, S., Yun J., **Lin, S.-Y.**, Zimmerman, M. (2023, April 21-22). *Do AMPD domains predict outcomes in individuals with major depressive disorder?* [Conference poster]. North American Society for the Study of Personality Disorders 2023 Conference, Waltham, MA.

Lin, S.-Y., Bliton, C. F., Eaton, N. R. & Picus, A. L. (2022, November 17-20). *Comparing the clinical utility of the dimensional and categorical models of personality pathology: Prediction of treatment outcome trajectories in a naturalistic clinical setting.* [Conference poster]. ABCT 2022 56th Annual Convention, New York City, NY.

Honors & Awards

Best Poster Award of the North American Society for the Study of Personality Disorders 2023 Conference

Does Borderline Personality Affect Treatment Trajectories of Patients with Major Depressive Disorder?

Sin-Ying Lin, MA, Shereen Khoo, Ph.D., Mark Zimmerman, Ph.D.

Background
Borderline personality disorder (BPD) is often comorbid with major depressive disorder (MDD) and is commonly viewed as a negative indicator of treatment outcomes in depression. However, research on such adverse predictive effects of BPD on treatment outcomes showed mixed results and primarily focused on single-point comparisons (e.g., pre-post comparisons), which may be insufficient to capture the mood fluctuation characterizing BPD. The actual effects of comorbid BPD on treatment trajectories of patients with MDD remain understudied.

Objective
The current study aimed to investigate the effects of BPD on the treatment trajectories in patients who primarily sought treatment for MDD.

Method
We collected data from a partial hospital program setting where assessments on depressive symptoms, depression-related functioning, and general well-being were administered daily as part of the clinical routine. We estimated a series of mixed-effects models to capture the effects of BPD on treatment trajectory parameters (i.e., intercepts and slopes) of three outcome domains: depressive symptoms, depression-related functioning, and general well-being. We allowed individual variance in intercepts and slopes in these models and controlled for relevant clinical presentations of BPD, such as the number of comorbid psychiatric conditions.

Results
Our results showed that BPD was associated with higher severity of depressive symptoms and worse depression-related functioning and general well-being at intake. Comorbid BPD also predicted slower improvement in depressive symptoms throughout treatment. However, when accounting for the number of psychiatric comorbidities, BPD was only independently associated with higher initial severity of depressive symptoms. In contrast, the number of comorbidities better explained the other observed adverse effects of BPD on treatment trajectories.

Conclusion
Although MDD patients with comorbid BPD tend to show higher initial severity and slower improvement in treatment, our results suggest that the high psychiatric comorbidities in BPD, instead of personality pathology per se, is a more precise indicator of treatment trajectories of patients with MDD.

Daniel Mackin *(Brown Research Advisor: **Mark Zimmerman**)*

Publications

Zimmerman, M., & **Mackin, D. M.** (under review). Identifying difficult to treat depression before the patient is treatment resistant. *Psychiatry Research.*

Zimmerman, M., & **Mackin, D. M.** (under review). A psychometric evaluation of the DSM-5 Mixed Features Criteria in Depressed Patients. *Journal of Affective Disorders.*

Zimmerman, M., & **Mackin, D. M.** (under review). How Many Criteria Should be Required to Define the DSM-5 Mixed Features Specifier in Depressed Patients? *Journal of Clinical Psychiatry.*

Zimmerman, M., & **Mackin, D. M.** (under review). Identifying the DSM-5 Mixed Features Specifier in Depressed Patients: A Comparison of Measures. *Journal of Affective Disorders.*

Zimmerman, M., & **Mackin, D. M.** (under review). Reliability and Validity of the DSM-5 Mixed Features Specifier Interview. *Bipolar Disorders.*

Calentino, A. E., Dicky, L., **Mackin, D. M.**, Kessel, E. M., Kujawa, A., Klein, D. N. (under review). Electrocortical Reactivity to Affective Stimuli and Adolescent Anxiety Symptoms: The Moderating Role of Stress. *Journal of Anxiety Disorders*.

Mackin, D. M., Goldstein, B. L. Mumper, E., Kujawa, A. J., Kessel, E., Olino, T. M., Nelson, B. D., Hajcak, G., & Klein, D. N. (2023). Longitudinal Associations Between Reward Responsiveness and Depression Across Adolescence. *Journal of the American Academy of Child & Adolescent Psychiatry.* Advance online publication. doi: 10.1016/j.jaac.2022.11.013

Zimmerman, M., & **Mackin, D. M.** (2023). Reliability and Validity of the Difficult to Treat Depression Questionnaire. *Psychiatry Research*, 324, 115225. doi: 10.1016/j.psychres.2023.115225.

Silver, J., **Mackin., D. M.**, Bufferd, S. J., Dougherty, L. R., Goldstein, B. L., Carlson, G. A., Klein, D. N. (2023). Tonic and Phasic Irritability in 6-year-old-Children: Differential Correlates and Outcomes. *Journal of Child Psychology and Psychiatry*. doi:10.1111/jcpp.13688

Mackin, D. M., Finsaas, M. C., Nelson, B. D., Perlman, G., Kotov, R., & Klein, D. N. (2022). Intergenerational Transmission of Depression and Anxiety Disorders: A Mediational Path Model Via Youth Personality. *Journal of Psychopathology and Clinical Science*, 131(5), 467. doi: 10.1037/abn0000759

Black, S. R., Scalco, M. D., **Mackin, D. M.**, Shirtcliff, E. A., & Klein, D. N. (2022). Longitudinal Patterns of Neuroendocrine Coupling from Middle Childhood to Early Adolescence. *Developmental Psychobiology,* 64, e22340. doi: 10.1002/dev.22340

Zimmerman, M., Thompson, J., & **Mackin, D. M.** (2022). The relative importance of diagnostic specific and transdiagnostic factors in evaluating treatment outcome of depressed patients. *Psychiatry Research*, 317, 114883. Advance online publication. DOI: 10.1016/j.psychres.2022.114883

Presentations

Mackin, D. M., Goldstein, B. L. Mumper, E., Kujawa, A. J., Kessel, E., Olinio, T. M., Nelson, B. D., Hajcak, G., & Klein, D. N. (2022, March). *Longitudinal Associations Between Reward Responsiveness and Depression Across Adolescence.* In K. L. Burkhouse (Chair), The Role of Brain-Based Correlates of Reward and Threat Processing in the Prediction of Internalizing Psychopathologies across Development. Symposium presented at the annual meeting of the Anxiety and Depression Association of America.

Mackin, D. M., & Zimmerman, M. (2023, March). *Reliability, Validity, and Predictive Utility of the Difficult to Treat Depression Questionnaire.* Poster presented at the Annual Mind Brain Research Day at Brown University, Providence, R.I.

Mackin, D. M., Goldstein, B. L. Mumper, E., Kujawa, A. J., Kessel, E., Olinio, T. M., Nelson, B. D., Hajcak, G., & Klein, D. N. (2022, September). *Longitudinal Associations Between Reward Responsiveness and Depression Across Adolescence*. Poster presented at the 35th meeting of the Society for Research in Psychopathology, Philadelphia, P.A.

Calentino, C., Dickey, L., **Mackin, D. M.**, Kessel, E., Kujawa, A. J., Klein, D. N. (2022, September). *Electrocortical Reactivity to Negative Stimuli and Adolescent Anxiety Symptoms: The Moderating Role of Peer and Family Stress*. Poster presented at the 35th meeting of the Society for Research in Psychopathology, Philadelphia, P.A.

Reliability, Validity, and Predictive Utility of the Difficult to Treat Depression Questionnaire

Daniel M. Mackin, M.A. & Mark Zimmerman, M.D.

Background: During the past two decades, there has been interest in defining, identifying, and investigating treatments for individuals with *treatment resistant depression* (TRD). While there has been variability in the definition of TRD, it is common to classify depressed patients who have not responded to multiple pharmacologic treatment efforts as treatment resistant.

Recently, it has been recommended that the TRD be reconceptualized and renamed *difficult to treat depression* (DTD). This shift emphasizes the importance of a broader conceptualization that includes consideration of longitudinal course, the number and type of prior treatment efforts, and clinical, social, and biological risk factors that provide a more comprehensive assessment and make identification of DTD possible prior to failed medication trials. Most importantly, DTD shifts the focus of treatment from a curative/remission model to a disease management model that emphasizes improved functioning and quality of life while also striving for optimal symptom control rather than elimination. The current study investigates the development and validation of the first self-report scale of DTD, the *Difficult to Treat Depression Questionnaire* (DTDQ), which was designed to prospectively identify patients with DTD in clinical practice.

Method: Nine hundred twenty depressed patients completed the DTDQ. A small subset of patients completed the scale a second time, while a larger subset of patients also completed the Remission from Depression Questionnaire (RDQ) at admission and discharge from a partial hospital program. The RDQ provides a measure of overall symptoms/functioning, as well as measures of depressive symptoms, non-depressive symptoms, coping ability, positive mental health, functional impairment, and quality of life. A subset of patients also completed a diagnostic interview at admission to assess diagnostic status and obtain additional information on treatment history and overall functioning.

Results: The DTDQ demonstrated excellent internal consistency and test-retest reliability. Greater scores on the DTDQ were associated with greater symptomatology and worse functioning on all RDQ subscales at admission, discharge, and discharge after controlling for scores at admission. Both the total DTDQ and the number of prior failed medication trials, the metric primarily used to classify TRD, predicted worse outcomes. However, the DTDQ continued to be significantly associated with outcomes after controlling for the number of failed trials, whereas the number of failed trials did not predict outcome after controlling for DTDQ scores. DTDQ scores were then dichotomized to identify a group (25% of our partial hospital sample) with DTD. Patients with DTD again demonstrated greater symptomatology and functioning on all RDQ scores at admission and discharge. When examining the relationship between DTD and RDQ scores at discharge, controlling for RDQ scores at admission, individuals with DTD demonstrated worse overall symptomatology/functioning, greater levels of depressive and non-depressive symptoms, and worse coping ability. When examining the diagnostic profiles of patients meeting criteria for DTD, they were more likely to meet criteria for dysthymia, substance use disorders, anxiety disorders, and personality disorders, but not alcohol use disorders, impulse control disorders, eating disorders, or ADHD. Patients with DTD were also more likely to have a history of inpatient and partial hospitalizations, to have missed work due to psychiatric reasons, worse current and long-term psychosocial functioning, and worse current overall functioning.

Conclusions: The DTDQ is a reliable and valid measure of DTD and has good predictive validity. The DTDQ captures important prognostic information related to DTD beyond that accounted for by the number of medication trial failures, the most used metric of TRD.

Sara Nolin *(Brown Research Advisor: **Laura Korthauer**)*

Publications

Norling, M., Bennett, A., Crowe, M., Long, D.L., **Nolin, S.A.**, Myers, T., Del Bene, V.A., Lazar, R.M., Gerstenecker, A. Longitudinal Associations of Anticholinergic Medications on Cognition and Possible Mitigating Role of Physical Activity. *Journal of the American Geriatrics Society.* (in press).

Nolin, S.A., Cowart, H., Raichlen, D.A., Franchetti, M.K., Rezaei, R.F., Merritt, S., Jessup, C.J., Geldmacher, D., Hishaw, G.A., Alperin, N., Trouard, T.P., Wadley, V.G., Levin, B.E., Woods, A.J., Rundek, T., Cohen, R.A., Alexander, G.E., Visscher, K.M. (2022) Validity of the NIH Toolbox Cognitive Battery in a healthy oldest-old 85+ sample. *Journal of the International Neuropsychology Society,* 1-10. doi:10.1017/S1355617722000443.

McDonough, I., **Nolin, S.A.**, Visscher, K.M. (2022) 25 Years of Neurocognitive Aging Theories: What Have We Learned? *Frontiers in Aging Neuroscience.* 14:1002096. doi: 10.3389/fnagi.2022.1002096

Nolin, S.A., Faulkner, M.E., Stewart, P., Raichlen, D.A., Bharadwaj, P.K., Franchetti, M.K., Rezaei, R.F., Merritt, S., Jessup, C.J., Porges, E.S., Geldmacher, D., Hishaw, G.A., Alperin, N., Trouard, T.P., Wadley, V.G., Levin, B.E., Woods, A.J., Rundek, T., Cohen, R.A., Alexander, G.E., Visscher, K.M. Network Segregation Predicts Processing Speed in the Cognitively Healthy Oldest-old. (under review).

Parupura, V., Caceres, H., **Nolin, S.A.**, Raichlen, D.A., Franchetti, M.K., Rezaei, R.F., Merritt, S., Jessup, C.J., Geldmacher, D., Hishaw, G.A., Alperin, N., Trouard, T.P., Wadley, V.G., Levin, B.E., Woods, A.J., Rundek, T., Cohen, R.A., Alexander, G.E., Visscher, K.M. The relationship between hippocampal structure and episodic memory in the oldest-old. (under review).

Presentations

Nolin, S.A., Korthauer, L., Gemelli, Z. (2023, March) *Relationship between Cognition and EEG Resting State Brain Network Organization in Healthy Older Adults.* Poster presentation at Mind Brain Research Day, Providence, RI.

Nolin, S.A., Faulkner, M.E., Stewart, P., Raichlen, D.A., Bharadwaj, P.K., Franchetti, M.K., Rezaei, R.F., Merritt, S., Jessup, C.J., Porges, E.S., Geldmacher, D., Hishaw, G.A., Alperin, N., Trouard, T.P., Wadley, V.G., Levin, B.E., Woods, A.J., Rundek, T., Cohen, R.A., Alexander, G.E., Visscher, K.M. (2023, February) *Fronto-parietal Network Segregation Predicts Maintained Cognition in the Cognitively Healthy Oldest-old (85+): evidence for dedifferentiation.* Poster presentation at INS, San Diego, CA.

Grant Submissions

Brown Resident Grant Award, 2022-2023
Title: Resting State Brain Network Dynamics with Electroencephalography (EEG) in middle- aged individuals with family history of Alzheimer's Disease

Relationship between Cognition and EEG Resting State Brain Network Organization in Healthy Older Adults

Sara Nolin, MA, Laura Korthauer, PhD, and Zachary Gemelli

Resting state electroencephalography (rsEEG) measures electrical signals from the brain through the scalp. Prior work has shown that slowing of EEG activity and decreased brain-wide synchronization of activity at rest could be markers for early AD and correlate with other AD biomarkers. Prior research with relatives of AD patients (50-65 years old) has shown hypersynchronization in brain networks. This increased coupling may reflect the damaging excitotoxicity that precipitates network dysfunction and loss of synchronization in early AD. We measured brain synchronization in cognitively normal older adults enriched for risk for AD to investigate 1) the overall structure of brain networks and 2) how brain network structure relates to cognitive functioning.

This study was conducted with rsEEG data from 24 cognitively normal older adults (60-79 years old). EEG data was collected using a standardized resting state protocol (64 active scalp electrodes with noise subtraction circuits mounted in an electrode cap, amplified by battery-operated amplifiers with a gain of 46K through a bandpass filter of 0.01 – 100 Hz). Participants were asked to sit at rest with their eyes open and fixated on a cross in the center of a computer screen for 5 minutes. EEG was continuously acquired (rate 500 Hz) and stored for offline analysis. Data cleaning with EEGLAB followed standard procedures: 1) independent components analysis (ICA) to identify and remove common noise artifacts such as eye blinks and eye movements; 2) bandpass filtering; 3) 2-second epoching. Synchronization likelihood is a measure of the degree of correspondence between two signals on a scale of 0 to 1, where higher values indicate higher coupling between a pair of signals. These values were calculated for every signal pair, producing a synchronization matrix. Using this matrix we then analyzed brain network organization using the modularity metric, which describes how divisible the signals are into distinct networks. The HERMES toolbox was used to calculate synchronization likelihood and the Brain Connectivity Toolbox was used to calculate modularity. Pearson correlation was used to evaluate the relationship between modularity and cognitive variables including participants' performance on Trails B, Digits Backwards, WAIS-IV Coding, RAVLT delayed recall, and BVMT-R delayed recall.

Results indicated no statistically significant relationship between modularity and the cognitive variables. Follow-up analysis will include analyzing other metrics of brain organization, investigating specific brain regions such as those related to the fronto-parietal network, and comparing this sample of healthy older adults to healthy young adults, middle-aged adults and individuals with MCI. We also plan to investigate the impact of APOE status and dementia family history on brain network organization.

Lesley Norris *(Brown Research Advisor: **Kristen Benito**)*

Publications

Norris, L.A., Rabner, J.C., Storch, E.A., Wood, J.J., Kerns, C., Lewin, A.B., Small, B.J., & Kendall, P.C. (2022). Idiographic coping outcomes in youth with autism spectrum disorder and co-occurring anxiety: results from the TAASD study. *Journal of Autism and Developmental Disorders*. https://doi.org/10.1007/s10803-022-05716-7

Stanojevic, M., **Norris, L. A.,** Kendall, P. C., & Obradovic, Z. (2022, December). Predicting anxiety treatment outcomes with machine learning. In *2022 21st IEEE International Conference on Machine Learning and Applications (ICMLA)* (pp. 957-962). IEEE.

Norris, L.A., Rabner, J.C., Crane, M.E., Cervin, M., Ney, J.S., Benito, K.G., Kendall, P.C. & Frank, H.E. (invited for resubmission). What caregivers like the most (and least) about cognitive behavioral therapy for youth anxiety: A mixed methods approach.

Rabner, J., **Norris, L.A.,** Crane, M.E., Klugman, J., & Kendall, P.C. (under review). Impact of youth and caregiver worries about treatment on therapeutic process factors and posttreatment outcomes.

Presentations

Norris, L.A., Stanojevic, M., Obradovic, Z., & Kendall, P.C. (2022, November). *Using machine learning to predict treatment outcome for youth with anxiety*. Poster presented at the Association for Behavioral and Cognitive Therapies Annual Conference, New York, NY.

Norris, L.A., Rabner, J.C., Crane, M.E., Cervin, M., Ney, J.S., Benito, K.G., Kendall, P.C. & Frank, H.E. (2023, March). *What caregivers like the most (and least) about cognitive behavioral therapy for youth anxiety: A mixed methods approach*. Poster presented at Mind Brain Research Day, Providence, RI

Grant Submissions

Brown Resident Grant Award, 2022-2023
Title: Understanding the decision to end treatment

What Caregivers Like the Most (and Least) About Cognitive Behavioral Therapy for Youth Anxiety: A Mixed Methods Approach

Lesley A. Norris, M.A., Jonathan C. Rabner, M.A., Margaret E. Crane, M.A., Matti Cervin, Ph.D., Julia S. Ney, M.A. Kristen G. Benito, Ph.D., Philip C. Kendall, Ph.D.
& Hannah E. Frank, Ph.D.

Cognitive behavioral therapy (CBT) is an efficacious therapy for youth anxiety disorders.

Caregivers are key stakeholders in youth therapy, and their feedback on treatment can help to inform intervention personalization. The current mixed-methods study applied a systematic inductive thematic analysis to identify themes among most- and least-liked CBT features reported by caregivers using open-ended responses on the Client Satisfaction Questionnaire (CSQ-8). The purposive sample included 139 caregivers of youth ages 7-17 (M = 12.21, SD = 3.05; 60% female; 79.1% Caucasian, 6.5% Black, 2.9% Asian, 2.2% Hispanic, 9.4% Other) with principal anxiety diagnoses who completed 16-sessions of CBT. CSQ-8 quantitative satisfaction scores (M = 29.18, SD = 3.30; *range*: 16-32) and survey-based response rates (responders n = 93, 67%) were high. Most-liked treatment features included: coping skills (i.e., exposure, understanding/identifying anxiety, rewards, homework), therapist factors (interpersonal style/skill, relationship, accessibility), parent involvement, one-on-one time with a therapist, structure, consistency, and personally tailored treatment. Least-liked treatment features included: questionnaires, cost/payment logistics, telehealth, distance, need for more sessions, non-anxiety concerns not addressed, more parent involvement, and aspects of exposure tasks. Proportional frequencies of most- and least-liked themes differed by responder status (e.g., responders cited exposure and homework as most-liked more frequently).

Miguel Nuñez *(Brown Research Advisor: **Christopher Houck**)*

Publications

Nuñez, M., Beal, S. J., Hamik, E., Nause, K., & Greiner, M. (under review). Foster youth's resilience and wellbeing during placement changes. *Child Care in Practice.*

Odar Stough, C., Rabin, J., Gates, T., Garr, K., Combs, A., Edwards, Z., Summer, S. S. Woo, J. G., Folger, A. T., Ammerman, R. T., **Nuñez, M.,** Berndsen, J., Clark, M. J., Frey, J. R., & Vaughn, L. M. (in press). Infant obesity prevention programs for underrepresented mothers in a home visiting program: A qualitative and community-engaged needs assessment. *Community Health Equity Research & Policy.*

Zhen-Duan, J., **Nuñez, M.,** Solomon, M. B., Geracioti, T., & Jacquez, F. (2023). Adverse childhood experiences and alcohol use among U.S.-born and immigrant Latinx youth: The roles of social support and stress hormones. *Journal of Child and Family Studies.* Advance online publication. https://doi.org/10.1007/s10826-023-02550-y

Beal, S. J., **Nuñez, M.,** & Greiner, M. V. (2023). The impact of protective custody and out-of- home care on the health and development of adolescents and young adults. In L. J. Crockett, G. Carlo, & J. E. Schulenberg (Eds.), *The handbook of adolescent and young adult development.* American Psychological Association.

Presentations

Nuñez, M., Houck, C., & Rizzo, C. (2023, March 30). *Does self-regulation protect against recidivism? A longitudinal study with juvenile justice-involved females* [Poster presentation]. The Warren Alpert Medical School of Brown University's 25th Annual Mind Brain Research Day, Providence, RI, United States.

Nuñez, M., Houck, C., & Rizzo, C. (2023, March 16-18). *Does self-regulation protect against recidivism? A study with juvenile justice-involved females* [Poster presentation]. American Psychology-Law Society (AP-LS) Annual Conference, Philadelphia, PA, United States.

Does Self-Regulation Protect Against Recidivism?
A Longitudinal Study with Juvenile Justice-Involved Females

Miguel Nuñez[1,2], Christopher Houck[1,2], & Christie Rizzo[2,3]

[1] Brown University, [2] Bradley Hasbro Children's Research Center, [3] Northeastern University

Abstract

The present study aimed to identify whether type of childhood maltreatment, (emotional abuse, physical abuse, sexual abuse, emotional neglect and physical neglect), predicted recidivism beyond demographic factors and previous justice system involvement. Further, we analyzed whether short- and long-term self-regulation serve as protective factors against recidivism. Non-incarcerated, justice- involved females were assessed at baseline and 12-month follow-up. Findings suggest that the associations between childhood maltreatment and recidivism, as well as self-regulation and recidivism, dissipate when the number of charges a youth has at baseline are taken into consideration.

Summary

Childhood maltreatment increases the likelihood of juvenile justice (JJ) system involvement (Ford, Chapman, Mack & Pearson, 2006; Vitopoulos et al., 2019). However, the findings between maltreatment and recidivism, particularly in females, are inconsistent and in need of clarification (Archwamety and Katsiyanis, 1998; Conrad et al., 2014; Minor, Wells & Angel, 2008). Most research on recidivism has largely neglected investigating protective factors, such as self-regulation. Self- regulation is associated with prosocial activities (Moilanen, 2007), whereas deficits in self-regulation are associated with antisocial behavior (Fine et al., 2018).

The present study aimed to better understand risk and protective factors that predict recidivism among females involved with the JJ system. We utilized data from a larger study of non-incarcerated, justice-involved females (i.e., DateSMART; Rizzo et al., in press). The larger study was an intervention targeting underlying skill deficits linked to domestic violence and sexual risk behavior in adolescent females. Participants' assigned condition was included in analyses of the present study to control for potential intervention impact. Potential confounding variables on recidivism were also included in the analyses (i.e., age, ethnic/racial status, and previous involvement with the JJ system; Bishop, Leiber & Johnson, 2010; Claus, Vidal & Harmon, 2018; Garcia-Gomis, Villanueva & Jara, 2017; Kalist, Lee & Spurr, 2015).

Participants (N = 245; 26.5% non-Hispanic White, 71.8% youth of color) were followed for 12- months after baseline and information about new charges during the follow-up period were collected.
Participants were asked to self-report their race, ethnicity, and age. Experiences of maltreatment (physical, sexual, and emotional abuse, as well as physical and emotional neglect) and self-regulation (short-term and long-term) were captured through validated questionnaires. Specifically, we utilized the Childhood Trauma Questionnaire – Short Form (CTQ – SF; Moilanen, 2007) and the Adolescent Self- Regulatory Inventory (ASRI; Bernstein et al., 2003). Recidivism was indicated if youth acquired charges between baseline and follow-up. We also captured the total number of charges a youth had acquired by the 12-month follow-up. Previous JJ involvement arose as the only significant predictor of recidivism and number of charges at follow-up in our multivariate models. Notwithstanding, our results highlight the importance of prevention work with court-involved females, such as diversion programs which have shown to be effective (Wilson & Hoge, 2013).

Roselyn Peterson *(Brown Research Advisor:* **Lindsay Orchowski)**

Publications

Bhuptani, P.H., López, G., **Peterson, R.,** & Orchowski, L.M. (In press). Online social reactions to disclosure of sexual victimization via #MeToo and symptoms of post-traumatic stress disorder. *Journal of Interpersonal Violence.*

Leary, A.V., Dvorak, R. D., Burr, E. K., **Peterson, R.,** De Leon, A. N., Klaver, S. J., Maynard, M. H., & Harm Reduction Research Group. (In press). Development and validation of the Personal Assessment of Responsible Drinking Identity (PARDI). *Psychological Assessment*.

Burr, E. K., Dvorak, R. D., De Leon, A. N., Leary, A. V., **Peterson, R.,** Schaefer, L. M., & Wonderlich, S. A. (2023). The role of eating expectancies and eating motives in the association between mood and loss-of-control eating: A national sample daily diary study. *Appetite,* 1;180:106322. https://doi:10.1016/j.appet.2022.106322.

De Leon, A. N., **Peterson, R.,** Leary, A. V., Kramer, M. P., Burr, E.K., Pinto, D., & Dvorak, R. D. (2023). The health belief model in the context of alcohol protective behavioral strategies. *Psychiatry: Interpersonal and Biological Processes,* 86(1):1-16. https://doi:10.1080/00332747.2022.2114270

Kiefer, R., **Peterson, R.,** & Orchowski, L. M. Correlates of college women's sexual assault resistance self-efficacy. Manuscript Under Review.

Peterson, R., Dvorak, R. D, De Leon, A. N., Leary, A. V., Burr, E. K., Meshesha, L., Woerner, J., & Kaukinen, C. Development and validation of the sexual and negative dating inventory (SANDI): A measure of dating and sexual protective behaviors. Manuscript Under Review.

Klaver. S.J., Dvorak, R.D., De Leon, A.N., Burr, E.K., Leary, A.V., Hayden, E.R., Allen, Q., Gwaltney, C.J. & **Peterson, R.** Testing the incentive-sensitization theory in adolescent ad libitum smokers using ecological momentary assessment. Manuscript Under Review.

Peterson, R., Dvorak, R. D, De Leon, A. N., Klaver, S. Burr, E. K., Maynard, M. &. Hayden, E. Examination of the Sexual and Negative Dating Inventory (SANDI) among Sexual and Gender Minorities. Manuscript Submitted for Publication.

Presentations

Kiefer, R., Peterson, R., Weiss, N. H., & Orchowski, L. O. (2023, November). *Correlates of college women's sexual assault resistance self-efficacy.* [Poster presentation]. The 39th annual convention for the International Society for Traumatic Stress Studies (ISTSS), Los Angeles, CA.

Peterson, R., Dvorak, R. D., Woerner, J., De Leon, A. N., Leary, A. V., Klaver, S. J., Burr, E. K., Maynard, M., & Hayden, E. R. (2023, March). *Adverse sexual outcomes and dating and sexual protective behaviors among a sample of sexual and/or gender minority individuals.* [Poster presentation]. Mind Brain Research Day 2023, Brown University, Providence, RI.

Peterson, R., Dvorak, R. D., Woerner, J., De Leon, A. N., Leary, A. V., Klaver, S. J., Burr, E. K., Maynard, M., & Hayden, E. R. (2023, March). *Adverse sexual outcomes and dating and sexual protective behaviors among a sample of sexual and/or gender minority individuals.* [Poster presentation]. Annual meeting of the International Convention of Psychological Science (ICPS), Brussels, Belgium.

Burr, E. K., Dvorak, R. D., Leary, A. V., Lynch, G., Klaver, S. J., Hayden, E. R., **Peterson, R.,** Maynard, M., & De Leon, A. N. (2023, March). *Food addiction Is indirectly associated with sensitivity to punishment and reward via affective lability.* [Poster presentation]. Annual meeting of the International Convention of Psychological Science (ICPS), Brussels, Belgium.

Leary, A. V., Dvorak, R. D., Burr, E. K., **Peterson, R.,** De Leon, A. N., Klaver, S. J., Maynard, M., Lynch, G., & Hayden, E. R. (2023, March). *The role responsible drinking identity has on future protective behavioral strategies, alcohol use, and alcohol problems.* [Poster presentation]. Annual meeting of the International Convention of Psychological Science (ICPS), Brussels, Belgium.

Peterson, R., Dvorak, R. D., De Leon, A. N., Leary, A. V., & Burr, E. K. (2022, November). *Measure Development of the Sexual and Negative Dating Inventory (SANDI): Psychometric Evaluation using a College Student Sample* [Poster presentation]. 56th annual meeting of the Association for Behavioral and Cognitive Therapies (ABCT), New York City, NY.

De Leon, A. N., Dvorak, R. D., **Peterson, R.,** Burr, E. K., & Leary, A. V. (2022, November). *The role of sociocultural factors on alcohol use behaviors among hispanic/latinx individuals* [Poster presentation]. 56th annual meeting of the Association for Behavioral and Cognitive Therapies (ABCT) for Behavioral and Cognitive Therapies (ABCT), New York City, NY.

Grant Submissions

Brown University Predoctoral Seed Research Grant, Alpert Medical School, 2022-2023 Title: Qualitative follow-up to the development of the sexual and negative dating inventory (SANDI): A feasibility study

<u>Title:</u> Adverse Sexual Outcomes and Dating and Sexual Protective Behaviors Among a Sample of Sexual and Gender Minority Individuals

<u>Authors:</u> Roselyn Peterson, Robert D. Dvorak, Jacqueline Woerner, Ardhys N. De Leon, Angelina V. Leary, Samantha J. Klaver, Emily K. Burr, Madison Maynard, Emma R. Hayden

Background: Research on adverse sexual outcomes including sexual violence, risky sex, and sexual regret is crucial. Adverse sexual outcomes are highly prevalent among college students, with 20-25% of cisgender women experiencing sexual assault, at least 60% of undergraduates engaging in risky sex, and a lifetime rate of regretted sexual experiences as high as 72%. Several studies indicate that these experiences are even more prevalent among sexual and/or gender minority (SGM) identifying individuals and that such experiences are associated with negative mental health symptoms such as depression and anxiety symptoms, and are disproportionally experienced by SGM individuals. **Methods:** The Sexual and Negative Dating Inventory (SANDI) is a measure of dating and sexual PBS that incorporates updated advancements of online/app dating and location sharing services. The SANDI includes five factors: Location Sharing (e.g., "I always keep my location 'on' and shared with another person when I am on a date"), Assertiveness (e.g., "I make sure I have a say in the plans/collaborate with my date on plans for a first date"), Self-Protection (e.g., "I have a plan for what self-protective measures I will take if my date becomes violent or sexually aggressive"), Risk Reduction (e.g., "I do not drink or use any substances on first dates" and "I do not have sex on the first date") and Privacy (e.g., "I do not meet my date at my home or their home"). Data was examined from $n = 313$ SGM individuals. Regarding gender, individuals identified as women ($n = 223$), men ($n = 45$), genderqueer or gender non-conforming ($n = 28$), transgender men ($n = 7$), questioning ($n = 6$) transgender women ($n = 2$), or other ($n = 2$). Regarding sexual orientation, individuals identified as bisexual ($n = 191$), lesbian ($n = 33$), pansexual ($n = 25$), other ($n = 23$), gay ($n = 21$), asexual ($n = 18$), or heterosexual ($n = 2$). Individuals were on average 19.70 (2.98 SD) years old and 25% identified as a non-white. This study is confirmatory, empirical, and data collection is complete. **Results:** One-way ANOVAs were used to observe differences by gender and sexual orientation. Individuals who identify as women, transgender men, and genderqueer endorsed higher rates of Location Sharing and Risk Reduction behaviors relative to men. Women and genderqueer individuals endorsed higher rates of Assertiveness and Self Protection behaviors relative to men. Women, transgender men, and genderqueer individuals endorsed higher rates of Privacy behavior relative to men. Bisexual individuals endorsed higher rates of Location Sharing, Assertiveness, and Self-Protections behaviors relative to heterosexual individuals. In addition, lesbian and bisexual individuals endorsed higher rates of Privacy behaviors relative to heterosexual individuals. **Conclusions:** Overall, these findings highlight the importance of 1) including underrepresented populations in research studies and 2) understanding how the use of specific types of dating and sexual protective behaviors differ across dimensions of gender and sexual orientation. Prevention and intervention targets for individuals both with a history of and who are at increased risk of experiencing adverse sexual outcomes are indicated, particularly for sexual and gender minority individuals.

Jessica Powers *(Brown Research Advisor: **Laura Stroud**)*

Publications

Powers, J. M., Zale, E. L., Deyo, A. G., Rubenstein, D., Terry, E. L., Heckman, B. W., & Ditre, J. W. (in press). Pain and Menthol Use are Related to Greater Nicotine Dependence among Black Adults who Smoke Cigarettes at Wave 5 (2018-2019) of the Population Assessment of Tobacco and Health (PATH) Study. *Journal of Racial and Ethnic Health Disparities.*

Powers, J. M., Lape, E. C., LaRowe, L. R., Hooker, J. E., & Ditre, J. W. (in press). Initial Validation of the Intentions to Co-Use Alcohol and Opioids Scale. *Journal of Psychoactive Drugs.*

Ditre, J. W., LaRowe, L. R., **Powers, J. M.,** White, K. M., Paladino, M. B., Zvolensky, M. J., Glatt, S., Maisto, S. A. (2023). Pain as a Causal Motivator of Alcohol Consumption: Associations with Gender and Race. *Journal of Psychopathology and Clinical Science*, *132*(1), 101-109.

Lape, E. C., **Powers, J. M.,** Hooker, J. E., Edwards, R. R., & Ditre, J. W. (2023). Benzodiazepine Use and Dependence in Relation to Chronic Pain Intensity and Pain Catastrophizing. *Journal of Pain, 24*(2), 345-355.

Powers, J. M., Maisto, S. A., Zvolensky, M. J., Heckman, B. W., & Ditre, J. W. (2023). Longitudinal Associations Between Pain and Use of Cigarettes and E-Cigarettes in the Population Assessment of Tobacco and Health (PATH) Study. *Nicotine & Tobacco Research, 25*(3), 404-411.

Lape, E. C., LaRowe, L. R., **Powers, J. M.,** & Ditre, J. W. (under review). Initial Validation of the Expectancies for Benzodiazepine Analgesia Scale.

Rubenstein, D., McClernon, F. J., **Powers, J. M.,** Aston, E. R., Keefe, F. J., Sweitzer, M. M. (under review). Pain is associated with exclusive use and co-use of tobacco and cannabis: Findings from Wave 5 (2018-2019) of the Population Assessment of Tobacco and Health Study.

Presentations

Powers, J. M., Sharma, E., & Stroud, L. R. (2023, April). *Use and Co-Use of Cannabis and Nicotine Before, During, and After Pregnancy: A Longitudinal Analysis of Waves 1-5 of the Population Assessment of Tobacco and Health (PATH) Study.* Poster abstract presented at the 25th annual Mind Brain Research Day hosted by the Carney Institute for Brain Science and the Department of Psychiatry and Human Behavior, The Warren Alpert Medical School of Brown University, Providence, RI.

Rubenstein, D., McClernon, F. J., **Powers, J. M.,** Aston, E. R., Keefe, F. J., Sweitzer, M. M. (2023, April). *Pain is associated with exclusive use and co-use of tobacco and cannabis: Findings from Wave 5 (2018-2019) of the Population Assessment of Tobacco and Health Study.*

Poster abstract presented to the annual meeting of the U.S. Association for the Study of Pain, Durham, NC.

Powers, J. M., Zale, E. L., Deyo, A. G., Rubenstein, D., Terry, E. L., Heckman, B. W., & Ditre, J. W. (2023, March). *Pain and Menthol Use are Related to Greater Nicotine Dependence among Black Cigarette Smokers at Wave 5 (2018-2019) of the Population Assessment of Tobacco and Health (PATH) Study*. Poster abstract presented at the 29th annual meeting of the Society for Research on Nicotine and Tobacco, San Antonio, TX.

Deyo, A. G., LaRowe, L. R., **Powers, J. M.,** & Ditre. J. W. (2023, March). *Poly-Nicotine Use Among Individuals with Minoritized Sexual Identities: In the 2020 National Health Interview Survey (NHIS).* Poster abstract presented at the 29th annual meeting of the Society for Research on Nicotine and Tobacco, San Antonio, TX.

Honors & Awards

First Prize, Clinical Psychology Resident Category, Mind Brain Research Day hosted by the Carney Institute for Brain Science and the Department of Psychiatry and Human Behavior, The Warren Alpert Medical School of Brown University, Providence, RI.

USE AND CO-USE OF CANNABIS AND NICOTINE BEFORE, DURING, AND AFTER PREGNANCY: A LONGITUDINAL ANALYSIS OF WAVES 1-5 OF THE POPULATION ASSESSMENT OF TOBACCO AND HEALTH (PATH) STUDY

Jessica M. Powers,[1,2,3] Eva Sharma,[4] & Laura R. Stroud[1,2]

[1] Department of Psychiatry and Human Behavior, Warren Alpert Medical School, Brown University

[2] Center for Behavioral and Preventive Medicine, The Miriam Hospital

[3] Department of Psychology, Syracuse University

[4] Behavioral Health and Health Policy, Westat

Significance: Use of nicotine/tobacco and cannabis in pregnancy is highly contraindicated and independent use of either substance is an established predictor of adverse health outcomes for both mother and fetus. Initial research suggests that co-use of nicotine and cannabis (i.e., using both substances in an overlapping period of time) may be prevalent among pregnant individuals, potentially engendering greater negative health effects than use of either substance alone.

Utilizing a nationally-representative sample of pregnant individuals followed before and after pregnancy, the goals of the current study were: 1) to examine use/co-use of nicotine and cannabis across the perinatal period, and 2) to test whether individuals who endorsed baseline co-use of nicotine/cannabis (vs. exclusive nicotine use and exclusive cannabis use) were more likely to continue using substances during pregnancy. Method: Data were drawn from Waves 1-5 (2013- 2019) of the Population Assessment of Tobacco and Health (PATH) Study. Baseline, pregnancy, and postpartum data was captured and stacked over three intervals (Waves 1 to 3, Waves 2 to 4, and Waves 3 to 5). Participants were N = 686 U.S. women (72% white, 46% aged 25-34 years old) who were currently pregnant during the middle wave of the interval. Past 30-day use of nicotine, cannabis, and co-use of both substances was assessed at all waves. Generalized estimating equations (GEE) were utilized which covaried for relevant sociodemographic characteristics. Results: Approximately 55% of individuals who reported baseline cannabis and/or nicotine use stopped using substances during pregnancy, although 94% of these individuals relapsed in postpartum. Among respondents who continued to use cannabis and/or nicotine in pregnancy, approximately 60% endorsed continued use in postpartum. GEE models demonstrated that individuals who endorsed baseline nicotine/cannabis co-use (vs. exclusive cannabis use) were 2.6 times more likely to continue using substances in pregnancy ($p < .001$).

There was no significant difference between baseline co-use of cannabis/nicotine and exclusive nicotine use on likelihood of substance use in pregnancy ($ps > .05$). Among individuals who endorsed baseline co-use and continued to use substances in pregnancy, about half transitioned to exclusive nicotine use (45.16%). Conclusion: Although more than half of baseline nicotine/cannabis users stop using substances during pregnancy, a majority resume substance use in postpartum. Results also indicate that both baseline nicotine use and co-use of nicotine/cannabis engender greater likelihood of using substances in pregnancy, and that half of individuals who reported co-use of cannabis and nicotine prior to pregnancy transition to nicotine use while pregnant. These findings underscore the need for further clinical and empirical focus on dynamic patterns of use/co-use of nicotine and cannabis across the perinatal period, including cessation interventions to reduce nicotine and cannabis use in pregnancy and protect against relapse in postpartum.

Ana Rabasco *(Brown Research Advisor: **Brandon Gaudiano**)*

Publications

Rabasco, A., DeSon, J., Rubi, L., & Andover, M. (2023). Protective factors for suicidal ideation and depressive symptoms among transgender and gender diverse adults. *The Behavior Therapist*.

Klein, A.B., Barnes-Horowitz, N.M., Tran, I., **Rabasco, A.,** Steele, E.H., Breaux, R. (2022). Perceived barriers to seeking mental health treatment among clinical psychology graduate students. *Training and Education in Professional Psychology*. https://doi.org/10.1037/tep0000413

Rabasco, A., Neimeyer, G., Macura, Z., McKay, D., Washburn, J. (under review). Aligning values with regulations: A comparison of professional values in continuing education regulations. *Professional Psychology: Research and Practice.*

Presentations

Rabasco, A. & Andover, M. (2022, November). The relationship between race, dissociation, and minority stress in conferring risk for suicidal ideation among transgender and gender diverse adults. In R. Lopez Jr. and C. Esposito-Smythers (Co-Chairs), *Prospective Risk for Self-Injurious Thoughts and Behaviors Among Vulnerable Populations Across the Lifespan* [Symposium].
Association of Behavioral and Cognitive Therapies, New York, NY.

Rabasco, A., Arias, S., Benz, M.B., Weinstock, L., Miller, I., Boudreaux, E.D., Camargo, C.A., & Gaudiano, B.A. (2023, March). *Longitudinal risk of suicidal behaviors in people with severe mental illness following an emergency department visit with versus without suicide prevention treatment* [Poster session]. Brown University's 25th annual Mind Brain Research Day, Providence, RI.

Benz, M.B., Arias, S., **Rabasco, A.**, Miller, I., Boudreaux, E., Camargo, C., & Gaudiano, B.A. (2023, March). *Intentionality and characteristics of emergency department patients with a history of suicide attempt via medication overdose*. Brown University's 25th annual Mind Brain Research Day, Providence, RI.

Ilagan, G.S., Martin Lopez, M., Manuel, I., **Rabasco, A.,** Anderson, G.N., Silverman, M.R., Conway, C.C. (2023). *Examining the Day-to-Day Relationship between Suicidal Thoughts and Coping Strategies: Within- and Between-Person Associations* [Poster presentation]. Big Apple Health Psychology Colloquium, New York, NY.

Anderson, G.N., **Rabasco, A**., Martin Lopez, M., Ilagan, G.S., Manuel, I.A., Silverman, M.R., Conway, C.C. (2023). *The Predictive Utility of Distress Tolerance on Thoughts of Self-Harm in a High-Risk, Marginalized Sample of Adults: An Experience Sampling Study.* [Poster presentation]. Big Apple Health Psychology, New York, NY.

Anderson, G.N., **Rabasco, A.,** Martin Lopez, M., Ilagan, G.S., Manuel, I., Silverman, M.R., Conway, C.C. (2022, November). *The Short-Term Relationship Between Distress Tolerance and Non-Suicidal Self-Injury in Adults with a History of Self-Harm* [Poster]. Association of Behavioral and Cognitive Therapies, New York, NY.

Anderson, G.N., Martin Lopez, M., **Rabasco, A.,** Ilagan, G.S., Manuel, I., Silverman, M.R., Conway, C.C. (2022, November). *Daily Variation in Distress Intolerance and Emotion Regulation Strategies in a High-Risk Community Sample* [Poster]. Association of Behavioral and Cognitive Therapies, New York, NY.

Ilagan, G.S., Martin Lopez, M., Manuel, I., **Rabasco, A**., Anderson, G.N., Silverman, M.R., Conway, C.C. (2022, November). *Daily Emotion Regulation Strategies and Fluctuations in Suicidal Ideation: An Experience Sampling Study in High-Risk Adults from a Marginalized Community* [Poster]. Association of Behavioral and Cognitive Therapies, New York, NY.

Rabasco, A., & Andover, M. (2022, November). *Preliminary Findings from a Brief Mindfulness Intervention for Adults with Suicidal Ideation* [Poster]. Association for Behavioral and Cognitive Therapies, New York, NY.

Grant Submissions

American Foundation for Suicide Prevention Postdoctoral Research Grant (submitted, pending review)
Title: Addressing Suicide for People with Psychosis by Improving Recovery and Empowerment (ASPPIRE) Intervention

Honors & Awards

Association for Behavioral and Cognitive Therapies Elsie Ramos Memorial Student Poster Award, 2022

Title: Longitudinal Risk of Suicidal Behaviors in People with Severe Mental Illness following an Emergency Department Visit with versus without Suicide Prevention Treatment

Authors: Ana Rabasco, MA, Sarah Arias, PhD, Madeline Benz, PhD, Lauren Weinstock, PhD, Ivan Miller, PhD, Edwin D. Boudreaux, PhD, Carlos A. Camargo, Jr., MD DrPH, & Brandon A. Gaudiano, PhD

Individuals with severe mental illness (SMI), including schizophrenia-spectrum disorders (SSD) and bipolar disorder (BD), are at high risk for suicide (e.g., Palmer et al., 2005; Saha et al., 2007). However, suicide research often excludes individuals with SMI (Villa et al., 2020), limiting our understanding of risk for suicidal behaviors (SBs) over time and the efficacy of suicide prevention treatments among people with these diagnoses. Therefore, the aims of this research were to examine: 1) differences in SBs over the course of 52 weeks between people with and without SSD and BD diagnoses following an emergency department (ED) visit, and 2) the effects of the Coping Long Term with Active Suicide Program (CLASP) intervention in reducing SBs among people with SSD and BD diagnoses. Participants were 1,235 adults recruited from 8 different EDs across the United States who presented with recent suicidality.

Using a quasi-experimental, interrupted time series design, participants were followed for 52- weeks with or without subsequent provision of CLASP. A total of 33% ($n = 456$) of the sample had BD, 11% ($n = 149$) had SSD, and 46% ($n = 630$) had another psychiatric diagnosis (OPD).

First, survival analyses showed that, over the course of follow-up, participants in the SSD group had a significantly shorter mean time to SBs (41 weeks) than participants in the OPD group (44 weeks; $p = .04$), as did participants in the BD group (40 weeks; $p = .003$). Second, among participants with BD, those who received the CLASP intervention had a significantly longer time to SBs (44 weeks) compared with those who did not receive CLASP (40 weeks; $p = .04$).

However, among those with SSD, there was no significant difference in time to SBs in those receiving CLASP (41 weeks) vs not receiving CLASP (41 weeks; $p = .86$). Cox regressions, which included relevant covariates, demonstrated the same pattern of results.

These findings suggest that, among adults at high-risk for suicide identified in the ED, SMI diagnosis is a critical indicator of prospective suicide risk. The study also shows that CLASP reduces subsequent suicide risk in those with BD but not necessarily in those with SSD. This work has considerable clinical implications, highlighting the importance of providing people with SMI with additional treatment that addresses their unique needs. In addition, the ED may be a particularly useful setting in which to identify those at risk and administer suicide interventions as part of follow-up care.

Nicole Ruppe *(Brown Research Advisor: **Elizabeth McQuaid**)*

Publications

Ruppe, N. M., Clawson, A. H., Ankney, R. L., Welch, G., Mullins, L. L., & Chaney, J. M. (2023). Depressive symptom trajectories across adolescence and adulthood among individuals with asthma. *Journal of pediatric psychology* (In Press).

Clawson, A. H., Cole, A. B., **Ruppe, N. M.**, Nwankwo, C. N., Blair, A. L., Berlin, K. S., & Naifeh, M. M. (2022). Smoking across adolescence and adulthood with cardiovascular risk among American Indian peoples. *Health Psychology*, 41(12), 912.

Eshtehardi, S. S., Filder, A. L., Rea, K. E., Campbell, M. S., Shields, C., **Ruppe, N. M.**, McLaughlin, A., Moorman, E. L., Kelleher, J. A., & Engel, M. L. (2022, August). The 2021- 2022 Pediatric Psychology Virtual Application Cycle: Trainee Preferences, Outcomes, & Future Directions. *Society of Pediatric Psychology Progress Notes, 46*(4). https://pedpsych.org/wp- content/uploads/2022/08/Virtual-Interview-Article-2022.pdf

Ruppe, N. M., Clawson, A. H., Nwankwo, C. N., & Blair, A. Longitudinal associations between depression and religiosity/spirituality among individuals with asthma. Manuscript invited for revision.

Ruppe, N. M., Clawson, A. H., Nwankwo, C. N., Sharkey, C. M, Bakula, D. M., Traino, K., & Mullins, L. L. Transition readiness among emerging adults with and without chronic medical conditions and the role of depression and marijuana use. Manuscript invited for revision.

Presentations

Ruppe, N. M., Cushman, G., Durkin, K., Kopel, S., Dusinger, S., McQuaid, E. (2023, March) *Family asthma management across high school among urban sample.* Poster presented at the Society of Pediatric Psychology Annual Conference.

Ruppe, N. M., Cushman, G., Durkin, K., Kopel, S., Dusinger, S., McQuaid, E. (2023, March) *Family asthma management across high school among urban sample.* Poster presented at the Presented at the Carney Institute for Brain Science and the Department of Psychiatry and Human Behavior 25th Annual Mind Brain Research Day

Eshtehardi, S. E., **Ruppe, N. M.,** Engel, M. L., Rea, K. E., Campbell, M. S., Shields, C., McLaughlin, A., Moorman, E., Kelleher, J., & Fidler, A. (2023, March) *Applicant Preferences for Pediatric Psychology Clinical Psychology Internship Virtual Interviews: 2021 and 2022 Application Cycles*. Poster presented at the Society of Pediatric Psychology Annual Conference, Chicago, Illinois

Campbell, M. S., Kelleher, J., Rea, K. E., Eshtehardi, S. E., Moorman, E., Fidler, A. Engel, M. L., **Ruppe, N. M.,** McLaughlin, A., & Shields, C. (2023, March) *Applicant Preferences for*

Pediatric Psychology Graduate School Virtual Interviews: 2021 and 2022 Application Cycles. Poster presented at the Society of Pediatric Psychology Annual Conference, Chicago, Illinois

Moorman, E., Fidler, A., McLaughlin, A., Eshtehardi, S. E., Rea, K. E., Campbell, M. S., **Ruppe, N. M.,** Kelleher, J., Engel, M. L., & Shields, C. (2023, March) *Applicant Preferences for Pediatric Psychology Post-Doctoral Programs Virtual Interviews: 2021 and 2022 Application Cycles.* Poster presented at the Society of Pediatric Psychology Annual Conference, Chicago, Illinois

Blair, A. L.., **Ruppe, N. M.**, Nwankwo, C. N., Armstrong, C., Arteaga, K., Moua, P., House, J., Clawson, A.H., & Cole, A.B., (2023, March). *Parental Gender Moderates the Relation Between Parent Asthma Management Self-Efficacy and Quality of Life among Parents of Children with Asthma During COVID-19.* Poster presented at the Society of Pediatric Psychology Annual Conference, Chicago, Illinois.

Ruppe, N. M., Clawson, A. H., Ankney, R. L., & Kurien, C. (2022, November) *Identifying trajectories and predictors of depressive symptoms among individuals with asthma: an application of latent growth curve modeling.* Oral presentation at the Society of Pediatric Psychology Allergic Diseases Special Interest Group Data Blitz.

DeCeasare, C., Vargas, S., **Ruppe, N. M.,** McQuaid, E., Koinis-Mitchell, D. (2022) *Caregiver's asthma knowledge before and after attending the Controlling Asthma in Schools Effectively (CASE) program.* Oral presentation at the RA Research Day at The Warren Alpert Medical School of Brown University.

Honors & Awards

American Psychological Association Division 54 Society of Pediatric Psychology Annual Conference Student Travel Award (2023)

Family asthma management across high school among urban sample

Ruppe, N. M., Cushman, G., Durkin, K., Kopel, S., Dusinger, S., McQuaid, E.

Introduction: Among pediatric patients, optimal asthma management is required to control asthma symptoms and reduce asthma morbidity. Adolescence is characterized by poor asthma control and worse asthma-related outcomes, which may be partially due to normative shifts in disease management. The present study sought to examine changes in family asthma management from 8th to 10th grade to better understand changes in how families manage asthma.

Methods: Adolescent-parent dyads (N=97) were recruited from an urban sample and completed the Family Asthma Management System Scale interview (FAMSS) in 8th and 10th grade. The FAMSS is a validated semi-structured interview that assesses key aspects of asthma management within the family. Interviewers rate the effectiveness of asthma management behaviors derived from the interview, such as parent and child identification and management of asthma symptoms. A mixed effects model with random slope was used to examine changes in FAMSS total scores over time adjusting for child race/ethnicity.

Results: No significant changes were found in FAMSS scores from 8th to 10th grade (B=-.09,p=.575*)*. However, youths' racial identity was a significant predictor of change in FAMSS scores; Black adolescents had significantly lower FAMSS scores (*B*=-.74,p=0.005) relative to non-Hispanic White adolescents at both timepoints. There were no differences between Hispanic and White adolescents.

Conclusion: No significant change in family asthma management across high school was observed, suggesting stability in how effectively families manage asthma across this transition period. Further research is needed to understand additional contextual factors, including social determinants of health and perceived discrimination that may relate to patterns of asthma management and differing outcomes by race/ethnicity. Future research may focus on interventions to improve asthma management during this time, considering both the role of medication adherence and the structural factors that may affect disease management that contribute to health disparities.

<u>Kayla Sall</u> *(Brown Research Advisor: **Emily Panza & Rena Wing**)*

Publications

Carels, R.A., **Sall, K.E.,** Jansen, E., Miller, J.C., Shonrock, A.T., & Byrd, R. (2022). The relation between weight bias attitudes on judgments of sexual assault scenarios. *Stigma & Health*.

Shonrock, A.T., Miller, J.C., Byrd, R., **Sall, K.E.,** Jansen, E., Carraway, M., Campbell, L., & Carels, R.A. (2022). Experienced weight stigma, internalized weight bias, and maladaptive eating patterns among heterosexual and sexual minority individuals. *Eating and Weight Disorders*. https://doi.org/10.1007/s40519-022-01486-4

Edwards, K.M., Littleton, H., Lim, S., Wheeler, L.A., Chen, D., **Sall, K.E.,** Huff, M., Siller, L., & Mauer, V.A. (under review). Examination of the multi-level sexual stigma model of IPV: A prospective analysis across eighteen institutions of higher education.

Sall, K.E., Tripp, C., Anthony, S., Saunders, C., Hashmath, Z, & Sears, S.F. (under review). Cardio-Obstetrics: What can psychologists bring to the team?

Sall, K.E., Miller, J.C., Jansen, E., Shonrock, A.T., Byrd, R., & Carels, R.A. (under review). Sexual assault among college women: The role of survivor acknowledgment, weight bias, and body appreciation.

Presentations

Sall, K.E., Jansen, E.T., Miller, J.C., Shonrock, A.T., Byrd, R., Mansour, L., & Carels, R. (2023, April). *Sexual assault among college women: The role of survivor acknowledgment, rape myth acceptance, and weight-related constructs.* Paper presented at the annual meeting of the Society of Behavioral Medicine, Phoenix, AZ, United States.

Jansen, E.T., **Sall, K.E.,** Miller, J.C., Shonrock, A.T., Byrd, R., Mansour, L., & Carels, R. (2023, April). *The relation between weight bias attitudes on judgments of sexual assault scenarios.*
Paper presented at the annual meeting of the Society of Behavioral Medicine, Phoenix, AZ, United States.

Sall, K.E., & Carels, R.A. (2023, March). *An evaluation of weight class and sexual health during pregnancy: The mediating roles of weight bias and body dissatisfaction*. Poster presented at Brown University's Mind Brain Research Day, Providence, RI.

Littleton, H., Edwards, K. M., Mauer, V., Lim, S., & **Sall, K. E.** (2022, November). *COVID-Specific coercive control: A novel form of pandemic-related IPV.* In A. Smith (Chair), Empowering personal agency and control as transdiagnostic mechanisms of health during the endless adversity of COVID-19. Presented at the annual meeting of the International Society for Traumatic Stress Studies, Atlanta, GA, United States.

Edwards, K. M., Littleton, H., Lim, S., Wheeler, L., Chen, D., **Sall, K.,** Mauer, V. L., Siller, L., Huff, M., & Marshall., J. (2022, July 28-30). *Examination of the Multi-level Sexual Stigma Model of IPV*. Paper presented at the National LGBTQ Health Conference, Chicago, IL, United States.

Grant Submissions

Brown Resident Seed Grant Award, 2022-2023
Title: How exposure to ACEs relates to behavioral weight loss in sexual minority women: A trauma-informed approach

Honors & Awards

Society for Behavioral Medicine Meritorious Abstract Award, 2023 Providence VAMC Great Catch Award, 2022

An evaluation of weight class and sexual health during pregnancy: The mediating roles of weight bias and body dissatisfaction

Background: Obesity is a national public health issue that adversely affects women of reproductive age and increases the risk for chronic issues (CVD, T2DM, decreased fertility) that can cause short- and long-term consequences during pregnancy. Obesity is also related to sexual functioning, with greater BMI being linked to greater sexual problems among this population. Two potential mediators that may explain the relation between weight and sexual problems during pregnancy are internalized weight bias and body image dissatisfaction. Indeed, how a person perceives their weight and body image as it changes during pregnancy likely affects their sexual functioning and satisfaction. Importantly, little research has explored the association between these constructs among a racially diverse sample (Black, White race), thus calling for more understanding of how these variables operate among diverse groups of pregnant people.

Purpose: The current study sought to examine the relationship between weight class, internalized weight bias, body dissatisfaction, and sexual health (functioning, satisfaction) during pregnancy among a racially diverse sample of Black and White pregnant women.

Methods: Participants were 306 pregnant individuals (0-39 weeks gestation; 40.5% Black, 51.3% White race) living within the United States who were assigned female at birth, sexually active during pregnancy, and between the ages of 18-45 years of age. Participants were drawn from a Qualtrics Panel and completed an online survey assessing obstetric characteristics, sexual activity, functioning and satisfaction, as well as weight-related constructs.

Results: Structural equation modeling was utilized to evaluate a parallel mediation model to examine the indirect effects of internalized weight bias (IWB; M_1) and body dissatisfaction (BD; M_2) on the relation between weight class (pre-pregnancy BMI [X_1] and gestational weight gain [X_2]) and sexual health (sexual functioning [Y_1] and sexual satisfaction [Y_2]). Results indicated that pre-pregnancy BMI and gestational weight gain (GWG) were indirectly related to sexual functioning through its relationship with BD. Participants who reported greater pre-pregnancy BMI ($a_2 = 0.019$, $p = .002$) and greater GWG ($a_4 = 0.008$, $p = .004$) also reported greater BD, which was then in turn related to greater sexual dysfunction ($b_2 = 2.467$, $p < .001$). A 95% bias-corrected confidence interval based on bootstrap samples indicated that the indirect effect of pre-pregnancy BMI and sexual dysfunction through BD ($a_2b_2 = 0.048$), holding all other mediators constant, was entirely above zero (0.013 to 0.086). Similarly, the indirect effect of GWG and sexual dysfunction through BD ($a_4b_2 = 0.020$), was above zero (0.005 to 0.037). Additionally, pre-pregnancy BMI was indirectly related to sexual satisfaction through its relationship with IWB. Participants who reported greater pre-pregnancy BMI also reported greater IWB ($a_1 = 0.038$, $p = .009$), which in turn was related to lower sexual satisfaction ($b_3 = -6.129$, $p < .001$). Bootstrapped results indicated that the indirect effect of pre-pregnancy BMI on sexual satisfaction through IWB ($a_1b_3 = 0.234$), holding all other mediators constant, was above zero (0.052 to 0.468).

Conclusions: Results indicate that BMI *prior* to pregnancy plays a role in sexual functioning and satisfaction *during* pregnancy, and that this relationship is partially explained by perceived level of internalized weight bias and body dissatisfaction. Further, gestational weight gain can also influence perceived sexual functioning during pregnancy, by way of a pregnant person's level of body dissatisfaction. Evenmore, given the racial diversity of this sample future directions should include exploration of how these weight and sexual health constructs differ among Black and White pregnant individuals, as this may inform assessment and treatment of sexual dysfunction and weight-related concerns during pregnancy.

Stefanie Sequeira *(Brown Research Advisors: Anastacia Kudinova, Tony Spirito, & Jackie Nesi)*

Publications

James, K.M., Silk, J.S., Scott, L.N., Hutchinson, E.A., Wang, S., **Sequeira, S.L**., Lu, C., Oppenheimer, C., & Ladouceur, C.D. (in press). Peer connectedness and social technology use during COVID-19 lockdown predict adolescent girls' emotional health. *Research on Child and Adolescent Psychopathology*.

James, K.M.*, **Sequeira, S.L.***, Dahl, R.E., Forbes, E.E., Ryan, N.D., Hooley, J., Ladouceur, C.D.[t], Silk, J.S.[t]. (in press). Neural reactivity to parental criticism is associated with less happiness in daily life. **Authors contributed equally;* [t]*Shared senior authorship.*

Presentations

Sequeira, S.L., Ladouceur, C.D., & Silk, J.S. (April 2023). *Testing a neurobiological susceptibility to social context model linking neural reward function and social threat to social anxiety in girls.* In R. Dahl (Chair), *Differential susceptibility of social emotional functioning in typical and atypical development.* Paper presented at the 2023 Society for Research on Adolescence Annual Meeting, San Diego, CA.

Sequeira, S.L., Silk, J.S., Jones, N.P., & Ladouceur, C.D. (April 2023). *Clarifying the role of neural reward function in the development of social anxiety symptoms in adolescent girls.* Poster presented at Brown University's Mind-Brain Research Day.

Sequeira, S.L., Silk, J.S., Hutchinson, E., Jones, N.P., & Ladouceur, C.D. (November 2022). *Shy temperament exacerbates risk for depressive symptoms during the COVID-19 pandemic in adolescent girls with neural and real-world markers of aberrant social functioning.* In D. Gee &
A. Heller (Chairs), *The impact of the COVID-19 pandemic on neural and behavioral markers of mental health across child and adolescent development*. Paper presented at the 2022 Annual Meeting of the Association for Behavioral and Cognitive Therapies, NYC, New York.

Grant Submissions

Brown Resident Research Training Grant Award, 2022-2023 (funded)
Title: Investigating associations between anxiety and reward learning in adolescents Mentors: Anastacia Kudinova & Anthony Spirito

American Foundation for Suicide Prevention (AFSP) Postdoctoral Research Fellowship Innovation Grant, 2023-2025 (funded)
Title: A multimethod investigation of social anhedonia as a risk factor for suicidal thoughts and behaviors in adolescence
Mentors: Anastacia Kudinova & Anthony Spirito

Title: Clarifying the role of neural reward function in the development of social anxiety symptoms in adolescent girls

Authors: Stefanie L. Sequeira, Jennifer S. Silk, Neil P. Jones, Cecile D. Ladouceur University of Pittsburgh

Abstract:

Social anxiety disorder (SAD) is common, impairing, and often treatment-resistant in adolescent girls. Emerging theory suggests that SAD develops through interactions between neural reward function and social stress; testing this theory may provide critical insight to improve treatment for SAD. In 129 girls (ages 11-13) oversampled for temperamental risk for SAD, we tested whether neural reward function interacts with perceptions of social threat in daily interactions with peers to predict social anxiety symptoms two years later. Girls reporting higher social threat in daily life had more severe clinician-rated social anxiety symptoms two years later when they showed higher basolateral amygdala (BLA) activation to the anticipation of socially rewarding (vs. neutral) feedback at baseline. Findings were specific to the BLA (vs. a more distributed social reward network) and to neural activation to social *reward* anticipation (vs. social *threat* anticipation). Unexpectedly, interactions between daily social threat and BLA activity at baseline also predicted generalized anxiety and depression symptoms two years later, demonstrating possible transdiagnostic risk pathways for internalizing symptoms. Socially threatening experiences may be particularly detrimental for youth highly sensitive to reward contingencies, potentially due to effects of social threat on reward learning processes, though this remains to be tested.

Daniel Sullivan *(Brown Research Advisors: **Jennifer Davis & Seth Margolis**)*

Publications

Shpigel, D. M., Gittleman, J., Estey, D., Birchwale, J. T., Rosensweig, S. R., **Sullivan, D.,** Lalani, S., de la Fuente, A., Mercedes, E., & Weinberger, A. H. (2023). Psychosocial and psychiatric-related stress and cigarette smoking among Black and Latinx adults with psychiatric disorders. *Journal of Ethnicity in Substance Abuse*, *22*(1), 260–284.

Presentations

Sullivan, D., Margolis, S. A., Davis, J. D., Zullo, A. R., & Joyce, N. R. (2023, March). *Antiepileptic drugs and motor vehicle driving: A systematic review.* Poster presented at the 25th Annual Mind Brain Research Day of Brown University, Providence, RI.

Costello, K., Schare, M., **Sullivan, D.,** & DeJesus, C. (2022, November). *Distress tolerance and institutional betrayal factors related to posttraumatic stress outcomes in military sexual trauma (MST).* Poster presented at the Annual Convention of the Association for Behavioral and Cognitive Therapies, New York, NY.

Title: Antiepileptic Drugs and Driving Safety: A Systematic Review

Authors: Daniel Sullivan, MA; Seth Margolis, PhD; Jennifer Davis, PhD; Andrew Zullo, PharmD, PhD; Nina Joyce, PhD

Background: Antiepileptic drugs (AEDs) are effective in achieving seizure control in the 3.4 million people with epilepsy (PWE). Of those who drive, it remains unclear whether seizure control eliminates risk of motor vehicle accidents (MVAs) due to AED side effects (e.g., ataxia, blurred vision, dizziness, sedation). Cognitive impairment is also common in PWE, including reduced attention, speed, visuospatial functioning, and memory. These abilities are critical for driving. The AED side effects, polypharmacy, comorbidities, and cognitive and motor consequences of epilepsy contribute to driving risk. AEDs are also prescribed for other conditions, including bipolar disorder, neuralgia, and tremor. This represents a population taking AEDs for seizures, other conditions, and off-label indications. As such, the effects of AEDs, polypharmacy, and drug–drug and drug–disease interactions on driving in PWE is a critical area to maintain quality of life and safety. Yet, there have been no reviews of the evidence. The aim of this review was to synthesize findings on AEDs and driving. Given the uncertainty from published studies, no *a priori* hypothesis was specified.

Methods: English studies, practice guidelines, and reviews on AEDs and driving outcomes published between January 1, 2010, and October 31, 2022, were searched in Medline. Titles and abstracts were screened, while eligible articles were reviewed. Outcomes included injuries, healthcare encounters, fatalities, and crash responsibility. Explanatory variables included medication exposure. Data were extracted for year, country, study design, data source, years of data, inclusion of covariates and confounding variables, AEDs studied, and polypharmacy.

Results: The search yielded 3,198 citations. Screening reduced the studies to 176. Of 117 eligible articles, 107 did not examine AEDs. The final 10 were included. Studies were published from 2010–2021 and averaged 7 years of data. Most designs were case–control, comparing crash responsibility (case) to non-responsible (control). All studies examined drivers only.
Responsibility was the most common outcome. Some studies compared risk of MVAs during a period of AED exposure to an earlier unexposed period (case–crossover). Data typically came from linking MVAs to either healthcare encounters or pharmacy data. Only one study utilized blood labs to measure AEDs. Overall, there was widespread variability in the results. Seven of the studies indicated increased risk of adverse outcomes, while one indicated reduced risk and two reported no association. At times, the association changed after including covariates (e.g., additional medications) or analyzing data several ways (e.g., treatment naïve vs. existing, classes of AEDs, AED generation). These factors rendered it difficult to report one result from each study.

Conclusion: The strongest evidence was derived from one study that utilized blood samples to measure AED exposure in conjunction with emergency department visits for crash-related injuries, though the relationship was non-significant when accounting for other medications. It was unclear in many studies whether participants were taking medications (rather than refilling the prescriptions) or what the indication for the medication was. Studies did not accurately report that they were estimated crash-related injuries, not crashes, in drivers. The self-report data were limited. Finally, future studies should consider analyzing the AED subtypes or generations separately due to nuanced results.

Gemma Wallace *(Brown Research Advisors: **Leslie Brick & Jessica Peters**)*

Publications

Wallace, G. T., Whichard, C., Augustyn, M., & Henry, K. L. (2022). Heavy episodic drinking in adolescence and alcohol-related problems in adulthood: A developmental approach to alcohol use across the life course. *Development and Psychopathology.* Advance online publication. https://doi.org/10.1017/S0954579422001249

Wallace, G. T., Barrett, K. C., Henry, K. L., Prince, M. A., & Conner, B. T. (2022). Examining underlying factor structures of cognitive emotion regulation strategies using exploratory structural equation modeling. *Quality and Quantity*. Advance online publication. https://doi.org/10.1007/s11135-022-01531-5

Presentations

Wallace, G. T. (2023, April). *Longitudinal network analyses of biopsychosocial risk factors for early onset suicidal ideation*. Paper talk at the Suicide Research Symposium, Virtual.

Wallace, G. T., Whichard, C., Augustyn, M., & Henry, K. L. (2023, March). *Early antecedents and long-term outcomes of binge drinking trajectories among socioeconomically and racially diverse youth*. Poster presented at the annual Mind Brain Research Day at Brown University, Providence, RI.

Arkfeld, P. A., **Wallace, G. T.**, Mataczynski, M. J., Emery, N. N., Conner, B. T., Prince, M. A. (2022, November). *Utilizing classification trees to identify differential risk factors for attempting suicide across intersections of gender identity and sexual orientation*. In **G. T. Wallace** & K. E. Shin (Chairs) Expanding your analytic toolkit: Applying innovative statistical methods to clinical science. Symposium talk at the Association for Behavioral and Cognitive Therapies Annual Convention, New York, NY.

Grant Submissions

Predoctoral Seed Money Research Grant, 2022-2023 Alpert Medical School of Brown University
Title: Dynamic Relations Between Affect and Suicidality in the High-Risk Period Following Psychiatric Inpatient Discharge

Honors & Awards

National Register Credentialing Scholarship*, National Register of Health Service Psychologists,* 2022

Early Antecedents and Long-Term Outcomes of Binge Drinking Trajectories Among Socioeconomically and Racially Diverse Youth

Gemma Wallace, M.S.[1,2], Corey Whichard, Ph.D.[3], Megan Augustyn, Ph.D.[4], & Kimberly Henry, Ph.D.[1]

1. Department of Psychology, Colorado State University, Fort Collins, CO
2. Department of Psychiatry & Human Behavior, Alpert Medical School of Brown University, Providence, RI
3. School of Criminal Justice, University at Albany, State University of New York, Albany, NY
4. Department of Criminology & Criminal Justice, The University of Texas at San Antonio, San Antonio, TX

Binge drinking is a significant public health concern, and youth who engage in binge drinking are at elevated risk for long-term alcohol-related problems in adulthood.

Importantly, there is heterogeneity in the onset and course of youth alcohol use, as adolescents exhibit different trajectories of initiation and progression into binge drinking. Much of what is known about the etiology of youth binge drinking and alcohol-related problems that persist into adulthood comes from samples of primarily white, middle-class youth. However, alcohol use and related-problems vary by race/ethnicity and socioeconomic status, with minoritized individuals experiencing disproportionately high burdens of alcohol-related problems in adulthood. It is unclear whether previous findings on developmental antecedents and distal consequences of adolescent binge drinking are relevant among racially and economically minoritized populations. In the current study, we utilize a developmental psychopathology perspective to address this gap in the literature.

Our sample is a cohort that includes overrepresentation of racially and economically minoritized youth who were followed from adolescence into adulthood through the Rochester Youth Development Study (N = 939, 73% male, 68% African American, 17% Hispanic, 15% white, and >50% of families were considered low socioeconomic status). We applied group-based trajectory modeling (GBTM) to identify latent patterns of involvement in binge drinking from ages 14 to 17. We then investigated developmental antecedents of GBTM class membership spanning from *in utero* to early adolescence, as well as alcohol- related distal outcomes in adulthood (~ age 31). Models discerned two latent trajectories: a large group of youth who engaged in rare or no binge drinking (n ~ 779), and a smaller group whose likelihood of binge drinking increased substantially across adolescence (n ~ 160). Several antecedents conferred increased risk of belonging to the higher binge drinking trajectory, many of which can be modifiable intervention targets (e.g., early onset of alcohol use, descriptive norms for peer alcohol use, parental alcohol use problems). Further, youth in the higher binge drinking trajectory had greater likelihood of engaging in heavy alcohol use and experiencing alcohol-related problems in adulthood. Results provide a comprehensive developmental approach to understanding the etiology and long-term consequences of adolescent binge drinking among a racially and economically diverse cohort, which is an understudied population in the alcohol use literature.