



BROWN
Alpert Medical School

Research Accomplishments

Brown University Clinical Psychology
Training Consortium

**Pre-doctoral Training Program Residents
2020-2021**

Resident: Micheline Anderson: Advisor: Cynthia L. Battle

Publications

Anderson, M.R., Wickramaratne, P., Svob, C., & Miller, L. (2020). Religiosity and depression at midlife: A prospective study. *Religions, 12*(1), 28.

Crete, A., **Anderson, M.R.,** Scalora, S., Mistur, E., Fuller, O., & Miller, L. (2020). Spiritual decline as a predictor of post-traumatic stress. *Religions, 11*(11), 575.

Anderson, M.R. (2020). The spiritual heart: psychophysiological mechanism of health and wellness. *Religions, 11*(10), 506

Scalora, S., **Anderson, M.R.,** & Miller, L. (2020). A Spiritual Mind-Body (SMB) Wellness Center in a university setting: a service assessment study. *Religions, 11*(9), 466

Presentations

Anderson, M.R., Salisbury, A.L., Uebelacker, L.A., & Battle, C.L. (2021, April), *COVID-19 related stress, coping and psychological functioning among a clinical sample of perinatal women: a mixed methods study*. Poster presented at the 2021 Annual Meeting of the Society for Behavioral Medicine.

Anderson, M.R., Salisbury, A.L., Uebelacker, L.A., & Battle, C.L. (2021, March) *COVID-19 related stress, coping and psychological functioning among a clinical sample of perinatal women: a mixed methods study*. Presented at the 23rd Annual Brown University Mind Brain Research Day, Providence, RI.

Grant Submissions

Mind & Life Institute Think Tank, 2021 (under review).

Title: Beyond White Mindfulness: Dialogues on Racism, Liberation, and Religion/Spirituality

COVID-19 Related Stress, Coping and Psychological Functioning Among a Clinical Sample of Perinatal Women

Micheline R. Anderson^a, Amy L. Salisbury^{a,b}, Lisa A. Uebelacker^a, Cynthia L. Battle^a

^a Warren Alpert School of Medicine of Brown University, Department of Psychiatry and Human Behavior, Providence, RI

^b School of Nursing, Virginia Commonwealth University, Richmond, VA

Introduction: Recent findings suggest that increased stress associated with the COVID-19 pandemic has magnified risk for recurrence and onset of psychopathology among vulnerable groups, including perinatal women. Emerging data have primarily come from community-based samples; thus, little is known about how stress related to COVID-19 affects perinatal women from higher risk clinical groups, such as those with histories of depression. We aim to address this gap in the literature. **Methods:** Pregnant and postpartum women (N=56) who participated in one of two randomized controlled trials evaluating wellness based interventions for antenatal depression completed a remotely-delivered assessment that included the EPDS depression scale and a series of forced-choice and open-ended questions regarding the COVID-19 crisis, including changes to medical care, perceived stressors, coping strategies utilized, and any positive outcomes related to the COVID-19 pandemic. We calculated means and standard deviations of sum depression scores on the EPDS total scale and the EPDS anxiety subscale. Elevated depression symptoms was defined as ≥ 13 on the EPDS, and elevated anxiety defined as ≥ 6 on the anxiety subscale. Narrative responses to open-ended questions regarding stress and coping were coded by two raters using an inductive, data-driven approach. **Results:** Mean depression scores were in the mild range ($M = 10.02$, $SD = 5.81$), with 33.9% of participants reporting elevated symptoms of depression. With regards to symptoms of anxiety, mean scores were 4.38 ($SD=2.28$); 37.5% of participants reported elevated symptoms. Common themes of COVID-19 related stressors included risk of infection, uncertainty and change regarding birthing/postpartum plans, childcare-related stressors, and reduced self-care. Dominant themes with regard to coping strategies included talking with family and friends, exercise, and use of accessible outdoor space. Women's reports of "silver linings" were largely focused on being able to spend more time with one's family, most notably appreciation of extended time home with newborns. **Conclusion:** Perinatal women with histories of depression may experience higher levels of depression and anxiety symptoms during the COVID pandemic, in comparison to perinatal women from non-clinical community sample; both pre-existing risk factors and unique COVID-19 stressors may contribute to these elevations. Coping strategies utilized by perinatal women to manage COVID related stress - including those engaged in during participation in intervention arms of RCTs (walking, yoga) - may mitigate these stressors.

Barnett, Andrew (*Brown Research Advisor: Dr. Houck*)

Publications

Zea, M.C., **Barnett, A.P.**, del Río-González, A.M., Parchem, B., Pinho, V., Le, H.-N., & Poppen, P.J. (2021). Experiences of violence and mental health outcomes among Colombian cisgender men who have sex with men (MSM) and transgender women. *Journal of Interpersonal Violence*. Published online first. <https://doi.org/10.1177/0886260521997445>

Presentations

Barnett, A.P., Houck, C.D., Barker, D., & Rizzo, C.J. (2021, March). *Sexual minority status, peer victimization, emotion regulation, and delinquency among court-involved young women*. Presented at the 23rd Annual Brown University Mind Brain Research Day, Providence, RI.

Sexual Minority Status, Peer Victimization, Emotion Regulation, and Delinquency Among Court-Involved Young Women

Andrew P. Barnett, Christopher D. Houck, David Barker, and Christie J. Rizzo

Introduction: Previous studies have found that sexual minorities are overrepresented among young women who are incarcerated or court-involved, and there is some evidence that sexual minority youth are at greater risk for delinquency. More research is needed to identify mechanisms underlying these disparities. Using the minority stress model and psychological mediation framework, we investigated the relationships among sexual minority status, peer victimization, emotion regulation, and delinquency using a sample of court-involved young women.

Methods: Analyses were conducted using baseline data from a randomized controlled trial of a dating violence intervention for court-involved young women. The analytic sample consisted of 228 young women ages 14-18 with an open court petition (49% sexual minority). Race, Latinx ethnicity, socioeconomic status, neighborhood disorder, and childhood mistreatment were included as covariates.

Results: We first investigated if peer victimization was associated with emotion regulation and if sexual minority status moderated that relationship. Contrary to our hypothesis, there was no evidence that victimization was associated with emotion regulation; sexual minority status was significantly associated with emotion regulation ($b=0.36$; $p<0.01$). Using causal mediation, we next investigated if sexual minority status was associated with delinquency via emotion regulation. Results indicated that sexual minority status was associated with delinquency via emotion regulation ($B=1.17$, 95% C.I.=0.73 – 1.61, $SE=0.23$, $p<0.01$; natural indirect effect: $B=1.35$, 95% C.I.=1.10 – 1.59, $SE=0.12$, $p<0.01$; % mediated: 70.32%; $p<0.01$).

Conclusions: Findings indicate that, among young women who are court-involved, sexual minority young women report greater problems with emotion regulation and this association partially accounts for the relationship between sexual minority status and delinquency. Although we did not find evidence that peer victimization was associated with emotion regulation, our measure did not differentiate victimization based on sexual minority status, and our analysis did not include other distal or proximal minority stress processes (e.g., victimization in other domains, expectations of rejection). Further research is needed to investigate whether these processes account for the relationship between sexual minority status, emotion regulation, and delinquency observed in this study, as hypothesized by the psychological mediation framework.

Corinne Bart (*Brown Research Advisor: Kirsten Langdon, PhD*)

Publications

Bart, C.P., Titone, M.K., Ng, T.H., Nusslock, R., & Alloy, L.B. (in press). Neural reward circuit dysfunction as a risk factor in bipolar spectrum and substance use disorders: A review and integration. *Clinical Psychology Review*.

Presentations

Bart, C.P., Scherzer, C.R., Ramsey, S., Carey, K., Rich, J., Ranney, M.L., Langdon, K.J. (2021, May). *Identifying drug use triggers in patients engaged in opioid use disorder treatment: Implications for treatment development*. Poster accepted for presentation at the Association for Psychological Science's 33rd Annual Meeting, (Virtual due to COVID-19).

Bart, C.P., Scherzer, C.R., Ramsey, S., Carey, K., Rich, J., Ranney, M.L., Langdon, K.J. (2021, March). *Identifying drug use triggers in patients engaged in opioid use disorder treatment*. Presented at the 23rd Annual Brown University Mind Brain Research Day, Providence, RI.

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Identifying Drug Use Triggers in Patients Engaged in Opioid Use Disorder Treatment

Corinne P. Bart, MA¹, Caroline R. Scherzer, BS^{1,3}, Susan Ramsey, PhD^{1,4,5},
Kate Carey, PhD^{6,7}, Josiah Rich, MD MPH^{4,8}, Megan L. Ranney, MD MPH
FACEP^{3,9}, Kirsten J. Langdon, PhD^{1,2}

¹Dept. of Psychiatry and Human Behavior, Alpert Medical School of Brown University, ²Dept. of Psychiatry, Rhode Island Hospital, ³Brown-Lifespan Center for Digital Health, ⁴Dept. of Medicine, Alpert Medical School of Brown University, ⁵Division of General Internal Medicine, Dept. of Medicine, Rhode Island Hospital. ⁶Dept. of Behavioral and Social Sciences, Brown University of Public Health, ⁷Center for Alcohol and Addiction Studies, Brown University School of Public Health, ⁸Dept. of Epidemiology, Brown University School of Public Health. ⁹Dept. of Emergency Medicine, Rhode Island Hospital

Background: Opioid Use Disorder (OUD) is a significant public health concern in the United States, accounting for nearly 47,000 overdose deaths in 2018¹. Despite evidence supporting the efficacy of buprenorphine-naloxone treatment for OUD, a significant portion of patients return to opioid use and/or prematurely discontinue treatment^{2,3}. Additionally, the number of individuals needing treatment for OUD currently outweighs treatment capacity⁴. Thus, development of novel and accessible interventions is crucial to improve reach and enhance effectiveness of medication-based treatments for OUD. The aim of this study was to explore triggers for drug use among individuals participating in a treatment development trial assessing the feasibility and acceptability of a digital health intervention for adults engaged in buprenorphine treatment.

Methods: Twenty-four patients undergoing treatment for OUD at two outpatient addiction treatment centers completed a semi-structured interview to provide their feedback on a text-message and computer-based digital behavioral health intervention. The sample was balanced by sex and primary type of opioid use upon treatment entry. Interviews were audio-recorded and transcribed verbatim. Qualitative analyses consisted of both thematic and data-driven codes that were entered into a framework matrix. An exploratory coding scheme was later developed to investigate potential triggers for drug use.

Results: Themes for triggers emerged in two main categories: *external* (consisting of the following subcategories: availability of drug, social, places, objects) and *internal* (consisting of the following subcategories: emotional, cognitive, physical). All participants endorsed at least one external and one internal trigger. Within the external trigger category, social triggers were most frequently endorsed, including being around people with whom drugs were used, interpersonal conflicts, and isolation. Within the internal trigger category, physical (particularly related to pain and withdrawal symptoms), cognitive, and emotion-based triggers were all equally endorsed. **Conclusions:** Participants engaged in buprenorphine treatment for OUD endorsed common drug use

triggers which impacted past recovery and treatment attempts. Ongoing daily monitoring for potential triggers to drug use is an important part of substance treatment. Though triggers underlying reoccurrence of drug use have been widely studied, there are limited qualitative analyses of triggers in individuals undergoing treatment for OUD. Thus, this qualitative approach to exploring triggers may open pathways to more nuanced and personalized treatment development. Additionally, further research on how individual differences in affect and related vulnerability factors influence one's experience of triggers, responses to drug craving, and recovery course may help further improve and personalize OUD interventions.

References:

1. Center for Disease Control and Prevention, Opioid Overdose (2018), <https://www.cdc.gov/drugoverdose/> Accessed Jan 17, 2021
2. Hser, Y.I., Saxon, A.J., Huang, D., Hasson, A., Thomas, C, Hillhouse, M., et al. Treatment retention among patients randomized to buprenorphine/naloxone compared to methadone in a multi-site trial. *Addiction*. 2014; 109:79-87.
3. Thomas, C.P., Fullerton, C.A., Kim, M., Montejano, L., Lyman, D.R., Dougherty RH, et al. Medication-assisted treatment with buprenorphine: assessing the evidence. *Psychiatric Serv*. 2014; 65: 158-170.
4. Jones, C.M., Campopiano, M., Baldwin, G., McCance-Katz, E. National and state treatment need and capacity for opioid agonist medication assisted treatment. *Am J Public Health*. 2015; 105(8): e55-63.

Prachi H. Bhuptani (*Brown Research Advisor:Lindsay M. Orchowski*)

Publications

Bhuptani,P.H., & Messman-Moore, T. L. (in press).Self-compassion and shame among rape victims. *Journal of Interpersonal Violence*.

Aggarwal, P., Weise, D. L., & **Bhuptani, P.H.** (in press). Relational ecological model of identity: A tool for providing culturally competent clinical care in India. *International Perspectives in Psychology: Research, Practice, Consultation*.

Adams-Clark, A. A., Smith, C. P., **Bhuptani, P.H.**, & Freyd, J.J. (2020).University crime alerts: Do they contribute to institutional betrayal and rape myths? *Dignity: A Journal on Sexual Exploitation and Violence*(5). doi: 10.23860/dignity.2020.05.01.0

Orchowski, L.M. & **Bhuptani, P.H.** (in press). *Dissociative disorders*. In F.F. Ferri (Ed). Ferri's Clinical Advisor, 2022. Philadelphia: Elsevier

Bogen, K.W., **Bhuptani, P.H.**, Haikalis, M., Orchowski, L. M. (under review). A qualitative analysis of how individuals utilized the Twitter hashtags #NotOkay and #MeToo to comment on the perpetration of interpersonal violence.

Orchowski, L. M., Bogen, K.W., & **Bhuptani, P.H.** (under review). Gender Bias in Recognition Awards from the American Psychological Association.

Bhuptani, P. H., & Messman, T. L. (under review). Role of blame and rape-related shame in distress among rape victims.

Presentations

Bhuptani, P.H., López, G., & Orchowski, L.M. (2021, March) *Sexual Assault and Risky Behaviors in Community College Women*. Presented at the 23rd Annual Brown University Mind Brain Research Day, Providence, RI.

Sexual Assault and Risky Behaviors in Community College Women

Prachi H. Bhuptani, M.A. Gabriela López, Ph.D. Lindsay M. Orchowski, Ph.D.

Sexual assault is widely prevalent on college campuses, particularly among women enrolled in community college. Prior research indicates that women with history of sexual assault engage in heavy drinking, more problematic drinking, using substances (alcohol or drugs) before engaging in drinking activity, less use of protective behaviors in dating situations, and less sexual refusal assertiveness, compared to women with no history of sexual assault. However, most of this research has focused on women enrolled in a 4-years university and largely ignored women enrolled at community college. We examined how these behaviors varied among community college women with history of rape, sexual assault, and no history of sexual assault. We hypothesized that women with history of rape will demonstrate significantly more risky substance use, less use of protective behavior, and less sexual refusal assertiveness compared to women with history of sexual assault and women with history of no sexual assault. We further expected that women history of sexual assault will demonstrate significantly more risky substance use, less use of protective behaviors, and less sexual refusal assertiveness compared to women with history of no sexual assault. We found that women with history of rape endorse significantly more risky substance use and less self-protective behaviors in dating relationships compared to those with no history of sexual assault. Further, we found that women with history of rape demonstrate significantly more problematic alcohol use compared to women with history of sexual assault. No other differences were found. Findings and implications are further discussed.

Allison Borges (*Brown Research Advisor: Ana Abrantes*)

Publications

Borges, A.M., Uebelacker, L.A., Brown, R.A., Price, L.H., and Abrantes, A.M. (under review) Distress intolerance and rate of perceived exertion predict the acute effects of aerobic exercise among treatment-seeking smokers.

Presentations

Borges, A.M., Uebelacker, L.A., Brown, R.A., Price, L.H., and Abrantes, A.M. (2021) *Distress intolerance and rate of perceived exertion predict the acute effects of aerobic exercise among treatment-seeking smokers*. Presented at the 23rd Annual Brown University Mind Brain Research Day, Providence, RI.

Distress intolerance and rate of perceived exertion predict the acute effects of aerobic exercise among treatment-seeking smokers

Allison M. Borges, M.S., Lisa A. Uebelacker, Ph.D., Richard A. Brown, Ph.D., Lawrence H. Price, M.D., and Ana M. Abrantes, Ph.D.

Aerobic exercise is frequently used as an intervention for depression and smoking cessation because of its antidepressant and anxiolytic effects. Distress Intolerance (DI) is a proposed individual difference factor that, coupled with a higher rate of perceived exertion, may significantly alter the acute mood and anxiolytic effects of exercise. The current study examined the interactive effects of DI and maximum rate of perceived exertion (RPE) on change in mood and anxiety. Two hundred and twenty-six participants ($M_{age} = 45.32$; 72% female) with elevated depressive symptoms completed a 1-mile treadmill walk at their preferred intensity and self-reported their RPE during the test. Moderation analyses were conducted to examine whether DI and maximum RPE predicted change in self-reported mood and anxiety from before to after the walk test. Findings indicate a significant interactive effect on change in mood. Individuals reporting higher DI and higher RPE, as compared to lower RPE, exhibited smaller changes in mood. The opposite effect was observed for individuals reporting lower DI. Lower DI and higher RPE predicted greater improvements in mood compared to those reporting lower RPE. The subjective effects of exercise could be improved by tailoring exercise intensity to individual characteristics.

Alex Busuito (*Brown Research Advisor: Stephanie Parade*)

Publications

Huffhines, L.; Coe, J.; **Busuito, A.**; Seifer, R.; Parade, S. (under review). Understanding links between maternal perinatal posttraumatic stress symptoms and infant socioemotional and physical health.

Presentations

Busuito, A. (2021, April). *Maternal adversity and child psychopathology in the first years of life: Parenting difficulties as mechanisms*. Paper symposium presented at the Society for Research in Child Development, Virtual.

Busuito, A. & Lunkenheimer, E.S. (2021, April). *Parenthood at risk: disentangling influences of maternal childhood maltreatment from other adverse experiences*. Paper symposium presented at the Society for Research in Child Development, Virtual.

Busito, A. (2021, March). *The Intergenerational Reach of Childhood Maltreatment: Exploring Transmission Mechanisms in Developmental and Socioeconomic Contexts*. Presented at the 23rd Annual Brown University Mind Brain Research Day, Providence, RI.

The Intergenerational Reach of Childhood Maltreatment: Exploring Transmission Mechanisms in Developmental and Socioeconomic Contexts

Alex Busuito, M.S.

My program of research investigates how adversity—violence or poverty—interrupts the development of vital self-regulatory abilities in infancy and early childhood. Research has identified self-regulation as a foundational skill that predicts wellbeing across the lifespan. My work demonstrates that children exposed to violence show deficits in self-regulation that predict later mental health problems (Busuito & Moore, 2017; Mammen, Busuito, Moore, Quigley, & Doheny, 2017). However, little is known about how the development of self-regulation is disrupted by adversity. My work has showed evidence for mediation by parenting: mothers exposed to domestic violence were less responsive to infants' distress, and this impaired the development of infant's self-regulation (Busuito & Moore, 2017).

To investigate further, I have conducted studies on parent's self-regulation, finding that even everyday caregiving is physiologically taxing and requires active regulation of emotions (Busuito et al., 2019; Lunkenheimer, Busuito, Brown, Panlilio & Skowron, 2019). Supported by a Doris Duke Fellowship for the Promotion of Wellbeing, my dissertation built on this work and began to identify the “active ingredients” of parenting that could be targeted to increase parents' engagement with and enhance effectiveness of community-based interventions.

My dissertation is comprised of three papers, each using a sample with unique demographic characteristics. The first paper used a large sample—varying in mothers' age, education, and ethnicity—to elucidate relations among mothers' childhood maltreatment, socio-demographic factors in adulthood, and parenting as they predict child regulatory outcomes. The second used a sample—diverse in income and child welfare system involvement—to examine mothers' self-regulation during parenting as a mechanism of this intergenerational transmission of risk. The final paper—based on original data collected in rural Pennsylvania—zoomed in even further with the aim of beginning to identify the precise nature (physiological vs. cognitive) of mothers' putative childhood maltreatment-associated regulatory impairments. Together these papers suggest that knowing *what* to do is not sufficient to improve child outcomes if caregivers do not have the support necessary to carry out these practices.

Therefore, with a second line of inquiry begun with Dr. Stephanie Parade, I have initiated a research project to examine predictors of family engagement in Rhode Island evidence-based home visiting interventions. This research bears important implications for early childhood prevention programs and public policy, and I hope to continue this line of work moving forward.

Kimberly Chapman (*Brown Research Advisor: Geoffrey Tremont*)

Publications:

Chapman, K.R., Tremont, G., Spitznagel, M.B. (2021). Development of an Assessment Measure for Sexual Disinhibition in Dementia. *International Journal of Geriatric Psychiatry*, [ePub ahead of print].

Patrick, K. S., Martin, J. T., **Chapman, K. R.**, Anderson, J. R., & Spitznagel, M. B. (2021). The moderating role of pain self-efficacy in the relationships among caregiver burden and care recipient pain and neuropsychiatric symptoms in a sample of persons with dementia. *Alzheimers Disease and Associated Disorders*.

Chapman, K.R., Tremont, G. (Under review). Executive Dysfunction Mediates the Relationship between Functional Impairment and Caregiver Burden in Mild Cognitive Impairment.

Martin, J., **Chapman, K.R.**, Anderson, J.R., Spitznagel, M.B. (Under review). Factors of Dementia Caregiver Burden Differentially Contribute to Desire to Institutionalize.

Martin, J.T., Anderson, J.R., **Chapman, K.R.**, Kayani N., Drost, J., Spitznagel, M.B. (Under review). The Relationship between Dementia Caregiver Burden and Caregiver Communications in a Memory Clinic Setting.

Presentations:

Chapman, K.R., Tremont, G. (May, 2021). *Development of a Brief Caregiver Intervention for Sexual Disinhibition in Dementia*. Talk presented at the Brown University Clinical Neuropsychology Specialty Program's Resident Research Symposium.

Chapman, K.R., Tremont, G. (March, 2021). *Executive Dysfunction Mediates the Relationship between Functional Impairment and Caregiver Burden in Mild Cognitive Impairment*. Presented at the 23rd Annual Brown University Mind Brain Research Day, Providence, RI.

Chapman, K.R., (2021). Tremont, G. *Executive Dysfunction Mediates the Relationship between Functional Impairment and Caregiver Burden in Mild Cognitive Impairment*. Abstract (poster) presented at the International Neuropsychological Society, San Diego, CA

Chapman, K.R., Tremont, G., Spitznagel, M.B. (2021). *Development of an Assessment Measure for Sexual Disinhibition in Dementia*. Abstract (poster) presented at the International Neuropsychological Society, San Diego, CA.

Anderson, J.R., Martin, J.T., **Chapman, K.R.**, Suchan, A., Spitznagel, M.B. (2021). *Using Machine Learning to Predict Communication Requirements in a Geriatric Clinic*. Abstract (poster) presented at the International Neuropsychological Society, San Diego, CA.

Martin, J.T., Anderson, J.R., **Chapman, K.R.**, Spitznagel, M.B. (2021). *Dementia Caregiver Burden and Communications in a Memory Clinic Setting*. Abstract (poster) presented at the International Neuropsychological Society, San Diego, CA.

Patrick, K., Martin, J.T., **Chapman, K.R.**, Spitznagel, M.B. (2021). Pain in Persons with Dementia: *The Contribution of Neuropsychiatric Symptoms and Pain Self-Efficacy to Caregiver Burden*. Abstract (poster) presented at the International Neuropsychological Society, San Diego, CA.

Grant Submissions:

Brown Resident Seed Grant Award, 2020-2021 (funded)

Title: Development of a Supportive Caregiver Intervention for Sexual Disinhibition in Dementia

Honors & Awards:

Kent State University Graduate Student Paper Award (2021)

Recognized for publishing original research in a journal with a history of high impact
(*Awarded \$100*)

Kent State University Domestic Travel Award (2021)

Funded conference presentation travel (*Awarded \$150*)

Executive Dysfunction Mediates the Relationship between Functional Impairment and Caregiver Burden in Mild Cognitive Impairment.

Kimberly Chapman and Geoffrey Tremont

Objective: Mild cognitive impairment (MCI) is considered an intermediate phase between normal aging and dementia. While by definition mild, executive dysfunction and functional impairment can be observed in MCI and have been linked to greater caregiver burden. However, the respective contribution of these factors is not well understood, and it is possible that executive dysfunction accounts for the relationship between functional impairment and caregiver burden. The present study examined the relationship between executive dysfunction, and caregiver burden, accounting for functional impairment.

Participants and Methods: 77 caregivers (average age: 61.4 years, 69.0% female) who presented with their care recipient (average age: 74.8 years, 65.3% female) for evaluation at an outpatient neuropsychology service. All caregivers completed the Executive Dysfunction subscale of the Frontal Systems Behavior Scale (eFrSBE), the Lawton-Brody Instrumental Activities of Daily Living Scale (IADL), and the Zarit Burden Interview (ZBI). Linear regression analyses examined the relationships between functional impairment, executive dysfunction, and caregiver burden independently, followed by hierarchical linear regression to determine the contribution of executive dysfunction to predict caregiver burden above and beyond functional impairment. Mediation analyses, where mediation was determined by examining the bootstrapped (5,000 bootstrap samples) confidence interval for the indirect effect (PROCESS macro), determined if executive dysfunction significantly accounted for the relationship between functional impairment and caregiver burden.

Results: Two separate linear regression analyses, controlling for caregiver type (spouse (58.7%) vs. other), revealed that both greater functional impairment ($R^2=0.15$, $F(2,75)=6.55$, $p<0.01$), and executive dysfunction ($R^2=0.27$, $F(2,75)=13.21$, $p<0.01$) predicted greater caregiver burden. Follow-up hierarchical linear regression revealed that greater executive dysfunction predicted greater caregiver burden above and beyond the contribution of functional impairment ($\Delta R^2=0.22$, $\Delta F(3,74)=23.70$, $p<0.001$), and executive dysfunction mediated the relationship between functional impairment and caregiver burden ($b=-0.38$, 95% bootstrapped CI [-0.91, -0.02]).

Conclusions: The current study revealed that while executive dysfunction and functional impairment independently predicted caregiver burden in MCI, executive dysfunction predicted caregiver burden above and beyond the

contribution of, and mediated the relationship between, functional impairment and caregiver burden. These results add to a body of work demonstrating that presence of executive dysfunction is distressing to caregivers, even in mild disease stages. Because executive dysfunction may herald swifter decline, early identification of caregivers reporting executive dysfunction in their care recipient is imperative to ensure establishment of caregiver support(s) early in the disease course.

Emily Cherenack (*Brown Research Advisor: Lisa Uebelacker*)

Publications

Cherenack, E. M. & Sikkema, K. J. (In Press). Puberty- and menstruation-related stressors are associated with depression, anxiety, and reproductive tract infection symptoms among adolescent girls in Tanzania. *International Journal of Behavioral Medicine*.

Tapia, G. R., Glynn, T. R., Miller, C., Manuzak, J., Broedlow, C., McGaugh, A., **Cherenack, E. M.**, Bauermeister, J. A., Grov, C., Parisi, R., Martinez, D., Klatt, N., Carrico A. W. (In Press). Syndemics, pre-exposure prophylaxis, and rectal inflammation in sexual minority men. *AIDS*.

Knettel, A. B., Corrigan, K. L., **Cherenack, E. M.**, Ho, N., Carr, S., Shah, B., Cahill, J., Watt, M. H., & Suneja, G. (In Press). HIV, cancer, and coping: The accumulative burden of a cancer diagnosis among people living with HIV. *Journal of Psychosocial Oncology*.

Knettel, A. B., **Cherenack, E. M.**, & Friis, E. (In Press). Examining causal attributions for depression, alcohol use disorder, and schizophrenia in a diverse sample of international students at U.S. universities. *Journal of American College Health*.

Cherenack, E. M., Rubli J., Dow, D., & Sikkema, K. J. (2020) Menstrual practices, sexual risk behaviors, and intravaginal practices among adolescent girls and young women in Tanzania: A cross-sectional, school-based study. *International Journal of Sexual Health*.

Cherenack E. M., Tolley E., Kaaya, S., Headley, J., & Baumgartner J. N. (2020). Depression symptom severity, sexual behavior, and sexual trauma among adolescent girls enrolled in HIV-prevention research in Tanzania. *Maternal and Child Health Journal*.

Cherenack, E. M. & Sikkema, K. J. (Minor Revision Under Review). Puberty- and menstruation-related stressors are associated with depression, anxiety, and reproductive tract infection symptoms among adolescent girls in Tanzania. *International Journal of Behavioral Medicine*.

Knettel, A. B., **Cherenack, E. M.**, Bianchi-Rossi, C. (Revision Under Review). A cross-sectional analysis of stress, anxiety, binge drinking, and substance use among college student-athletes. *Journal of Sport and Exercise Psychology*.

Uebelacker, L. A., **Cherenack, E. M.**, Busch, A., Baker, J. V., Pinkston-Camp, M., Gleason, N., Madden, S., Stein, M. D. (Under Review). Pharmacologic and non-pharmacologic treatments for chronic pain used by patients with pain, HIV, and depression.

Cherenack, E. M., Enders, K., Psioda, M., Rupp B. M., Sena, A. C., and the ATN. (Under Review). Predictors of ART adherence among HIV-infected young men who have sex with men living with HIV: A longitudinal daily diary study.

Harper, G. W., **Cherenack, E.M.**, Slye, N., Jadwin-Cakmak, L., Hudgens, M. (Under Review). Pilot trial of a critical consciousness-based intervention that addresses intersectional stigma for black young gay and bisexual men living with HIV: Mobilizing Our Voices for Empowerment (MOVE).

Presentations

Harper, G. W., **Cherenack, E. M.**, Slye, N., Jadwin-Cakmak, L., Hudgens, M. (2021, May). *Pilot trial of a critical consciousness-based intervention that addresses intersectional stigma for Black young gay and bisexual men living with HIV: Mobilizing Our Voices for Empowerment (MOVE)*. Poster presented at the Adolescent Trials Network for HIV/AIDS Interventions Network Plenary Meeting.

Cherenack, E. M., Stein, M. D., Abrantes A. M., Uebelacker, L. A. (2021, March). *Substance use and physical activity among people living with HIV, chronic pain, and depression symptoms*. Presented at the 23rd Annual Brown University Mind Brain Research Day, Providence, RI.

Grant Submissions

NIH F32 Original Submission September 2020

Title: Syndemics, the microbiome, and mucosal inflammation involved in HIV acquisition.

NIH F32 Revision Submission January 2021 (Pending Final Decision)

Title: Syndemics, the microbiome, and mucosal inflammation involved in HIV acquisition.

A Cross-Sectional Analysis of Substance Use and Physical Activity among People Living with HIV, Chronic Pain, and Symptoms of Depression

Emily M. Cherenack, Michael D. Stein, Ana M. Abrantes, and Lisa A. Uebelacker

Background: Chronic pain, depression, and substance use are common among people living with HIV (PLWH). Physical activity is important for improving chronic pain and depression. There are mixed findings on the relationship between substance use and physical activity, with most research focused on adolescent athletes, for whom substance use is associated with decreased participation in sports. Although cannabis is increasingly being used to treat pain and HIV/AIDS-related conditions, there is little research on substance use and physical activity among PLWH with chronic pain, for whom substance use might improve pain.

Methods: This cross-sectional analysis explored substance use and physical activity among adults living with HIV, chronic pain, and symptoms of depression. From 2017-2020, 187 participants were recruited at three HIV clinics in the US to complete a self-report questionnaire during the baseline visit for a trial of a psychotherapeutic intervention for pain and depression. The Addiction Severity Index measured alcohol use, cannabis use, and nicotine use over the past 30 days, dichotomized into “use” or “no use.” The International Physical Activity Questionnaire measured estimated energy units (i.e., METs) used for walking, moderate activity, and vigorous activity across seven days. To analyze the relationship between substance use and the three physical activity scores, we used generalized linear models with loglink and Poisson family error distributions and robust standard errors to account for non-normal distribution of scores and over dispersion. Models included age and gender*substance use interactions.

Results: The sample included 43% (n = 80) women and 56% (n = 105) men between the ages of 22-75 (M age = 51). In the past 30 days, 45% (n = 84) of participants used cannabis, with 26% (n = 48) endorsing heavy use (defined as 20-30 days of use); 45% used alcohol, with 8% (n = 15) endorsing heavy use; and 45% used cigarettes (M cigarettes per day = 1.4). Men who used alcohol had higher estimated walking MET scores (M = 1,837) than men who denied alcohol use (M = 1,381). This relationship was reversed for women: women who used alcohol had lower estimated walking MET scores (M = 490) than women who denied alcohol use (M = 1,466). Men who used cannabis had higher estimated vigorous activity MET scores (M = 3,388) than men who did not use cannabis (M = 843). This relationship was reversed for women: women who used cannabis had lower estimated vigorous activity MET scores (M = 461) than women who denied cannabis use (M = 628). Cigarette use was not associated with physical activity.

Conclusions: In this study of PLWH with chronic pain and symptoms of

depression, substance use was associated with less walking and vigorous physical activity among women and greater walking and vigorous physical activity among men. Research is needed to explore reasons for sex- and gender-based differences in physical activity. Clinicians working with women with HIV, pain, and depression may want to evaluate and discuss the potential negative relationship between substance use and physical activity.

Po-hun (Tommy) Chou (*Brown Research Advisors: Jennifer Wolff and Heather MacPherson*)

Publications

Chou, T., & Frazier, S.L. (in review). Designing wise interventions: User-centered design and development of an emotion-enhanced children's book intervention. *Journal of Consulting and Clinical Psychology*.

Chou, T., MacPherson, H.A., Massing-Schaffer, M., Spirito, A., & Wolff, J. (in press). Implementation and Training. In E. Frazier & J.M. Leffler (Eds.), *Handbook of Evidence-Based Day Treatment Programs for Children and Adolescents*. New York: Springer.

Presentations

Chou, T., & Frazier, S. L. (2021, April). *Community, Compassion, and Creativity: Partnering with afterschool programs to support socio-emotional learning for traditionally underserved youth*. Sarah Lawrence College C-3 New Scholar Series. Bronxville, NY.

Ramos, G., **Chou, T.,** Chavira, D. A., Huey, S., Hwan, W., Lau, A., & Piña, A. (2020, November). *Provision of culturally robust interventions in 2020 and beyond: Truths, myths, and opportunities for growth*. Association of Behavioral and Cognitive Therapies Annual Convention. Philadelphia, PA.

Hart, K. C., Poznanski, B., Cheatham-Johnson, R., Gregg, D., Zambrana, K., Gutierrez Renzulli, A., Flores, H., Sotolongo, L., **Chou, T.,** Moses, J. O., Villodas, F., & Villodas, M. T. (2020, November). *Utilizing the Summer Treatment Program Model to Promote School Readiness in Young Children Living in Urban Poverty*. In S. Tannenbaum (Chair). STPs in the Real-World: Exploring Adaptations to Improve Access and Feasibility While Maintaining High Quality Care. Association for Behavioral and Cognitive Therapies Annual Convention. Philadelphia, PA.

Chou, T., & Frazier, S. L. (2021, March). *Compassion-Oriented Reflection and Engagement*. Presented at the 23rd Annual Brown University Mind Brain Research Day, Providence, RI.

Grant Submissions

AHRQ NRSA F32 (submitted Dec. 2020)

Title: *Technology-Based Multiple Health Behavior Change Program for Underserved Families in Primary Care*

CORE: Compassion Oriented Reflection and Engagement to Guide Community Outreach and Partnership

Tommy Chou, M.S., & Stacy L. Frazier, Ph.D.

Estimates in dissemination, implementation, and services (DIS) research continue to present a 17-year lag for implementation of only 14% of evidence-based clinical services and technologies in practice (Chambers, 2018) – especially troubling for communities characterized by disproportionately high rates of poverty, crime and mental health need (Yoshikawa, Aber, & Beardslee, 2012). Culturally robust efforts towards closing this gap often rely on academic- community partnerships which can help bring science to service for vulnerable and systemically disenfranchised populations (e.g., communities of color and those characterized by poverty); however, a range of challenges can disrupt implementation and adoption (Damschroder et al., 2009) and scientific conduct has historically employed deceptive or unethical practices (e.g., communities of color or those characterized by poverty; Lee, 2012; Satcher, 2012). This presentation describes Compassion-Oriented Reflection and Engagement (CORE), a framework to inform academic collaborators' perspectives and practices towards building flexible, responsive partnerships with youth-serving community-based organizations. Further, it reviews relevant literature on the history of academic-community partnership and examines the ethical considerations of community-engaged initiatives and research.

Grace Cushman (*Brown Research Advisor: Elizabeth McQuaid*)

Publications

Cushman, G. K., Gutierrez-Colina, A. M., Lee, J. L., Rich, K. L., Mee, L. L., Rea, K., Blount, R. L., & Eaton, C. K. (In Press). Caregiver-Reported Outcomes of Pediatric Transplantation: Changes and Predictors at 6-Months Post-Transplant. *Pediatric Transplantation*.

Rea, K. E., **Cushman, G. K.**, Quast, L. F., Stolz, M. G., Mee, L. L., George, R., & Blount, R. L. (In Press). Specific responsibilities and perceived transition readiness in adolescent solid organ transplant recipients. *Patient Education and Counseling*.

Cushman, G. K., West, K. B., Davis, M., LaMotte, J., Eaton, C. K., Gutierrez-Colina, A. M., Suveg, C., & Blount, R. (In Press). The role of executive functioning, healthcare management, and self-efficacy in emerging adults' health-related quality of life. *Journal of American College Health*.

Cushman, G. K., Shih, S., Stolz, M. G., Hinrichs, R. C., Jovanovic, T., Lee, J., Kugathasan, S., & Reed, B. (2021). Stressful life events, depression, and the moderating role of psychophysiological reactivity in patients with pediatric inflammatory bowel disease. *Journal of Psychosomatic Research*. doi: 10.1016/j.jpsychores.2020.110323

Cushman, G. K., Stolz, M. G., Shih, S., Listernick, Z., Talmadge, C., Gold, B., & Reed, B. (2021). Age, disease symptoms, and depression associated with body image dissatisfaction in pediatric inflammatory bowel disease. *Journal of Pediatric Gastroenterology and Nutrition*, 72, 57-62. doi: 10.1097/MPG.0000000000002943

Shih, S., **Cushman, G. K.**, & Reed, B. (2021). Temperament and health-related quality of life in newly diagnosed pediatric inflammatory bowel disease. *Journal of Pediatric Psychology*, 46, 404-412.

Gutierrez-Colina, A. M., Davis, M., Eaton, C. K., LaMotte, J., **Cushman, G. K.**, Quast, L., Suveg, C., & Blount, R. L. (2020). The Role of Executive Functioning in Health Self-Management and the Transition to Adult Health Care among College Students. *Journal of American College Health*. doi: 10.1080/07448481.2020.1775605

Cushman, G. K., Shih, S. & Reed, B. (2020). Parent and family functioning in pediatric inflammatory bowel disease. *Children*, 7, 188-203. doi: 10.3390/children7100188

Rea, K. E., **Cushman, G. K.**, Santee, T., Blount, R. L., & Mee, L. L. (Under Review). A systematic review of factors contributing to transition readiness in adolescents and young adults with sickle cell disease.

Stolz, M.G., Rea, K., **Cushman, G.**, Quast, L., Gutiérrez-Colina, A.M., Eaton, C., & Blount, R. (Under Review). The interactive effect of executive functioning and personality on post-traumatic stress symptoms in adolescent solid organ transplant recipients.

Presentations

Cushman, G. K., Shih, S., Stolz, M. G., Rea, K., & Reed, B. (2021, April). *Individual characteristics predicting body image dissatisfaction in youth with Inflammatory Bowel Disease*. Poster presented at the 2021 Society of Pediatric Psychology Annual Conference (Virtual).

Rea, K. E., **Cushman, G. K.**, Quast, L. F., George, R., Basu, A., Ford, R., ... & Blount, R. L. (2021, April). *Healthcare utilization and medical outcomes in the first three years post-transfer among young adult solid organ transplant recipients*. Poster presented at the 2021 Society of Pediatric Psychology Annual Conference (Virtual).

Casleton, S., Quast, L., Rea, K., **Cushman, G.**, Pritchard, B., Shields, C., & Blount, R. (2021, April). *Relation between parent stress and quality of life in children with chronic medical conditions*. Poster presented at the 2021 Society of Pediatric Psychology Annual Conference (Virtual).

Cushman, G., Kopel, S., Dunsiger, S., McQuaid, E. (2021, March). *Medication Adherence in Adolescents with Asthma During the Transitional Summer Months Before High School*. Presented at the 23rd Annual Brown University Mind Brain Research Day, Providence, RI.

Grant Submissions

Brown Predoctoral Seed Money Research Grant, 2020-2021

Title: *Psychosocial Barriers to Implementing Peanut Allergy Prevention in Young Children*

F32 Ruth L. Kirschstein Postdoctoral Individual National Research Service Award, 2021-2023
(Submitted)

Title: *Preventing Peanut Allergy in Young Children: Identifying Barriers to Protocol Adherence*

Medication Adherence in Adolescents with Asthma During the Transitional Summer Months Before High School

Grace Cushman, MS, Sheryl Kopel, MSc, Shira Dunsiger, PhD, Elizabeth McQuaid, PhD

Background: Adherence to prescribed medications among adolescents with asthma is critical to prevent negative outcomes such as poor asthma control and hospitalizations. Yet, adolescents are at increased risk of not taking their daily medications as prescribed. Prior work has characterized three classes of adherence behavior for adolescents prior to and during the high school transition, including those who have high and sustained adherence, low and sustained adherence, and those with low and declining adherence. The purpose of the present study is to examine risk periods for low adherence within the low and declining adherence group.

Methods: Adolescents with asthma on controller medications were enrolled in 8th grade and monitored through 10th grade. Daily medication usage was assessed via objective methods, including electronic caps monitoring date and time participants opened their pill bottles, doser devices placed on the end of inhaler canisters, and dosage counters on dry powder inhalers. Adherence was defined by the number of ingested doses divided by the number of prescribed doses.

Results: Daily medication use for 62 participants (*M*_{age at enrollment} = 13.7 years) was collected between 8th and 10th grade and 29% of the sample (*n* = 18) had low and declining adherence. Within the low and declining adherence group, there was a significant decline in adherence between 8th and 9th grade, but not between 9th and 10th grade. Examination of adherence levels at the month-level indicate a peak in adherence in March of 8th grade (~42% adherent) and a decline approaching the beginning of the summer months. Adherence increased in the months approaching the start of the school year, around August and September of 9th grade.

Conclusions: The months approaching the end of middle school and beginning of summer may be a risk period for poor adherence in adolescents with asthma. The decreased structure of summer months, including changes in sleep schedules, may impact adolescents' ability to adhere to their medical provider's recommendations. Lower adherence may also represent a dissonance between adolescents' self-efficacy with medication management and actual skills. Clinical providers may consider assessing for medication use in 8th grade and provide anticipatory guidance regarding the transition from middle school into summer to offset the risk for decreased adherence and subsequent negative health outcomes.

Alyssa De Vito M.A. (Brown Research Advisor: Athene Lee, Ph.D.)

Publications

Publications

Cherry, K. E., **De Vito, A. N.**, Calamia, M. R., Elliott, E. M., Yu, S., Sampson, L., Galea, S., Mansoor, M., McKneely, K. J., & Nguyen, Q. P. (2021). Disaster stressors and psychological well-being in older adults after a flood. *Psychology and Aging*. Advance online publication. <https://doi.org/10.1037/pag0000602>

Kirby, K. M., Pillai, S., Brouillette, R. M., Keller, J. N., **De Vito, A. N.**, Bernstein, J. P., ... & Carmichael, O. T. (2021). Neuroimaging, behavioral, and gait correlates of fall profile in older adults. *Frontiers in aging neuroscience*, *13*, 51.

Pugh, E., **De Vito, A.N.**, Divers, R., Robinson, A., Weitzner, D. S., & Calamia, M. (2021). Social factors that predict cognitive decline in older African American adults. *International Journal of Geriatric Psychiatry*, *36*(3), 403-410.

Under Review

De Vito, A.N., Zamit, A.R., Calamia, M., Pugh, E., & Muniz-Terrera, G., (Revision Under Review) Variability in cognitive performance as an early sign of dementia: A replication and analysis of two longitudinal samples.

Divers, R., **De Vito, A.N.**, Robinson, A., Pugh, E., Calamia, M. (Revision Under Review) Longitudinal changes in predictors of informant-rated everyday function in mild cognitive impairment.

Pugh, E., Robinson, A., **De Vito, A.N.**, Bernstein, J.P.K., Calamia, M. (Revision Under Review) African American Representation in Neuropsychology. Manuscript submitted for publication.

Divers, R., Robinson, A., Miller, L., **De Vito, A.N.**, Pugh, E., Calamia, M. (Under Review) Beyond Depression: Examining the Role of Anxiety and Anxiety Sensitivity on Subjective Cognition and Functioning in Older Adults. Manuscript submitted for publication.

Presentations

De Vito, A.N. & Lee, A. (2021, March) *An Exploration of Compensatory Strategy Use in Diverse Older Adults: The Impact of Cultural Beliefs Regarding Aging*. Presented at the 23rd Annual Brown University Mind Brain Research Day, Providence, RI.

An Exploration of Compensatory Strategy Use in Diverse Older Adults: The Impact of Cultural Beliefs Regarding Aging

Alyssa De Vito, M.A., Athene Lee, Ph.D.

Compensatory strategies (CS) are behaviors used to adapt to or overcome changes in cognition and to mitigate declines in instrumental activities of daily living (IADLs). Research has demonstrated that regular use of CS has been linked to improved real-world functional performance and prolonged maintenance of independence in older adults with subjective and/or objective cognitive decline. Individual differences (e.g., age, gender, cognitive status) have been associated with differing levels and types of CS use. Previous literature on CS use has been conducted primarily in white, well-educated, and middle-class samples. There has not yet been examinations on potential differences in CS use between ethno-racial groups or the underlying causes of ethno-racial differences in CS use. Several studies have found that cultural factors such as dementia stigma and beliefs about the aging process often impact health-related behaviors and treatment utilization in under-represented populations (URPs). Identifying if differences in CS use exist and potential underlying causes of these differences will help to develop culturally-informed treatment to promote prolonged functional independence and reduce aging-related functional disparities.

Participants will be a subset of 900 individuals aged 55 or older who reside in the United States and are native English and/or Spanish speakers. The present study will focus on Non-Hispanic White (NHW), Black/African American, and Latinx individuals with equal recruitment between groups. Participants will be recruited through Amazon's Mechanical Turk (MTurk) to answer questions regarding their demographics, compensatory strategy use (Everyday Compensation Questionnaire, Memory Compensation Questionnaire), anxiety (Penn State Worry Questionnaire-Abbreviated), depression (Geriatric Depression Scale-15 Item), and their beliefs about aging (STIG-MA Survey, Expectations Regarding Aging-38 Item). Exclusion criteria included 1) Formal dementia diagnosis 2) History of traumatic brain injury 2) History of psychosis 3) History of substance abuse 4) Pharmacological treatment for memory loss.

ANOVAs will be used to assess for differences in the level of CS use between ethno-racial groups. It is hypothesized that white individuals will use more internal (e.g., memory tricks such as chunking) or external (e.g., creating lists/written reminders) CS whereas Latinx and Black individuals will use more socially-based CS (e.g., asking a family member to help remind them of appointments) given previous research that demonstrates these groups are

more likely to manage aging-related challenges within the family unit first prior to seeking information or aid through external informal (e.g., internet search) or formal (e.g., through healthcare provider) channels. Mediation analysis will be used to determine if/which cultural factors mediate the relationship between ethno-racial group and CS use. Previous work has demonstrated that Latinx individuals expect greater aging-related decline compared to NHWs and Blacks.

Therefore, it is hypothesized that this attitude towards aging will mediate the relationship between Latinx ethnicity and CS use, but this relationship will not be observed in NHWs or Blacks. Regarding dementia stigma, previous work has shown that a cognitive/dementia diagnosis is more stigmatizing in Black and Latinx communities than in NHW communities. Therefore, dementia stigma may mediate the relationship between ethno-racial identity and CS use in these groups.

Claire Dunphy (*Brown Research Advisor: Susan Ramsey, PhD*)

Publications

Duncan-Park, S., **Dunphy, C.**, Becker, J., D'Urso, C., Annunziato, R.A., Blatter, J., Conrad, C., Goldfarb, S.B., Hayes, D., Melicoff-Portillo, E., Schechter, M., Visner, G., Armstrong, B., Chin, H., Kesler, K., Williams, N.M., Odum, J.N., Sweet, S.C., Danziger-Isakov, L., Shemesh, E. (2021). Remote intervention engagement and outcomes in the Clinical Trials in Organ Transplantation in Children consortium multisite trial: a nonrandomized controlled trial. *American Journal of Transplantation*, 1-11.

Dunphy, C., Annunziato, R.A. (Under review). Caring for the teenager in an adult unit in *Handbook of Dialysis Therapy*, 6th ed.

Presentations

Dunphy, C. (2021, March). *Psychosocial predictors of immunosuppressant nonadherence among adult liver transplant recipients*. Presented at the 23rd Annual Brown University Mind Brain Research Day, Providence, RI.

Psychosocial predictors of immunosuppressant nonadherence among adult liver transplant recipients

Claire Dunphy, MA, Alexandra Jerzynska, BS, Maria Zarcone,
Thomas Schiano, MD, Rachel Annunziato, PhD

Background: Nonadherence to immunosuppressant (IS) medication is associated with poor outcomes for transplant recipients, including graft rejection and graft loss. To date, intervention attempts have failed to demonstrate improvement of transplant outcomes. A number of possible sociodemographic, psychosocial, and other risk factors for IS nonadherence have been explored in the literature, but there is no clear consensus about which specific characteristics confer risk of nonadherence and subsequent poor health outcomes in this population. As a result, interventions thus far have largely failed to target important risk factors. Additionally, prior research has relied on subjective measures of adherence that are not related to objective transplant outcomes. This study examined psychosocial and cognitive factors in relation to IS nonadherence.

Method: Eighty-eight liver transplant recipients were recruited from one academic medical center. Patients completed a series of psychosocial questionnaires and one measure of cognitive functioning on the day of study enrollment. Variables assessed at enrollment included health literacy, social support, psychological distress, subjective social status, and problem solving. Patient medical records were reviewed over a period of one year to calculate the Medication Level Variability Index (MLVI), a measure of the variability of IS levels (tacrolimus) in the blood. A higher MLVI indicates greater nonadherence with values ≥ 2 being associated with poor outcomes. Episodes of graft rejection were also identified. MANOVA analyses were conducted to examine differences between adherent and nonadherent groups. Logistic regression analyses were computed to examine differences between groups and the effects of predictor variables on outcomes.

Results: Forty-four percent (N=33) of patients were classified as nonadherent (MLVI ≥ 2). Graft rejection was identified in 6.8% (N=6) of patients. Nonadherent patients were younger and demonstrated significantly lower social support and higher problem-solving scores at enrollment than adherent patients ($p < 0.05$). Age, problem solving, and social support also predicted categorical nonadherence. Psychosocial and cognitive variables did not predict graft rejection.

Conclusions: Nearly half of the patients in this sample demonstrated IS nonadherence. Results of these analyses suggest that younger adult patients may be at higher risk of nonadherence than older patients. The role of social support and cognitive functioning should be further explored in relation to IS nonadherence and clinical outcomes.

STACY ELLENBERG, MS (*Brown Research Advisor: **BRANDON GAUDIANO, PHD***)

Publications

Ellenberg, S., & Gaudiano, B. (in press). Schizophrenia-spectrum and other psychotic disorders: Third wave case conceptualization. In O'Donohue & Masuda. (Eds.). *Behavior Therapy: First, Second, and Third Waves*.

Gaudiano, B. & **Ellenberg, S.** (in press). ACT for the treatment of psychosis and schizophrenia-spectrum disorders. In Twohig, M.P., Levin, M.E., & Petersen, J.M. (Eds.), *The Oxford Handbook of Acceptance and Commitment Therapy*. Oxford University Press.

Gaudiano, B., **Ellenberg, S.**, Ostrove, B., Johnson, J., Mueser, K., Furman, M., & Miller, I. (2021). *Effectiveness of acceptance and commitment therapy for inpatients with psychosis: Feasibility and acceptability from a pilot randomized controlled trial*. Manuscript in preparation.

Presentations

Ellenberg, S., Miller, I., & Gaudiano, B. (2021, March). *Acceptance and Commitment Therapy for Inpatients with Psychosis: Feasibility and Acceptability from a Pilot Randomized Controlled Trial*. Presented at the 23rd Annual Brown University Mind Brain Research Day, Providence, RI.

Ellenberg, S. (2020, October). *Technology, Social Behavior and Schizophrenia in the Digital Age*. Presented as Resident Professional Presentation as part of the Adult Track Didactic Seminar Series.

Gaudiano, B., **Ellenberg, S.**, Ostrove, B., Johnson, J., Mueser, K., Furman, M., & Miller, I. (2021, June). *Mindfulness and acceptance based approaches for psychosis: current evidence and future directions*. Symposium accepted for presentation at ACBS Conference.

Acceptance and Commitment Therapy for Inpatients with Psychosis: Feasibility and Acceptability from a Pilot Randomized Controlled Trial

Stacy Ellenberg, M.S.¹; Ivan W. Miller, Ph.D.,^{2,3} Brandon A. Gaudiano, Ph.D.^{2,3,4} ¹Binghamton University, ²Alpert Medical School of Brown University, ³Butler Hospital, ⁴Providence VA Medical Center

To date, Acceptance and Commitment Therapy (ACT) boasts a small but promising literature to support its feasibility, acceptability, and effectiveness for inpatients with psychosis. In the current trial, inpatients with schizophrenia-spectrum disorders were randomly assigned to Acceptance and Commitment Therapy for Inpatients (ACT-IN; n=24) or Enhanced Treatment as Usual (E-TAU; n=24). Clinical and functional outcomes were monitored from baseline through four months post-discharge, and feasibility and acceptability ratings were captured for participants and inpatient staff. ACT-IN was rated highly on measures of feasibility by routine hospital staff and treatment credibility/satisfaction by participants. While both conditions demonstrated significant improvement in clinical outcomes from baseline through four months, rehospitalization rates for patients receiving aftercare in the E-TAU condition were 47% vs 17% in the ACT-IN condition. This trial emphasizes the importance of furthering research in the clinical effectiveness of ACT-IN, a treatment that is brief and easily implemented, rated favorably by participants, and potentially capable of producing longstanding effects.

Keywords: acceptance and commitment therapy; schizophrenia; psychosis; psychiatric inpatient hospitalization

Dov Gold (Brown Research Advisor: Anjali Palav)

Publications

Gold, D., Wisialowski, C., Piryatinsky, I., Gaudet, C., Niermeyer, M., Malloy, P., Salloway S., Klinge, P., & Lee, A. (under review). *Post-shunt outcomes in Idiopathic Normal Pressure Hydrocephalus with and without comorbid Alzheimer's disease.*

Gold, D., Stockwood, J., Boulos, K., Kasha, S., Vyshedskiy, A., deTorres, L., Ostrovsky, S., Durakovic, D., Savchenko, A., Piryatinsky, I., (under review). *The Boston Cognitive Assessment: Psychometric foundations of a self-administered measure of global cognition.*

Presentations

Gold, D., Wisialowski, C., Piryatinsky, I., Malloy, P., Salloway, S., Klinge, P., & Lee, A. (2021, March). *Post-Shunt Outcomes in Idiopathic Normal Pressure Hydrocephalus with and without Comorbid Alzheimer's Disease.* Presented at the 23rd Annual Brown University Mind Brain Research Day, Providence, RI.

Gold, D., Ravid, D., Crain, E., Holler, K., (2021). *Relationship between suicidality and discrepancies in verbal and nonverbal intelligence in adolescents.* Poster submitted to the 41st Annual Conference of the National Academy of Neuropsychology

Ferguson, H., Turok, N., Colby, K.A., **Gold, D.,** Piryatinsky, I., (2021) *Remote cognitive screening: A preliminary study of location administration of the Boston Cognitive Assessment (BoCA).* Poster submitted to the 41st Annual Conference of the National Academy of Neuropsychology

Gold, D., Wisialowski, C., Piryatinsky, I., Malloy, P., Salloway S., Klinge, P., & Lee, A. (2021, June). *Post-shunt outcomes in Idiopathic Normal Pressure Hydrocephalus with and without comorbid Alzheimer's disease.* Poster presented at the 19th Annual meeting of the American Academy of Clinical Neuropsychology

Gold, D., Stockwood, J., Boulos, K., Vyshedskiy, A., deTorres, L., Ostrovsky, S., Durakovic, D., Savchenko, A., Piryatinsky, I., (2020, November). *The Boston Cognitive Assessment: Convergent and discriminant validity of a self-administered measure of global cognition.* Poster presented at the annual meeting of the Massachusetts Psychological Association.

Gold, D., Boulos, K., Coolbrith, N., Piryatinsky, I. (2020, October). *What makes them tick? The Clock Drawing Test and correlations between cognitive and functional abilities.* Poster presented at the 40th Annual Conference of the National Academy of Neuropsychology.

Grant Submissions

Brown Resident Grant Award, 2020-2021

Title: Longitudinal Post-Shunt Outcomes in Patients with Normal Pressure Hydrocephalus and Comorbid Alzheimer's Disease

Post-Shunt Outcomes in Idiopathic Normal Pressure Hydrocephalus with and without Comorbid Alzheimer's Disease

Dov Gold, Caroline Wisialowski, Irene Piryatinsky, Paul Malloy, Stephen Salloway, Petra Klinge, and Athene Lee

Alzheimer's disease (AD) is highly comorbid with Idiopathic Normal Pressure Hydrocephalus (iNPH) and may diminish the potential benefits of shunting; however, findings in this area are mixed. We examined postoperative outcomes, with emphases on cognition and utilization of novel scoring procedures to enhance sensitivity. We analyzed data from 31 individuals retrospectively to identify the main and interaction effects of time since surgery (baseline, 3 months, 12 months) and AD comorbidity (20 iNPH, 11 iNPH+AD) on activities of daily living (ADLs) and iNPH symptoms. We also assessed whether baseline variables predicted postoperative improvements. Gait, continence, and personal ADLs improved over time. AD comorbidity was associated with worse memory, semantic fluency, and motor dexterity.

Interaction effects were observed on informant ratings of executive dysfunction ($F=4.59$; $p=0.02$), serial dotting speed ($F=5.80$; $p=0.01$), and line tracing efficiency ($F=3.95$; $p=0.03$), suggesting that comorbid AD contributed to less improvement in these areas postoperatively. Baseline Mini Mental Status Exam (MMSE) and List Recognition and total index scores from the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) were associated with iNPH symptom reduction after 3 months. These findings may help inform discussions regarding the risks and potential benefits of surgery for iNPH patients with comorbid AD.

Tiffany Jenzer (*Brown Research Advisors: Robert Miranda and Hayley Treloar Padovano*)

Publications

Mann, I., **Jenzer, T.**, Mereish, E., & Miranda, R. (under review, revise and resubmit). Sexual minority stress and nicotine use.

Anthenien, A., Prince, M., Wallace, G., **Jenzer, T.**, & Neighbors, C. (2021). Cannabis outcome expectancies, cannabis use motives, and cannabis use among a small sample of frequent using adults. *Cannabis*, 4(1), 69-84.

Presentations

Jenzer, T. & Read, J.P. (2021, April). *Emotion regulation flexibility and alcohol use: a daily diary study*. Poster presented at the 2021 Collaborative Perspective on Addictions conference, virtual.

Jenzer, T. & Read, J.P. (2021, March) *Emotion regulation flexibility and alcohol use: a daily diary study*. Presented at the 23rd Annual Brown University Mind Brain Research Day, Providence, RI.

Grant Submissions

Canadian Institute of Health Research Postdoctoral Fellowship (2020, under review)
Title: How and for whom do alcohol use treatments work? Examining the role of emotion regulation in treatments for adolescents

EMOTION REGULATION FLEXIBILITY AND ALCOHOL USE: A DAILY-DIARY STUDY

Tiffany Jenzer & Jennifer P. Read

Emotion regulation (ER), which refers to all efforts to manage emotion, is a critical psychological process implicated in problematic alcohol use. Theories suggest that problematic drinkers rely on alcohol to manage stress because they lack other, more effective ways of managing their emotions. Thus, effective and successful use of ER strategies is a relevant factor in the etiology and treatment of this behavior. Recent work suggests that effective ER requires that an individual be able to flexibly use a variety of ER strategies across different situations (*ER variability*) and must be able to select the appropriate strategy for each situation, depending on the controllability of the stressor (*strategy-situation fit hypothesis*). Together, these components make up the construct of ER flexibility, which has yet to be examined in relation to alcohol-related outcomes. An initial investigation of the association between ER flexibility and alcohol-related outcomes (alcohol urge, consumption, and consequences) was the primary aim of this study. Participants (N = 145) were frequent drinkers (at least twice/week) aged 18-65, who participated in an online 14-day daily diary study. Participants first completed a 1-hour baseline survey assessing demographics, personality, psychopathology symptoms, and substance use.

Daily surveys assessed daily mood, daily stressors, stressor characteristics (including perceived controllability), ER strategy use, and daily alcohol outcomes. Multilevel structural equation modeling was used to examine associations of interest. ER strategy-situation fit predicted lower daily alcohol urge, suggesting it may be a protective factor. ER variability, on the other hand, showed mixed associations with alcohol outcomes. These findings may inform alcohol use interventions because they point to a relevant skill (i.e., fitting the strategy to the type of stressor) that could be integrated into treatment.

Lisa LaRowe (*Brown Research Advisor: David Williams*)

Publications

LaRowe, L.R. & Ditre, J.W. (2020). Pain, Nicotine, and Tobacco Smoking: Current State of the Science. *Pain*, *161*(8), 1688-1693.

LaRowe, L.R., Powers, J.M., Garey, L., Rogers, A.H., Zvolensky, M.J., & Ditre, J.W. (2020). Pain-Related Anxiety, Sex, and Co-Use of Alcohol and Prescription Opioids among Adults with Chronic Pain. *Drug and Alcohol Dependence*, *214*, 108171.

Goodhines, P.A., **LaRowe, L.R.**, Gellis, L.A., Ditre, J.W., & Park, A. (2020). Sleep-Related Cannabis Expectancies Questionnaire (SR-CEQ): Initial Development and Validation among College Students. *Journal of Psychoactive Drugs*, <https://doi.org/10.1080/02791072.2020.1800151>

Powers, J.M., **LaRowe, L.R.**, Garey, L., Zvolensky, M. J., & Ditre, J.W. (2020). Pain Intensity, E-Cigarette Dependence, and Cessation-Related Outcomes: The Moderating Role of Pain-Related Anxiety. *Addictive Behaviors*, *111*, 106548.

LaRowe, L.R., Maisto, S.A., & Ditre, J.W. (2021). A Measure of Expectancies for Alcohol Analgesia: Preliminary Factor Analysis, Reliability, and Validity. *Addictive Behaviors*, *116*, 106822.

LaRowe, L.R., Cleveland, J.D., Long, D.M., Nahvi, S., Cachay, E.R., Christopoulos, K.A., Crane, H.M., Cropsey, K., Napravnik, S., O'Cleirigh, C., Merlin, J.S., & Ditre, J.W. (2021). Prevalence and Impact of Comorbid Chronic Pain and Cigarette Smoking among People Living with HIV. *AIDS Care*, <https://doi.org/10.1080/09540121.2021.1883511>.

Ditre, J.W., Heckman, B.W., **LaRowe, L.R.**, & Powers, J.M. (2021). Pain Status as a Predictor of Smoking Cessation Initiation, Lapse, and Relapse. *Nicotine & Tobacco Research*, *23*(1), 186-194.

Lape, E.C., **LaRowe, L.R.**, Zale, E.L., Gellis, L.A., Park, A., & Ditre, J.W. (2021). Tobacco Cigarette Smokers Who Endorse Greater Intolerance for Nicotine Withdrawal Also Report More Severe Insomnia Symptoms. *Experimental and Clinical Psychopharmacology*, <https://doi.org/10.1037/pha0000440>.

Powers, J.M., **LaRowe, L.R.**, Lape, E.C., Zvolensky, M.J., & Ditre, J.W. (2021). Anxiety Sensitivity, Pain Severity, and Co-Use of Cigarettes and E-Cigarettes among Adults with Chronic Pain. *Journal of Behavioral Medicine*, *44*(3), 392-401.

LaRowe, L.R., Powers, J.M., Maisto, S.A., Zvolensky, M.J., Glatt, S.J., & Ditre, J.W. (under review). The Expectancies for Alcohol Analgesia Scale (EAA): Validation among Moderate-to-Heavy Drinkers without Chronic Pain.

Hooker, J.E., **LaRowe, L.R.**, Powers, J.M., & Ditre, J.W. (under review). Emotion Dysregulation and Hazardous Alcohol Use among Adults with Chronic Pain: The Role of Pain Intensity.

Ferguson, E., Vitus, D., Williams, M., Anderson, M., **LaRowe, L.R.**, Ditre, J.W., Stennet, B., & Boissonaeault, J. (under review). Sex Differences in Associations between Delay Discounting and Expectancies for Alcohol Analgesia.

Powers, J.M., Lape, E.C., **LaRowe, L.R.**, Hooker, J.E., & Ditre, J.W. (under review). Initial Validation of the Behavioral Expectancies to Co-Use Alcohol and Opioids Scale.

Ditre, J.W., **LaRowe, L.R.**, Powers, J.M., & Hooker, J.E. (submitted). Nicotine, Tobacco Smoking, and E-Cigarettes. In G. Asmundson and G. Crombez (Eds.), *Comprehensive Clinical Psychology, 2nd edition*.

Presentations

LaRowe, L.R., Dunsiger, S., & Williams, D.M. (2021, April). *Acute Effects of Exercise on Motivation to Quit Smoking among Female Smokers*. Research Spotlight presented the 42nd Annual Meeting & Scientific Sessions of the Society of Behavioral Medicine, Virtual Conference.

Hooker, J.E., **LaRowe, L.R.**, & Ditre, J.W. (2021, April). *The Role of Expectancies for Alcohol Analgesia in the Association between Emotion Dysregulation and Hazardous Alcohol Use among Individuals with Chronic Pain*. Poster presented the 42nd Annual Meeting & Scientific Sessions of the Society of Behavioral Medicine, Virtual Conference.

LaRowe, L., Dunsiger, S., & Williams, D. (2021, March). *Acute Effects of Exercise on Motivation to Quit Smoking and Subsequent Cessation Status among Female Smokers*. Presented at the 23rd Annual Brown University Mind Brain Research Day, Providence, RI.

LaRowe, L.R., Powers, J.M., Hooker, J.E., Lape, E.C., White, K.M., Paladino, M.B., & Ditre, J.W. (2021, February). *A Brief Mindfulness-Based Intervention for Nicotine Abstinence-Induced Hyperalgesia among Daily Cigarette Smokers with Chronic Pain*. Poster presented at the 27th annual meeting of the Society for Research on Nicotine and Tobacco, Virtual Conference.

Lape, E.C., **LaRowe, L.R.**, Zale, E.L., Gellis, L.A., Park, A., & Ditre, J.W. (2021, February). *Tobacco Cigarette Smokers who Endorse Greater Intolerance for Nicotine Withdrawal also Report More Severe Insomnia Symptoms*. Poster presented at the 27th annual meeting of the Society for Research on Nicotine and Tobacco, Virtual Conference.

Powers, J.M., **LaRowe, L.R.**, Lape, E.C., Zvolensky, M.J., & Ditre, J.W. (2021, February). *Anxiety Sensitivity, Pain Disability, and Co-Use of Cigarettes and E-Cigarettes among Adults with Chronic Pain*. Poster presented the 27th annual meeting of the Society for Research on Nicotine and Tobacco, Virtual Conference.

Grant Submissions

Active

Internship Research Grant (PI: LaRowe)

Brown University Clinical Psychology Internship Training Program

Exercise-Induced Pain as a Barrier to Physical Activity among Overweight/Obese Midlife Adults with Chronic Pain: A Proof-of-Concept and Feasibility Study

Pending

F32AG074680 (PI: LaRowe)

NIH/NIA

Adherence to Physical Activity among Midlife Adults with Chronic Pain: The Role of Acute Increases in Pain during Physical Activity

Acute Effects of Exercise on Motivation to Quit Smoking and Subsequent Cessation Status among Female Smokers

Lisa LaRowe, Shira Dunsiger, & David Williams

Cigarette smoking remains the leading cause of preventable death worldwide, and converging evidence indicates that women (vs. men) experience greater difficulty achieving/maintaining smoking abstinence. Exercise has been recommended as an adjunct cessation treatment that may offer unique utility among female smokers. However, no prior work has tested the acute effects of exercise on motivation to quit smoking. The goals of these secondary analyses were to test the acute effects of exercise on motivation to quit smoking/stay smoke-free, and to examine whether within-person changes in motivation predicted cessation status at the subsequent time point.

Participants included $N = 105$ women ($m_{age} = 42.5$) who participated in an RCT testing the efficacy of aerobic exercise (vs. contact control) as an adjunct smoking cessation treatment and completed a 12-week EMA protocol. A longitudinal mediation model was used to simultaneously test the effects of (a) group on pre-to-post session changes in motivation controlling for pre-session motivation, previous smoking cessation status and nicotine dependence at baseline, (b) effects of changes pre-to-post session in motivation on smoking cessation at the next time point controlling for group and baseline motivation, and (ab) indirect effects of group on cessation through acute effects of motivation. As expected, results indicated significant a path coefficients (participants randomized to exercise reported greater changes in motivation pre-to-post session, $a = .20$, $SE = .07$, $p = .04$), significant b path coefficients (greater increases in motivation were associated with higher odds of cessation at next measurement point, $OR = 1.10$, $95\% CI: 1.06-1.16$), and a significant indirect effect of intervention on cessation through acute changes in motivation ($p < .05$). These findings suggest that aerobic exercise increases motivation to quit smoking immediately post-exercise, which increases odds of subsequent smoking abstinence. One potential implication of these findings is that encouraging smokers to engage in frequent exercise sessions before and during a quit attempt may improve cessation outcomes. Future work is needed to examine the effects of exercise-induced increases in motivation on longer-term cessation outcomes.

Sharon Lee (Brown Research Advisor: Laura Stroud)

Publications

Lee, S.Y., Waring, M.E., Park, C.L., & Blake, E. (2021). Do depressive symptoms predict blood pressure control in US veterans? *Journal of General Internal Medicine*.

Finkelstein-Fox, L., Sinnott, S.M., **Lee, S.Y.**, Carney, L.M., Park, C.L., ... & Hoff, R. (2021). Meaningful military engagement among male and female post-9/11 veterans: An examination of correlates and implications for resilience. *Journal of Clinical Psychology*.

Park, C.L., Sacco, S.J., Finkelstein-Fox, L., Sinnott, S.M., Scoglio, A.A.J., **Lee, S.Y.**, ... & Kraus, S.W. (2021). Post-9/11 military veterans' adjustment to civilian life over time following separation from service. *Journal of Clinical Psychology*.

Park, C.L., Williams, M.K., Hernandez, P.R., Agocha, V.B., **Lee, S.Y.**, ... & Loomis, D. (2020). Development of emotion regulation across the first two years of college. *Journal of Adolescence*, 84, 230-242.

Hernandez, P.R., Agocha, V.B., Carney, L.M., Estrada, M., **Lee, S.Y.**, ... & Park, C.L. (2020). Testing models of reciprocal relations between social influence and integration in STEM across the college years. *PLOS ONE*, 15(9), e0238250.

Lee, S. Y., Agocha, V.B., Hernandez, P.R., Carney, L.M., Park, C.L., & Williams, M.K. (under review). Perceived discrimination, coping styles, and changes in eating behaviors during the transition to college.

Lee, S.Y., Park, C.L., & Laflash, S. (under review). Perceived posttraumatic growth in cardiac patients: A systematic scoping review.

Ching, T.H.W., Finkelstein-Fox, L., **Lee, S.Y.**, & Watson, R.J. (under review). Sexual and gender minority stress among adolescents of color in the United States.

Presentations

Lee, S.Y., Vergara-Lopez, C., Bublitz, M.H., & Stroud, L.R. (2021, March) *Early Life Stress Predicts Adolescent Girls' Cardiovascular Recovery in Response to Peer Rejection*. Presented at the 23rd Annual Brown University Mind Brain Research Day, Providence, RI.

Lee, S.Y., Vergara-Lopez, C., Bublitz, M.H., & Stroud, L.R. (2021, June). *Early life stress and cardiovascular recovery in response to peer rejection among adolescent girls*. Poster presented at the 16th International Congress of Behavioral Medicine (virtual conference).

Lee, S.Y., Park, C.L., Cilhaoroz, B.T., & Pescatello, L.S. (2020, December). *The role of negative cognitions and mood in the association between posttraumatic stress disorder symptoms and resting heart rate variability*. Poster presented at the 2020 Virtual Meeting of the American Psychosomatic Society (virtual conference).

Gnall, K.E., Park, C.L., **Lee, S.Y.**, & Finkelstein-Fox, L. (2020, August). *Exercise motives and exercise engagement during the college transition: The moderating role of interoceptive awareness*. Poster presented at the 128th Annual Convention of the American Psychological Association (virtual conference).

Hernandez, P.R., Agocha, V.B., Carney, L.M., Estrada, M., **Lee, S.Y.**, Loomis, D., Williams, M., & Park, C.L. (2020, August). *Testing models of reciprocal relations between social influence and integration in STEM across the college years*. Poster presented at the 128th Annual Convention of the American Psychological Association (virtual conference).

Honors & Awards

Mind Brain Research Day, 2nd Place Poster Award for Clinical Psychology Residents, 2021
American Psychosomatic Society, Citation Poster Award, 2020
American Psychosomatic Society, 2nd Place Poster Award for Psychosomatic Affective Neuroscience, 2020

Early Life Stress Predicts Adolescent Girls' Cardiovascular Recovery in Response to Peer Rejection

Sharon Y. Lee^{1,2}, Chrystal Vergara-Lopez^{1,2,4}, Margaret H. Bublitz^{1,3,4}, Laura R. Stroud^{1,2}

¹Department of Psychiatry and Human Behavior, Warren Alpert Medical School, Brown University, Providence, RI

²Center for Behavioral and Preventive Medicine, The Miriam Hospital, Coro West, Providence, RI

³Department of Medicine, The Warren Alpert Medical School of Brown University, Providence, RI

⁴Women's Medicine Collaborative, The Miriam Hospital, Providence, RI

Background: Women are more likely than men to experience at least four adverse childhood events, or early life stress (ELS), placing them at higher risk for morbidity of various diseases and illnesses. Cardiovascular reactivity and recovery to social rejection in adolescent girls maybe an important mechanism linking early life stress and morbidity. We hypothesized that a history of high ELS is associated with greater cardiovascular reactivity and slower recovery to peer rejection among adolescent girls.

Method: Ninety-two adolescent girls in the community (*Age* = 13.2; 43.5% racial/ethnic minorities) completed demographic measures, a physical exam, and the Psychosocial Schedule to assess for cumulative ELS. Low ELS was defined as three or fewer early life stressors and high ELS was defined as four or more. In a subsequent study visit, girls had their blood pressure and heart rate measured during the Yale Interpersonal Stressor, a peer rejection paradigm involving gradual exclusion during a series of three conversations with two confederates.

Results: Consistent with our hypothesis, linear mixed models revealed that adolescent girls with high ELS demonstrated delayed diastolic blood pressure recovery to repeated exposure of peer rejection compared to girls with low ELS. Counter to our hypothesis, girls with *low* ELS had slower heart rate recovery during the final recovery period. There were no significant differences by ELS group in systolic blood pressure during any recovery period or cardiovascular reactivity during any stressor period.

Conclusions: Results suggest that a history of high ELS may contribute to a prolonged stress response to peer rejection among adolescent girls, which in turn may elevate cardiovascular health risk over time.

Katherine Lenger (Brown Research Advisor: Jennifer Primack)

Publications

Lenger, K. A., Roberson, P. N. E., & Bluth, K. (2020). Are contemplative capacities created equal?: Examining demographic differences in adolescents' contemplative capacity and differences in psychological well-being. *Mindfulness*, *11*(7), 1678-1689. **View Article.**

Roberson, P. N. E., **Lenger, K. A.**, Gray, T., Cordova, J. V., G & Gordon, K. C. (2020). Dyadic latent profile analyses and multilevel modeling to examine differential response to couple relationship education. *Journal of Family Psychology*, *34*(7), 879-885.

Wischkaemper, K. C., Fleming, C. J., **Lenger, K. A.**†, Roberson, P. N. E., Gray, T., Cordova, J. V., & Gordon, K. C. (2020). Attitudes toward relationship treatment among underserved couples. *Couple and Family Psychology: Research and Practice*, *9*(3), 156-166.

Waugh, M. W., McClain, C. M., Florimbio, A. R., **Lenger, K. A.**, De Vore, E. N., Fillauer, J. P., Lewis, K. C., Mariotti, E. C., Mulay, A. L., Ridenour, J. M., Russell, A. N. (2020). Comparative content validity analyses of self-report measures of Criterion A and B of the Alternative Model of Personality Disorders. *Journal of Personality Assessment*, *103* (2), 161-173

Roberson, P. N. E., Cortez, G., **Lenger, K. A.**, Bell, C., Bell, J., Freeman, T., Heidel, R. E., & Lloyd, J. (2021). Quality of life fluctuations before and after breast surgery for estrogen-positive breast cancer patients living in South-central Appalachia: A prospective pilot study. *The Breast Journal*, *27* (4), 400-402

Holman, C. Bozzay, M., Barredo, J., **Lenger, K. A.**, & Primack, J. (In Press). Suicide prevention within the Veterans Health Administration. *The Behavior Therapist*, *43*(8), 305-309.

Roberson, P.N.E., Cortez, G., Trull, L.H., & **Lenger, K.A.** (2020). In their own words: How opioids have impacted the lives of "everyday" people living in Appalachia. *Journal of Appalachian Health* *2*(4), 26-36. <https://www.muse.jhu.edu/article/774856>.

Hughes, J. A., Gordon, K. C., **Lenger, K. A.** †, & Roberson, P. N. E., Gray, T., & Cordova, J. V. (Under Review). Examining the role of therapeutic alliance, split alliance, and gender on couples' relationship satisfaction following a brief couple intervention. *Contemporary Family Therapy*.

Rose, K. M., Gordon, K. C., Schlegel, E. C., McCall, M., Gao, A., Ma, M., **Lenger, K. A.**, Wright, K. D., Ko, E., Wang, H., & Stankovic, J. (2021). Smarthealth technology study protocol to improve relationships between older adults with dementia and family caregivers. *Journal of Advanced Nursing*, *77* (5), 2519-2529.

Presentations

Lenger, K.A. & Gordon, K. C. (March, 2021) *Is mindfulness only for the fortunate? The development and dissemination of a brief home-based mindfulness intervention to*

low-income couples. Presented at the 23rd Annual Brown University Mind Brain Research Day, Providence, RI.

McGuire, A., **Lenger, K.A.**, Sawyer, B., Whitton, S., Graziosi, M., Galán, C., Gordon, C. (Under Review). *Multicultural considerations for integrating positive psychology and strengths-based approaches into mental health treatment*. Panel discussion proposed for the annual meeting of the Association of Behavioral and Cognitive Therapies (ABCT, 2021), New Orleans, LA.

Grant Submissions

Think Tank Award, Mind and Life (2021, under review)

Title: Beyond white mindfulness: Dialogues on racism, liberation, and religion/spirituality.

Is Mindfulness Only For The Fortunate? The Development and Dissemination of a Brief Home-Based Mindfulness Intervention to Low-Income Couples

Katherine A. Lenger, M.A. & Kristina C. Gordon, Ph.D.
University of Tennessee, Knoxville

Low-income individuals tend to experience greater psychosocial and relationship stressors than economic majority individuals. Although mindfulness is documented to reduce both individual and relationship stress, research has yet to examine mindfulness among economic minorities. Low-income populations experience greater barriers to engaging in typical approaches to therapy (e.g., transportation, child-care). In response to these barriers, *brief, home-based*, treatments have been found to be a successful solution to reaching these populations. Given that mindfulness has the flexibility to be taught anywhere (e.g., home), it may be a useful tool to disseminate to economic minority couples. The present study used a Community Based Participatory Research (CBPR) approach to design a brief mindfulness intervention, tailored toward couples, that could be delivered in a home or clinic format to improve access to care. To develop the intervention, we worked with a team of community partners at local integrative healthcare facilities and conducted two focus groups with low-income individuals ($n = 13$) to determine their attitudes about mindfulness and how to make this brief intervention most useful for this population. Themes from these focus groups were identified using grounded theory and adaptations to the intervention manual were made to tailor this program to be most useful to low-income populations. Upon completion of the intervention manual development, the program was disseminated to a sample that overrepresented low-income couples. Couples chose where they would like to participate (e.g., their home or a variety of local clinics) and free childcare was provided regardless of setting. Thirty-nine couples completed the brief, two-session, intervention and completed assessments on individual (i.e., mindfulness, depression, anxiety, and stress) and relationship functioning (i.e., relationship satisfaction and communication) at baseline, 1-month and 2-months post-intervention. Couples reported significant improvements in mindfulness, individual functioning (i.e., depression, anxiety, and stress) and relationship satisfaction across the program. Low-income couples specifically evidenced change in mindfulness and relationship satisfaction at one-month post-intervention, and later evidenced reductions in individual stress at two-months post-intervention. Higher income couples evidenced improvement in individual anxiety, depression, and stress at both one- and two-months post-intervention, but did not change in relationship satisfaction or communication at either follow-up. Collectively, these results suggest that mindfulness can be taught in a brief, flexible (i.e., home or clinic) format and improvements in individual and relationship functioning can be achieved and maintained through one- and two-months post-intervention. Additionally, these data evidence that mindfulness may address different needs for higher-income and low-income individuals and couples. Thus, it is essential to continue to be sensitive to the needs of the population one is serving and adapting interventions appropriately. Research of this nature is a step toward reducing

inequities in access to individual and relationship health services among underserved communities. Clinical and research implications will be discussed.

Maya Massing-Schaffer (*Brown Research Advisors: Tony Spirito, Jennifer Wolff and Jackie Nesi*)

Publications

Nesi, J., Rothenberg, W. A., Bettis, A. H., **Massing-Schaffer, M.**, Fox, K. A., Telzer, E. H., Lindquist, K. A., & Prinstein, M. J. (under review). Positive and negative social media experiences among adolescents: Longitudinal associations with depressive symptoms.

Spirito, A., Nestor, B. A., **Massing-Schaffer, M.**, Esposito-Smythers, C., Stout, R., Frazier, E. A., Gomez, G., Graves, H., Yen, S., Hunt, J., & Wolff, J. C. (in press). Predictors and moderators of marijuana and heavy alcohol use outcomes in adolescents treated for co-occurring substance use and psychiatric disorders in a randomized controlled trial. *Journal of Substance Abuse Treatment*.

MacPherson, H. A., Wolff, J. C., Nestor, B. A., Frazier, E. A., **Massing-Schaffer, M.**, Graves, H., Esposito-Smythers, C., & Spirito, A. (2021). Parental monitoring predicts depressive symptom and suicidal ideation outcomes in adolescents being treated for co-occurring substance use and psychiatric disorders. *Journal of Affective Disorders*, 284, 190-198.

Below is a chapter:

Chou, T., MacPherson, H. A., **Massing-Schaffer, M.**, Spirito, A., & Wolff, J. C. (under review). Implementation and training. In *Handbook of Evidence-Based Day Treatment Programs for Children and Adolescents*.

Presentations

Massing-Schaffer, M., Nesi, J., Telzer, J., Lindquist, K. & Prinstein, M.J. (2021, March) *Protective Effects of Online-Only Friendships for Youth with Suicidal Thoughts*. Presented at the 23rd Annual Brown University Mind Brain Research Day, Providence, RI.

Massing-Schaffer, M., Nesi, J., & Prinstein, M. J. (2020, November). *Depressive symptoms and prospective changes in friendship status in adolescence*. In M. Fischer (Chair). Social processes and psychopathology: Effects of disorders and symptoms on relationships across the lifespan. Symposium presented at the annual meeting of the Association for Behavioral and Cognitive Therapies Meeting, virtual conference.

Protective Effects of Online-Only Friendships for Youth with Suicidal Thoughts

Maya Massing-Schaffer, M.A., Jacqueline Nesi, Ph.D., Eva Telzer, Ph.D., Kristen Lindquist, Ph. D. & Mitchell J. Prinstein, Ph.D.

Department of Psychiatry and Human Behavior, Warren Alpert Medical School of Brown
Department of Psychology and Neuroscience, UNC Chapel Hill

Background: Adolescents are increasingly using social media to explore and define their identities. Given the public and interactive nature of digital environments, today's youth frequently use online social relationships to inform self-presentation and identity development. Online-only friendships, or friendships that take place exclusively online, are increasingly prevalent. Yet, little is known about how they create risk or protective experiences for youth experiencing suicidal ideation (SI). This study offers descriptive information on the prevalence and quality of online-only friendships. In addition, we tested the potential protective effect of online-only friendships on associations between peer relational victimization and prospectively occurring SI.

Methods: Participants were 630 6th and 7th grade students recruited from three rural public schools (49.0% female, $M = 11.79$ years; $SD = .70$). Participants completed measures of online-only friendship and quality, sociometric relational victimization, and depressive symptoms at baseline, and SI at baseline and one-year follow-up. Hierarchical linear regression was used to test whether having online-only friendships moderated the longitudinal association between relational victimization and SI.

Results: Compared to participants without SI, those with SI were more likely to have online-only friendships, $\chi^2(1)=11.305, p<.001$, and to report that these friendships were supportive and of high quality. A significant relational victimization by online-only friendship interaction was found ($\beta=-.023, p = .030$); the association between peer-reported relational victimization and SI was significant only for those without any online-only friends [$b(se)=0.019 (0.01), p=.018$, vs. $b(se)=-0.004 (0.01), p=0.564$].

Conclusions: Adolescents' peer relationships play an integral role in youth identity development, as well as the development and maintenance of SI. Online-only friendships may be a critical social experience in the lives of youth. The current study highlights the need for a nuanced research agenda, considering both risks and benefits of online friendships, within the study of adolescent suicide risk.

Kayleigh McCarty (Brown Research Advisor: Jane Metrik)

Publications

Motschman, C. A., Hatz, L. E., **McCarty, K. N.**, Merkle, E. C., Trull, T. J., & McCarthy, D. M. (2020). Event-level predictors of alcohol-impaired driving intentions. *Journal of Studies on Alcohol and Drugs*, 81(5), 647-654.

McCarthy, D. M., **McCarty, K. N.**, Hatz, L. E., Prestigiacomo, C. J., Park, S., & Davis-Stober, C. P. (2021). Applying Bayesian cognitive models to decisions to drive after drinking. *Addiction*, 6, 1424-1430.

Presentations

McCarty, K. N., Hatz, L. E., Davis-Stober, C. P., & McCarthy, D. M. (2021, March). *The Effect of Acute Alcohol Intoxication on Risk Attitude*. Presented at the 23rd Annual Brown University Mind Brain Research Day, Providence, RI.

The Effect of Acute Alcohol Intoxication on Risk Attitude

Kayleigh N. McCarty, Laura E. Hatz, Clinton P. Davis-Stober, Denis M. McCarthy

Risk attitude is defined as an individual's preference for or aversion to risk. There is substantial evidence linking risk attitude and financial risk taking. More recently risk attitude has been applied to substance related behaviors, suggesting that individuals who are risk seeking are more likely to experience more negative consequences from alcohol consumption (Szrek et al., 2012; McCarty et al., 2015). The goal of this project was to determine whether alcohol intoxication influenced changes in risk attitude as measured by a behavioral decision making task (Davis-Stober & Brown, 2013). Specifically, we were interested in determining whether individuals were more likely to adopt a risk seeking attitude under alcohol intoxication relative to a placebo condition.

Participants ($n = 52$, mean age = 22, 84.6% white) were recruited from a large Midwestern university and the surrounding community for a within-subjects, placebo-controlled alcohol administration study. Placebo and alcohol sessions were separated by approximately one week. In the alcohol session, participants received a moderate dose of alcohol (target peak BAC = 0.10 g%), and the risk attitude task was administered at peak BAC. In the placebo session, participants received an isovolumetric beverage of mixer only with a small amount of alcohol floated on top. The risk attitude task was administered at a time matched to the alcohol condition. Risk attitude classifications were determined using Bayesian model comparison.

In the alcohol condition, participants were classified as follows: risk seeking (43.8%), risk averse (8.3%), risk neutral (2.1%), gain-loss sensitive (4.2%), and mixed gambles sensitive (6.3%). The remaining 35.4% demonstrated risk attitudes that are not well captured by leading decision theories. These proportions in the alcohol condition were not significantly different from those observed in the placebo condition ($p = 0.94$). There were 25 (54.3%) participants that were classified differently in the placebo condition than in the alcohol condition. Of these, 13 (52% of switches) changed to a more risk seeking classification.

Follow-up analyses classified participants as risk seeking, risk averse, or risk neutral for specific gamble types (gains, losses, mixed) to determine whether alcohol intoxication had differential effects on risk attitude based on context. Further, this approach has the capability to capture those who were previously unable to be classified. Results indicated that proportions of risk attitude classifications were not significantly different across conditions ($p = 0.23$ for

gains, $p = 0.90$ for losses, $p = 0.54$ for mixed). In addition, this more nuanced approach to risk attitude classification did not improve classification rate, with the proportions of unclassified individuals ranging from 38% to 46%.

These results suggest that acute alcohol intoxication may not change one's risk attitude in a consistent or theoretically meaningful way. Future research should continue to explore the possible role of risk attitude in substance related risk taking, including the mechanism by which risk attitude influences alcohol misuse and negative consequences.

Jamie Parnes (*Brown Research Advisor: **Robert Miranda***)

Publications

Fetterling, T. J., **Parnes, J. E.**, Prince, M. A., Conner, B. T., George, M. W., Shillington, A. M., Riggs, N. R. (in press). Moderated mediation of the eCHECKUP TO GO college student cannabis use intervention. *Substance Use and Misuse*.

Prince, M. A., Tyskiewics, A., Conner, B. T., **Parnes, J. E.**, George, M., Shillington, A., & Riggs, N. (2021). Mechanisms of change in an adapted e-CHECKUP TO GO intervention on decreased college student cannabis use. *Journal of Substance Abuse Treatment*, 124. <https://doi.org/10.1016/j.jsat.2021.108308>

Parnes, J. E., Kentopp, S. D., Conner, B. T., & Rebecca, R. A. (2020). Who takes the trip? Personality and hallucinogen use among college students and adolescents. *Drug and Alcohol Dependence*, 217. <https://doi.org/10.1016/j.drugalcdep.2020.108263>

Witt, J. K., **Parnes, J. E.**, & Tenhundfeld, N. T. (2020) Wielding a gun increases judgments of others holding guns: A randomized controlled trial. *Cognitive Research: Principals and Implications*, 5 (58). <https://doi.org/10.1186/s41235-020-00260-3>

Parnes, J. E., Kentopp, S. D., Sommerfeld, J., & Conner, B. T. (2020). *The relation between impulsivity and estimation of marijuana weight*. Manuscript under review.

Flynn, T. P., **Parnes, J. E.**, Conner, B. T. (2020). *Predictive factors in the development of risky behaviors and personality disorders*. Manuscript under review.

Presentations

Parnes, J.E., Kentopp, S.D., Conner, B.T., & Rachel, R.A. (2021, March) *Personality predictors of hallucinogen use among college students and inpatient adolescents*. Presented at the 23rd Annual Brown University Mind Brain Research Day, Providence, RI.

I submitted a presentation to the Research Society for Marijuana conference, taking place in July 2021, however acceptance is pending.

Grant Submissions

Ruth L. Kirschstein National Research Service Award (NRSA) Individual Postdoctoral Fellowship (Parent F32)

Title: *Identifying Treatment Effects, Mechanisms, and Moderators in Youth Cannabis Use Treatment Using Ecological Momentary Assessment*

Personality predictors of hallucinogen use among college students and inpatient adolescents

Jamie E. Parnes, Shane D. Kentopp, Bradley T. Conner, & Rebecca A. Rachel

Research examining hallucinogen use has identified potential benefits, as well as potential harms, associated with use. The acute effects of hallucinogen use can be intense, disorienting, cognitively impairing, and may result in perceptual changes mimicking aspects of temporary psychosis.

Hallucinogen use may also lead to the onset of more chronic issues, such as Hallucinogen Persisting Perception Disorder, which impairs daily functioning even when sober. However, research on factors that predict who will misuse hallucinogens is an understudied area. In particular, sensation seeking, impulsivity, and emotion dysregulation have all been shown to be predictive of problematic substance misuse; however, there is almost no research on how these personality variables predict hallucinogen use. The present study assessed how these personality traits predicted hallucinogen use in a sample of college undergraduates ($N = 10,251$) and a sample of adolescents in an inpatient residential psychiatric hospital ($N = 200$). Results indicated that facets of sensation seeking, impulsivity, and emotion dysregulation positively predicted ever having used hallucinogens, earlier initiation of use, and lifetime use among college students. Findings also indicated that facets of sensation seeking, impulsivity, and emotion dysregulation positively predicted having ever used hallucinogens in the adolescent inpatient sample. Results highlight the need for more research on who is likely to misuse hallucinogens. If confirmed in future research, the findings presented herein indicate viable personality variables as predictors. This is especially important as there has been a recent explosion of research on the positive benefits of therapeutic hallucinogen use.

Maribel Plasencia (*Brown Research Advisor: A. Rani Elwy*)

Presentations

Plasencia, M. (2021, March). *Non-Traditional Therapy Formats: Would Clinicians Implement Guided Self-Help?* Presented at the 23rd Annual Brown University Mind Brain Research Day, Providence, RI.

Non-Traditional Therapy Formats: Would Clinicians Implement Guided Self-Help?

Maribel Plasencia

The current study evaluated knowledge of and attitude towards a scalable therapy format (Guided Self-Help; GSH) among evidence-based clinicians who treated one or more of the following disorders: panic disorder, major depressive disorder, bulimia nervosa, binge-eating disorder, and generalized anxiety disorder. A total of 155 out of 256 individuals recruited online and at professional conferences were eligible after completing a screening questionnaire. The subsequent study survey assessed whether clinicians had experience utilizing GSH, measured their confidence in defining GSH, evaluated their ability to define it, and asked whether clinicians would hypothetically utilize GSH with a fictional client. The fictional client presented to each clinician had a diagnosis that matched the clinicians' specialization. Additionally, each case's severity was determined from a literature review of the average profiles of individuals recruited in GSH trials.

Analyses indicated that less than 10% of individuals had ever implemented GSH as a stand-alone treatment (i.e., not as an adjunct to standard therapy). Additionally, after reading fictional vignettes of client cases, the average hypothetical use of GSH was approximately 50%. Exploratory analyses indicated that hypothetical use was predicted by two subscales of the Evidence-Based Practice Attitudes Scale: Openness and Appeal. Study findings suggest that evidence-based clinicians do not uniformly know of or endorse the use of this low-intensity intervention for mild to moderate cases of anxiety, depression, eating disorders (bulimia nervosa and binge eating disorder) or panic disorder. Analyses indicate that some of this variation may be predicted by interest in learning new treatments as well as knowledge of and training in such interventions. In fact, lack of training in GSH was one of the most frequently endorsed barriers to implementing GSH in clinical practice ($n = 99$, 64%).

The current findings have implications for future studies on the dissemination and implementation of treatments like GSH in the United States, which have a greater potential for scalability. For example, it may be useful to investigate whether openness to new interventions as well as their appeal are modifiable factors in order to promote the use of such treatments in the United States. Additionally, addressing barriers to the utilization of low-intensity interventions may foster clinician uptake of such treatment formats. Regarding the evidence for GSH, research may seek to compare GSH to other low-intensity interventions. Finally, it may be important to incorporate scalable interventions into graduate program curricula and clinical training.

Keywords: guided self-help, scalable interventions, anxiety, depression, eating disorders

Ryan Rahm-Knigge (*Brown Research Advisor: Alyssa Norris and Shira Dunsiger*)

Publications

Rahm-Knigge, R. L., Prince, M. A., & Conner, B. T. (in-press). More likely to have sex but less sexually satisfied: A profile of high social interaction anxiety, urgency, and emotion dysregulation.

Powell, K. M., **Rahm-Knigge, R. L.**, & Conner, B. T. (2020) Resilience Protective Factors Checklist (RPFC): Buffering childhood adversity and promoting positive outcomes.

Presentations

Rahm-Knigge, R. L., Norris, A. L., & Dunsiger, S. (2021, March). *Exploring sexual orientation and alcohol use on the likelihood of HIV testing*. Presented at the 23rd Annual Brown University Mind Brain Research Day, Providence, RI.

Ballinger-Dix, E., **Rahm-Knigge, R. L.**, Kentopp, S. D., & Conner, B. T (2020, November). *Personality traits and risky sexual behaviors among psychiatrically hospitalized female adolescents*. Poster presented at the 54th annual Association for Cognitive and Behavioral Therapies Convention, Philadelphia, PA.

Sahleen, M., **Rahm-Knigge, R. L.**, & Conner, B. T (2020, November). *Examining the predictive power of the Big 5 personality traits and cannabis use on non-suicidal self-injury*. Poster presented at the 54th annual Association for Cognitive and Behavioral Therapies Convention, Philadelphia, PA.

Wallace, G.T., Kentopp, S., **Rahm-Knigge, R.L.**, Shillington, A.M., Conner, B.T., & Rebecca, R.A. (2020, November). *Relations between social media use and several self-injurious and health-risk behaviors among adolescents admitted to a psychiatric inpatient hospital*. Poster presented at the 54th annual Association for Cognitive and Behavioral Therapies Convention, Philadelphia, PA.

Exploring Sexual Orientation and Alcohol Use on the Likelihood of HIV Testing

Ryan L. Rahm-Knigge, MS, Alyssa L. Norris, PhD, and Shira Dunsiger, PhD

Routine HIV screening and testing is associated with reduced HIV-testing stigma, early HIV diagnosis and treatment, and prevention of AIDS and other HIV-related health conditions (e.g., Tan et al., 2016). In light of these outcomes, the CDC recommends annual opt-out screening during medical appointments, at least one HIV test for all patients, and regular testing for at-risk patients (Branson et al., 2006). HIV-risk factors include being a man who has sex with men, intravenous drug use, having multiple sexual partners, and sexual contact with a person living with HIV (CDC, 2020). Additionally, alcohol use is a risk factor for HIV due to increased health-risk sexual behavior associated with alcohol use (e.g., Scott-Sheldon et al., 2016). Despite recommendations, only one-third of adults in the U.S. have ever been tested (Conserve et al., 2014) and 14% of people living with HIV are undiagnosed (CDC, 2020). Women, sexual minorities, and people who use alcohol are more likely to be tested (Agénor et al., 2019; Conserve et al., 2014; Ward, 2014). However, less is known about how alcohol use is associated with HIV testing within sexual orientation identities; for example, if differences exist between gay men who do and do not drink.

The current study explored interactions between sexual orientation and alcohol use on HIV testing. Data from the National Health Interview Survey (2013-2018; $N = 176,998$) were analyzed using logistic regression. Analyses controlled for race, ethnicity, age, and health insurance coverage; accounted for complex survey design; and were stratified by sex. Consistent with previous reports, two-thirds of the sample had never been tested. Among heterosexual women, those who never used alcohol (OR = 1.22, 95% CI 1.12-1.33), formerly used alcohol (OR = 2.45, 95% CI 2.29-2.61), and currently use alcohol (OR = 2.32, 95% CI 2.19-2.45) were more likely to be tested for HIV than not. Sexual minority women who identified as bisexual and formerly used alcohol (OR = 8.13, 95% CI 1.89-35.03) or currently use alcohol (OR = 3.41, 95% CI 1.28-9.09), as well as lesbian and never used alcohol (OR = 1.71, 95% CI 1.04-2.82) were more likely to be tested for HIV than not. Heterosexual men who formerly used alcohol (OR = 2.28, 95% CI 2.10-2.47) or currently use alcohol (OR = 2.29, 95% CI 2.14-2.45) were more likely to be tested than not, while those who never used alcohol were 62% less likely to be tested for HIV (OR = 0.38, 95% CI 0.35-.042). Sexual minority men who identified as bisexual and currently use alcohol (OR = 7.17, 95% CI 1.04-49.33), gay and never used alcohol (OR = 6.34, 95% CI 3.96-10.15), or gay and currently use alcohol (OR = 3.37, 95% CI 1.21-9.37) were more likely to be tested for HIV.

This study found differences in the likelihood of HIV testing by alcohol use within sexual orientation identities. Results of the present study identified groups to increase efforts for HIV testing due to lower likelihoods of testing. These groups include lesbian women who currently use alcohol or previously used alcohol; bisexual men who have not used or previously used alcohol; and

gay men who previously used alcohol. The lower likelihoods of HIV testing among these interactions of sexual minority identities and alcohol use status, especially among those who currently or previously used alcohol, is noteworthy as sexual minorities and people with an alcohol-use history tend to have higher rates of HIV testing. Further, these groups may be at increased risk for HIV transmission. Rates of testing are low among heterosexual men who do not use alcohol, which reflects previous studies finding heterosexual men to generally have low rates of testing. However, given the low rate of testing in the U.S., increased testing across all demographic groups is needed to prevent HIV transmission and improve health outcomes.

Kaitlin Sheerin (*Brown Research Advisor: Kathleen Kemp & Tony Spirito*)

Publications

Sheerin, K.M., Tugendrajch, S.K., Presser, N.R., & Bell., D.J. (2021). Implementing skills for psychological recovery at a training clinic during COVID-19. *Cognitive and Behavioral Practice*. Advance online publication.

Tugendrajch, S.K., **Sheerin, K.M.**, Marriot, B.M., Cho, E.J., Andrews, J.M., Hawley, K. (2021). What is the evidence base for evidence-based supervision? *The Clinical Supervisor*. Advance online publication.

Brown, C.E., Boness, C.L., & **Sheerin, KM.** (2021). Supporting students in health service psychology training: a theory-driven approach to meeting the diverse needs of trainees. *Training and Education in Professional Psychology*. Advance online publication.

Sheerin, K.M., Borduin, C.M., Brown, C.E., & Letourneau, E.J. (2021). An evaluation of mechanisms of change in multisystemic therapy with juvenile justice-involved youths a decade following treatment. *Journal of Marital and Family Therapy*. Advance online publication.

Brown, C.E., **Sheerin, K.M.**, Quetsch, Lauren B., & Borduin, C.M. (under review). Family functioning is related to friendship quality in youths with Autism Spectrum Disorder.

Presentations

Viera, A., **Sheerin, K.M.**, & Kemp, K. (2021, November). *Treatment Engagement Among Hispanic/Latino Youth in the Juvenile Justice System*. Poster to be presented at the annual meeting of the Association for Behavioral and Cognitive Therapies, New Orleans, LA.

Sheerin, K.M. & Kemp, K. (2021, March). *Sexual Behavior Problems and Placement Changes for Child Welfare-Involved Youths*. Presented at the 23rd Annual Brown University Mind Brain Research Day, Providence, RI.

Sheerin, K.M., Borduin, C.M., & Brown, C.E. (2020, November). *Multisystemic therapy with juvenile justice-involved youths: mechanisms of change through early adulthood*. In K.E. Moore and M. Owens (Co-Chairs), *Barriers to behavioral health treatment entry, engagement, and outcomes in the criminal justice system*. Symposium conducted at the annual meeting of the Association for Behavioral and Cognitive Therapies, Philadelphia, PA.

Tugendrajch, S.K., **Sheerin, K.M.**, & Borduin, C.M. (2020, November). *Opportunities to improve parent training interventions for school-age children with disruptive behavior problems*. Poster presented at the annual meeting of the Association for Behavioral and Cognitive Therapies, Philadelphia, PA.

Sexual Behavior Problems and Placement Changes for Child Welfare-Involved Youths

Kaitlin M. Sheerin & Kathleen Kemp

BACKGROUND: Youths involved in the child welfare system experience frequent placement changes, which are often linked with mental health concerns (Koh et al., 2014). Despite the high prevalence of developmentally atypical sexual behaviors among child welfare-involved youth, these behaviors have rarely been measured conjointly with other mental health problems to assess for their effect on placement changes. To that end, the present study evaluated whether sexual behavior problems (i.e., preoccupation, distress) in a sample of youth in the child welfare system predicted placement changes while also accounting for mental health problems.

METHOD: 125 youths in the child welfare system in New England participated in a broader study of the impact of evaluations on these youths. At baseline, these youths completed a brief trauma screener (Child Trauma Screen; Lang & Conell, 2017) and a measure of trauma-related mental health concerns, sexual preoccupation, and sexual distress (Trauma Symptom Checklist for Children; Briere, 1996). One year later, information regarding the number of placement changes each youth experienced was obtained from a record review.

RESULTS: Zero-Inflated Poisson regressions were employed to evaluate if sexual behavior problems, mental health concerns, and traumatic experiences predicted the odds and rates by which each youth experienced placement changes. The results indicated that higher levels of sexual distress were linked increased odds of having a placement change; conversely, higher levels of sexual preoccupation were associated with lower odds of having a placement change.

DISCUSSION: The results of the present study indicate that sexual behavior problems are an important variable for predicting placement changes for child welfare-involved youths. Our findings have implications for the assessment and treatment of child welfare-involved youths.

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

Publications

Sullivan, K. L., Kulesz, P. A., & Woods, S. P. (2021). Psychometrics and validity of the Survey of Memory-Related Quality of Life in HIV disease. *Archives of Clinical Neuropsychology*, *36*, 186–202.

Webber, T.A., Collins, R. L., **Sullivan, K. L.**, Chen, D. K., & Grabyan, J. M. (2021). Clinical identification of psychogenic non-epileptic events using combinations of psychological tests in a Veteran sample. *Epilepsy and Behavior*, *115*, 107631.

Sullivan, K. L., Babicz, M. A., & Woods, S. P. (2021). Verbal learning mediates the relationship between executive functions and a laboratory task of medication management in HIV disease. *Archives of Clinical Neuropsychology*, *36*(4), 507–516.

Sullivan, K. L., Sheppard, D. P., Johnson, B., Thompson, J. L., Medina, L. D., Neighbors, C., Hasbun, R., Morgan, E. E., Loft, S., & Woods, S. P. (in press). Future and past autobiographical memory in persons with HIV disease. *Neuropsychology*.

Woods, S. P., Babicz, M. A., Matchanova, A., **Sullivan, K. L.**, Avci, G., Hasbun, R., Giordano, T. P., Fazeli, P., & Morgan, E. E. (in press). A clinical pilot study of spaced retrieval practice to improve health-related memory in persons with HIV disease. *Archives of Clinical Neuropsychology*.

Sullivan, K. L., Neighbors, C., Bucks, R. S., Weinborn, M., Gavett, B. E., & Woods, S. P. (in press). Longitudinal declines in event-based, but not time-based, prospective memory among community-dwelling older adults. *Aging, Neuropsychology, and Cognition*.

Matchanova, A., Avci, G., Babicz, M. A., Thompson, J. L., Johnson, B., Ke, I. J., Rahman, S., **Sullivan, K. L.**, Sheppard, D. P., Morales, Y., Tierney, S. M., Kordovski, V. K., Beltran-Najera, I., Ulrich, N., Pilloff, S., Yeates, K. O., & Woods, S. P. (in press). Gender disparities in the author bylines of articles published in clinical neuropsychology journals from 1985 to 2019. *The Clinical Neuropsychologist*.

Matchanova, A., Babicz, M. A., Medina, L. D., Rahman, S., Johnson, B., Thompson, J. L., Beltran-Najera, I., Brooks, J., **Sullivan, K. L.**, Walker, R. L., Podell, K., & Woods, S. P. (in press). Latent structure of a brief clinical battery of neuropsychological tests administered in-home via telephone. *Archives of Clinical Neuropsychology*.

Babicz, M. A., Woods, S. P., Matchanova, A., Medina, L. D., Podell, K., Walker, R. L., Fetterman, A., Rahman, S., Johnson, B., Thompson, J. L., **Sullivan, K. L.**, Beltran-Najera, I., Brooks, J., Morales, Y. & Avci, G. (in press). How did individual differences in neurocognition and health literacy influence the initial uptake and use of health-related information about COVID-19? *Journal of Clinical and Experimental Neuropsychology*.

Beltran-Najera, I., Thompson, J. L., Matchanova, A., **Sullivan, K. L.**, Babicz, M. A., &

Woods, S. P. (under review). Neurocognitive performance differences between Black and White individuals with HIV disease are mediated by health literacy.

Hallowell, E. S., **Sullivan, K. L.**, Davis, J. D., Burke, E., Kenney, L. E., Tremont, G. N., & Margolis, S. A. (under review). The complementary utility of cognitive testing and the Medication Management Ability Assessment in older adults.

Presentations

Sullivan, K. L., Davis, J. D., Hallowell, E., Tremont, G. N., Daiello, L. A., Ott, B. R., Burke, E., Nakhutina, L., & Margolis, S. A. (2021, February). *Compensatory strategy use in mild cognitive impairment*. Poster presented virtually at the 49th Annual Meeting of the International Neuropsychological Society, San Diego, CA.

Babicz, M. A., Woods, S. P., Matchanova, A., Medina, L. D., Thompson, J. L., Rahman, S., Johnson, B., Podell, K., Walker, R. L., Fetterman, A., **Sullivan, K. L.**, Beltran-Najera, I., Brooks, J., & Morales, Y. (2021, February). *Wear a mask and don't drink bleach: The role of neurocognition and health literacy in COVID-19 information-seeking, knowledge, and prevention*. Paper presented virtually at the 49th Annual Meeting of the International Neuropsychological Society, San Diego, CA.

Beltran-Najera, I., Thompson, J. L., Matchanova, A., **Sullivan, K. L.**, Babicz, M. A., & Woods, S. P. (2020, October). *Neuropsychological differences in Black and White individuals living with HIV are mediated by health literacy*. Poster presented at the Annual Houston Neuropsychological Society Symposium, Houston, TX.

Sullivan, K. L., Davis, J. D., Hallowell, E., Tremont, G. N., Daiello, L. A., Ott, B. R., Burke, E., Nakhutina, L., & Margolis, S. A. (2021, March). *Compensatory strategy use in mild cognitive impairment*. Presented at the 23rd Annual Brown University Mind Brain Research Day, Providence, RI.

Margolis, S. A., Davis, J. D., Hallowell, E. S., & **Sullivan, K. L.** *The neuropsychology of everyday life*. KnowNeuropsychology Lecture Series. November 30, 2020. Webinar.

Grant Submissions

Brown Resident Grant Award, 2020-2021

Title: Perceived barriers and facilitators of compensatory strategy use in mild cognitive impairment

Honors & Awards

Mind Brain Research Day 2021 Award, Clinical Psychology Resident Category

Compensatory Strategy Use in Mild Cognitive Impairment

Kelli L. Sullivan¹; Jennifer D. Davis^{1,2}; Emily S. Hallowell¹; Geoffrey N. Tremont^{1,2}; Lori A. Daiello^{1,2}; Brian R. Ott^{1,2}; Erin Burke²; Luba Nakhutina³; Seth A. Margolis^{1,2}

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Objective: Individuals with mild cognitive impairment (MCI) may have subtle difficulties managing instrumental activities of daily living (IADLs).

Understanding how such individuals compensate for IADL difficulties, and the relationships between compensatory strategy use and cognitive functioning, may help guide intervention development aimed at prolonging functional independence. The current study characterized the most frequently used compensatory strategies and interrelationships with cognition and MCI subtypes in a clinical sample who presented for neuropsychological evaluation.

Participants and Methods: Participants included 42 older adults (M age = 71.9 years, $SD = 6.5$; 55% female) with a clinical diagnosis of MCI according to Petersen criteria. Demographically adjusted T-score composites were derived for memory, executive functions, language, attention/processing speed, and visuospatial skills. On average, participants demonstrated mildly impaired memory ($T = 34$) with low average to average mean performance across other domains ($Ts = 41-46$). Participants with memory composite T-scores ≤ 35 were classified as amnesic MCI ($n = 21$). Compensatory strategy use was assessed with the Everyday Compensation Questionnaire, which measured 40 strategies across 6 IADLs, and a novel questionnaire assessing 12 medication self-management strategies, each along a Likert-type scale (0=never - 4=always). Item-level modes were computed to identify strategies used “frequently” or “always” by most of the sample; these items were averaged to capture participants’ typical strategy use. Correlations, t-tests, and multiple regression were used to elucidate interrelationships. **Results:** Of the 52 compensatory strategies assessed, 32 (61%) were used frequently or always by most respondents ($\alpha = .747$).

The top 10 strategies were used by $\geq 74\%$ of individuals; these involved using a calendar to track appointments, preparing items to bring to an appointment, taking medication at regular times, and keeping important items (i.e., medications, bills, keys) in specific locations. Women reported more frequent strategy use than men ($t = 2.13, p = .040$). Partial correlations controlling for sex revealed that more frequent strategy use was associated with better memory ($pr = .42, p = .008$) and executive functions ($pr = .33, p = .042$), but not with language ($pr = .07, p = .686$), attention/processing speed ($pr = .16, p = .336$), or visuospatial skills ($pr = .06, p = .696$). When memory, executive functions, and sex were modeled together to predict strategy use, they collectively accounted for 29% of the variance; however, memory was the only unique predictor ($\beta = .34, p = .029$). Additionally, non-amnesic MCI cases reported significantly

more frequent strategy use ($M = 2.70$, $SD = 0.40$) than amnesic MCI counterparts ($M = 2.38$, $SD = 0.49$), $t = 2.36$, $p = .023$.

Conclusions: Since individuals with MCI may have subtle difficulties with IADLs, it is encouraging that compensatory strategy use was prevalent. However, strategies were used less frequently by MCI patients with worse memory and executive functions, as well as those with amnesic MCI. Future studies should assess how relationships between strategy use and cognition unfold over time and how executively demanding memory (e.g., prospective memory) and insight impact strategy use in MCI.

Julianne Wilner Tirpak (Brown Research Advisor: Mark Zimmerman)

Publications

Ametaj AA, **Wilner Tirpak J**, Cassiello-Robbins C, Snow R, Rassaby MM, Beer K, Sauer-Zavala S. . (Epub ahead of print). A Preliminary Investigation of Provider Attitudes Toward a Transdiagnostic Treatment: Outcomes from Training Workshops with the Unified Protocol. *Adm Policy Ment Health*.

Sauer-Zavala, S., **Tirpak, J. W.**, Eustis, E. H., Woods, B. K., & Russell, K. (2021). Unified Protocol for the Transdiagnostic Prevention of Emotional Disorders: Evaluation of a Brief, Online Course for College Freshmen. *Behavior Therapy*, 52(1), 64-76.

Zimmerman, M., Terrill, D., D'Avanzato, C., & **Tirpak, J. W.** (2021). Telehealth Treatment of Patients in an Intensive Acute Care Psychiatric Setting During the COVID-19 Pandemic: Comparative Safety and Effectiveness to In-Person Treatment. *The Journal of Clinical Psychiatry*, 82(2), 0-0.

Zimmerman, M., Benjamin, I., **Tirpak, J. W.**, & D'Avanzato, C. (2021). Patient Satisfaction with Partial Hospital Telehealth Treatment During the COVID-19 Pandemic: Comparison to In-Person Treatment. *Psychiatry Research*, 113966.

Zimmerman, M., Terrill, D., Ward, M., D'Avanzato, C., **Tirpak, J.W.** (in press). Telemental Health After COVID-19: Understanding Effectiveness and Implementation across Patient Populations while Building Provider Acceptance are the Next Steps: In reply. *The Journal of Clinical Psychiatry*.

Sauer-Zavala, S., Rosellini, A.J., Bentley, K.H., Ametaj, A.A., Boswell, J.F., Cassiello-Robbins, C., **Tirpak, J.W.**, Farchione, T.J., & Barlow, D.H. (in press). Skill acquisition as a mechanism of symptom change during transdiagnostic treatment with the Unified Protocol. *Behavior Therapy*.

Sauer-Zavala, S., Cassiello-Robbins, C., Woods, B. K., Curreri, A., **Wilner Tirpak, J.**, & Rassaby, M. (2020). Countering emotional behaviors in the treatment of borderline personality disorder. *Personality Disorders: Theory, Research, and Treatment*, 11(5), 328–338.

Zimmerman, M., Ward, M., D'Avanzato, C., **Tirpak, J.W.** (submitted). Telehealth Treatment of Patients with Borderline Personality Disorder in a Partial Hospital Setting During the COVID-19 Pandemic: Comparative Safety, Patient Satisfaction, and Effectiveness to In-Person Treatment.

Presentations

Tirpak, J.W. & Smith, L. (2020, November). The impact of mental health clinic relocation on new patient demographics: A geographic information systems analysis. Poster presented at the Association for Behavioral and Cognitive Therapies Annual Convention, virtual.

Farchione, T., Kamholz, B.W., Krompinger, J., Madigan, R., Smith, L., & **Tirpak, J.W.** (2020, November). Adaptations in mental healthcare treatment delivery and research conducted in response to the COVID-19 pandemic in an urban setting. Panel discussion presented at the Association for Behavioral and Cognitive Therapist Annual Convention, Virtual.

Tirpak, J.W., Sandage, S., Sauer-Zavala, S. (2020, November). Attachment or emotion regulation, why not both? Evaluating Mechanisms of change driving interpersonal conflict in borderline personality disorder. In McMahon K. (Chair), *Interpersonal dysfunction: Understanding mechanisms and potential targets of treatments for people with chronic social impairment*. Symposium presented at the annual meeting of the Association for Behavioral and Cognitive Therapies, Virtual.

Tirpak, J.W., Sandage, S., Sauer-Zavala, S. (2021, April). Theories of borderline personality disorder: A mechanistic evaluation. In **J.W. Tirpak** (Chair), *What works and why? Mechanism-focused treatment of borderline personality disorder*. Symposium accepted to the annual meeting of the North American Society for the Study of Personality Disorders, Virtual.

Sauer-Zavala, S., **Tirpak, J.**, Cassiello-Robbins, C., Curren, A., & Woods, B. (2021, April). Isolating mechanisms in the treatment of borderline personality disorder. In **J. W. Tirpak** (Chair), *What works and why? Mechanism-focused treatment of borderline personality disorder*. Symposium presented at the annual meeting of the North American Society for the Study of Personality Disorders, Virtual.

Tirpak, J.W. (2021, March). Attachment or emotion regulation, why not both? Evaluating mechanisms of change driving interpersonal conflict in borderline personality disorder. Presented at the 23rd Annual Brown University Mind Brain Research Day, Providence, RI.

Attachment or emotion regulation, why not both? Evaluating mechanisms of change driving interpersonal conflict in borderline personality disorder

Julianne Wilner Tirpak, M.A.

Objective: Difficulties in interpersonal functioning is a characteristic symptom domain of borderline personality disorder (BPD). However, there are differing opinions about what core psychopathological processes drive BPD symptoms. This study evaluates two brief interventions with different theoretical underpinnings for treating interpersonal conflict in BPD.

Method: Single case experimental design was utilized with counterbalanced, combined-series methods (multiple baseline and phase change) to allow for both between- and within-subjects comparison. Participants (N = 8) were randomized to receive either an emotion regulation module informed by emotion dysregulation approaches (Barlow et al., 2011; n = 4), or a forgiveness intervention informed by relational and attachment theories (Sandage et al., 2015; n = 4). Participants first completed an assessment-only baseline phase. Then, they were randomized to receive one of the two interventions.

Phase change was determined idiosyncratically based on each participant's changes in frequency of interpersonal conflicts using ecological momentary assessment. If participants did not respond to the first intervention, they subsequently received the alternative intervention. Responders were classified as participants who experienced a 50% reduction in daily interpersonal conflicts between the intervention and baseline phases. All participants completed a four-week, assessment-only follow-up phase.

Results: Visual inspection and non-parametric statistics reveal that three participants responded after the first module (two in forgiveness, one in emotion regulation), an additional three responded after a two-week return to baseline after the first module (two in forgiveness, one in emotion regulation), and two were classified as non-responders after the first module (both emotion regulation) and immediately continued with the alternative intervention.

Conclusion: Interpersonal conflict in BPD can change in brief (four session) interventions informed by different theories. Multiple mechanisms might be driving interpersonal conflict, and idiographic factors may influence treatment response. Future directions including personalized treatment approaches for BPD will be discussed.