BROWN

MIND BRAIN RESEARCH DAY 2026

⁂

THURSDAY, MARCH 26, 2026

11:00am-12:45pm – Poster Session
1:00-3:00pm – Keynote and Q&A

Sayles Hall & Salomon Center, Brown campus

POSTER ABSTRACTS

Prostaglandin E_2 Links Sensory Experience to Intrinsic Plasticity in the Developing *Xenopus* Optic Tectum

Shawn Adam[1], Adrian Thompson[1,†], Gianna Rocchio[1], James Afford[1], Abigail Jones[1], and Carlos D. Aizenman[1,*]

[1]Department of Neuroscience, Brown University, Providence, RI 02912, USA
[†]Present address: Boston University, Boston, MA 02215, USA
**Corresponding author: Carlos D. Aizenman (carlos_aizenman@brown.edu)*

Developing neural circuits must remain plastic enough to be shaped by sensory experience yet stable enough to function within a useful dynamic range. In the *Xenopus laevis* optic tectum, intrinsic excitability undergoes stereotyped developmental changes that maintain this balance: excitability peaks during a critical period and subsequently declines as circuits mature, paralleled by changes in voltage-gated sodium channel expression. Enhanced visual stimulation (EVS) acutely increases intrinsic excitability, offsetting homeostatic decreases in glutamatergic synaptic transmission and preserving stable input–output balance. This increase depends on upregulation of sodium channels, particularly Nav1.6. Despite the central importance of these processes, the molecular signal coupling sensory experience to the transcriptional regulation of neuronal excitability has remained unknown.

Here we identify prostaglandin E_2 (PGE_2), a lipid signaling molecule classically associated with inflammation, as the upstream mediator coupling visual experience to sodium channel regulation and intrinsic plasticity in the developing central nervous system. We show that pharmacological blockade at every level of the PGE_2 pathway, including COX-2, mPGES-1, EP receptors, and PGE_2 transport, prevents EVS from increasing Na^+ currents and action potential firing in tectal neurons, establishing that PGE_2 signaling is **necessary** for experience-dependent increases in intrinsic excitability. COX-1-selective inhibition has no effect, confirming enzymatic specificity. Conversely, exogenous PGE_2 alone, in the absence of visual stimulation, fully recapitulates the EVS effect, establishing **sufficiency**. We find that individual EP receptor agonists (EP1–EP4) each contribute to the increase in intrinsic excitability. Molecular data corroborate the electrophysiology: ELISA confirms elevated PGE_2 in stimulated tecta, and qPCR demonstrates PGE_2-dependent upregulation of Nav1.6 expression.

Beyond its acute role, we show that PGE_2 is required for the developmental maturation of intrinsic excitability. Chronic COX-2 inhibition during rearing disrupts the normal homeostatic trajectory in both directions, preventing the critical period peak in excitability and blocking its subsequent decline. Developmental PGE_2 exposure also impairs schooling behavior, linking this signaling pathway to functional consequences for circuit-dependent social behavior.

Together, these results define a pathway in which visual experience drives COX-2-dependent PGE_2 synthesis, which acts through EP receptors to transcriptionally upregulate sodium channels and increase intrinsic excitability. These findings reveal an unanticipated convergence of inflammatory and plasticity signaling and demonstrate that a prostaglandin mediates experience-dependent homeostatic regulation of neuronal excitability in the developing CNS.

Sexual Identity Differences in Protective Dating Strategies, Resistance Self-Efficacy, and Psychological Barriers to Resistance

Alexis Adams-Clark, PhD., Prachi Bhuptani, PhD., & Lindsay Orchowski, PhD

Sexual minority women experience elevated rates of sexual victimization, yet little research examines differences in resistance-related processes across specific sexual minority identities. Bisexual women are often combined with lesbian women in research despite evidence that bisexual women may be at heightened risk of sexual assault. The present study used one-way ANOVAs to examine group differences among bisexual, heterosexual, and lesbian women in (1) protective dating strategies, (2) resistance self-efficacy, and (3) psychological barriers to resisting unwanted sexual advance, which are constructs central to sexual violence prevention and harm-reduction interventions. Participants were women, nonbinary, or gender-diverse undergraduate and graduate students aged 18-24 recruited via social media and flyers. They completed an online normative baseline survey as part of two larger treatment development studies (one focused broadly on women and one specifically on bisexual women, using identical baseline measures). Data were combined, yielding a sample of 1,008 participants (68.7% bisexual, $n = 692$; 22.5% heterosexual, $n = 227$; 8.8% lesbian, $n = 89$). The majority identified as women ($n = 865$, 85.8%), White ($n = 739$, 73.3%), and currently dating or in a relationship ($n = 845$, 83.8%). Participants completed measures of dating protective strategies (Sexual and Negative Dating Inventory [SANDI]), resistance self-efficacy (Resistance Self-Efficacy Scale [RSES]), and psychological barriers to resisting sexual advances (Psychological Barriers to Resisting Questionnaire). Welch's ANOVAs with Games-Howell post hoc tests were used when variances were unequal; otherwise, standard ANOVAs with Tukey tests were conducted.

Analyses indicated significant differences in protective strategies usage, $F(2, 230.67) = 70.29, p < .001, \eta^2 = .09$. Contrary to hypotheses, bisexual women ($M = 3.24, SD = 1.09$) reported higher use of protective behavioral strategies than heterosexual ($M = 2.68, SD = 0.95, p < .001$) and lesbian women ($M = 2.96, SD = 1.02, p < .001$). Lesbian and heterosexual women did not significantly differ from one another. Significant group differences emerged in resistance self-efficacy, $F(2, 211.12) = 9.17, p < .001, \eta^2 = .02$. Despite higher use of protective strategies, bisexual women ($M = 32.30, SD = 7.05$) reported lower resistance self-efficacy than heterosexual women ($M = 34.80, SD = 8.18, p < .001$). Lesbian women ($M = 33.10, SD = 7.54$) did not significantly differ from either group. In relation to psychological barriers, there were significant group differences in fear-of-injury barriers, $F(2, 1005) = 10.85, p < .001, \eta^2 = .02$, such that heterosexual women reported fewer barriers ($M = 6.28, SD = 3.96$) than bisexual ($M = 7.71, SD = 4.04, p < .001$) and lesbian women ($M = 7.49, SD = 4.04, p = .042$). A similar pattern emerged for relationship-preservation barriers, $F(2, 1005) = 9.50, p < .001, \eta^2 = .02$, with heterosexual women ($M = 4.59, SD = 3.23$) reporting fewer barriers than bisexual ($M = 5.63, SD = 3.44, p < .001$) and lesbian women ($M = 5.96, SD = 3.07, p = .003$). There were no significant group differences for self-confidence barriers.

These findings suggest that sexual minority women, and bisexual women in particular, may engage in more proactive safety behaviors while simultaneously experiencing heightened internal and relational barriers to direct resistance. This pattern is consistent with minority stress frameworks, which propose that bisexual women may experience unique stigma-related stressors and heightened vulnerability to violence, without reflecting diminished skill or capacity.

Title: Stakeholders' Perspectives on Engaging Latine and Hispanic Youth and Their Families in Evidence-Based Outpatient Treatment

Authors: Aiello, M., Jimenez-Colon, G., Espinal, N., Torres-Lopez, A., Gamio Cuervo, A., Tejeda, F., Pineda, C. & Duarte-Velez, Y.

Background: Disparities accessing evidence-based treatment are common in minoritized groups. Many Latine and Hispanic (L/H) families face significant obstacles engaging in outpatient mental health services which can negatively impact treatment outcomes. However, prior research conducted outside of outpatient settings suggests that Community Health Workers (CHW) may offer solutions to close gaps in care for minoritized groups. This project is part of a larger ongoing randomized controlled trial funded by the American Foundation for Suicide Prevention testing the effect of the Socio-Cognitive Behavioral Therapy for Suicidal Behaviors alongside CHW support on clinical outcomes in L/H youth. Guided by implementation science frameworks, this project aimed to identify feasible strategies from stakeholder perspectives to improve treatment engagement of L/H youth and their families in an outpatient mental health clinic. **Method**: Qualitative data is currently being collected from research study therapists and CHWs during monthly provider perspective meetings, and biannually from a stakeholder advisory board comprised of local healthcare professionals, community leaders, school district members, health insurance representatives, and others. Each meeting is held to gather feedback on the implementation of the interventions, receive guidance on strategies to address barriers, and develop a plan for sustainability. Audio recordings and comprehensive notes are completed for each meeting. Using a rapid assessment procedure, two research staff created memos by coding the facilitators, barriers, and suggestions identified into the Consolidated Framework for Implementation Research (CIFR) domains. Thus far, 12 provider perspective and four advisory board meetings have been coded.
Results: This presentation summarizes codes from the Outer and Inner Setting CIFR domains. In the Outer Setting, stakeholders acknowledged the following facilitators to implementation: surviving community organizations that support families basic needs and engagement in treatment, state laws that protect underage youths' right to health insurance regardless of legal status, hospital financial support to implement caregiver groups in Spanish, and support from hospital administration to implement culturally responsive strategies that meet the needs of L/H families. Barriers identified in the Outer Setting included: system level issues integrating CHWs into the outpatient workflow, reimbursement rates for CHW interventions, cultural factors and structural barriers that often call for additional non-billable collateral work, substantial structural barriers faced by families (e.g., economic hardships, demanding work schedules, transportation constraints) that limit their ability to engage in treatment, defunding of social services that addressed social determinants of health, lack of bilingual referral options for long-term care, among others. In the Inner Setting, stakeholder members noted the following facilitators: Availability of internal grants and philanthropic funds to support the program, allocation of grant funds to increase family engagement in treatment and research activities, among others. Barriers identified in the Inner Setting included: the program is a relatively new clinic that operates with a small team, short-term treatment program limits that lead to challenges managing high-risk and clinically complex cases that require longer treatment, among others.
Conclusion: Rapid analysis facilitated timely feedback that informed actionable changes at institutional and program levels. This has promoted continued growth of the program, development of trustworthy relationships with families and the larger community, and improvements in treatment engagement for L/H youth families. Strengthening sustainability efforts will be necessary to ensure that the work supported by the current research funding continues to benefit families within the program in the future.

Dynamic Associations Between Help-Seeking and Suicidal Ideation Across Family Conflict Contexts: A Time-Varying Effect Modeling Approach

Allegra S. Anderson, Anastacia Kudinova, Leslie A. Brick, Marisa Marracini, Michael Armey, Nicole Nugent

Background: Adolescents recently hospitalized for suicidal thoughts and behaviors remain at heightened risk for recurrence in the critical weeks following discharge. Although help-seeking is considered a protective behavior, its immediate association with suicidal ideation (SI) may vary depending on adolescents' family environments. High family conflict may undermine the effectiveness of help-seeking, whereas supportive family contexts may facilitate more adaptive use of coping and support. Leveraging ecological momentary assessment (EMA) and time-varying effect modeling (TVEM) allows for the examination of how the relation between help-seeking and SI unfolds dynamically over time in adolescents' daily lives. Methods: Participants ($n = 172$, $M_{\text{age}} = 15.1$, $SD = 1.44$) included adolescents recently hospitalized for suicidal thoughts and behaviors who completed three weeks of EMA surveys following discharge. Participants self-identified as White (65.2%), Black/African American (8.2%), Asian (1%), American Indian/Alaska Native (1%), or more than one race (15%); 13.8% identified as Hispanic or Latino. Baseline family conflict, as measured by the *Conflict Behavior Questionnaire – Adolescent Report,* was used to stratify participants into low (-1 SD), moderate (mean), and high (+1 SD) family conflict groups. Separate TVEMs then estimated how the association between momentary help-seeking behaviors and SI intensity changed over time within each group. Results: Distinct temporal patterns were observed across family-conflict groups. Among adolescents from low-conflict families, both SI and its association with help-seeking varied significantly over time (ps $< .001$): closer to discharge, help-seeking co-occurred with higher SI but became negatively associated later, suggesting a shift from distress-driven to adaptive help-seeking over time. In moderate-conflict families, SI fluctuated significantly ($p < .001$), and the help-seeking effect trended positive ($p = .054$). In high-conflict families, baseline SI remained elevated ($p = .003$) and the time-varying effect of help-seeking was nonsignificant ($p = .49$), indicating minimal covariation between the two processes. Conclusion: Findings indicate that the dynamic relation between help-seeking and suicidal ideation differs across family conflict contexts. Adolescents from low-conflict families demonstrated increasingly adaptive help-seeking over time, whereas those from higher-conflict families exhibited persistently reactive or uncoupled patterns. These results highlight the importance of incorporating family context into post-discharge monitoring and intervention efforts and underscore the utility of dynamic modeling approaches like TVEM for elucidating real-time recovery processes among suicidal adolescents.

From Private Shelves to Public Good: Preserving the Butler Hospital Historic Library

Authors: Antoine, A., Phoebe, B., Whiteley, I.

Background: The Butler Hospital Historic Library preserves a rare and largely inaccessible collection documenting the intellectual, medical, and social foundations of mental health treatment. Although actively maintained until the 1960s, the loss of catalog records left numerous volumes, manuscripts, and photographs, dating from 1590 to 1925, largely unknown to the public. **Objectives:** This project aims to restore intellectual access to the Butler Hospital Historic Library and reestablish it as a public scholarly resource for the history of medicine and the humane treatment of psychiatric illness. A secondary objective is to examine the intellectual networks and professional influences of Butler Hospital's founding leaders, clinicians, community advocates, and patients. **Methods:** Systematic inventory and review of the library's holdings were conducted under professional archival guidance. Materials were evaluated for historical significance and preservation needs. Attention was given to volumes associated with Dr. Pardon Bowen, Dr. Joseph Mauran, and Dr. Isaac Ray, as well as to transatlantic medical texts reflecting European and American exchange, and patient journals and art. **Results:** As of January 2026, approximately 40% of the collection has been electronically inventoried. The review has revealed a diverse collection of European and American imprints from London, Paris, Edinburgh, and Philadelphia, including translated editions of foundational medical texts. Notable findings include multiple French editions of works by Marie François Xavier Bichat and the identification of an 1838 volume signed by Oliver Wendell Holmes. Cataloging has also clarified intellectual and professional collections maintained by Dr. Pardon Bowen, Dr. Joseph Mauran, and Dr. Isaac Ray**.** **Conclusions:** Preliminary findings demonstrate the scholarly value of the Butler Hospital Historic Library and underscore the importance of restoring access to institutional medical archives. The collection provides insight into early psychiatric thought, medical education, and the ethical foundations of mental health care in the nineteenth century. **Discussion:** By transforming a neglected institutional archive into an accessible public resource, this project contributes to scholarship in the history of psychiatry and medicine while reinforcing the civic responsibility of preserving public access to medical history. Ongoing and future efforts will focus on completing the inventory, developing online finding aids, digitizing select materials, and establishing sustainable researcher access.

TITLE: Investigating Self-Compassion as a Protective Factor in the Association Between Emotion Dysregulation and Cannabis Use in Adolescents

AUTHORS: Pearl Ayiku, Alex LeVert, Chloe Burton, Emily Olenik, Sarah Ryan, Anastacia Kudinova, PhD, Sarah A. Thomas, Ph.D.

BACKGROUND: Cannabis use (CU) in adolescence has been linked to alterations in emotion regulation and executive functioning. Emotional dysregulation, a multidimensional construct that includes affect dysregulation, is associated with mental health problems, including depression and anxiety, as well as substance use (Weidburg et al., 2023). Self-compassion is a psychological construct reflecting a healthy relationship with the self. It encompasses self-kindness, mindfulness, and the recognition that pain and frustration are intrinsic aspects of human experience (Karlou et al., 2025). Self-compassion fosters adaptive emotion regulation, facilitating the processing of negative emotions versus engaging in maladaptive coping strategies (Inwood & Ferrari, 2018). Self-compassion promotes recovery from substance use disorder, has been associated with fewer drug cravings in adults, and has also been associated with lower alcohol use and lower risk of alcohol use disorder for indigenous youth (Shahin et al., 2021; Spillane et al., 2022). Given its protective role, we investigated whether self-compassion is a significant predictor of adolescent cannabis use, and whether it contributes to the association between affect dysregulation and adolescent cannabis use.

METHOD: Participants were 79 adolescents (mean age=15.61 years), recruited from diverse sources, including flyers, social media advertising, schools, community organizations, and medical chart review. Measures included the Affect Dysregulation Scale, which assessed difficulty managing strong emotions within a three-month time frame (Shipman et al., 2000), lifetime cannabis use status (yes or no), the self-compassion scale, which assesses self-kindness, mindfulness and common humanity (Neff, 2003). Hierarchical logistic regression was used to examine predictors of adolescent cannabis use. Models sequentially included affect dysregulation, self-compassion, and additional psychological well-being variables (Youth Self Report positive qualities[Achenbach & Rescorla, 2001], Inventory for Depression and Anxiety Symptoms Well-Being subscale, and anhedonia well being items [Watson et al., 2007]) to test contributions and model fit, with age and sex included as covariates.

RESULTS: Participants were 79 adolescents between 14-17 years old (mean age = 15.61, SD = 1.14), with 60.76% females and 39.24% males. 53.16% of participants reported cannabis use. Mean affect dysregulation was 2.21 (SD = 0.72), and mean self-compassion was 3.09 (SD = 0.82). Affect dysregulation consistently predicted a higher likelihood of cannabis use. Self-compassion did not moderate this link, nor did the addition of self-compassion (or any well-being factor) lessen the link in hierarchical regression.

CONCLUSION: Affect dysregulation was a robust predictor of cannabis use. However, self-compassion overall did not independently predict cannabis use or improve model fit beyond affect dysregulation and demographic covariates. These findings highlight that mitigating affect dysregulation may be important in substance use prevention, and additional protective factors should be explored to better understand resilience to substance use risk.

Relationships Matter: An exploration of factors connected to preschool teachers' relationships with parents and young children

Ana Luisa B. T. Dau, PhD, Rachel Herman, PhD, & Rebecca Newland Kilch, PhD

Early childhood educators play an important role in supporting children's social and emotional development, and positive parent-teacher relationships can further promote better social, behavioral and academic outcomes for young children (Cox, 2005). However, it is not uncommon for parent-teacher relationships to become conflictual, particularly when children are exhibiting challenging behaviors in the school setting. When relationships between families and teachers deteriorate, children may be at higher risk for expulsion. This is particularly relevant considering that young children are at high risk of expulsion from preschool, with surveys indicating that approximately 17,000 preschoolers are expelled in a given year (National Survey of Children's Health, 2016). Zulauf and Zinsser (2019) have noted that an often overlooked factor in research is how the parent-teacher relationship may affect teachers' perceptions of child behavior, their relationships with children and their likelihood to request that child be removed from their classroom. One way of disrupting the cycle of preschool expulsion and promoting positive student outcomes is the consistent implementation of Infant and Early Childhood Mental Health Consultation (IECMHC). IECMHC is a multilevel relationship-based capacity-building intervention provided to adults who care for young children to develop and maintain a high-quality classroom climate and reduce children's challenging behaviors (Center of Excellence, 2023).

In a sample of 417 children, their families, and school caregivers participating in IECMHC in the state of Rhode Island, this study explored the following questions: (1) does teacher-parent relationship quality differ based on child demographics (i.e., race, ethnicity, sex and age)? (2) how is teacher-parent relationship quality associated with teacher-child relationships and children's functioning in the classroom? (3) does teacher-parent relationship quality impact teachers' perceptions of child functioning following participation in IECMHC? Preliminary analyses suggest that, in terms of research question (1), child ethnicity was correlated with parent report of parent-teacher relationship quality, with Hispanic parents reporting higher quality of relationship with teachers, $r(308) = .122$, $p = .032$. Regarding question (2), teachers who reported higher quality parent relationships also reported that their children were functioning better in the classroom, $r(302) = .182$, $p < .001$. Similarly, higher teacher-reported parent-child relationships were correlated with higher teacher-child closeness, $r(405) = .225$, $p < .001$, and lower conflict, $r(406) = -.247$, $p < .001$. In relation to question (3), although teacher perceptions of teacher-parent relationship quality were associated with child functioning at the beginning of consultation, they were no longer significantly correlated with teacher perception of child functioning after consultation, $r(141) = .002$, $p = .980$, nor with teacher perceptions of change in functioning from pre- to post-consultation, $r(141) = .\ 055$, $p = .511$. Interestingly, parents' perceptions of the teacher-parent relationship were correlated with teacher's perceptions of child's change in functioning from pre to post consultation, $r(116) = .330$, $p < .001$. The connection between the quality of parent-teacher relationship, child's functioning and teacher's relationship with the child reinforces the importance of interventions that can support a positive relationship between teachers and families to foster children's social and emotional development. Additional statistical analysis will be conducted to continue to answer the research questions, and further implications of the findings will be discussed in connection with a child-focused model of consultation.

Title: Impact of Mindfulness Training on Fetal Growth Among Pregnancies At Risk for Hypertensive Disorders

Authors: Anisha Baktha, Maggie Bublitz PhD, Laura Sapano MD

Objectives: Hypertensive disorders of pregnancy (HDP) are the most common medical conditions in pregnancy and are associated with fetal growth restriction and low birth weight. Current interventions to prevent HDP are limited and do not target underlying mechanisms of disease. Mindfulness training holds tremendous promise as a mind-body intervention to prevent HDP and potentially influence fetal growth trajectories. This study examined whether higher scores in mindfulness-related measures following a prenatal mindfulness training intervention were associated with infant growth trajectories among pregnant individuals at risk for HDP.

Methods: Participants were 150 women at risk for HDP based on American College of Obstetrician and Gynecology criteria for low dose Aspirin administration, <20 weeks' gestation, English speaking, with singleton pregnancies, who did not practice mind-body exercises regularly at enrollment. Participants were randomized to an 8-week phone delivered mindfulness training intervention or usual prenatal care. The Five Facet Mindfulness Questionnaire (FFMQ) was administered to both groups following the intervention. Change in infant weight percentile was calculated between the mid-pregnancy anatomy scan and birth. Pearson correlations evaluated associations between FFMQ subscales and infant weight change. Linear regression models adjusted for maternal BMI, gestational diabetes, parity, hypertensive disorders of pregnancy, and aspirin use. Analyses were additionally stratified by randomized group.

Results: Participants were aged 32 (SD=5) years old, 45% primigravida, the average BMI was 31 kg/m^2 (SD=7), 55% self-reported taking low dose Aspirin during pregnancy, 15% reported an annual household income below the Rhode Island poverty line, and 21% reported an education less than college/university. Fourteen percent reported their relationship status as single. In terms of race/ethnicity, 27% of the sample reported their ethnicity as Hispanic, 68% reported their race as White, 23% Black, 5% Asian, 2% American Indian/Alaskan Native, and 11% reported their race as "other" or "prefer not to say." Participants were, on average 18 weeks' gestation at the baseline visit and 32 weeks' gestation at the follow up visit. One hundred and twenty-five participants were randomized to usual care (n=62) or to the mindfulness condition (n=63).

Higher scores on the FFMQ mindfulness subscale "Describe" were significantly associated with greater increases in infant weight percentile ($r = 0.31$, $p = .003$). No other mindfulness subscales were significant. This association remained significant after adjustment for maternal BMI, gestational diabetes, parity, HDP, and aspirin use ($B = 0.254$, $p = .023$). When stratified by group, the association persisted only among participants randomized to mindfulness training ($B = 0.37$, $p = .014$).

Conclusions: A greater capacity to label or account for internal experiences (thoughts, feelings, sensations) with words, a facet of mindfulness measured by the "Describe" subscale, was associated with increasing fetal growth trajectories in this sample, particularly among those receiving mindfulness training. These findings suggest mindfulness-related skills may be protective against fetal growth restriction. Further research is warranted to clarify causal pathways linking maternal psychological processes to fetal development.

Title: Scoping Review of Acceptance and Commitment Therapy–Informed Interventions for Individuals Navigating Conception, Pregnancy, Postpartum, Infertility, or Pregnancy Loss

Authors: Anisha Baktha[1]; Nina K. Ayala[2,3]; Sarah Bailey[4]; Margaret H. Bublitz,[4,5]; Alexandra Kiley[5]; Trisha Arnold[4,5]

1. Warren Alpert Medical School of Brown University, Providence, RI 02903
2. Department of Medicine, Warren Alpert Medical School of Brown University, Providence, Rhode Island USA 02903
3. Department of Obstetrics and Gynecology, Warren Alpert Medical School of Brown University, Providence, Rhode Island USA 02903
4. Department of Psychiatry, Rhode Island Hospital, Providence, Rhode Island, USA 02903
5. Department of Psychiatry and Human Behavior, Warren Alpert Medical School of Brown University, Providence, Rhode Island USA 02903

ABSTRACT

Objectives: Individuals navigating conception, infertility, pregnancy, postpartum, or pregnancy loss experience heightened psychological distress. Acceptance and Commitment Therapy (ACT) is a mental health intervention that increases psychological flexibility and engagement in values-aligned behaviors. ACT may be particularly well-suited to address the emotional and behavioral challenges associated with reproductive transitions. The goal of this scoping review was to examine existing ACT-informed interventions across the reproductive continuum.

Methods: A comprehensive search of PubMed, APA PsycInfo, CINAHL, and Scopus was conducted from inception through November 16, 2025. Studies were eligible if they evaluated or described ACT-informed interventions for individuals navigating conception, infertility, pregnancy (antenatal), postpartum, or pregnancy loss. No restrictions were placed on study design or geographic location. Screening and data extraction were conducted using Covidence. Data were synthesized descriptively following the PRISMA-ScR guidelines.

Results: Seventeen publications describing 16 distinct interventions met the inclusion criteria. Interventions were delivered across infertility/pre-conception (n=4), pregnancy/antenatal (n=10), postpartum (n=2), and pregnancy loss/termination (n=1) contexts. Delivery formats varied and included single-session workshops, multi-session group programs, inpatient interventions, online and videoconference groups, self-guided digital modules, and mobile-supported models. Study designs included randomized controlled trials, pilot and feasibility studies, qualitative implementation research, and intervention development papers. Across contexts, interventions consistently targeted psychological flexibility and related ACT processes. Several coherent intervention trajectories were identified, including iterative adaptation from in-person to online delivery in fear-of-childbirth interventions and expansion from feasibility to implementation-focused evaluations in perinatal mood disorder programs. Most studies reported feasibility and acceptability; evidence for clinical effectiveness remains preliminary.

Conclusions: ACT-informed interventions have been applied across diverse reproductive and perinatal contexts using varied delivery formats and provider types. While feasibility findings are promising, the evidence base remains early-stage and heterogeneous. Future research should prioritize rigorous trials, mechanistic evaluation of ACT processes, and implementation-focused studies to support scalable, equitable perinatal mental health care.

Testing the Role of Relationship Support and Discord in Prompted Parent-Adolescent Discussions

Ballard, S., Doyle, M., Rizzo, C., Houck, C., Barker, D.

Background: Dating violence (DV) emerges during early adolescence, yet prevention efforts have largely focused on girls despite evidence that boys also follow developmental pathways toward violence. Project STRONG is a web-based intervention designed to prevent DV among middle school boys by targeting emotion regulation and communication, using parents (84% mothers) as facilitators. Web-based family interventions use structured discussion prompts to encourage dyadic engagement; however, it remains unclear how baseline relationship quality predicts engagement in these conversations. This study examined whether adolescent-reported relationship support and discord were associated with the duration of a challenging prompted parent–adolescent conversation. It was hypothesized that higher perceived support and lower discord would predict longer conversation duration.

Methods: Participants were 76 parent-adolescent dyads assigned to the intervention condition of Project STRONG. During the intervention, dyads viewed a condom-use demonstration and were subsequently prompted to discuss common mistakes people make. Conversation length was operationalized as the number of seconds elapsed prior to clicking “continue”. Conversation duration was used as a behavioral proxy for engagement because longer discussions may reflect greater willingness to participate and elaborate. Relationship quality was assessed using adolescent-reported Social Support (SS) and Discord subscales from the Network of Relationships Inventory (NRI). Subscale scores were mean-centered for regression analyses. Demographic covariates include adolescent age and household structure. Multiple linear regression models were estimated to examine the association between relationship quality and log-transformed conversation length. Model 1 included NRI-SS and NRI-Discord. Model 2 added household structure (single-parent vs. two-parent household). Model 3 further adjusted for adolescent age. Nested model comparisons were conducted using ANOVA.

Results: Across all models, relationship quality variables were not significantly associated with conversation duration. In Model 1, neither NRI-SS ($\beta = -0.01$, SE = 0.16, $p = .943$) nor NRI-Discord ($\beta = 0.04$, SE = 0.16, $p = .779$) predicted log conversation duration. The overall model was not significant, $F(2, 73) = 0.05$, $p = .956$, with minimal explained variance ($R^2 = .001$). Adding household structure and adolescent age in Models 2 and 3 did not improve model fit. Two-parent household status was not a significant predictor ($\beta = 0.08$, SE = 0.27, $p = .757$), and the model remained non-significant. ANOVA comparisons indicated no significant improvement over the base model ($p = .757$). In Model 3, adjusting for adolescent age similarly yielded no significant predictors. Age was not associated with conversation length ($\beta = 0.11$, SE = 0.14, $p = .452$), and neither relationship support nor discord reached significance. Model comparisons indicated no significant incremental variance explained by the addition of age ($p = .452$).

Conclusion: Contrary to hypotheses, adolescent-reported relationship support and discord were not associated with the duration of a challenging prompted parent-adolescent conversation within a web-based intervention. Additionally, household structure and adolescent age did not predict conversation length. These results suggest structured prompts may support engagement regardless of baseline relationship quality. Alternatively, conversation duration may not fully capture qualitative aspects of communication, such as depth, emotional attunement, or responsiveness. It is also possible that the content of the prompt (discussion about condoms) influenced how families responded and may not generalize to other kinds of conversations. While supportive parent-child relationships remain central to DV prevention theory, these results underscore the need to refine how engagement is conceptualized and measured.

Title: Effect of Caffeine on Transcranial Magnetic Stimulation (TMS) Clinical Outcomes for Major Depressive Disorder

Authors: Anastasia Bekou, Eric Tirrell, Megan Vigne, Zachary Borden, Meghan Kulak, Joshua Brown, Linda Carpenter

Background:

Identifying factors associated with variability in response to repetitive transcranial magnetic stimulation (rTMS) for Major Depressive Disorder (MDD) remains an important clinical goal. Given caffeine's widespread consumption and its effects on neural excitability, we evaluated whether habitual caffeine use influences clinical treatment response.

Methods:

We retrospectively analyzed 161 adult patients who were systematically screened for caffeine use prior to initiating a course of TMS for MDD in a naturalistic clinical setting at Butler Hospital. Patients in this sample were categorized as daily caffeine users (n=124) or non-users (n=37). Primary outcomes included percent change in Inventory of Depressive Symptomatology–Self Report (IDS-SR) scores from baseline, treatment response (≥50% reduction), and remission (final score ≤14). Secondary outcome used the Generalized Anxiety Disorder-7 Item (GAD-7) scale to measure change in anxiety severity (n=110). Between-group differences were assessed using t-tests and chi-square analyses, and adjusted regression models accounted for baseline severity, sex, age and total number of TMS sessions.

Results:

Caffeine users and non-users did not differ in baseline IDS-SR scores (p > .44) but women in exhibited higher baseline depression severity than men (p = .003). Mean IDS-SR percent improvement was 45.6% in caffeine users versus 39.4% in non-users (p = .258). IDS-SR response (46.5% vs. 35.9%, p = .267) and remission rates (28.2% vs. 21.6%, p = .426) similarly did not differ by caffeine status. Furthermore, in participants with available GAD-7 data, caffeine users demonstrated greater GAD-7 percent improvement (p = .004).

Conclusions:

In this clinical sample, caffeine consumption was not associated with antidepressant response to rTMS. Our findings suggest that routine caffeine intake does not meaningfully influence TMS treatment efficacy in patients with major depressive disorder but prospective trials with controlled caffeine exposure are needed to confirm these results.

Prenatal E-Cigarette Use: Patterns, Preferences, & Perceptions

Nicole M. S. Belanger[1], **Ruth G. St Fleur**[1], **Widline Senatus**[1], **Laura R. Stroud**[1,2]

[1]Center for Behavioral and Preventive Medicine, Brown University Health

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

Background: Nicotine use patterns have shifted in the US, with declining rates of combustible cigarettes (CC) and increasing rates of e-cigarette (ECig) use, including exclusive and dual/poly use (ECig + one or more tobacco products) among young adults. Similar patterns are emerging in pregnant populations, where ECigs are becoming increasingly common. Despite perceptions of reduced harm, ECig users may be exposed to nicotine, flavored chemicals, heating-related toxicants, and heavy metals, which have been associated with adverse infant outcomes.

Objective: To characterize the prevalence and patterns of exclusive ECig use and dual/poly use across preconception and pregnancy, including user characteristics, device and flavor preferences, reasons for use, and perceptions of harm among pregnant women.

Method: Participants (*n*=124; M_{age}=27.4; *SD*=5.6) were drawn from a prospective cohort study examining prenatal ECig use and fetal/infant development. Participants completed up to three interviews between 17 and 37 weeks gestation. ECig and tobacco use were assessed using the Timeline Followback, a structured calendar-based interview capturing daily use of ECig and other tobacco products from three months prior to pregnancy through pregnancy. Interviews also assessed device characteristics, flavors, reasons for use, and harm perceptions. Saliva samples and breath carbon monoxide were collected for biochemical verification of nicotine and tobacco product use.

Results: Participants were classified into three groups based on Timeline Followback reports and biochemical verification: no use (*n*=55), exclusive ECig use (*n*=24), and dual/poly tobacco use (*n*=45).

Compared to the No-Use group, the ECig-Only and Dual/Poly groups were younger, more likely to be unmarried, and more likely to report unpanned pregnancies (*p*s<.05). The Dual/Poly group had lower education, lower income, and lower socioeconomic status compared to the No-Use group (*p*s<.05). Age of ECig initiation, ECig dependence levels, and duration of ECig use did not differ between the ECig-Only and Dual/Poly groups (*p*s>.05).

All ECig-Only and Dual/Poly users reported using ECigs during the preconception period. ECig use declined across pregnancy, with 89% reporting use in the 1st trimester, 37% in the 2nd trimester, and 29% in the 3rd trimester. Among those who continued ECig use, average days of use remained relatively consistent across pregnancy. Rates and frequency of ECig use did not differ between groups.

ECig-Only and Dual/Poly users reported using a range of ECig device types, most commonly rechargeable (71%), disposable (40%), and refillable with e-liquid (40%). Most users (94%) believed their devices contained nicotine with 34% reported using high-concentration nicotine (>50mg). Fruit, menthol/mint, and tobacco were the most used flavors. Device characteristics and flavors did not differ between groups.

Common reasons for use included flavor variety (89%), consideration of others (89%), fun/social (81%), lower perceived risk (75%), ability to use ECigs where CCs are not allowed (73%), and affordability (68%). ECig-Only users were more likely than Dual/Poly users to report using ECigs because they could be obtained without nicotine and to quit or reduce CC smoking (*p*s<.05). Although participants rated CCs as highly harmful, both ECig-Only and Dual/Poly groups perceived ECigs as less harmful to general health, to pregnant women, and to the fetus compared to the No Use group (*p*s≤.015).

Conclusions: ECig use commonly began before pregnancy recognition and often persisted into pregnancy, involving nicotine-containing liquids and flavors that may reinforce continued use. Participants perceived ECigs as less harmful than CCs, suggesting ongoing fetal exposure driven by harm-reduction beliefs. Early pregnancy may represent a critical window for screening and cessation interventions, and counseling should address product characteristics and harm perceptions.

Title: Overdose Phenomenology Among a Dual Diagnosis Psychiatric Inpatient Population

Authors: Yukti Bhatt, M.A., Rita Rossi, M.A., Chloe Kim, Brandon A. Gaudiano, Ph.D., Madeline B. Benz, Ph.D.

Background: Bipolar Disorder (BP) is characterized by high rates of suicide and self-harm, with intentional self-poisoning being a key mechanism of lethality. Substance use disorders (SUD) increase mortality via unintentional overdose. The co-occurrence of these 2 disorders compounds the risk of negative mental health outcomes for dual diagnosis individuals, including experiences of both types of overdose events. Patients with co-occurring BP and SUD face a "double jeopardy," elevating the risk of overdose death. While any form of overdose is of the utmost concern, less is understood about the differences in phenomenology between intentional and unintentional overdose among this group. **Methods:** Demographic and clinical characteristics were drawn from a sample of psychiatric inpatients at a psychiatric hospital in the northeast from their baseline assessment as part of a larger randomized trial of a psychosocial intervention.

Diagnoses of BP and SUD (drug and/or alcohol use disorders) were confirmed using the Mini-International Neuropsychiatric Interview (MINI). The Overdose Interview (ODI) and the Columbia Suicide Severity Rating Scale (C-SSRS) were used to examine the participant's overdose history and suicidal ideation (SI) severity. **Results:** Among 171 dual diagnosis patients with BP-SUD, 77% reported a history of any type of overdose, 48% reported a history of unintentional overdose, 56% reported a lifetime suicide attempt via intentional overdose, and 28% reported both intentional and unintentional overdose. Psychiatric medications were most common in intentional overdose, followed by sedatives and alcohol. Opioids were most common in accidental overdose, followed by alcohol and stimulants. Polysubstance drug use (i.e., use of 2 or more substances) was present for 62% of intentional and 43% of accidental overdose events. Compared to participants with a history of intentional overdose only, those who have experienced both types of overdose were significantly younger (M age = 36.9 vs. 41.4) and more likely to have co-occurring alcohol use disorder and drug use disorder (87.9% vs. 65.6%) Additionally, SI severity differed significantly across overdose groups ($F(3,170) = 20.42$, $p < .001$, $\eta^2 = .265$), such that those with intentional only overdose (M = 3.83, SD = 1.70) and those with both types of overdose (M = 3.69, SD = 1.70) endorsed significantly higher SI severity compared to those with no overdose history (M = 1.60, SD = 1.70) or those with accidental only overdose (M = 1.86, SD = 1.83). Interestingly, demographic characteristics of race, sex, household income, marital status, and years of education did not significantly differ across overdose groups. **Conclusions:** Overdose phenomenology may differ across overdose types for the population with co-occurring BP and SUD. Psychiatric medications may play an important role in intentional overdose, while opioid use appears to be more linked to accidental overdose. Alcohol use may be an underappreciated variable across the overdose intentionality spectrum, especially for those who have a history of both types of overdose. Moreover, higher suicidal ideation severity among participants with intentional overdose only is consistent with the presence of intent; however, participants who reported both intentional and unintentional overdose history demonstrated comparable SI severity. These results highlight the need for a focus on prevention of polysubstance overdose across the intentionality spectrum, as well as suicidality screening and prevention for these dual-diagnosis patients.

Assessing the Safety and Tolerability of Accelerated iTBS in Adolescents with ADHD

Zac Borden[1], Megan Vigne[2], Eric Tirrell[1,3], Linda L. Carpenter[1,3], Brian C. Kavanaugh[3,4]

[1]Brain Research and Interventional Neurotherapeutics (BRaIN) Program, Butler Hospital, Providence, RI, USA
[2]Department of Neuroscience, School of Medicine, University of Pittsburgh, Pittsburgh, PA, USA
[3]Department of Psychiatry and Human Behavior, Warren Alpert Medical School, Providence, RI, USA
[4]Department of Psychiatry and Human Behavior, Bradley Hospital, East Providence, RI, USA

Background: Accelerated intermittent theta burst stimulation (aTBS) approaches have become integrated into clinical and research iTBS for adult neuropsychiatric conditions. However, the safety and tolerability of aTBS in adolescent populations remains largely unknown. The objective of this study was to assess the safety and tolerability of aTBS in a cohort of adolescents with attention-deficit hyperactivity disorder (ADHD).

Methods: We reviewed data from our aTBS and adolescent ADHD clinical trials. The first cohort received two daily iTBS sessions for 5 days (n=4) or 10 days (n=4) targeting the left dorsolateral prefrontal cortex (DLPFC) at 80% resting motor threshold (rMT; 1,800 pulses per session; 50 Hz bursts every 200 ms). Another participant received 4-6 iTBS sessions per day for 5 days with identical parameters (24 total sessions). The second cohort (n=5) received three daily iTBS sessions for 10 days randomized to target either the left DLPFC or right pre-supplementary motor area (preSMA; 80% rMT). Adverse events (AE) rates, iTBS tolerability, and dropout rates were assessed.

Results: A total of n = 14 adolescents with ADHD received ≥2 sessions per day of iTBS for at least one week. Two adverse events were reported (both transient mild headaches) across 294 iTBS sessions (14% per-person AE rate). No serious AEs occurred. All but one participant tolerated 80% rMT. No participants withdrew.

Conclusions: These findings demonstrate preliminary safety and tolerability of aTBS in adolescent ADHD. While aTBS holds promise for maximizing rTMS-ADHD clinical trial efficiency, ongoing safety and tolerability data in larger cohorts are critical.

A mixed methods study of social connection among stigmatized people with epilepsy

Megan L. Bradson, Elaine T. Kiriakopoulos, Alexandra Hernandez-Vallant, Sarah Prieto, Allyson Goldstein, Wren M. Kaden, Geoffrey Tremont, Kunal Mankodiya, Elijah Castillo, Shehjar Sadhu, Dhaval Solanki, Jennifer D. Davis & Seth A. Margolis

Introduction: RISE ABOVE is a self-paced, online anti-stigma self-management program designed to help people with epilepsy (PWE) recognize and reduce internalized stigma by reframing stigma-related thoughts, emotions, and reactions and strengthening problem-solving skills. An open trial showed the program is feasible, acceptable, and preliminarily efficacious. Subsequent qualitative work identified facilitators of growth and barriers, including low readiness for change and limited relatability of content. Our prior work also showed that participants endorsing stigma related to non-epilepsy factors (e.g. unemployment) demonstrated fewer gains in self-efficacy and less sustained improvement in social role satisfaction and loneliness. Yet, perceived social connection was never directly assessed, despite many spontaneously describing it in exit interviews. This mixed-methods study examined how spontaneously described social connection and disconnection related to sample characteristics, self-efficacy, social role satisfaction, and loneliness.

Materials and Methods: Twenty PWE (age 47.30±14.25; 50% female; 50% uncontrolled seizures; 30% unemployed) completed RISE ABOVE, post-intervention qualitative interviews, and pre/post-intervention surveys. Interviews covered impressions, accessibility, content, module-specific feedback, and perceived impact, but not social connectedness. Transcripts were coded with an initial codebook distinguishing social connection from disconnection and double-coded using inductive thematic analysis in NVivo15. Codes were quantified by number of unique spontaneous references to connection (Md=1; Range=0–6) or disconnection (Md=2; Range=0–11). Median splits classified participants as low or high on each construct. Multidimensional groupings (highly disconnected, highly connected, balanced) accounted for combined patterns; seven participants with minimal reference to either construct were excluded from multidimensional groupings. Two-tailed Chi-square and Mann-Whitney U tests explored relationships with demographic and clinical factors; one-tailed tests assessed hypothesized associations with psychosocial outcomes at baseline, immediately post-intervention, and six-month follow-up.

Results: Connection manifested in sources of social support (e.g. peers or family with epilepsy, support groups, epilepsy organizations, therapists, self-management programs, community spaces) and comfort in social situations (e.g. trust in others, comfort with disclosure, confidence in public settings). Disconnection involved discomfort in social situations, feeling misunderstood, isolation, interpersonal conflict, and socially driven emotions (e.g. shame, feeling like a burden). Men were more disconnected than women ($z=-2.34$, $p=.020$), and unemployed participants were more disconnected than employed ones ($\chi^2=6.71$, $p=.010$). Clinical characteristics did not vary by connection status. Compared to highly connected individuals, those with high disconnection and low connection reported lower self-efficacy at baseline ($p=.032$), a trend immediately post-intervention ($p=.056$), and lower self-efficacy at six months ($p=.015$). Relative to the balanced group, highly disconnected participants reported lower self-efficacy pre-intervention and immediately post-intervention ($p=.015$ and .029), with a trend at six months ($p=.067$). No group differences emerged for social role satisfaction or loneliness, or between balanced and highly connected participants.

Discussion: Social connection and disconnection manifest in diverse ways among stigmatized PWE who engaged with RISE ABOVE. Men and unemployed individuals were the most disconnected, and social disconnection without corresponding experiences of connection was associated with lower self-efficacy across timepoints. Gender, employment status, and degree of social disconnection may influence intervention engagement and outcomes and should be assessed as potential moderators in future efficacy trials.

Prenatal Major Depressive Disorder Negatively Impacts Neonatal Neurobehavioral Development

Julia A. Brekke-Riedl MD PhD*, Nikki Aubuchon-Endsley, Meaghan Mccallum, Gina Erato Garza PhD, Natasha Sokol PhD, Laura R. Stroud PhD

Department of Psychiatry and Human Behavior, Brown University Alpert Medical School, 222 Richmond St. Providence, RI 02903, USA

Center for Behavioral and Preventive Medicine, The Miriam Hospital, 164 Summit Ave. Providence, RI 02906, USA

Background: Perinatal depression affects approximately 1 in 4 women with higher rates in low socioeconomic status (SES) populations. Given long-term behavioral impacts of child exposure to maternal depression, it is critical to identify early neurobehavioral risk markers.

Methods: 153 mother-infant dyads were enrolled from within an ethnoracially diverse cohort. Women were *M*=26+/-5 years; 54% identified as racial/ethnic minorities. Repeated structured diagnostic interviews were administered to identify women with (a) prenatal major depressive disorder (MDD), (b) preconception-only MDD, and (c) controls. Participants also completed the Inventory of Depressive Symptoms to measure depression severity. A standardized assessment of infant neurobehavior (NICU Network Neurobehavioral Scale [NNNS], including neurological, behavioral, and stress subscales) was administered to neonates postnatally on day 0-5 and day 25-40. The impact of MDD, duration of MDD, and depression severity on NNNS subscales was examined longitudinally via a Repeated-Measures ANOVA within a Multiple Regression framework.

Results: Results unveiled negative effects of prenatal MDD on neonates with increased lethargy (*p*=.04), poorer attention (*p*=.01), and greater asymmetrical reflexes (*p*=.05). Longer duration of MDD was associated with increased neonatal lethargy (*p*=.05). Finally, greater depression severity was associated with increased lethargy (*p*=.01), impairments in attention (*p*=.002), and poorer quality of movement (*p*=.03).

Conclusion: Results highlight the impact of prenatal MDD on early markers of infant neurobehavioral risk. In particular, maternal MDD, duration of MDD, and severity of depression were linked to increased lethargic behaviors, and alterations in attention and reflexes/quality of movement in neonates. These findings suggest there is a need to support early intervention for maternal depression to reduce infant neurobehavioral risk.

Clinical severity and parental stress in autistic children with and without ADHD

Karen Cammuso, PhD, Catrina Elizardo, BS, Rachel G. McDonald, PhD, Devon Ryan, Ethan Moore, Rabia Ni, Sara Welch, Petya Radoeva, MD, PhD, & David Lichtenstein, PhD

Autistic people have a high rate of co-occurring Attention Deficit Hyperactivity Disorder (ADHD). In a prior report, we found that parental stress (low self-efficacy and understanding related to child illness) was not associated with child sleep problems but with the presence of ADHD in offspring. The current study seeks to follow up on that finding by comparing the differences in clinical severity of autistic patients with ADHD to those with autism without ADHD, and comparing parent stress in the two groups. There is evidence that ADHD, in combination with autism, is associated with poor adaptive and social functioning (Liu et al., 2021) and parent functioning (Shepherd et al, 2026). The present study focuses on a sample of children receiving treatment from an outpatient clinic for behavioral health challenges co-occurring with autism and other disabilities. Autistic subjects with and without comorbid ADHD were identified, and the severity of symptoms, quantified by the clinician CGI at their first clinic visits, was explored in relation to ADHD. Parent ratings of stress were also explored in relation to the presence of ADHD diagnoses. We hypothesized that those with co-occurring autism and ADHD would have more significant clinical presentations, and parents would present with higher levels of stress in comparison to those without ADHD. Lastly, we looked at the relationship between ADHD and later psychiatric hospitalization in a smaller subset of subjects.

A Latent Profile Analysis of Mindfulness Traits Among Adults with Elevated Depressive Symptoms

Authors: Hannah Carlon, Zachary Kunicki, Camille Neutz, Katherine Landino, & Morganne Kraines

Background: Mindfulness, or the capacity towards nonjudgmental awareness of the present moment, is as a protective factor against maladaptive emotional functioning. As such, mindfulness-based treatments for emotional disorders have gained popularity and exhibited promising effects on outcomes related to emotional functioning, such as depression. However, much of the prior work investigating the relationship between mindfulness and emotional functioning has used variable-centered analytic methods, which assume a sample is homogenous and relationships between variables are uniform across a population. Given that prior work has found mindfulness to be heterogenous across adult populations, variable-centered approaches may not accurately capture the true individual-level relationships between mindfulness traits and emotional functioning. Person-centered analytic methods, defined as methods assuming heterogeneous distributions of variables across a population, may be better suited for such research questions. This work advances scientific understanding of the relationship between mindfulness and emotional functioning by using latent profile analysis (LPA), a person-centered analysis, to identify distinct subgroups of mindfulness traits across a sample of adults with elevated depression symptoms enrolled in a larger trial examining mechanisms of treatments for depression, and mean differences across these subgroups on aspects of emotional functioning.

Methods: Participants were 52 adults with elevated depressive symptoms (i.e., sample mean of 10.45 on the Quick Inventory of Depressive Symptoms–Self Report [QIDS-SR]), who completed a baseline assessment prior to randomization in a larger trial. Trait mindfulness was measured using the Five-Factor Mindfulness Questionnaire (FFMQ), which yields scores across five subscales of mindfulness traits: observing, describing, acting with awareness, nonjudgment, and nonreactivity. Participants also completed measures of depression, rumination, and positive and negative affect. We conducted LPA using Mplus Version 8.11 of the five mindfulness facets, and then examined mean differences across profiles on depressive symptoms, rumination, positive affect, and negative affect.

Results: LPA results revealed a two-profile solution as best-fitting to the data. Profile 1 (i.e., *low-moderate traits*) included 44 (85%) of individuals in the sample and was characterized by mean levels of mindfulness facets that were comparable or slightly lower than those of the overall sample mean. Profile 2 (i.e., *high traits*) included 8 (16%) of individuals in the sample and included individuals with mindfulness facet scores that were higher than the overall sample means. Mean differences between profiles emerged for depressive symptoms and negative affect, such that individuals in the *high traits* profile had lower mean depressive symptoms (8.62 vs. 10.89, p=.01) and negative affect (11.53 vs. 15.46, p<.01) compared to those in the *low-moderate traits* profile. No significant mean differences between profiles emerged for rumination or positive affect.

Discussion: These findings suggest that meaningful heterogeneity in trait mindfulness exists among adults with elevated depressive symptoms, with a subgroup characterized by relatively higher mindfulness across facets. Individuals in this high-traits profile reported lower depressive symptoms and negative affect, supporting the protective role of mindfulness in emotional functioning. Results highlight the value of person-centered approaches for identifying clinically relevant subgroups that may be obscured in variable-centered analyses. Though replication in larger samples is needed to confirm profile structure, these results could suggest implications for treatment response and personalization of mindfulness-based treatments for individuals with elevated depression.

Neuropsychiatric Symptom Clusters Are Conserved Across CADASIL and AD

Megan Caruso, Sarah Benjamin MS, Paula Lorenzi MA, Alyssa De Vito PhD, William Adams PhD, Barbara Fischer PhD, Jane Paulsen PhD, Edward Huey MD

Background: Cerebral Autosomal Dominant Arteriopathy with Subcortical Infarcts and Leukoencephalopathy (CADASIL) is a neurovascular disorder caused by a genetically inherited NOTCH3 mutation found on vascular smooth muscle cells of the small cerebral arteries. CADASIL can result in stroke-like events, chronic headache, psychiatric changes, and cognitive impairment. Neuropsychiatric symptoms (NPS), such as apathy, depression, and anxiety, manifest in almost half of CADASIL patients, indicating the need for better understanding to improve patient outcomes. The Neuropsychiatric Inventory Questionnaire (NPI-Q) is the most extensively used informant-report questionnaire of NPS. Despite its widespread use, it has not yet been validated in those with CADASIL. The aim of this study was to evaluate the psychometric properties of a pre-established factor structure of the NPI-Q in CADASIL patients to fill this important gap. Developed from NPI-Q responses collected on over 40,000 participants at Alzheimer's Disease Research Centers, González and colleagues found that 10 of the 12 NPI-Q symptoms sort into four categories, or factors, of neuropsychiatric disturbance. The four factors include psychosis, involving hallucinations and delusions, behavioral activation, concerning agitation, disinhibition, and irritability, mood disturbance, covering depression and anxiety, and somatic disturbance and behavior suppression, which involves apathy, disordered sleep, and appetite and eating changes.

Methods: Participants were 396 NOTCH3 carriers from the CADASIL Consortium which follows over 500 people from families with CADASIL longitudinally. Clinical histories, biofluids, neuroimaging, and cognitive testing is collected across each visit, along with an informant interview. The cognitive and neuropsychiatric instruments administered are modeled after those used by the National Alzheimer's Coordinating Center (NACC) and modified to better fit the changes seen in CADASIL. NPS are collected via the participants directly through self-reported quality of life assessments, in proxy through clinical psychiatric diagnoses, and through their informant via the NPI-Q. Using responses from the informants of NOTCH3 carriers, we performed a confirmatory factor analysis (CFA) of an NPI-Q factor structure (González et al., 2023) to examine whether NPS clusters are conserved across disease etiologies.

Results: CFA on the factor structure outlined in González and colleagues (2023) demonstrated excellent fit with the CADASIL Consortium sample (RMSEA=0.02, Bentler CFI=0.97). Standardized factor loadings followed a similar pattern seen in prior work with the highest factor loadings being seen for delusions and hallucinations on the psychosis factor and the lowest factor loadings being seen for appetite/eating symptoms on the somatic disturbance factor. Correlations among the factors were similar in strength for the original model and the CADASIL model except for behavioral activation, which showed stronger relationships with somatic disturbance and mood than in the original model.

Conclusions: Findings indicate a similar factor structure on the NPI-Q in CADASIL as is seen in other neurodegenerative groups, suggesting that the organization of neuropsychiatric symptoms may be preserved across distinct pathological processes.

Future directions include examining construct validity and performing an exploratory factor analysis using the consortium's data to see if there's a factor structure that fits better for CADASIL.

Pregnancy Complications as a Risk Factor for Earlier Cerebrovascular Events in CADASIL Consortium Patients

Megan Caruso, William H. Adams, PhD, H. Jeremy Bockholt, Deven K. Burks, PhD, Edward D. Huey, MD, Stephen P. Salloway, MD, Jane S. Paulsen, PhD

Cerebral Autosomal Dominant Arteriopathy with Subcortical Infarcts and Leukoencephalopathy (CADASIL) is the most common monogenic cause of stroke and vascular dementia. Symptoms start in early adulthood and include migraine with aura (MA), mental illness, cerebrovascular events (CVEs), and cognitive impairment. While disease progression is highly variable, there is evidence that sex is influential in phenotype expression, with prevalence rates of stroke, apathy, and MA differing for patients under age 51. Most sex differences are no longer significant in older patients. Pregnancy is a transformative time for the body. Complicating conditions, such as gestational diabetes, pre-eclampsia, and miscarriage, lead to a higher risk of chronic disease later, like cardiovascular disease, diabetes mellitus, and psychiatric disorders. Still, pregnancy can cause beneficial changes to the cerebrovascular system like increased cerebrovascular reactivity and enhanced vasodilation. For individuals with preexisting vascular conditions, there may be insufficient resilience to these adaptations during this period. We hypothesized that complications during pregnancy or in the postpartum period predispose women with CADASIL to earlier onset of CVEs compared to those without pregnancy complications.

The CADASIL Consortium (n=562) collected data to investigate the relationship between reproductive health experiences and CADASIL outcomes. Relevant items include age at first CVE, incidence of pregnancy, and incidence of complications including miscarriage.

Of 357 women in the consortium, 234 women reported at least one pregnancy. Among these, 96 reported having at least one CVE. Using general linear models, we found there was a significant difference in mean age of onset at first CVE (p=0.03). Women with a history of complicated pregnancy had a mean onset age of 40.0 years (n=62; SD: 12.4), compared with 46.2 years (n= 34; SD: 14.2) for those without pregnancy difficulties. This remained significant when controlling for effects of blood pressure and hypercholesterolemia (p=0.04.)

In conclusion, while these findings suggest that complications during pregnancy may predispose a CADASIL patient to having earlier CVE onset, further investigation is needed to understand the nature of this relationship. Improved awareness and management of pregnancy-related complication could potentially mitigate earlier neurovascular injury and delay CVE onset.

Title: Externalizing problems predict chronic cyberbullying victimization among a sample of trauma-exposed adolescents.

Author List: Sabrina J. Cassarino, B.S., Katherine M. Ingram, Ph.D., Sophie M. Edelman, B.S., Marisa Marraccini, PhD, & Nicole R. Nugent, Ph.D.

There is strong evidence for social support as a moderator of psychological recovery following a traumatic event among adolescents. Among trauma-exposed youth, studies show high rates of comorbidity between trauma and stressor related disorders and externalizing symptoms, which often impair functioning in interpersonal relationships. Additionally, the rapid development of online socialization has allowed for new forms of peer aggression in youth. The current study tested the hypothesis that trauma-exposed youth with externalizing symptoms are at higher risk for cyberbullying victimization. Among a sample of adolescents (N=192, age *M* =15.22, *SD*=1.32) recruited from a children's hospital emergency department following a potentially traumatic event (PTE), a mixed-effects model was used to examine cyberbullying victimization at three time points (two weeks, six months, and nine months) following the PTE. Results indicate that youth experienced stable levels of cyberbullying victimization throughout the study period. A direct main effect of externalizing symptoms was observed (*b*=2.62, *p*=.024), such that trauma-exposed youth with high ratings of externalizing symptoms were significantly more likely to experience consistently elevated cyberbullying victimization. No significant associations were observed with internalizing symptoms. Findings highlight elevated risk for trauma-exposed youth with externalizing presentations: Impaired peer relationships may further hinder their ability to psychologically recover following a traumatic event.

Investigating TREX1 as a mediator of neuroinflammation in tauopathy

Julianna Chang[1], Morgan Lambert[1], Bess Frost, PhD[1]

[1]Brown University Center for Alzheimer's Disease Research, Providence, RI

Alzheimer's disease (AD) is a progressive neurodegenerative disease characterized by memory loss and a decline in cognitive function. As a tauopathy, AD is associated with the abnormal accumulation of pathogenic tau in the brain. This tau dysfunction destabilizes the nucleus, resulting in the decondensation of heterochromatin that derepresses previously silenced DNA, such as retrotransposons. Typically silent in the cell, retrotransposons are DNA sequences that are derived from ancient retroviruses and can mobilize throughout the genome by reverse transcribing its RNA into complementary DNA (cDNA). Previous research has demonstrated that pathogenic tau is sufficient to induce retrotransposon transcription, but little is known about the subsequent cDNA, which may reinsert itself into the genome or remain in the cytosol as cytoplasmic DNA. In a healthy brain, cytoplasmic DNA activates the cGAS-STING pathway, resulting in the downstream upregulation of proinflammatory cytokines. Alternatively, cytoplasmic DNA is also degraded by TREX1, serving as an endogenous mediator of the cGAS pathway. While the cGAS-STING pathway has been shown to be elevated across models of AD, the role of TREX1 upregulation as a potential mechanism to reduce tau-induced neuroinflammation and neurodegeneration has not yet been studied. We hypothesize that TREX1 upregulation will mitigate tau-induced neuroinflammation by clearing cytoplasmic DNA and reducing cGAS-STING activation. Using the PS19 mouse model of tauopathy, we will characterize the effects of both TREX1 overexpression and knock-out on tau levels and cGAS-STING signaling. These results may identify TREX1 as a potential therapeutic target to reduce neuroinflammation and neurodegeneration in AD.

Title: Predictors of Acute Treatment Utilization Following an Emergency Department Visit Among Individuals with Major Psychiatric Disorders and Suicidality

Authors: Jihoon Choi[1,2], Akane Kinumaki[1,2], Ilana Ladis[1,2], Sarah A. Arias[1,2], Lauren M. Weinstock[1], Ivan Miller[1,2], Edwin D. Boudreaux[3], Carlos A. Camargo Jr.[4], Brandon A. Gaudiano[1,2], and Ana Rabasco[1,2]

Affiliations:
[1]Department of Psychiatry and Human Behavior, Brown University, Providence, Rhode Island;
[2]Psychosocial Research Program, Butler Hospital, Providence, Rhode Island;
[3]Departments of Psychiatry and Population and Quantitative Health Sciences, University of Massachusetts Chan Medical School, Worcester, MA;
[4]Department of Emergency Medicine, Massachusetts General Hospital, Harvard Medical School, Boston, MA.

Introduction: People with major psychiatric disorders – such as major depressive disorder (MDD), bipolar disorder (BD), and schizophrenia-spectrum disorders (SSD) – utilize acute treatment at high rates. Rates of acute treatment utilization are even higher among individuals with major psychiatric disorders experiencing suicidal thoughts and behaviors (STBs). However, there is limited prior longitudinal research on differences in treatment utilization among people with different psychiatric diagnoses and STBs. The current study aimed to examine factors associated with acute treatment utilization (psychiatric inpatient hospitalization and emergency department [ED visit]) among individuals with major psychiatric disorders and STBs presenting to the ED.

Methods: Adults with MDD (n = 347), BD, (n = 298), and SSD (n = 100) with active STBs at baseline were recruited from eight EDs across the United States as part of a larger study (the ED-SAFE Trial) of treatment for STBs. Chart reviews and participant assessments were conducted longitudinally during the 52-weeks following ED discharge.

Results: Participants with BD and SSD had higher rates of and shorter time to inpatient hospitalization and ED visit over follow-up than people with MDD. Outpatient mental health treatment utilization and lack of employment were associated with increased psychiatric inpatient hospitalization over follow-up. Unemployment, substance use disorder, and chronic pain predicted increased ED visits over follow-up.

Conclusions: Results show that treatment utilization differed by type of major psychiatric diagnosis. These findings suggest that people with BD and SSD may benefit from additional supports, including vocational services, during and following ED visits to reduce future acute treatment utilization.

A Qualitative Examination of Caregivers' Impressions of Exposure Therapy for Youth Anxiety

E. Ruby Cramer, Hallel A. Abrams Gerber, Danielle R. Adams, Hannah E. Frank, Ruben G. Martinez, Jennifer Espinoza Ramirez, Gabriella T. Ponzini, Julia S. Ney, Dominique S. McKnight, Philip C. Kendall, Margaret E. Crane

Abstract:

Background. Cognitive Behavioral Therapy (CBT) is an effective evidence-based treatment for youth anxiety, with exposure as a core strategy. Many anxious youth do not receive adequate treatment. Caregivers' impressions of exposure play an important role in the decision to seek exposure-based CBT for their youth.

Objective. This study aimed to assess caregivers' (N = 36) of clinically anxious youth (aged 5-18) impressions of exposure, to inform future direct-to-consumer (DTC) dissemination and therapist training.

Methods. This study used qualitative interviews to assess impressions: 18 caregivers had a child who had received exposure and 18 were informed consumers, meaning they attended a presentation on youth anxiety and how to seek treatment. An integrated inductive and deductive thematic analysis approach was used to code for themes around perceptions of exposure and preferences for how to describe exposures in dissemination efforts.

Results. Caregivers generally liked the term exposure, thought it was accurate, and used metaphors to describe the gradual nature of exposures. Participants praised the strategy's effectiveness and appreciated therapists' roles in providing the treatment. Negative impressions included short-term child discomfort, challenges persevering through long-term treatment, difficulty carrying out exposures without the therapist, and variability in exposure therapist availability. The term SAFE-CBT was appreciated for its warmth, but seen as too much jargon.

Conclusions. These findings are useful for dissemination efforts to both therapists and consumers. Consumer-focused dissemination efforts should describe exposure in simple terms (e.g., slowly facing fears) and provide examples. Training for therapists can integrate study findings to counteract negative therapist beliefs about exposure, highlight the importance of involving caregivers in exposure, and provide examples of how therapists should describe exposure to families.

Key words: exposure, caregivers, youth, anxiety, impressions

Associations Between Sleep Regularity and Depressive Symptoms in First-Year College Students

Authors: Christopher A. Crawford, David H. Barker, John E. McGeary, Mary A. Carskadon

Background

Sleep and mood exhibit complex bidirectional relationships, with substantial evidence linking insomnia to the onset and recurrence of depressive disorders. Prospective studies, randomized controlled trials, and Mendelian randomization analyses increasingly support impaired sleep as an independent and causal risk factor for depression, with effect sizes suggesting stronger influence from sleep disturbance to depression than vice versa. Even so, far less is known about the dynamic interplay of sleep and mood during periods of stressful life transitions, such as the first semester of college, when sleep timing, regularity, and emotional functioning undergo rapid change. Characterizing the temporal coupling between sleep regularity and depressive symptoms during this transition may clarify whether sleep exerts prospective influence on mood, mood influences sleep, or both.

Methods

To assess the nature of these variables in a population of first semester college students, a secondary analysis of the Brown Prospective Study was performed. The parent study recruited first-year Brown University students in six waves from 2009 to 2014. All participants were eligible for inclusion in this secondary analysis. Due to missing data, the final analytic sample included 1,074 students (M = 18.5 years, SD = 0.50; 57.8% female; 54.6% White; 20.2% Asian; 9.2% unknown/not reported; 9.1% multiracial; 6.4% Black; 0.5% American Indian/Alaska Native). Participants tracked their sleep across the first 9 weeks of the first semester with an online daily sleep diary (bedtime, rising time, napping, etc.) starting the first day of class and ending before the Thanksgiving holiday break. Participants additionally completed online biweekly surveys following weeks 2, 6, 8, and 10, and on two consecutive days following weeks 4 and 12 of their first semester assessing mood, among other psychosocial factors. Sleep duration was computed as average daily total sleep time, and sleep regularity was indexed using the Sleep Regularity Index (SRI). A latent change score model was first specified to examine reciprocal change processes between SRI and mood. Given poor absolute and relative model fit, a within-person autoregressive cross-lagged model was subsequently estimated.

Results

The latent change score model demonstrated poor fit to the observed covariance structure. In the autoregressive cross-lagged model, higher-than-usual sleep regularity predicted subsequent reductions in depressive symptoms ($b = -0.0128$, $SE = 0.0061$, $p = .037$). Depressive symptom deviations did not significantly predict subsequent sleep regularity deviations ($b = -0.0755$, $SE = 0.0416$, $p = .069$). Autoregressive effects were significant for both sleep and mood, indicating moderate biweekly stability.

Conclusions

During the first semester of college, sleep regularity demonstrated small but significant prospective effects on depressive symptoms, whereas evidence for the reverse (i.e., depressive symptoms prospectively affecting sleep regularity) was weaker. Model fit indicated that a stability-based autoregressive structure better represented the data than a dual latent change model with proportional and constant change components. Together, these results suggest asymmetric temporal coupling between sleep regularity and mood during this key developmental transition.

Title: Trauma History, Negative Self and Other Beliefs, and Subclinical Paranoia: Investigating Mindfulness as a Protective Buffer

Authors: Alana Davis, BA, Jihoon Choi, BS, Meghana Konda, & Brandon A. Gaudiano, Ph.D.

Affiliation: Alpert Medical School of Brown University and Butler Hospital

Rationale: Extant research has revealed associations among traumatic experiences, negative beliefs about the self and others, and paranoid ideation. Mindfulness, the state of non-judgmental present-focused awareness, has been implicated as a potential buffer of paranoid ideation. Thus, mindfulness has emerged as a potential protective factor mitigating the association between trauma exposure, negative beliefs, and paranoia. While the relationships among these constructs have been recognized, an empirical gap remains regarding the role of mindfulness in moderating their negative effects.

Hypothesis: We predict that lifetime presence of trauma will be associated with current subclinical paranoid ideation, and that polytraumatized individuals will display a greater severity of paranoia than individuals reporting less extensive traumatic victimization. Further, we predict that the relationship between trauma and paranoia will be mediated by negative beliefs about the self and others and that this relationship will be further moderated by mindfulness. In particular, we hypothesize that the nonjudgment facet of mindfulness, which refers to the quality of observing one's internal experiences without evaluating or assigning value to them, will moderate the relationships among trauma, negative beliefs, and paranoia.

Methods: An online survey was administered via Qualtrics to a representative US sample of 500 English-speaking adults. Participants completed baseline self-report measures including the Brief Core Schema Scale, the Revised-Green Paranoid Thoughts Scale, and the Five-Facet Mindfulness Questionnaire. Traumatic experiences were assessed in the domains of emotional neglect, psychological abuse, physical abuse, and sexual abuse.

Analysis: We will perform a moderated mediation analysis using Hayes' PROCESS macro for SPSS to examine the relationships among trauma, negative self/other beliefs, paranoia, and mindfulness.

Implications of Relevance/Conclusion: This study explores how trauma could have a lasting impact on individuals' beliefs about themselves and others, influencing their experience of paranoia. It also examines whether mindfulness could serve as a protective factor.

Transcranial Magnetic Stimulation Improves Symptoms of Anhedonia in Veterans with Depression

Catherine D. DeCesare[1], Madeleine R. Lefkowitz[1], Noah S. Philip[1,2], and Amanda R. Arulpragasam[1,2]

[1]VA RR&D Center for Neurorestoration and Neurotechnology, VA Providence Healthcare System, Providence, RI, USA
[2]Department of Psychiatry and Human Behavior, Alpert Medical School of Brown University, Providence, RI, USA

Anhedonia, a symptom characterized by challenges in interest or pleasure in activities, as well as motivation, effort expenditure, and valuation, is common in major depressive disorder (MDD), difficult to treat, and predictive of poor functional outcomes. Transcranial magnetic stimulation (TMS) is a promising treatment for MDD that targets the dorsolateral prefrontal cortex (dlPFC), an area commonly implicated in effort expenditure and motivation. However, few studies have directly examined the impact of TMS on anhedonia. The current study aims to assess anhedonia via a behavioral task and self-report measures before and after a course of TMS.

25 Veterans with MDD (ages 28-69, $M_{age} = 49.12$, $N_{female} = 9$) were recruited through the VA Providence Neuromodulation Clinic and enrolled in the current study. 20 Veterans (ages 28-69, $M_{age} = 47.4$, $N_{female} = 8$) completed both study visits, a Pre-TMS visit and a Post-TMS session. At each visit participants completed the following self-report questionnaires assessing anhedonia: the Snath-Hamilton Pleasure Scale (SHAPS), Temporal Experience of Pleasure Scale (TEPS), Apathy Motivation Index (AMI), and Apathy Evaluation Scale (AES). Participants also completed the Incentivized Mental Effort Task, a computerized decision-making task which measures how expectations of reward and outcome controllability influence effort allocation.

Preliminary results indicate that TMS may improve self-reported symptoms of amotivation and anhedonia in Veterans with depression. Significant improvements in anhedonia and amotivation were observed following TMS as measured by the SHAPS ($t_{(19)} = 3.41$, $p = 0.003$), TEPS ($t_{(19)} = -4.53$, $p < 0.001$), AMI ($t_{(19)} = 4.56$, $p < 0.001$), and AES ($t_{(19)} = -3.35$, $p = 0.003$). Additional analyses revealed significant changes in the AMI Behavioral Activation ($t_{(19)} = 3.31$, $p = 0.004$) and Social Motivation ($t_{(19)} = 4.26$, $p = <0.001$) subscales but not the Emotional Sensitivity subscale. Significant improvements were also observed in the AES Cognitive ($t_{(19)} = -3.07$, $p = 0.006$) and Behavioral ($t_{(19)} = -2.84$, $p = 0.011$) subscales but not the Emotional subscale; as well as in the Consummatory Scale ($t_{(19)} = -4.73$, $p=<0.001$) and Anticipatory Scale ($t_{(19)} = -3.92$, $p<0.001$) of the TEPS.

These results suggest that TMS improves many facets of anhedonia including increased experience of pleasure as well as increased motivation, specifically greater goal directed behavior and goal-directed thought-content, and increased engagement in social interactions. Interestingly, we did not observe improvements in emotional aspects of motivation.
Taken together, these results support the use of TMS in patients with anhedonia. Data collection and analysis remain ongoing. Next steps include continued participant recruitment (target N = 40) and task data analyses.

Differential Patterns of Pain Across the Menstrual Cycle: Evidence for Dimensions of Hormone Sensitivity

Meaghan L. Delcourt, Allison Stumper, Megan Fydenkevez, Doudou Tshiyena, & Jessica R. Peters

Background: Chronic pain is a public health concern that disproportionately impacts females. Recent evidence suggests that hormone fluctuations in the menstrual cycle influence pain. The Dimensional Affective Sensitivity to Hormones across the Menstrual Cycle framework (DASH-MC; Peters et al., 2025) posits multiple distinct effects of cycle-related hormone change on mood, cognition, and behavior, but has not yet been applied to pain. The current study tested whether different types of pain severity vary across the menstrual cycle and whether there is evidence of multiple patterns of cyclical change.

Methods: Data are from an ongoing study examining cycle-related changes in an array of symptoms in ovulating females who endorsed emotional and/or interpersonal difficulties (n = 116). Symptoms were assessed daily across two menstrual cycles. Items from the Daily Record of Severity of Problems (Endicott et al., 2006) were used to assess severity of breast, headache, and joint/muscle pain. Items were later added to measure total pain and pelvic pain (n = 107). Urine LH surge testing was used to confirm ovulation and daily levels of estradiol (E2) and progesterone (P4) were obtained using innovative urine testing technology. Data were scaled across the cycle using Phase-Aligned Cycle Time Scaling (PACTS), a novel protocol and algorithm for continuous cycle coding. Generalized Additive Mixture Models (GAMMS) were used to test cycle-related effects in the whole sample and Smoothing Mixture Models (SMMs) were used to identify subgroups with unique symptom trajectories. Models centered at both menses and ovulation were examined to best characterize symptom change across the cycle. Results of models testing cyclical changes in pelvic pain will be available by the time of presentation.

Results: GAMMS results showed significant perimenstrual exacerbation of breast, headache, joint/muscle, and total pain. SMMs revealed multiple patterns of significant symptom flux across the cycle for all outcomes (*p*'s < .001). For breast pain, fit was maximized with two groups, including one with perimenstrual pain exacerbation and one with minimal cyclicity. In the headache model, fit was maximized with four groups: one with most severe exacerbation in the mid/late luteal phase, one with a mid-follicular pattern, one with pain peaking proximal to menses, and one with minimal cyclicity. For joint pain, fit was maximized with three groups, one with most severe exacerbation in the mid/late luteal phase, one with a perimenstrual pattern, and one with minimal cyclic change. In the total pain model, fit was maximized with three groups, one group with increasing pain through the mid/late luteal phase, one with a perimenstrual pattern, and one with minimal cyclicity.

Conclusions: These results demonstrate cyclicity of breast, headache, joint/muscle and total pain severity. These findings provide evidence for varying forms of hormone sensitivity across people, including some with minimal sensitivity and others with substantial impacts. Further, the results indicate multiple patterns of hormone sensitivity, particularly for headache, joint/muscle, and total pain. These results extend the DASH-MC framework to pain and suggest the validity of a dimensional approach to cyclical assessment of pain. This project also demonstrates the feasibility of new analytic approaches for continuous menstrual cycle coding and person-centered modeling of longitudinal data. Future directions include modeling direct effects of hormones on pain symptoms. These results highlight the importance of considering hormone sensitivity in the context of pain, including types of pain that are less commonly linked to the menstrual cycle.

Nutritional and Eating-related Comorbidities Among Youth with Functional Neurological Disorder (FND) Participating in an Interdisciplinary Day Treatment Program

Diane DerMarderosian, MD, Mirabelle Mattar, MD, Heather Champman, MD, Jessica Gore, DPT, Ana Albuja, MD, Lily Rayor, BS, Barbara Jandasek Ph.D., Diva Bhatia

Background. Functional neurological disorder (FND), termed Conversion Disorder (CD) prior to DSM-5, has incidence estimates of 2–4/100,000 for functional seizures and 4–5/100,000 for functional motor symptoms (Patron et al., 2022). Comorbidities are frequent and associated with poorer outcomes. Emerging evidence suggests elevated rates of FND among patients with eating disorders, highlighting shared predisposing and maintaining factors that can complicate treatment. Youth with functional seizures and eating disorders have increased risk of depression, anxiety, suicidality, and hospitalization compared to peers with only one condition (Tokatly Latzer et al., 2025).

The Hasbro Med-Psych service line, including inpatient and partial hospital programs, provides interdisciplinary, family-based care for youth with combined medical and psychiatric needs. A range of eating-related and nutritional concerns among patients with FND have been observed, beyond those with formal eating-disorder diagnoses. This study characterizes the scope of these co-occurring concerns among youth with FND/CD treated in HCPHP from 2015 to 2020.

Methods. Participants were youth ages 6–18 years (median [IQR] = 13 [11–15]) with English-speaking caregivers who enrolled in a research study during admission to HCPHP. Charts were reviewed for FND/CD diagnoses and associated clinical features. Within this subgroup, formal diagnoses and clinical evidence of nutritional or eating-related concerns were identified and verified by an interdisciplinary team. Prevalence of FND/CD and specifically FND/CD with nutritional concerns were assessed; the nature of these concerns was further described. Consent is being obtained from 2 families to include brief clinical vignettes in the final poster.

Results. Of 243 participants, 24 (10%) were diagnosed with FND/CD. Compared to the rest of the cohort, youth with FND were older (median age 15 vs 13; $p = 0.045$) but did not differ by sex, race/ethnicity, length of stay, or total number of diagnoses. Among the 24 youth with FND/CD, 12 (50%) had evidence of nutritional or eating-related concerns. Four had formal diagnoses including ARFID, anorexia nervosa, nutritional deficiency, or abnormal weight loss, and 8 were identified through clinical assessment. All 12 received referrals and treatment from a registered dietitian. Nutritional concerns among those without formal diagnoses included picky eating, underweight, weight loss, restricted intake, limited food acceptance, decreased appetite, inability to self-feed, and poor growth.

Discussion & Conclusions. Co-occurring nutritional and eating-related concerns were common among youth with FND/CD in this treatment setting, with presentations ranging from eating-disorder diagnoses to other clinically significant nutritional challenges. Early, comprehensive nutrition screening—including family history, eating patterns, growth trends, food-related beliefs, and sensory factors—is conducted for all patients with FND in HCPHP. Each patient receives coordinated, multidisciplinary care addressing specific nutritional concerns within the broader treatment of FND.

Given that undernutrition itself impairs cognition, psychological state, and treatment engagement, while also increasing risk for future eating disorders, identifying and treating nutritional issues is essential in managing FND. This approach aligns with AACAP recommendations to screen all youth presenting to mental health providers. Understanding whether nutritional issues relate directly to FND symptoms, a distinct eating disorder, other psychiatric comorbidities, and/or a combination of factors is important for creating an effective treatment plan and supporting families.

Future research should explore the function of FND symptoms in the context of nutritional challenges and examine whether early detection and intervention improve FND outcomes. Similar length of stay and diagnostic complexity between groups underscores the multifaceted presentations treated within HCPHP.

G384D-Induced Cerebellar Atrophy and Reactive Neuroinflammation: In vivo Characterization of a Christianson Syndrome Mouse Model

Jessica F. Devlin, Hasib A. Riaz, Qing Ouyang, and Eric M. Morrow
Department of Molecular Biology, Cell Biology and Biochemistry and Center for Translational Neuroscience Brown University, Providence, RI

Christianson Syndrome (CS) is a rare X-linked endolysosomal disorder characterized by intellectual disability, seizures, ataxia, epilepsy, non-verbal status and postnatal microcephaly. CS is caused by a loss-of-function mutation in the SLC9A6 gene, encoding the endosomal Na+/H+ exchanger 6 (NHE6). While foundational studies have focused on highly deleterious null mutations, missense variants remain understudied. This highlights a potential gap in knowledge as variants vary by family. Furthermore, previous missense mutation studies have largely relied on ex vivo models that lack the biological complexity necessary to investigate proteins expressed from their endogenous loci. To address this, we performed an in vivo functional characterization of patient-reported SLC9A6 missense variant c.1148G>A (p.Gly383Asp). Using CRISPR/Cas9 genome editing, we generated a mouse model with the equivalent NHE6 p.G384D mutation as seen in humans. We observed that NHE6-G384D mutation caused a significant reduction in endogenously expressed NHE6 protein. At one year, NHE6-G384D mice exhibited cerebellar degeneration with strong microglial and astroglial activation in the cerebellum and corpus callosum. In addition, primary hippocampal cultures derived from male NHE6-G384D mice demonstrated impaired dendritic arborization suggesting developmental deficits in neuronal connectivity. Interestingly, NHE6-G384D mutation did not alter intra-endosomal pH in hippocampal neuronal culture, suggesting that CS mediated neurodegeneration may involve intra-endosomal pH independent mechanisms. This study advances our understanding of Christianson Syndrome and its underlying mechanisms. By modeling a specific patient reported variant this study expands beyond generalized loss of function and pivots towards mutation-specific pathologies, establishing a framework for individualized genomic studies.

Title: Sociocultural Factors Moderate The Relation Between Aging Beliefs and Subjective Cognitive Concerns

Authors: Bram Diamond[1], Alyssa De Vito[1], Athene Lee[1]

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

Objective:

Beliefs about aging shape how individuals perceive and report cognitive functioning, and are rooted in sociocultural background. Subjective cognitive concerns (SCCs) are increasingly recognized as early markers of neurodegenerative disease, yet it remains unclear how aging beliefs influence these perceptions. This study examines how sociocultural factors, including population density, generational cohort, sex, and cultural background, relate to beliefs about aging, and which of these factors moderate the relationship between aging beliefs and SCCs. Understanding how demographic and sociocultural factors interact to shape SCCs is critical for disentangling neuropathological signals from culturally driven perceptions and ensuring accurate early detection of neurodegenerative disease across the population.

Participants and Methods:

Older adults were recruited from a nationwide online survey via Amazon Mechanical Turk and Qualtrics Panels; all resided in the United States or Territories and self-identified as non-Latinx White (NLW), Black, or Latinx. Respondents completed the Expectations Regarding Aging Survey (ERA-38), the Cognitive Functioning Instrument (CFI), and mood measures (GDS-SF, PSWQ-A). Population density was derived from U.S. Census Bureau county data and generational cohort was classified according to Census definitions. Sociodemographic characteristics across the cohort were described. Associations between ERA-38 indices, CFI, and sociodemographic factors were first examined using Pearson's, polyserial, and polychoric correlations to identify candidate predictors. Categorical variables were evaluated using *t*-tests and one-way ANOVAs. Sociodemographic factors that showed significant associations with either ERA-38 or CFI were carried forward as potential moderators of the relation between aging beliefs and SCC and formally tested in regression models with interaction terms. Mood measures were included as covariates given their established link to SCC; additional covariates were considered if they showed significant associations with ERA-38 or CFI. Analyses were conducted in R (version 4.4.2).

Results

A total of 797 participants met inclusion criteria (65 ± 6 years). Generational cohort (CFI: $t = 24.2$; $p < 0.001$), sex (ERA Total: $t = -2.06$, $p < 0.05$), and cultural background (ERA-38 General Health Index: $F = 5.00$, $p < 0.05$) showed significant associations with outcomes measures and were tested as potential moderators. Generational cohort moderated the association between ERA-38 Functional Independence and CFI, such that the relationship was stronger for The Silent Generation than Baby Boomers ($t = 2.9$; $p < 0.05$) and Generation X ($t = 3.3$; $p < 0.01$). Cultural background moderated the association between ERA-38 Mental Health and CFI, such that the relationship was stronger among NLW than Black ($t = 2.64$, $p = 0.02$) or Latinx ($t = 2.59$, $p < 0.05$) participants.

Conclusions

Beliefs about aging and SCCs were unrelated to population density, but strongly associated with one another and linked to generational cohort, sex, and cultural background. Generational cohort and cultural background moderated the link between aging beliefs and SCC. Specifically, findings suggest cultural context shapes how older adults interpret and report aging expectations related to mental health and functional independence in relation to cognition. These findings highlight the need to consider sociocultural influences when using SCC as an early marker of neurodegenerative disease to ensure accurate detection across the population.

Multiracial Discrimination Scale: Development and Psychometric Validation of its Associations with Alcohol Misuse among Multiracial Young Adults

Fatima Dobani, MS & Aesoon Park, PhD

Abstract

Multiracial (i.e., biological parents of two or more racial and ethnic groups) young adults (ages 18-25) report elevated rates of alcohol misuse. One potential associated factor may be experiencing increased frequency of Multiracial discrimination, however, investigation into the discrimination-alcohol misuse relation is limited by the absence of a validated measure capturing institutional, interpersonal, and internalized domains. The present study aimed to develop the Multiracial Discrimination Scale (MDS) and provide initial psychometric validation of its associations with alcohol misuse using an exploratory. sequential mixed methods approach. Item development was informed by virtual focus groups with Multiracial young adults. A joint display integrating qualitative data with exploratory factor analysis identified three factors representing Imposing Monoracial Identity, Invalidating Multiracial Identity, and Internalizing Monoracism. Confirmatory factor analysis supported the 22-item, three-factor model (SRMR=0.06). The MDS demonstrated excellent test-score reliability (α=.92), as well as evidence for convergent (via positive correlations with discrimination measures) and predictive (via positive correlation with negative affect) validity. Among Multiracial young adults, the MDS was associated with twice the odds of past-year binge drinking frequency (*OR*=2.47, 95% CI [1.25, 4.87]), after controlling for age, sex, college student status, and sociodemographic disadvantage. The Internalizing Monoracism MDS subscale (but not Imposing Monoracial Identity or Invalidating Multiracial Identity subscales) was associated with higher odds of alcohol use frequency (*OR*=1.70, 95% CI [1.06, 2.72]) and hazardous alcohol use (*OR*=1.71, 95% CI [1.11, 2.62]). The MDS is the first measurement tool specific to assessing multidimensional Multiracial discrimination. Ongoing psychometric validation of the MDS and prospective Multiracial discrimination-alcohol misuse investigations are needed.

Cannabis Attitudes and Parental Monitoring in Parent–Adolescent Dyads

Authors: Tram Doran, Emily Olenik, Sarah Ryan, Alexandria LeVert, Pearl Ayiku, Jane Metrik, Samuel Meisel, Anthony Spirito, Sarah Thomas

Introduction

Adolescent cannabis use is a significant public health concern due to its associations with mental health problems, addiction risk, and adverse health outcomes (Blayer et al., 2024; Hall & Lynskey, 2020). Cannabis is among the most commonly used substances by adolescents, with 34% of U.S. 12th graders reporting lifetime use (Miech et al., 2025). These patterns have coincided with expanding legalization of medical and recreational cannabis in the US, which has been linked to increased availability, social acceptability, and reduced perceptions of harm (Hasin et al., 2015; Cerdá et al., 2017). Adolescents increasingly report that cannabis is easy to obtain and perceive it as less harmful than other substances; these perceptions are robustly associated with cannabis use behavior (Miech et al., 2025; Harrison et al., 2024; Choi et al., 2024).

Parental monitoring—defined here as parents' knowledge of adolescents' activities and the processes through which that knowledge is obtained—has been consistently associated with lower adolescent cannabis use (Dishion & McMahon, 1998; Kerr & Stattin, 2000; Lac & Crano, 2009). However, little is known about how cannabis-related attitudes and beliefs are related to parental monitoring itself. Guided by the Theory of Planned Behavior (Ajzen, 1991) and dyadic models of family influence, we propose that cannabis-related attitudes shape monitoring processes through both motivational and relational pathways. Specifically, parents who perceive cannabis use as harmful or disapprove of use may be more motivated to actively solicit information and enforce oversight, whereas adolescents who perceive low risk of harm. We examined in parent-adolescent dyads whether cannabis-related perceived risk, disapproval, and availability are associated with parental knowledge, parental solicitation, and adolescent disclosure using Actor–Partner Interdependence Models (APIMs).

Method

Participants were 73 adolescents aged 14–17 years (M = 15.60, SD = 1.15; 58.90% female) and their caregivers (M age = 44.64, SD = 7.14). Families were recruited through hospital chart review, schools, and community advertising. Adolescents and caregivers completed parallel measures of cannabis-related attitudes adapted from the Monitoring the Future Study (Miech et al., 2025) and parental knowledge and its sources using the Parental Monitoring Scale (Kerr & Stattin, 2000). APIM structural equation modeling accounted for non-independence within parent–adolescent dyads. Age was included as a covariate.

Results

When adolescents reported less perceived risk of harm of cannabis use, they also reported less disclosure of their whereabouts and activities to parents. When parents reported lower perceived risk of harm to teens from cannabis use, adolescents reported lower parental solicitation regarding their whereabouts and activities. When adolescents reported greater ease of obtaining cannabis, adolescents reported lower parental knowledge and lower disclosure to parents, and parents also reported lower knowledge of adolescents' whereabouts and activities. Cannabis disapproval was not significantly associated with parental knowledge and its sources.

Discussion

Results highlight the significant link between parent-adolescent cannabis-related perceptions and processes that underlie effective parental monitoring. A striking finding highlighted the interdependence between parental cannabis perceptions and adolescents' reports of parents' efforts to obtain knowledge about their activities. Interventions may benefit from efforts to strengthen parent–adolescent communication in an evolving cannabis policy context.

Using Group Concept Mapping to Shape a Community-Based Nutrition and Physical Activity Intervention for Adolescents

Authors: Kristine Durkin[1], PhD, Lounay Oliver-Camacho, Krissia Ramirez, Akemi Parker, Hania Naveed, Samia Naveed, Elissa Jelalian, PhD[1], Deborah Pearlman, PhD[2], A. Rani Elwy[1], PhD and Elizabeth L. McQuaid[1], PhD ABPP

[1]Department of Psychiatry and Human Behavior, Brown Medical School; [2]Department of Behavioral and Social Sciences, Brown University School of Public Health

Introduction:

This study used group concept mapping (GCM) to develop a conceptual model of factors influencing nutrition and physical activity among adolescents in an urban setting. Drawing on the insights and experiences of community members, the goal was to identify key targets for a community-based intervention aimed at improving diet quality and physical activity among adolescents in Providence, Rhode Island.

Methods:

Participants (n=30) were recruited through purposive sampling and included adolescents, caregivers, community organization staff, administrators at governmental health organizations, and pediatric physicians. Together, they generated 123 statements of factors related to nutrition and physical activity in youth. These were refined throughout an iterative process to a final list of 100 statements. A subset of participants (n=21) then sorted statements into thematic clusters and rated each statement based on the importance of addressing it in a future intervention. Multidimensional scaling and hierarchical cluster analysis were applied to create a conceptual map with descriptives of the rating values. A Youth Advisory Panel (n=12) participated in interpreting the final map and clusters.

Results:

Findings showed strong concordance among participants regarding the perceived importance of statements and how they were grouped. The multidimensional scaling yielded a stress value of 0.267, indicating a good fit for the two-dimensional solution. The final concept map revealed six thematic clusters: 1) Individual Restraints on Physical Activity, 2) Space and Access to Physical Activity, 3) Mental Health and Social Stigma, 4) Source/Credibility of Information, 5) Nutrition Education and Misinformation, and 6) Food Access in Public Spaces.

Conclusion:

This study highlights the multifaceted and multilevel factors influencing adolescent nutrition and physical activity. The resulting conceptual model was co-developed with youth and community partners and provides a foundation for designing a future community-based intervention that is both inclusive and contextually relevant.

Title: The Moderating Role of Pain Sensitivity for PTSD Symptom Severity and Decline in a Sample of Trauma-Exposed Adolescents

Authors: Sophie M. Edelman, B.S., Katherine M. Ingram, Ph.D., Sabrina J. Cassarino, B.S., Francesca Beaudoin, M.D., Nicole R. Nugent, Ph.D.

Abstract:

A majority (60-97%, depending on trauma type) of trauma-exposed adolescents psychologically recover over a 6-month period without intervention and do not develop post-traumatic stress disorder (PTSD)[1]. Some trauma-exposed adolescents, due to interactions between neurobiological and psychosocial factors, develop a heightened physiological reactivity to stress and, bidirectionally, with chronic pain[2,3]. The current study examines pain sensitivity as a moderator of post-traumatic stress symptom (PTSS)[4] severity and the rate of recovery over a 9 month post-trauma period. A sample of adolescents (*N*=111, *age M=15.34 (SD=1.35)*) were recruited from an emergency department following a potentially traumatic event. We hypothesized that adolescents with greater pain sensitivity, measured by the Pediatric-SOPA Emotionality Subscale[5], would have higher PTSS scores and slower rates of PTSS decline (measured at 6 weeks, 6 months, and 9 months). Results of a mixed-effects model demonstrated that high pain sensitivity was significantly associated with elevated PTSS severity at each time point (*b=2.69, p<.05*), and adolescents with high baseline pain sensitivity were likely to have clinically elevated PTSS severity at the 9 month time point. The current findings may inform early interventions for trauma-exposed adolescents reporting pain sensitivity.

References:

[1] Nooner, K. B., Linares, L. O., Batinjane, J., Kramer, R. A., Silva, R., & Cloitre, M. (2012). Factors related to posttraumatic stress disorder in adolescence. *Trauma, Violence & Abuse, 13*(3), 153–166. https://doi.org/10.1177/1524838012447698

[2] Nelson, S., Burns, M., McEwen, B., & Borsook, D. (2020). Stressful experiences in youth: “Set-up” for diminished resilience to chronic pain. *Brain, Behavior, & Immunity-Health, 5*, 100095. https://doi.org/10.1016/j.bbih.2020.100095

[3] Janssen, J., Abou-Assaly, E., Rasic, N., Noel, M., Miller, J. V. (2022). Trauma and pain sensitization in youth with chronic pain. *PAIN Reports, 7*(2), 992. https://doi.org/10.1097/PR9.0000000000000992

[4] Pynoos, R. S., Weathers, F. W., Steinberg, A. M., Marx, B. P., Layne, C. M., Kaloupek, D. G., Schnurr, P. P., Keane, T. M., Blake, D. D., Newman, E., Nader, K. O., Kriegler, J. A. (2015). Clinician-Administered PTSD Scale for DSM-5 - Child/Adolescent Version (CAPS-CA-5). *National Center for PTSD.* www.ptsd.va.gov.

[5] Engel, J. M., Jensen, M. P., Ciol, M. A., & Bolen, G. M. (2012). The development and preliminary validation of the pediatric survey of pain attitudes. *American Journal of Physical Medicine & Rehabilitation, 91*(2), 114-121. https://doi.org/10.1097/PHM.0b013e318238a074

Relationship Between Functional Connectivity and Depressive Symptoms in Autistic Children in the Adolescent Brain Cognitive Development Study

Catrina Elizardo, B.S., Sara Welch, Richard N. Jones, Sc.D., Jeffrey I. Hunt, M.D., Stephen J. Sheinkopf, Ph.D., Carla A. Mazefsky, Ph.D., Daniel P. Dickstein, M.D., Noah S. Philip, M.D., Petya D. Radoeva, M.D., Ph.D.

Background: Depression occurs more frequently in autistic individuals than in neurotypical peers. Here, we sought to investigate the association between resting-state functional connectivity and depressive symptoms in autistic children. We hypothesized that aberrant functional connectivity in fronto-limbic, fronto-frontal and fronto-thalamic circuits would be associated with increased severity of depressive symptoms.

Methods: Neuroimaging and psychiatric data from 121 children (ages 9-11, 100 boys, 21 girls) with a parent-reported diagnosis of autism spectrum disorder from the Adolescent Brain Cognitive Development Study (ABCD study) was used for this analysis. The ABCD study is a large cohort longitudinal multi-site study examining the brain and development of children and adolescents across the United States. We utilized resting-state functional magnetic resonance imaging (rs-fMRI) and the parent-report Child Behavior Checklist (CBCL) (specifically, the *Anxious/Depressed* and *Depressed/Withdrawn subscale T-Scores*) data from the initial visit of the ABCD study. We conducted zero-inflated Poisson regressions to assess the relationship between the functional connectivity between pairs of cortical and subcortical regions (169 cortical-to-cortical and 247 cortical-to-subcortical connectivity, as defined with the Gordon atlas/parcellations) and each of the two CBCL subscales T-scores, while also including *Age*, *Sex* and *Study Site* in the models. We then implemented FDR corrections for multiple comparisons.

Results: A complex pattern of statistically significant associations between the functional connectivity of pairs of regions (including *fronto-limbic / limbic system / fronto-subcortical* / *cortico-subcortical* regions) and the *CBCL Depressed/Withdrawn* and/or the *CBCL Anxious/Depressed* subscale emerged (in the zero-inflated Poisson regressions for the count model coefficients but not for the zero-inflation model coefficients).

Conclusion: Our results suggest that depressive symptoms are associated with atypical functional connectivity in autistic youth. Limitations include a majority male sample, and a sample that is not representative of moderate or severe autism. Future studies could work towards acquiring a more balanced and inclusive sample within the autistic population, and replicating our results in additional samples of autistic youth.

Presentation Title: Descriptive characteristics of adults with trauma- and stressor-related disorders from the All of Us dataset

Authors: Taryn R. Fitzgerald[1,2], Sydney M. Hardy[1,3], & Sharon Y. Lee[1,3]
[1]Department of Psychiatry and Human Behavior, Warren Alpert Medical School, Brown University, Providence, RI; [2]Veterans Affairs Providence Healthcare System, Providence, RI; [3]Center for Behavioral and Preventive Medicine, The Miriam Hospital, Providence, RI

Objective: Individuals with trauma-related disorders are at increased risk of developing chronic disease due to, in part, experiencing a chronic pro-inflammatory state as a result of dysregulation in autonomic and hypothalamic-pituitary-adrenal axis activity. With increasing ease and accessibility of "big data," behavioral scientists have more opportunities than ever to understand how trauma exposure affects health in the real world by integrating multimodal data. Importantly, these types of data can help us to better characterize the biological effects of trauma. This study seeks to provide descriptive information about trauma-exposed adults from the All of Us study, a large NIH dataset consisting of electronic health record, survey, genomics, and measurement/wearable data for a large US cohort. The present analyses show descriptive characteristics of the sample of participants who were diagnosed with a stressor- or trauma-related disorder and provided serum inflammation samples.

Methods: In the entire sample, self-reported age, sex, race, and socioeconomic status (SES; measured by total household income) were analyzed. Additionally, age, race, ethnicity, sex, gender, SES, and serum inflammation level were separately analyzed for individuals with a trauma- or stressor-related disorder diagnosis (e.g., posttraumatic stress disorder, acute stress disorder) documented in their electronic health record data between 2013 and 2021. Serum inflammation level was measured by averaging C-reactive protein lab values from all medical visits in participants' electric health record data. Data were analyzed using the All of Us Researcher Workbench and R Cloud Environment.

Results: The entire All of Us sample consists of more than 849,000 participants, 626,386 of whom had survey/demographic and electronic health record information available for analysis. 30% of participants fall between 18 and 44 years old, 35% between 45 and 64 years old, and 36% above 65 years old. With respect to race, the majority was White (56%), followed by Black or African American (16%), no race indicated (15%), and Asian (4%). For sex assigned at birth, 63% of individuals indicated female (36% male).

The sample of individuals with a trauma- and stressor-related disorder diagnosis and inflammation data between 2021 and 2025 consisted of 4,789 participants. The mean age was 56.37 (SD=14.52) and median age was 57.14. The sample was also largely female (64%), White (59%) and not Hispanic or Latino (82%). Regarding annual household income, 21.65% of participants reported income less than $10,000, 20.09% reported income between $10,000 and $25,000, 8.42% between $35,000 and $50,000, 31.62% reported income over $50,000, and 12% reported they prefer not to answer. Average CRP level for the sample was 14.77 mg/L (SD=33.51), which is above the normal reference range of < 8-10 mg/L according to the Mayo Clinic.

Conclusions and Future Directions: These initial results from the All of Us dataset provide preliminary evidence of elevated CRP among US adults diagnosed with trauma- and stressor-related disorders. Next steps include identification of psychological and social predictors of elevated CRP among adults with trauma- and stressor-related disorders and testing of pathways leading from inflammation to chronic disease.

Forche, Kathryn
Patient satisfaction following care in a perinatal OCD and anxiety intensive outpatient program

Kathryn Forche (Brown University; Women and Infants Hospital), Andrea Vijil Morin (Butler Hospital), Maggie O.T. Allen (Brown University; Women and Infants Hospital), Morgan Hoyt (Butler Hospital), Zobeida M. Diaz (Brown University; Women and Infants Hospital), Cynthia L. Battle (Brown University; Women and Infants Hospital; Butler Hospital)

Introduction

The perinatal period has high-risk for onset of obsessive-compulsive disorder (OCD), with prevalence ~9.1% in prenatal period and ~6.2% in postpartum period (Salari et al., 2024). Postpartum women with OCD report that their symptoms affect them for an average of 9.6 hours a day (Challacombe et al., 2016; Fairbrother & Woody, 2008). Obsessions often focus on contamination or infant harm (Abramowitz et al., 2003; Hudepohl et al., 2022). There are no specific guidelines for treatment for perinatal OCD (Mulcahy et al., 2023) and few settings provide specialized care. Exposure and Response Prevention (ERP) is considered the gold standard for OCD in the general population (Hezel & Simpson, 2019). ERP has been increasingly applied to perinatal OCD (Mulcahy et al., 2023); it is the primary treatment modality used in a novel perinatal OCD intensive outpatient program (IOP) at Women & Infants Hospital (est. 2021). The program provides care to perinatal women with clinically significant anxiety/OCD symptoms. We detail the rationale, structure, and treatment approach of this specialized OCD IOP, as well as assess patient satisfaction and feedback.

Methods

Written feedback from 20 recently treated patients was analyzed. Patients completed the Client Satisfaction Questionnaire-8 (CSQ-8; Attkisson & Zwick, 1982), which includes items assessing satisfaction with care, with response options on a 4-point Likert scale ranging from 1 (*low satisfaction*) to 4 (*high satisfaction*). Patients also rated specific components of the program on a 4-point scale from 1 (*not helpful*) to 4 (*very helpful*) and provided feedback through a series of open-ended questions regarding aspects of their experience. Thematic analysis was conducted with patient narrative feedback of what they liked or would change.

Results

This perinatal OCD IOP provides in-person behavioral health treatment over a 6–8-week period for perinatal patients with clinically elevated symptoms of anxiety and OCD. The program meets 3 days/week for 3 hours/day and includes ERP therapy groups, individual therapy sessions, and family sessions. If appropriate, medication management is provided. We used IBM SPSS Statistics version 22 (IBM-Corp, 2013) to analyze patient responses on the CSQ-8. The mean overall score was 31.55 (SD= 0.80) out of 32, indicating a very high level of satisfaction. Participants rated all 5 program components as helpful: Homework Report Group (M=3.75, SD=0.44), Exposure Group (M= 3.75, SD=0.55), Homework Planning Group (M= 3.45, SD= 0.76), Skills Group (M= 3.75; SD= 0.44), and Psychoeducation Group (M= 3.7; SD=0.47). Thematic analysis (Ahmed et al., 2025) of open-ended responses on the satisfaction survey revealed the most common theme was perceived support from staff and other mothers. Other themes included building connections with other patients, group structure, and suggestions for new content. Having a small group size and completing program with peers was helpful. We will provide representative quotes from patients, e.g., "there is a huge lift in seeing yourself as part of a community." Patients expressed high satisfaction in both quantitative and qualitative comments and felt appreciation for program and staff.

Discussion

Very few partial hospital and IOP programs focus specifically on perinatal anxiety and OCD. Our goal is to describe the program's structure and clinical content, and present findings from an evaluation of program acceptability. Findings revealed that patients reported extremely high satisfaction with the program and rated all components as helpful and applicable to their lives. Project limitations include small sample and inability to link patient feedback with clinical data. Future research should explore effectiveness of IOP program in reducing OCD/anxiety symptoms, as well as mother-baby interactions and long-term outcomes. It is necessary to consider how similar programs can be developed to reach more patients in need across the country.

A Review of NIH-Funded Projects and Randomized Controlled Trials focused on Justice-Involved Youth with Trauma-Related Experiences and Concerns

Kayla Ford, Jenna Schopen, Kaitlin Sheerin, & Kathleen Kemp
Alpert Medical School of Brown University

Objectives: Youth involved in the juvenile justice system experience disproportionate rates of adverse childhood experiences (ACEs) and traumatic events compared to the general population. ACEs include abuse, neglect, household dysfunction, loss and separation, community or environmental stressors, medical or health-related adversity, and/or exploitation. Approximately 72% of justice-involved youth have experienced multiple ACEs and 62% have experienced at least one traumatic event in early childhood. As a result, 25% of justice-involved youth report clinically significant symptoms of posttraumatic stress (PTS) and many have other mental and behavioral health concerns (e.g., substance use, suicidality, aggression, depression). Many justice-involved youth who are living in the community are court-ordered to participate in behavioral health treatment. These findings suggest the importance of trauma-related and community-based interventions for justice-involved youth. One recent review article identified studies funded by the National Institute of Health (NIH) focused on justice-involved youth, and another characterized randomized controlled trials (RCTs) focused on community-based behavioral health interventions among justice-involved youth. To expand on these reviews among justice-involved youth, the present review had multiple goals: (1) describe the funding landscape for trauma-related interventions funded by the NIH, (2) identify RCTs that assessed ACEs and/or traumatic events among study participants, (3) characterize interventions described as trauma-informed or trauma-focused, and (4) quantify studies focused on PTS as a primary outcome variable. **Methods**: From two larger review studies focused on NIH-funded projects ($N = 203$) and RCTs for youth in the juvenile legal system ($N = 51$), previously identified studies were screened to determine the frequency and outcomes related to trauma-informed and trauma-focused interventions. A codebook was created that defined various ACEs, traumatic experiences, trauma-informed and trauma-related interventions, and PTS as a primary outcome. To be included in the study, NIH-funded projects focused on a trauma-related concern ($n = 5$) and published RCTs on behavioral health interventions ($n = 51$) were screened for the assessment and treatment of adverse childhood and/or traumatic experiences and PTS as a primary outcome. Two authors coded the data separately utilizing a pre-defined codebook then met together to reach consensus on all study coding. **Results**: A total of 5 NIH-funded projects indicated that they focused on trauma-related concerns among juvenile justice populations. These studies were primarily funded in 2011 (60%), intervention-focused studies (80%) that were RCTs (60%), reported implementation outcomes (80%), utilized qualitative methods (40%), and located in a detention setting (60%). None of the NIH funded studies assessed PTS as a primary outcome variable. Similarly, the parent study for the RCTs indicated that no studies assessed PTS. Additional coding of RCTs for the assessment of ACEs or trauma among justice-involved youth is still being completed. **Conclusions**: Though ACEs and traumatic events are common among justice involved youth, few projects have been funded by the NIH to focus on trauma-related concerns. Among studies that addressed trauma-related concerns, only one was funded for youth in the community. Most RCTs appeared to not directly assess for experiences of ACEs/trauma as part of their study methodology and none assessed PTS as a primary outcome. There is a need for future research to conduct trauma-focused interventions given the high rates of exposure in this population.

Title: The Role of Belongingness in Social Support for Adolescents in In-Person and Virtual Partial Hospitalization Programs

Authors: Christine K. Francis, PsyD, Caitlin Stanley, B.S., Emily M. May, Ph.D., and Molly Hedrick, PhD

Belongingness and social support are critical protective factors in adolescence, shown to reduce distress and risky behaviors (Lardier et al., 2019). Many studies have focused on belongingness in school settings (Allen et al., 2018), but there are limited studies investigating belongingness in mental health treatment contexts (Barzilay et al., 2025). This study focuses on program belongingness for adolescents in in-person and virtual partial hospitalization programs (PHPs). PHPs are intensive day treatment programs (Pelcovitz et al., 2023), and belongingness in this context may help adolescents feel social support from the program, while also learning interpersonal effectiveness skills to enhance their sense of social support outside of program. The aims of this study are to: 1) explore whether program belongingness differs for in-person versus virtual PHPs, and 2) assess whether program belongingness predicts changes in perceived social support. It was hypothesized that a greater sense program belongingness would predict improved social support.

Participants were adolescents aged 12 to 18 years admitted to an in-person PHP ($N = 399$) and a virtual PHP ($N = 231$). Adolescents were gender diverse (61.6% female in-person and 60.1% virtual, 7.9% trans or gender nonconforming in-person and 8.3% virtual) and predominantly White (69.4% in-person and 58.9% virtual). Program belongingness was measured at discharge using a 5-item scale adapted from the School Connectedness Scale (McNelly et al., 2002). Social support was measured at admission and discharge with the 15-item Social Support subscale of the Treatment Support Measure (Burlingame et al, 2011).

A *t*-test revealed no significant differences in program belongingness for adolescents in the in-person versus virtual programs, $t(411) = 0.41, p = .68$. A linear regression indicated that program belongingness predicted greater social support at time of discharge (after controlling for social support at time of admission) for adolescents in the in-person program ($B = 0.11, p < .05$), as hypothesized. Contrary to hypotheses, program belongingness did not predict social support outcomes for adolescents in the virtual program ($B = 0.10, p = 0.13$). A high sense of belonging was found in both programs and did not differ from one another, thus affirming the idea that community and rapport can be created in the virtual environment as it would in-person. The finding that program belongingness predicted social support for in-person patients, but not virtual patients could be attributable to more social skills practice among peers in person. The in-person format may facilitate opportunities to build closer relationships with peers in the program (e.g., during meals and in between therapeutic sessions), which could promote self-efficacy for building relationships outside of the program. Implications from these findings corroborate past research in that belongingness is an important factor not only in school settings, but also in treatment settings which may strengthen a patients' support network inside and outside program. Further research could examine whether patients' sense of belonging in a program could mitigate psychiatric symptoms.

Shifting the Trajectory: Mechanism-Focused Intervention for Suicidal Thoughts and Behaviors

Authors:

Martina Fruhbauerova, MS
Julie Cerel, PhD
Kelly L. Green, PhD
Matthew Southward, PhD
Shannon Sauer-Zavala, PhD

Abstract:

Suicide remains a critical public health concern, with increasing rates and millions experiencing suicidal ideation annually. Although evidence-based treatments exist, many are time-intensive, underutilized, and often inaccessible to high-risk individuals, especially those recently discharged from inpatient psychiatric care. Brief, scalable interventions targeting core psychological mechanisms implicated in suicidal thoughts and behaviors (STBs) are needed. This study evaluated a novel Single Session Mechanism-Focused Intervention (SSMFI) designed to reduce hopelessness and negative perceptions of social relatedness among adults hospitalized for STBs. In a randomized controlled trial (N = 38) conducted on two inpatient psychiatric units, participants were assigned to either the SSMFI or an active control condition focused on distress tolerance skills. Assessments occurred pre-intervention, post-intervention, and at one-week and one-month follow-ups, measuring STBs, mechanisms (hopelessness, thwarted belongingness, perceived burdensomeness), and feasibility/acceptability. Results indicated high feasibility and acceptability. While the SSMFI did not produce significantly greater immediate changes in targeted mechanisms compared to the control, participants in the active control condition showed significantly greater improvements in hopelessness and perceptions of social relatedness at one-week follow-up, though these effects were not sustained at one month. No significant differences emerged in suicidal ideation or behavior, or outpatient appointment attendance. Findings suggest that while the SSMFI is feasible and well-received in acute settings, single-session mechanism-focused approaches may require refinement and additional support to achieve lasting clinical impact. Integrating brief, theoretically driven interventions in inpatient care may offer a promising avenue to improve suicide prevention during critical care transitions.

From Cognitive Maps to Creative Thought: Imagination as the Hippocampal Glue

Eleanor Fuller

What if the divide between memory and space is just two competing parts of the same whole? Perhaps memory and space are more dependent on each other than they are different. Perhaps, memory and space are simply interacting effects of the one all-encompossing hippocampal role, imagination.

The hippocampus has long been cast as a battleground between competing accounts of memory versus spatial navigation for the core function of this tiny yet mighty region of the brain. Yet, converging work on cognitive maps and scene construction suggests that these functions may reflect a deeper, shared capacity for imagination. This proposal outlines a project to set things straight: By comparing the imaginative capacities of amnesic patients with bilateral hippocampal damage to demographically matched healthy controls, this study aims to clarify imagination as the bridge between memory, space, and the hippocampus.

As proposed thus far, participants will first complete the Torrance Tests of Creative Thinking (TTCT) to index divergent thinking as an indicator of imaginative abilities. Participants will then complete two tightly linked tasks under fMRI recording: navigation of a circular arena with 5 standardized items to find, first using imagination, and then visual, virtual reality. Performance will be compared quantitatively and qualitatively for both navigational tasks and TTCT scores. Multivariate pattern analysis and representational similarity analysis will quantify the overlap between neural signatures of imagined and virtual navigation within the hippocampus while noting which areas of the brain compensate for patients with hippocampal damage. Structural imaging will index hippocampal volume.

The predicted results anticipate that amnesic patients will show disproportionately impaired imagined navigation, reduced TTCT scores, and diminished similarity between imagined and virtual navigation patterns, alongside compensatory increases in frontal connectivity. Across all participants, higher creativity is expected to track greater hippocampal pattern overlap and larger hippocampal volume, suggesting that the most creative thinkers are those who most effectively reuse spatial codes to construct novel scenarios.

By tying disruptions in creative thought and imagined navigation to altered hippocampal representations, this study reframes the hippocampus not as a structure for either memory or space, but as a neural engine for imagination that lets us learn from where we have been to transform where we can go next. This new way of approaching the hippocampus could revolutionize how we understand learning, memory, and navigation through space and time. This poster submission is an attempt to scout prospective interest and support for this study.

Latine Adolescents' and Caregivers' Perspectives on Integrating a Community Health Worker into Socio-Cognitive Behavioral Therapy for Suicidal Behaviors

Álvaro Gamio Cuervo, MSW, PhD Andrea Torres Lopez, BA, Nicole Espinal BS, Michelle Aiello, PhD, Gisela Jimenez-Colon PhD, Yovanska Duarte-Velez PhD

In 2024, 12% of Latine youth in the U.S. between the ages of 12-17 reported serious thoughts of suicide. Social determinants of health including poverty, lack of health insurance, language barriers, immigration related stress, and discrimination disproportionately shape health outcomes among Latine families and contribute to health care quality and access. Community Health Workers (CHWs) are equipped to address these inequities by providing resources for unmet social needs, care coordination, and strengthening connection between families and providers.
Although previous research has found that CHWs can improve behavioral and health outcomes, their integration in suicide prevention for youth remains limited.

Method. Data was collected as a part of an ongoing randomized controlled trial evaluating the effectiveness of a new clinical model (NCM) integrating CHWs into outpatient care for Latine youth (12-18 years old) with suicidal thoughts and behaviors (STBs). Participants were randomized to receive either Socio-Cognitive Behavioral Therapy for Suicidal Behaviors (SCBT-SB) alone or SCBT-SB plus the support of CHWs. To date, 65 families were enrolled and randomized. During the 6-month follow-up, 15 youth and 18 caregivers completed an interview assessing their perceptions with the NCM. Interviews were audio recorded and coded into analytic memos using the various domains of the Consolidated Framework for Implementation Research (CFIR). A rapid assessment procedure was implemented using the CFIR to identify salient themes across caregiver and youth samples. The resulting interview data predominantly explored two out of the five CFIR domains -innovation and individual characteristics- that were relevant for the implementation. Innovation refers to descriptions related to having the CHW as part of their care team while the individual domain refers to specific participant's characteristics. Each domain was categorized either as facilitators or barriers for the implementation of the NCM.

Results. At the *innovation level,* potential facilitators for caregivers included accessibility of the session format, skills-based training, resources provided, and coordination of care between treatment team members. Potential barriers for caregivers included the short-term nature of therapy. At the *individual domain* related to caregivers the following themes were identified as facilitators: cultural connection between clients and staff, relational cultural values, accessibility of the protocol, trustworthiness of staff, and addressing a broad range of needs across a short-term protocol. Regarding barriers, the following themes were identified: the need for more intensive services from the clinic, difficulty accessing resources in the community, and difficulty accessing the manual content. At the *innovation level*, potential facilitators for youth include the accessibility of sessions (i.e. frequency and location), psychoeducation, receiving integrated services, resources in the community, and utility of the manual while accessing manual content was identified as a potential barrier. At the *individual domain* related to youth, the following themes were identified as facilitators: relational cultural values, cultural connection with staff, and personalized interventions from the protocol. Frequency and sessions format were identified as barrier.

Conclusion. CFIR provided a valuable framework from which to evaluate salient factors enhancing or hindering the implementation of SCBT-SB with a CHW. Cultural values and mitigating systemic inequities, such as lack of resources and accessibility of clinical intervention, emerged as major strengths in the implementation of the NCM. Future adaptations should consider increasing the individualization of manual content, broadening the resources provided, and the incorporation of structured booster sessions after the 6-month treatment to promote the use of learned skills.

Computational Neural Modeling with the Human Neocortical Neurosolver (HNN) Reveals Spiking and Calcium Dynamics Underlying Individualized TMS-Evoked EEG Potentials

Joyce Gao, BSc, Jacob Tajchman, BSc, Danielle D. Sliva, PhD, Katharina Duecker, PhD, Stephanie R. Jones, PhD.

Background: Transcranial Magnetic Stimulation (TMS) is a non-invasive brain stimulation method that uses magnetic fields to stimulate focused regions of the cortex. It is an FDA-approved clinical treatment for mental health disorders, including Major Depressive and Obsessive Compulsive Disorders. However, its precise effect on neural circuits is unclear, and individual responses to TMS are variable, leading to inconsistency in therapeutic efficacy.

Computational neural modeling is one approach to investigate mechanisms by which TMS influences local neural circuits. Our lab developed the Human Neocortical Neurosolver (HNN), a biophysically principled neocortical column model designed to simulate the primary currents underlying electroencephalography (EEG) signals. HNN features synaptically coupled excitatory and inhibitory cells in a canonical neocortical circuit architecture, producing local-circuit dynamics when driven by layer-specific exogenous inputs. We used HNN to simulate recorded TMS Evoked EEG Potentials (TEPs), revealing the fast-timescale cell- and layer-specific spiking activity and calcium dynamics driven by a single pulse of TMS.

Methods: We applied single biphasic pulses of TMS (100% active motor threshold) targeting the hand representation of primary somatosensory cortex (SI). EEG signals from a single subject with high-quality data were source localized to a 10 mm region of maximum TMS activation within the postcentral gyrus to extract TEP waveforms. We then simulated the recorded TEP using an updated version of HNN with biophysically realistic intracellular calcium dynamics through voltage gated calcium and NMDA channels. To do so, we adjusted model parameters to test hypotheses on the cell and circuit mechanisms that could closely reproduce the source localized TEP and match the spiking patterns that have been reported in animal recordings.

Results: Source localized SI TEP showed robust waveforms consisting of positive and negative peaks, with a waveform shape remarkably consistent with somatosensory tactile evoked response (SEP). Motivated by prior studies of the neural mechanisms of SEPs (Jones et al 2007, J. Neurosci.), we showed that the TEP waveform could be reproduced by an evoked sequence of layer specific thalamocortical drive to the local SI network. We are currently testing various hypothesized mechanisms by which the TMS pulse induces initial activation of the SI circuit, which in turn initiates the thalamocortical drive sequence. Further examination of detailed cell activity during a simulated TEP showed strong activation of intracellular calcium dynamics in pyramidal neurons through NMDA channels, which may be assessed to aid in the design of TMS protocols that optimally modulate synaptic plasticity. Building from these model-derived mechanisms, we generated further testable predictions on (1) the effect of plasticity-enhancing drugs, such as D-cycloserine, on individual TEPs, and (2) the effect of double pulse TMS patterns on individual TEPs. Follow-up data collection in the same individual supported the latter double pulse TMS predictions, providing validation of the model assumptions.

Discussion: The HNN model is able to simulate the multi-scale neural origin of a single-pulse TEP waveform that closely matches empirical data, making predictions regarding the millisecond dynamics of cell-specific spiking and calcium activity. These predictions provide more insight into individualized cortical responses to single pulse TMS, and they could be used to design more effective clinical TMS protocols, including multi-pulse TMS paradigms and those paired with pharmacological modulations.

Title: Eliciting and Uplifting Youth Voice in Illinois Child Welfare Residential Care

Authors: Patricia Garibaldi, MS, Linzy Pinkerton, MS, Neil Jordan, PhD, Wendi Wilkins, LCPC, Alysha Thompson, PhD, & Cassandra Kisiel, PhD

Abstract:

Youth typically enter residential care with extensive trauma histories, complex needs (Greeson et al., 2011), and under-appreciated strengths. Further, residential care is resource intensive and has mixed evidence for its effectiveness (Gutterswijk et al., 2020). To improve residential outcomes, the 2018 Family First Prevention and Services Act tied 50% of federal funding for residential facilities to meeting several requirements, including mandates for trauma-informed care. A critical aspect of trauma-informed care is giving youth voice and empowering them to be active stakeholders in their care. To assess youth perspectives and incorporate their voices, all 570 youth ages 12+ in Illinois residential treatment facilities in October 2018 were presented with the Youth Experience of Care Survey. The survey included 27 Likert-scale and 3 open-ended questions. 547 (96%) of youth elected to participate, with 534 (98%) of participating youth providing qualitative feedback. To explore the youths' qualitative responses, we employed grounded coding theory (Urquhart, 2012), using open coding to identify underlying themes in 1255 qualitative responses youth provided.

This analysis resulted in 12 main codes: discrimination, empowerment, rules, general feedback, material resources, programming, relationships, restraints, safety, school, staff, and treatment. Youth had more negative (59%) than positive (35%) feedback, with the importance of relationships, unit programming, and staff being the most prominent themes in youths' responses. 39% of the coded responses corresponded to principles of trauma-informed care (SAMHSA, 2014). Of note, 4% of codes reflected significant safety concerns related to discrimination, restraints, or mistreatment.

This novel study provides critical feedback from youth regarding their perspectives on child welfare residential care, settings meant to be therapeutic places of healing and growth for youth with complex needs and strengths. Our findings illustrate that youth are eager to discuss their experiences in residential care, they have valuable and actionable insight to share, and express treatment and service needs aligned with principles of empowerment and trauma-informed care. The high response rate yielded in this survey demonstrate that surveying and involving youth in quality improvement efforts in residential care is worthwhile and instructive. The data provided by youth in this study highlight that 1) youth care about how their days are spent and the programming they receive with a desire for investment in activities, food, and visits with loved ones, 2) staff are vital to youths' experiences of residential care, and 3) young people want to have autonomy and learn independent living skills.

References:

Greeson, J. K. P., Briggs, E. C., Kisiel, C. L., Layne, C. M., Ake, G. S., Ko, S. J., Gerrity, E. T., Steinberg, A. M., Howard, M. L., Pynoos, R. S., & Fairbank, J. A. (2011). Complex trauma and mental health in children and adolescents placed in foster care: Findings from the national child traumatic stress network. *Child Welfare, 90*(6), 91–108.

Gutterswijk, R. V., Kuiper, C. H. Z., Lautan, N., Kunst, E. G., van der Horst, F. C. P., Stams, G. J. J. M., & Prinzie, P. (2020). The outcome of non-residential youth care compared to residential youth care: A multilevel meta-analysis. *Children and Youth Services Review, 113*(November 2019), 104950. https://doi.org/10.1016/j.childyouth.2020.104950

Substance Abuse and Mental Health Services Administration, National Mental Health Services Survey (N-MHSS): 2016. Data on Mental Health Treatment Facilities. BHSIS Series S-98, HHS Publication No. (SMA) 17-5049. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2017.

Urquhart, C. (2022). Grounded theory for qualitative research: A practical guide.

Beyond Symptoms: Behavioral and Personality Changes After Ventral Capsulotomy for Severe OCD

Jamilah R. George[abc], Paige Stetson[ad], Sarah Milback[a], Kit Chiappone[a], Donia S. Hassan[a], Benjamin D. Greenberg[abe], Wael F. Asaad[bc], Steven Rasmussen[abc], Nicole C.R. McLaughlin[ab]

[a]Butler Hospital, Psychiatric Neurosurgery Program
[b]Alpert Medical School of Brown University
[c]Brown University Health
[d]Brown University
[e]Center for Neurorestoration and Neurotechnology, VA Providence Healthcare System

Background: Ventral capsulotomy is an established neurosurgical intervention that is effective for a subset of individuals with severe, treatment-refractory obsessive–compulsive disorder (OCD). While prior work has focused primarily on symptom reduction, less is known about post-surgical changes in broader psychological processes that may underlie functional recovery, including behavioral activation, avoidance, and obsessive–compulsive personality disorder (OCPD) pathology. Examining these patient-reported outcomes may clarify post-surgical recovery trajectories and mechanisms of change.

Methods: Participants were 15 adults with severe OCD who underwent ventral capsulotomy and completed self-report measures at baseline and 12 months post-operative follow-up. Outcomes included maladaptive OCPD traits assessed by the Pathological Obsessive-Compulsive Personality Scale (POPS), Behavioral Activation for Depression Scale (BADS), and Cognitive-Behavioral Avoidance Scale (CBAS). Pre- to post-surgical changes were examined using paired-samples *t*-tests, with effect sizes estimated using Hedges' *g* to account for smaller sample size bias.

Results: Significant improvements were observed in behavioral and avoidance-related processes following surgery. Behavioral activation increased significantly from baseline to follow-up ($t(14) = -2.92$, $p = .011$), with a large effect size (Hedges' $g = -0.71$). Cognitive-behavioral avoidance demonstrated a significant reduction over time ($t(15) = -3.50$, $p = .003$), also corresponding to a large effect (Hedges' $g = -0.83$). Obsessive–compulsive personality pathology showed a decrease from baseline to follow-up; however, this change did not reach statistical significance ($t(10) = -1.19$, $p = .261$), with a small-to-moderate effect size (Hedges' $g = -0.33$).

Conclusions: Findings suggest that ventral capsulotomy is associated with substantial improvements in behavioral activation and reductions in avoidance, while changes in obsessive–compulsive personality pathology may be more modest over the same period. These results highlight the importance of examining transdiagnostic psychological processes alongside symptom outcomes to better characterize recovery trajectories following neurosurgical intervention for severe OCD.

Psychometric properties and factor structure of a measure to assess therapist self-efficacy in the treatment of child and adolescent anxiety

Christopher Georgiadis, Ph.D.,[1] Anya Urcuyo, M.S.,[2] & Jonathan S. Comer, Ph.D.[2]
[1]Department of Psychiatry and Human Behavior, Brown University
[2]Center for Children and Families, Florida International University

Provider self-efficacy refers to the extent to which a therapist has confidence in their capacity to effectively conduct treatment (Shapiro, MacDonell, & Moran, 2021). Research suggests provider self-efficacy can moderate the effectiveness of dissemination and implementation efforts, with stronger provider self-efficacy increasing a provider's receptivity to training in new treatment methods, and lower provider self-efficacy constraining training engagement, the uptake of evidence-based treatments, and overall clinical outcomes (Pace, Song, Suvak et al., 2021). Although child anxiety and related problems are among the most common referrals for youth mental health services, research has yet to examine provider self-efficacy in the specific context of treating pediatric anxiety. This may be due, in part, to the absence of a supported measure with which to assess provider self-efficacy in the treatment of pediatric anxiety.

The present study developed and evaluated the factor structure and psychometric properties of a measure to assess varying levels of provider self-efficacy in the treatment of pediatric anxiety. Data were drawn from N=160 providers trained as part of the Kids Formats of Anxiety Care Effectiveness study For Extending the Acceptability and Reach of Services (Kids FACE FEARS) trial. Kids FACE FEARS (Comer et al., 2024) was a recently completed multisite, pragmatic randomized clinical trial comparing the effectiveness of Therapist-Led CBT (telehealth, office-based or hybrid) versus Guided Online CBT (with minimal therapist support) for treating elevated youth anxiety identified in pediatric health settings. Participants (N=160) were natural providers in pediatric healthcare settings (i.e., they were not specialists in the treatment of pediatric anxiety, they were not research therapists, and they were not paid by the research project). Most providers held a master's degree (66.9%), with the rest holding a bachelor's degree (20.1%) or a doctoral degree (13.0%). In addition, most identified as female (88.8%) and as people of color (62.5%)—specifically, 37.5% identified as Hispanic/Latine, 37.5% identified as Non-Hispanic White, 10.0% identified as Asian, 9.4% identified as Black, 1.9% identified as Indigenous, and the rest identified with another race/ethnicity. Three quarters of the participating providers conducted all services in English (75%) and 25% conducted services in Spanish.

Prior to participating in a full-day training in CBT for pediatric anxiety, participating providers completed the *Therapist Self Efficacy Scale-CBT for Anxiety in Youth* (TSES-CAY), a 16-item survey designed for the present study that measures the extent to which therapists perceive they are capable of competently conducting CBT for youth anxiety. Items from a therapist self-efficacy scale for the treatment of adult depression were adapted to assess therapist perceptions of their abilities treating anxiety in children and adolescents. Factor analysis on the TSES-CAY items identified a three-factor structure: (a) *CBT/Anxiety-Specific Self-Efficacy* (which measures perceived ability to conceptualize client problems using the CBT model, maintain the structure of CBT, teach CBT skills, putting anxious patients in anxiety-provoking situations, and instruct patients to practice skills outside of session); (b) *Common-Factors Self-Efficacy* (which measures perceived ability to build therapeutic alliance, empathize with children/families, etc); and (c) *Patient Responsivity Self-Efficacy* (which measures perceived ability to adapt to patient/family needs, work collaboratively with patients/families, and address treatment barriers as they arise). Follow-up analyses will evaluate internal consistency, convergent validity, and divergent validity.

The present study demonstrated strong support for the 3-factor structure, reliability, and validity of the TSES-CAY in a representative sample of non-specialist providers working in pediatric health settings. Findings will be discussed in terms of implications for assessing factors that can influence the effectiveness of dissemination and implementation efforts and the overall uptake of evidence-based treatment practices for youth anxiety.

Safety in Low Intensity Focused Ultrasound Neuromodulation for Depression & Anxiety

Julia G. Gillotti[1], Amanda R. Arulpragasam[1,2], Mascha van't Wout-Frank[1,2], Yosef A. Berlow[1,2], Emily Aiken[1], Alison Gorbatov[1], Hannah R. Swearingen[1], Nicole McLaughlin[2,3], Ryan Van Patten[1,2], Israel Liberzon[4], Jennifer Barredo[1,2], Stephen Correia[5], Benjamin D. Greenberg[1,2,3], Noah S. Philip[1,2]

[1]Center for Neurorestoration & Neurotechnology, VA Providence Healthcare System, Providence, RI, USA
[2]Department of Psychiatry and Human Behavior, Warren Alpert Medical School of Brown University, Providence, RI, USA
[3]Butler Hospital, Providence, RI, USA
[4]Texas A&M College of Medicine, Bryan, TX, USA
[5]University of Georgia, Athens, GA, USA

Background: Low-intensity focused ultrasound (FUS) uses acoustic energy to reversibly modulate deep brain structures with high spatial specificity. This first-in-human trial aims to evaluate the safety of amygdala-targeted FUS in patients with depression (with and without comorbid anxiety) by delivering energy within established nonsignificant risk parameters.

Methods: Using a within-subject target-versus-control design, participants receive sonication to the right amygdala and the contralateral primary somatosensory cortex (S1). Safety assessments are administered throughout the study versus baseline. An abbreviated Systematic Assessment for Treatment Emergent Effects (SAFTEE) captures adverse events across bodily systems, supplemented by spontaneous reports. A neuropsychological battery assesses changes in immediate and delayed memory, attention, language, and related cognitive domains. Magnetic resonance imaging safety scans are acquired immediately after FUS, 24-hours, and 1-week after sonication.

Results: In the first cohort (n=10), nine participants completed both target (amygdala) and control (S1) sonication. No serious adverse events occurred, however, one participant required monitoring after worsening psychiatric symptoms following amygdala sonication. Adverse events were more frequent following amygdala than S1 (chi-square p=.002). Headache was the most reported side effect after both amygdala (n=4) and S1 (n=3) sonication. No participants were withdrawn due to sustained decreases on neuropsychological assessments. Across 61 safety scans, no FUS-induced brain injury was observed.

Conclusions: Amygdala-targeted low-intensity FUS can be delivered safely, with predominantly mild and transient side effects, no evidence of structural brain injury, and no sustained cognitive decline. These findings support future investigation of FUS neuromodulation in affective disorders.

Burden of Mental Health Symptoms and Access to Needed Mental Health Care among People with HIV in New England

Authors: Kayla H. Giorlando, Elizabeth M. Olsen, Sarah Bailey, Trisha Arnold, Avery Leigland, Julie Hugunin, Quinn Dougherty, Laura B. Whitely, and Larry K. Brown

ABSTRACT

People with HIV (PWH) are disproportionally impacted by mental health symptoms and poor health outcomes. HIV care settings strive to connect PWH with mental health services, but the effectiveness of these efforts is unknown. This project assessed the prevalence of mental health symptoms and facilitators and barriers to related care among 133 PWH in New England. Participants were 49.8 years old on average, 38.3% White, 79.7% non-Hispanic/Latinx, and 67.7% male. Many participants reported moderate-to-severe symptoms of depression (49.6%), anxiety (33.1%), anger (22.6%), and sleep disturbance (34.6%). Participants who reported that they did not receive needed mental health care during the past 12 months (21.8%), were significantly less likely than their peers to have HIV viral suppression, social support, and stable housing. These participants also had significantly higher rates of mental health symptoms, illicit substance use, and their HIV care providers offering to help them find mental health care. A logistic regression of these variables significantly associated at the bivariate level found that more mental health symptoms (OR = 1.05, p = .014) and HIV viral non-suppression (OR = 20.68, p = .020) continued to be associated with not being able to access needed mental health care in the past 12 months. Despite the integration of mental health screenings and referrals into HIV clinics, gaps remain, leaving PWH at ongoing risk for unmet treatment needs. Future work should focus on improving the implementation of evidence-based strategies that address the overlapping syndemics of HIV, mental health disorders, and systemic barriers for PWH.

Therapist Perceptions of the Utilization of and Barriers to Teaching Parents not to Accommodate

Theresa R. Gladstone, PhD & Christopher A. Flessner, PhD

Abstract

Anxiety and related concerns are the most common mental health concerns. If left untreated, anxiety may lead to additional concerns in a multitude of realms (e.g., psychological, familial, physical). Parental accommodation (i.e., parents modify their behavior to avoid or reduce their child's distress) has been consistently linked to increased youth anxiety. Teaching parents not to accommodate has become a fundamental aspect of evidence-based treatments for youth anxiety. Despite its indisputable importance in decreasing youth anxiety, no research thus far has explored the extent to which clinicians teach parents not to accommodate. The aims of this study were to explore (1) the frequency at which clinicians are teaching parents not to accommodate and (2 and 3) barriers to the implementation of this aspect of therapy. According to ecological models, barriers to utilization are critical to explore at the client (e.g., parental motivation), organizational (e.g., funding), and therapist (e.g., knowledge) levels. Mental health clinicians who treat youth with anxiety and related concerns were recruited for the current study to complete an online questionnaire (N=224). Descriptive statistics were run to assess Aim 1, 52.68% of participants reported teaching parents not to accommodate "often" or more. An exploratory factor analysis was utilized to examine Aim 2. Two factors were found "Therapist and Organizational Level Barriers" and "Client Level Barriers". To examine Aim 3, a regression analysis was run to explore if barriers (i.e., Therapist and Organizational Level Barriers, Client Level Barriers, and additional barriers highlighted by previous research) predicted the frequency at which therapists taught parents not to accommodate. The model was significant, F(10,213)= 33.33, *p*<.001 and accounted for 61.00% of the variance. This study affirmed that real world implementation of decreasing accommodation is challenging. Understanding barriers from an ecological framework is important, and barriers are related to therapists' self-report of how often they teach parents not to accommodate. Limitations ought to be considered and future work would benefit from confirming these findings.

Moderators of the Relationship Between Childhood Adversity and Post-Concussive Symptoms in Adults

Grace J. Goodwin, Jennifer K. Hoots, Nathan Cook, W. Curt LaFrance Jr., Ryan Van Patten

OBJECTIVE: While concussive symptoms typically resolve within days to weeks post injury, persistent symptoms after concussion (PSAC) occur in a subset of patients. Several trauma and stress-related factors are known to confer risk for PSAC. Adverse childhood experiences (ACEs; e.g., neglect, abuse) can disrupt developing brain circuits, increase stress hormones, and are associated with long-term perceived cognitive difficulty, psychopathology, chronic medical conditions, and somatization. ACEs are also a risk factor for PSAC among concussed youth and treatment seeking adults with concussion. However, less is known about the effects of a history of ACEs on chronic self-reported post-concussive symptoms (i.e., neurobehavioral symptoms [NBS]) in a population-based cohort of adults. The present study examined moderators (e.g., history of concussion) of the association between history of ACEs and current NBS. Consistent with the allostatic load conceptualization, we hypothesized that the relationship between ACEs and NBS would be stronger for those with history of concussion compared to those without.

PARTICIPANTS AND METHODS: Amazon's Mechanical Turk (MTurk), an online labor market, was used to recruit participants. Online self-report surveys were administered via REDCap, and participants who completed the full survey were provided financial compensation ($5.00) in accordance with MTurk procedures. Participants were excluded if they failed embedded validity checks. Participants indicated whether they had previously received a diagnosis of concussion. The adverse Childhood Experiences Questionnaire for Adults asks whether people experienced 10 categories of ACEs before the age of 18. The Neurobehavioral Symptom Inventory (NSI) is a self-report questionnaire that assesses the presence and severity of 22 neurobehavioral symptoms over the last two weeks on a 4 point scale (0=None, 3=Severe). Regression analysis was conducted to examine moderation effect of concussion diagnosis on the association between ACEs and NSI total severity score.

RESULTS: The sample (N=436) consisted of predominantly college-educated (57.8%) non-Hispanic white (66.1%) adults (M_{age}=31.97[7.02], 35.56% women). Of the 436 participants, 112 (26%) reported a previous diagnosis of concussion. 37.4% of the sample did not report any ACEs (37.4%), while those who did reported an average of 4 (median=4), with neglect as the most frequently endorsed ACE (60.8%). Participants reported high average rates of NBS (median NSI total score=35), with headaches being endorsed most frequently (87.4%). Higher number of ACEs predicted more severe NSI (r[434]=.36, p<.001). Concussion significantly moderated the association between ACEs and NSI (F[3, 432]=26.16, p<.001, R^2=.154, b=−2.10, SE=0.60, p<.001), such that the association was stronger among participants without a history of concussion compared to those with a concussion history.

CONCLUSIONS: Remote childhood adversity can increase the risk for concussion-like symptoms later in life. Contrary to our hypotheses, the association between ACEs and NBS was stronger among participants without a concussion history. It is possible that once overall allostatic load reaches a certain threshold, the additional impact of concussion on symptoms may be attenuated. Findings help advance our understanding of the effect of ACEs and concussion-like symptoms among adults in the general US population. Future work will examine other moderators between ACEs and functional symptoms.

Psychotic-like experiences and neurobehavioral reward processing in adolescents who use cannabis

Shelley A. Gresko PhD, Elizabeth C. Thompson, PhD, Meghan A. Gonsalves PhD, Gillian LeBlanc MS, Elizabeth Lorenc PhD, Jane Metrik PhD, Michael Frank PhD, Sarah Ryan BA, Emily Olenik BS, Leslie Brick PhD, Anthony Spirito PhD, Jodi Gilman PhD, Sarah A. Thomas PhD

Abstract

Cannabis use (CU) in adolescence is linked to increased risk of developing psychopathology, including psychotic-like experiences (PLEs), and disruptions in reward processing. How CU is associated with reward processing in the context of PLEs in adolescence is unknown. The present study assesses the interrelation between CU, PLEs, and neurobehavioral markers of reward processing, specifically tissue iron concentration (1/nT2*; a proxy for dopamine-related neurophysiology) and reward motivation.

Adolescents aged 14—17 within the greater Providence, RI area were recruited. Participant groups were characterized as either cannabis (>11 lifetime cannabis episodes) or control (<5 lifetime cannabis episodes). Current psychotic symptoms and lifetime history of any substance use other than nicotine or cannabis were exclusionary. The final sample included 47 controls (M_{age}=15.32, SD=1.01, 64% female) and 34 cannabis group participants (M_{age}=15.79, SD=1.21, 65% female).

CU frequency, quantity, and problems were assessed along with PLEs. Reward motivation (i.e., proportion of hard effort choices) was measured with a multi-trial behavioral task during which participants chose between an easy (low reward value, fixed effort) or hard (varying reward value and effort) trial with varying probability of winning points. Effort (i.e., number of key presses), reward value, and probability were shown before participants' selection. 1/nT2* was derived from functional magnetic resonance imaging.

Reward motivation was predicted by a significant four-way interaction between group membership and PLEs, with reward value and effort (ROR=3.82; 95% CI [1.24, 11.74], *p*=0.019). Even when required effort was low, the cannabis group, compared to controls, was less motivated by reward, particularly for those with high PLEs. Significant relationships between CU patterns and PLEs depended on 1/nT2* (at high 1/nT2*, CU positively predicted PLEs) as follows: cannabis frequency interacted with 1/nT2* in the right thalamus (β=102.65, SE=38.73, p=0.01); daily concentrate hits in the left putamen (β=51.58, SE=19.80, p=0.01); daily cannabis grams in the left putamen (β=73.34, SE=31.50, p=0.02), right putamen (β=101.69, SE=30.07, p=0.002), and right thalamus (β=102.38, SE=37.29, p=0.008); along with CU disorder severity in the right thalamus (β=83.22, SE=32.92, p=0.01).

Adolescent CU and PLEs were associated with alterations in neurobehavioral reward indices. Behaviorally, this manifested as reduced reward motivation and strategic goal-directed action. Consistent with psychosis research, increased dopamine-related neurophysiology was observed with higher CU and PLEs. Key brain regions, including the associative striatum and thalamus, are consistent with findings from psychosis spectrum studies. Longitudinal research is needed to determine the timing and mechanisms of neurobehavioral reward processing changes in adolescent CU.

Transcranial Magnetic Stimulation for treatment resistant Obsessive Compulsive Disorder with Comorbid Depression: A Case Series

Wenricka Griffith, Andrew Phan, Meghan Kulak, Eric Tirrell, A Polly Gobin, Carissa Perez, Nim Murugan, Linda L. Carpenter

---

Background: Obsessive Compulsive Disorder (OCD) is characterized by ritualized behaviors or mental acts performed in response to intrusive thoughts. Approximately 40% of individuals with OCD do not respond to first-line treatments such as medications or behavioral therapy. Treatment is often complicated further when combined with comorbid major depressive disorder (MDD). Transcranial Magnetic Stimulation (TMS) is an FDA cleared alternative based treatment that may be used for drug resistant MDD and OCD. One naturalistic study found significantly lower response rates to the OCD protocol than the pivotal trial leading to its approval. However, no studies have examined whether combined treatment of the OCD and MDD protocols is tolerable and effective at treating OCD with comorbid depressive symptoms.

Methods: This is a naturalistic case series of patients who underwent at least 30 sessions of OCD treatment with or without concurrent MDD in the Butler Hospital TMS Clinic between 2024 and 2026. Patients received either the "OCD protocol" consisting of 20Hz stimulation or a combined "OCD+MDD protocol" with the OCD protocol and MDD protocol of 600 pulses of Intermittent Theta Burst Stimulation (iTBS). OCD and MDD severity were measured at baseline and after session #30 using the Yale-Brown Obsessive Compulsive Scale (YBOCS), the Inventory of Depressive Symptomatology Self Report (IDS-SR) and the Patient Health Questionnaire (PHQ-9). Categorial response was defined by (baseline to #30) ≥30% decrease in YBOCS (for OCD) and ≥ 50% decrease in PHQ-9 or IDS-SR (for MDD). Paired t-tests were used to evaluate changes in clinical measures pre-to-post TMS.

Results: Thirteen patients were included in this case series and received either an OCD specific treatment protocol (n=7) or a combined OCD+MDD treatment protocol (n=4). The mean±SD baseline YBOCS score was 24.27±7.89. The mean change in YBOCS for patients receiving the OCD protocol was -3.71 points (p=0.147), with 2/7 patients meeting response criteria (28%). Of those with concurrent MDD (n=5/7), the mean change in IDSSR was -8.4 points (p=0.042) and change in PHQ-9 was -1.8 points (p=0.047) with a MDD response rate of 50%. Of those who received OCD+MDD treatment (n=4), the mean change in YBOCS was -7.75 points (p=.082) with 2 of 4 patients meeting response criteria (50%). The mean change in IDS-SR was -9.5 points (p=.283) and the mean change in PHQ-9 was -6 points (p=.317) with an MDD response rate of 50%.

Discussion: In this limited case series, findings suggest that patients who underwent the 20Hz OCD protocol alone had nonsignificant changes in YBOCS scores and low OCD response rates. In contrast, patients with concurrent MDD had significant changes in their MDD symptoms relative to baseline. Patients who received the dual OCD and MDD protocol appeared to have greater changes in their symptom scores, but interpretation is limited due to the small sample size. Further research is needed to explore the tolerability and efficacy of a dual MDD and OCD protocol in a larger population.

Mind Brain Research Day Abstract

Title: A Qualitative Analysis of Engagement with Existential Themes during MDMA-Assisted Therapy in Veterans with Co-Occurring PTSD and AUD.

Authors: Brian J. Gully[1], Lewis Nunez Severino[1, 2], Erica Eaton[2, 3, 4, 5], Christy Capone[2, 3, 4, 5], Robert M. Swift[2, 3, 4, 5], Carolina L. Haass-Koffler[2, 3, 5, 6]

1. Center for Alcohol and Addiction Studies, Brown University, Providence, RI, USA
2. Department of Neuroscience, Brown University, Providence, RI, USA
3. Department of Psychiatry and Human Behavior, Warren Alpert Medical School, Brown University, Providence, RI, USA
4. Providence Veteran Administration Medical Center, Providence, RI, USA
5. Department of Behavioral and Social Sciences, School of Public Health, Brown University, Providence, RI, USA
6. Carney Institute for Brain Science, Brown University, Providence, RI, USA

Co-occurring post-traumatic stress disorder (PTSD) and alcohol use disorder (AUD) is a prevalent issue among veteran populations with little treatment options. This comorbidity is thought to be driven by self-medicating behavior, wherein alcohol may be used to cope with symptoms of PTSD. A promising novel treatment is the integration of psychotherapy with the non-classical psychedelic 3,4-methylenedioxymethamphetamine (MDMA). MDMA assisted-therapy (MDMA-AT) consists of *preparatory sessions* in which participants meet with their therapy team and discuss presenting issues, *dosing sessions* where MDMA is administered within a therapeutic setting, and *integration sessions* focus on consolidating insights that emerge from the dosing experience. Growing evidence shows large reductions in PTSD severity and potential reductions in alcohol use after MDMA-AT. The efficacy of this treatment may be attributable to open-ended engagement with existential themes that may arise during the therapy sessions, such as ego transcendence. We conducted the first open-label trial investigating safety and efficacy of MDMA-AT for veterans with PTSD-AUD. Ongoing analyses revealed a reduction in PTSD and AUD severity, as measured by the CAPS-5 and SCID-E. Using interpretive phenomenological analysis (IPA), we evaluated the occurrence of existential themes during preparatory and integration sessions of a subset of participants *(n* = 5). Thus far, these themes have been found in preparatory sessions, prior to MDMA dosing, to a low degree. It is hypothesized that footage taken following dosing will demonstrate significant increases in engagement with these themes. We expect that higher levels of engagement will predict greater reductions in PTSD-AUD severity. Our findings will be informative of the importance of incorporating existential-psychotherapeutic strategies within this novel treatment.

Patient attitudes towards neurocircuitry-based procedures for Obsessive-Compulsive Disorder

Donia S. Hassan[ab], Meghan J. Kulak[ac], Sarah Milback[ab], Abel Mathew[de], Mohamed Sherif[bc], Benjamin D. Greenberg[bc] Erick Fedorenko[ac], Nicole C.R. McLaughlin[ac]

[a]Butler Hospital; [b]Rhode Island Hospital; [c]Department of Psychiatry and Human Behavior, Alpert Medical School, Brown University; [d]Price, Procter, & Associates, PLLC; [e]University of Texas-Southwestern Medical Center

Background: Obsessive-compulsive disorder (OCD) is a debilitating condition affecting 1-2% of the population. Neurocircuitry-based procedures including transcranial magnetic stimulation (TMS), deep brain stimulation, and lesion-based neurosurgery may be effective for the 10-20% of affected individuals unresponsive to conventional treatments. Ethical concerns include equitable access, patient awareness, and understanding of risks and benefits. This study explored perspectives on TMS and psychiatric neurosurgery among individuals with self-reported OCD to identify patient views and barriers to treatment potentially leading to underutilization.

Methods: 197 adults with self-reported OCD participated in the study. Participants completed an online qualitative survey on awareness of and attitudes towards neurocircuitry-based procedures. Recruitment occurred through social media, psychology/psychiatry organization groups (e.g., American Psychological Association), and patient advocacy websites such as the IOCDF.

Results: Most respondents had never received TMS (n=168) or neurosurgery (n=188) for OCD.

Of those who never received TMS (168/197), only 47.6% had heard about it. Reported barriers included access (40%), lack of knowledge of success rates (42.5%), lack of knowledge about TMS (37.5%), and fear of irreversible complications (58.8%). A majority (53.8%) considered TMS safe, whereas 33.8% reported no opinion or indifference. Overall, 29/197 reported they had received TMS. Among those, the most common stimulation targets were the dorsolateral prefrontal cortex (n=22) and orbitofrontal cortex (n=6). Among respondents who cited lack of access as a barrier to TMS, the largest proportion were located outside of the United States (28.1%), followed by the Northeast (25.0%). Notably, the largest pre-TMS fear reported was magnetic stimulation near the head (72.4%), and (82.8%) reported symptom improvement and would recommend the treatment.

Of those who never received psychiatric neurosurgery (n=188/197), only 58.0% had heard about it. Of those, DBS was the most commonly recognized procedure (86.2%), followed by capsulotomy (20.2%). Reported barriers included lack of knowledge of success rates (38.5%), lack of knowledge about psychiatric neurosurgery (50.5%), fear of irreversible complications (53.2%), and access (55.0%). Participants' perceptions of surgical safety were generally cautious. For lesion-based procedures, 29.3% agreed that the procedure is safe, whereas 54.1% expressed no opinion or indifference. DBS was viewed slightly more favorably, with 36.7% agreeing that it is safe and 47.7% reporting no opinion or indifference. n=9 of the total sample had undergone psychiatric neurosurgery. Among these, surgical complications were the largest pre-surgical fear. 55.6% agreed that their symptoms improved and they would recommend the treatment.

Discussion: Within this internet survey sample, awareness of neurocircuitry-based treatments for OCD remains limited. Barriers reported by the total population- excluding those who received neurocircuitry-based treatments for OCD- included limited knowledge, restricted access, and concerns about potential risks. Among respondents who had received TMS (n=29/197) or neurosurgery (n=9/197), most reported symptom improvement and would recommend their respective treatments. Fewer respondents had received psychiatric neurosurgery compared to TMS, and neurosurgical interventions were associated with more cautious safety perceptions. This likely reflects differences in perceived risk, invasiveness, and clinical indications, as well as the fact that psychiatric neurosurgery is considered only for highly selected subpopulations and is variably classified as experimental across treatment guidelines. Our findings highlight the need for improved patient and provider education that clearly differentiates neurocircuitry-based interventions, their risk profiles, and their guideline-supported indications, in order to promote informed decision-making and appropriate access for individuals with treatment-resistant OCD.

Exploring Equitable Clinical Decision-Making in Medication for Opioid Use Disorder Prescribing

Alexandra Hernandez-Vallant, Naila V. deCruz-Dixon, Cassandra Boness, Jessica R. Goodkind,
Katie Witkiewitz, & Margo C. Hurlocker

Medications for opioid use disorder (MOUD) – including methadone, buprenorphine, and extended-release naltrexone – are gold-standard treatments for opioid use disorder (OUD) but are underutilized by individuals in need of treatment. Although there is growing recognition that social determinants of health (SDOH) are related to MOUD treatment engagement and outcomes, there is limited research on whether and how SDOH inform clinical decision-making during MOUD clinical encounters. Based on prior qualitative work and expert feedback, we developed a clinical vignette-based survey with a total vignette population of 64 unique vignettes to assess MOUD clinical decision-making. Each vignette used descriptions of patients seeking MOUD who differed based on varying SDOH (e.g., housing, employment, and insurance status) and related sociodemographic factors (e.g., racial identity, age). In this mixed-methods pre-implementation study, we pilot tested the clinical vignette-based survey by conducting cognitive interviews with MOUD prescribers to examine vignette validity, gather reparative feedback on survey questions, and thematically explore drivers of disparities in provider implementation of MOUD. Cognitive interview protocol was guided by the Health Equity Implementation Framework, focusing on factors that influence equitable and successful implementation of MOUD. Healthcare professionals currently prescribing at least one MOUD from New Mexico (*n* = 10) or Washington state (*n* = 11) completed cognitive interviews. These states were selected given the similarities in opioid treatment policies and rural-urban demographics. Participants rated vignettes as very easy to understand (*M* = 2.98), relevant (*M* = 2.92), and important (*M* = 3.00) as measured by the Content Validity Index (score 1-3). Participants recommended changes to case descriptions (e.g., substituting fentanyl use for intravenous heroin use as it was more commonly seen in practice), terminology (e.g., changing to person-centered care from personalizing care as this was language more commonly used in medical settings) and response options (e.g., selection of top 3 or open response rather than all that apply). Thematic analysis of interviews also revealed three key themes: (1) challenges articulating how to implement person-centered care (e.g., difficulty articulating how they align their decision-making with patient needs; difficulties balancing patient clinical and social needs); (2) the importance of setting (e.g., inner setting policies dictated their MOUD selection, availability of other services, flexibility of scheduling, and availability of telehealth); and (3) mixed attitudes towards the inclusion of client racial and ethnic identities in the vignette descriptions (e.g., concerns that including racial identity incorrectly reified race as a biological construct; feeling it was important to know a person's racial identity and cultural context to effectively tailor treatment). Findings suggest that clinical vignettes offer a feasible and valid method to understand healthcare professionals' clinical-decision making. We also identified potential sources of disparate MOUD clinical decision-making worthy of incorporation into medical education and training, thereby advancing efforts to reduce health disparities and promote more structurally responsive care for this multiply marginalized population.

The Protective Effects of Mindfulness on Trauma-Related Shame Among Bisexual+ Individuals

Rhoen Hoff, Rhode Island Hospital
Alexis A. Adams-Clark, The Warren Alpert Medical School of Brown University
Lindsay M. Orchowski, The Warren Alpert Medical School of Brown University
Prachi H. Bhuptani, The Warren Alpert Medical School of Brown University
Jennifer Merrill, Brown University School of Public Health
Gabriela López, The Warren Alpert Medical School of Brown University
Lucy W. Naughton, Rhode Island Hospital
Sam Mulford, Rhode Island Hospital
Catrina Aglubat, Rhode Island Hospital
Anna Purcell, Rhode Island Hospital
Elizabeth D. Mayer, Rhode Island Hospital
Ananya Sharma, Rhode Island Hospital
Molly Maloney, Brown University School of Public Health

Background: Bisexual individuals are more likely to experience poor health outcomes related to stigma they face due to having a sexual minority identity while living in a heterosexist society (Salim & Messman, 2024). In addition to the minority stress experienced by lesbian, gay, bisexual, and transgender individuals broadly, bisexual individuals face anti-bisexual stigma, which negatively affects mental health outcomes (Katz-Wise et al., 2017; Salim & Messman, 2024). Research has identified a link between discrimination as a form of minority stress and trauma.

Bisexual individuals who experience anti-bisexual stigma may also experience elevated and persistent shame, a pervasive negative emotion characterized by feelings of powerlessness, inferiority, and inadequacy (Brown, 2006; Salim et al., 2025). However, mindfulness, the practice of paying attention to internal experiences, thoughts, and emotions in the present moment, has been associated with lower levels of negative emotions, including shame (Brown, 2022; Sedighimornani et al., 2019). Given the heightened levels of anti-bisexual stigma and the corresponding increases in shame among bisexual individuals, it is important to explore strategies for reducing the negative outcomes of stigma. Shame has been identified as a mechanism linking the experience of minority stress to adverse health outcomes, further emphasizing the need for interventions that target shame (McGarity-Shipley et al., 2023; Salim et al., 2025).

Methods: This investigation used baseline survey data from bisexual+ individuals (individuals attracted to more than one gender) to examine the relationship between exposure to anti-bisexual stigma and trauma related shame, and to test whether mindfulness moderates this association. Participants completed validated measures of intra-community and anti-bisexual stigma, mindfulness, and trauma related shame.

Hypothesis: It was hypothesized that higher levels of mindfulness would buffer the effects of increasing anti-bisexual stigma on shame, such that the association between stigma and shame would be weaker at higher levels of mindfulness.

Results: A significant interaction emerged: mindfulness moderated the association between intra-community bisexual stigma and trauma-related shame. At lower levels of mindfulness, greater exposure to anti-bisexual stigma was associated with significantly higher shame, indicating that individuals low in mindfulness were vulnerable to the harmful emotional effects of these experiences. At higher levels of mindfulness, the association between stigma and shame was not significant. These findings highlight the protective role of mindfulness in reducing the negative effects of stigma related trauma. This work contributes to the literature showing that mindfulness can buffer minority stress in bisexual+ individuals and suggests mindfulness-based interventions as a promising avenue for those who experience anti-bisexual stigma.

Title: Utilization of Infographics to explore mental health concepts with Latine adolescents

Marisa O. Hollinshead, MD[1,2], Norka Polanco-Frontera, PhD[3], Yovanska Duarte-Velez, PhD[2], Heather Baily, MPH, PhD[4] and Erika S. Trapl, PhD[4]

1. The Department of Psychiatry and Human Behavior, The Warren Alpert Medical School of Brown University, Providence, RI
2. Emma Pendleton Bradley Hospital, Brown Health, Providence, RI
3. Carlos Albizu University, San Juan, Puerto Rico
4. Department of Population and Quantitative Health Sciences, Prevention Research Center for Healthy Neighborhoods, Case Western Reserve University, Cleveland, OH

Lead Author's Contact: Marisa Hollinshead, MD
Email: marisa_hollinshead@brown.edu
Phone: (401) 432-1408

Abstract:

Objectives: Communication of scientific information to communities, especially within a rapidly evolving technological world, is of growing importance. Minoritized communities may be particularly vulnerable due to language barriers and differences in health literacy. Studies continue to show alarmingly high rates of depressive symptoms and suicidality in Latine youth and underutilization of mental health services. Communication of these rates among minoritized communities is unclear. Most qualitative studies have focused on clinical samples, that are mostly female, with sparse literature focused on community samples and differing gender experiences as it relates to suicidality in Latine adolescents. This study is unique in that it utilizes a community sample, and visual graphics to communicate quantitative data, of both males and females to understand Latine youth's perspective on mental health and suicidality. **Methods:** In 2019, three separate focus groups were conducted (10 females, 10 males, and 5 females with 5 males). Based on the focus group analysis, adjustments to the interview guide were made and semi-structured interviews (12 females, 6 males) were conducted. As part of the focus groups and semi-structured interview, participants were asked to view an infographic showing results from the Youth Risk Behavior Survey in Cuyahoga County. Research questions explored by gender included: 1) When utilizing visuals to communicate quantitative data, what are the ways adolescents interpret the data? 2) What are youth's reactions to higher rates of depressive symptoms and suicidality within the population?; 3) What are their perspectives and interpretations on why the rates may be higher? **Results:** Preliminary emerging themes found that when utilizing visuals to communicate data, adolescents were able to recognize differences in rates of depressive symptoms and suicidality between Latine and non-Latine adolescents when asked to interpret the infographic independently. The magnitude of difference was more difficult to interpret. Both males and females were surprised by the higher rates of depressive symptoms in Latine adolescents, with females having an increased awareness of the mental health challenges peers face. Interpretations of contributors to depressive symptoms and suicidality often mirrored challenges that were occurring in participants' own lives. **Conclusions:** Utilization of infographics could be an effective tool to communicate data that has been traditionally siloed to research communities. It may also serve as a multi-pronged approach to providing education and avenues for discussion around stigmatized topics.

Title: Functional Memory Concerns in an Online Sample
Authors: Jennifer K. Hoots, Ph.D., Lawrence Chan, Psy.D., Nathan E. Cook, Ph.D., W. Curt LaFrance Jr, MD, MPH, Ryan Van Patten, Ph.D.

Objective: Metamemory is a key component of various neuropsychiatric conditions, including functional cognitive disorder, and is associated with quality of life transdiagnostically. Better characterization of correlates and predictors of metamemory in the general population can inform clinical care in neuropsychiatry. The authors examined psychometric properties of the Multifactorial Memory Questionnaire (MMQ), a freely available measure, as well as relationships of metamemory with well-being and health-related factors.

Methods: Using Amazon's Mechanical Turk platform, 438 adults (*M*=31.97, *SD*=7.01) completed an online survey. Psychometric properties of MMQ scales were assessed, and hierarchical regressions assessed how metamemory relates to well-being and health-related factors (emotional distress, sleep disturbance, pain interference).

Results: All three MMQ scales showed adequate internal consistency and convergent validity. Only MMQ-Ability demonstrated good discriminant validity. Inclusion of MMQ scales improved models predicting well-being, beyond demographics alone (Meaning/Purpose: R^2=.31, $F(6, 431)=32.79$, $p<.001$; Ability to Participate: R^2=.22, $F(6, 431)=20.75$, $p<.001$). Inclusion of health-related factors, particularly emotional distress and sleep disturbance, improved models predicting MMQ-Satisfaction, MMQ-Ability, and MMQ-Strategy beyond demographic predictors alone (R^2=.40, $F(6, 431)=47.32$, $p<.001$; R^2=.30, $F(6, 431)=30.37$, $p<.001$; R^2=.14, $F(6, 431)=12.07$, $p<.001$), respectively.

Conclusions: The MMQ is a psychometrically robust measure of metamemory, with scientific and clinical utility in neuropsychiatry. Metamemory is related to well-being in a heterogenous sample of adults from the general population. Health-related variables, particularly emotional distress and sleep disturbance, relate to memory satisfaction, perceived memory, and compensatory strategy use. Findings emphasize the importance of assessing metamemory and incorporating health-related variables into conceptualization and treatment of metamemory in neuropsychiatric conditions.

Title: Clinical outcomes following treatment in a specialized perinatal OCD intensive outpatient program

Author(s): Morgan Hoyt (Butler Hospital) , Kathryn Forche (Brown University; Women and Infants Hospital) , Andrea Vijil Morin (Butler Hospital) , Maggie O.T. Allen (Brown University; Women and Infants Hospital) , Zobeida M. Diaz (Brown University; Women and Infants Hospital) , Cynthia L. Battle (Brown University; Women and Infants Hospital; Butler Hospital)

Abstract:

Obsessive-compulsive disorder (OCD) and subthreshold obsessive-compulsive symptoms (OCS) are common in the perinatal period, yet few specialized treatment programs exist and no established clinical guidelines specifically address perinatal OCD. Emerging evidence suggests that many individuals experience onset or exacerbation of symptoms during pregnancy and the postpartum period, with intrusive thoughts often focused on contamination during pregnancy and infant-related harm following delivery. Comorbid anxiety and depression are also highly prevalent, underscoring the need for integrated and intensive treatment approaches tailored to perinatal populations. Exposure and Response Prevention (ERP), the gold-standard treatment for OCD in general populations, has been incorporated into a novel perinatal intensive outpatient program (IOP) housed within a large obstetrical hospital in the Northeastern United States.

The present study aims to conduct an initial evaluation of clinical outcomes associated with this real-world perinatal OCD and anxiety IOP by examining changes in symptom severity across treatment. Participants include pregnant and postpartum patients enrolled in the program between 2022 and 2025. As part of routine clinical care, patients completed standardized symptom measures at intake and discharge, with more recent patients also completing weekly interim assessments during the typical 6–8 week treatment course. Clinical data were abstracted from electronic medical records and include demographic characteristics, diagnostic information, treatment duration, and validated symptom measures assessing depression (Edinburgh Postnatal Depression Scale; EPDS), anxiety (Generalized Anxiety Disorder-7; GAD-7), general OCD severity (Yale-Brown Obsessive Compulsive Scale; Y-BOCS), and perinatal-specific OCD symptoms (Perinatal Obsessive-Compulsive Scale; POCS).

To date, data have been abstracted for 50 patients. Most participants were treated postpartum (94%), with a smaller proportion treated during pregnancy (6%). Patients attended an average of 6.91 weeks of treatment (SD=1.98). Preliminary analyses indicate clinically elevated symptom severity at admission across domains. Paired samples t-tests were conducted to examine change from admission to final assessment. Results demonstrate significant reductions in OCD, anxiety, and depressive symptoms across treatment. Y-BOCS scores showed a large reduction in OCD severity, t(33)=5.17, p<.001, d=0.89. GAD-7 scores demonstrated a moderate reduction in anxiety, t(33)=3.36, p=.002, d=0.58. EPDS scores also showed a significant decrease in depressive symptoms, t(38)=3.84, p<.001, d=0.62. Perinatal-specific OCD symptoms measured by the POCS showed parallel improvement trends.

These preliminary findings suggest that a specialized perinatal OCD and anxiety IOP incorporating ERP may be associated with meaningful reductions in clinical symptoms among pregnant and postpartum patients. Ongoing analyses will incorporate mixed-effects models using weekly symptom data to better characterize trajectories of change and explore predictors of treatment response. Results highlight the potential value of specialized intensive interventions for perinatal OCD and emphasize the need for expanded access to tailored perinatal mental health services. Limitations include the use of a pre–post design without a comparison group, variability in treatment duration, and reliance on retrospective chart abstraction, which may limit data completeness. The relatively small sample size also restricts subgroup analyses, including differences between pregnancy and postpartum presentations. Future work will examine longer-term follow-up outcomes and patient-level factors associated with symptom improvement.

Age moderates the links between 2-back drift-diffusion model components and neuropsychological factor scores

Xiaoyang Hu[1] and Hwamee Oh[1,2]

[1] Department of Psychiatry and Human Behavior, Brown University, Providence, RI, USA
[2] Department of Cognitive and Psychological Sciences, Brown University, Providence, RI, USA

The Hierarchical Drift-Diffusion Model (HDDM) provides a principled framework for decomposing task performance into latent cognitive processes. Despite its increasing applications to better understand human higher order cognition, its application has been largely limited to individually developed computerized tasks in a narrow range of populations. In order to assess age-group differences and the clinical relevance of HDDM parameters, we applied HDDM to a 2-back face and scene working memory task with data from 87 cognitively normal participants (34 young (mean age = 27.24) and 53 older (mean age = 70.19)) and examined how these processes relate to broader cognitive abilities measured by standardized neuropsychological test performance between young and older adults. Relative to younger adults, older adults exhibited lower evidence accumulation rates, lower decision thresholds, and longer non-decision times. The latter two findings are consistent with the behavioral observation of older adults often making fast errors and immediately recognizing their mistakes. Participants also completed a comprehensive neuropsychological battery. Factor analysis of test scores yielded latent constructs capturing domains including executive functions, language, working memory, verbal memory, semantic knowledge, and visual memory. We found that the predictive utility of model parameters was age-dependent. Parameter-by-age interactions emerged for several cognitive measures: the evidence accumulation rate showed significant interactions when predicting Mini-Mental-State-Examination (MMSE) scores ($p<0.01$) and visual memory ($p<0.05$), with a marginal interaction for executive functions ($p<0.1$). The response threshold parameter demonstrated age-dependent effects on semantic knowledge ($p<0.01$) and marginally on working memory ($p<0.1$). Additionally, age moderated the effect of non-decision time on semantic knowledge significantly ($p<0.01$). Our results indicate that HDDM parameters capture decomposed latent cognitive processes underlying different cognitive domains assessed by standardized neuropsychological tests and highlight differential sensitivity of the HDDM parameters to neuropsychological test performance between young and older adults.

Day-Level Associations Between Cannabis Use and Sleep During Pregnancy

Ami S. Ikeda[1], Lindy K. Howe[1], Alexander W. Sokolovsky[1], Jane Metrik[1,2], Cynthia Battle[1], Lauren Micalizzi[1], Rachel L. Gunn[1]

1. Center for Alcohol and Addiction Studies, School of Public Health, Brown University, Providence, RI, United States
2. Providence Veterans Affairs Medical Center, Providence, RI, United States

Cannabis is among the most common and increasingly used substances during pregnancy in the United States. Qualitative studies suggest pregnant individuals use cannabis to manage pregnancy-related symptoms such as nausea, negative mood, anxiety or depression, pain, stress, and problems with sleep. Sleep disturbances, in particular, are prevalent among ~50% of pregnant individuals, with sleep quality declining throughout pregnancy. Importantly, studies in non-clinical, non-pregnant samples have demonstrated that poorer sleep quality and shorter sleep duration are associated with increased cannabis use. To date, no studies have examined whether poor sleep in pregnancy increases the risk of cannabis use, despite sleep being commonly disrupted among pregnant individuals. Therefore, understanding the relationship between cannabis use and sleep during pregnancy is necessary to elucidate whether cannabis use may increase distal risks for adverse maternal and fetal outcomes associated with poor sleep during pregnancy and inform the corresponding clinical guidelines. The present study aimed to investigate whether: (1) subjective sleep quality predicts next day cannabis use (CU), (2a) whether subjective sleep quality is associated with next day morning reports of intentions to use cannabis that day, and (2b) whether morning reports of intentions to use cannabis that day mediate the relationship between the previous evening's subjective sleep quality and that day's CU. This study draws on pilot data from a longitudinal multimethod study combining laboratory assessment and ecological momentary assessment (EMA)- from pregnant individuals (N=20) who use cannabis at least twice weekly over the past 60 days. The EMA protocol included morning assessments, which allowed for evaluation of previous day cannabis use, time to first cannabis use, sleep quality, and day-level intentions for use. While participants described their subjective sleep on average as '*fair*' in morning reports (scale range: 1-5; $M = 3.17$, $SD = 0.95$), their scores on the Pittsburgh Sleep Quality Index (PSQI) at baseline indicated that all participants demonstrated poor sleep quality over the past month (cutoff:> 5; $M = 10.95$, $SD = 2.56$). Results from multilevel mixed effects models indicated no significant association between prior-night subjective sleep quality and next day cannabis use (incidence rate ratio [IRR] = 1.17, 95% confidence interval [CI] [0.77-1.80]). Additionally, there were no significant associations between prior-night subjective sleep quality and morning intentions to use cannabis (IRR = 1.02, 95% CI [0.66-1.59]). Finally, there was no evidence of mediation via morning cannabis use intentions between prior-night subjective sleep quality and subsequent cannabis use (average causal mediation effect (ACME) = 0.04, 95% CI [−1.21, 1.54]). Overall, day-to-day subjective sleep quality may not play a central role in shaping either intentions to use cannabis or actual cannabis use the following day in those that regularly use cannabis in pregnancy. Larger, more well-powered studies are needed to clarify the factors that contribute to cannabis use in pregnancy, and the potential association between sleep and CU.

Title: In what ways did Youth Advisory Board feedback shape an EMA protocol?

Authors: Katie Ingram PhD1,2, Bailey Borkowski*, Lila Boutin*, Hanna Chong*, Gianna Cimorelli*, Georgia Hekking*, Laila Hekking*, Leonardo S Monzon*, Simone Punchak*, Bella Quiroa*, Makayla Senesi*, Luis Tornes*, Sophie Edelman BS[1,2], Sabrina Cassarino BS[1,2], Dimitri Luzincourt MA[1,2], Nicole R. Nugent PhD[2,1,3]

*indicates shared first-authorship and affiliation with Project DREAMS Youth Advisory Board

[1] Pediatric Emergency Medicine, Rhode Island Hospital
[2] Department of Psychiatry and Human Behavior, Warren Alpert Medical School of Brown University
[3] Department of Pediatrics, Rhode Island Hospital

Characters: 3214 / 4000 limit

Abstract: Among adolescents, sleep disturbance contributes to emotion dysregulation, which increases risk for psychopathology and suicidal thoughts and behaviors (STB).[1] In the digital age, adolescent social words span both online and in-person domains. However, the role of online social messaging (OSM; e.g., texting, Instagram, etc.) as it relates to adolescents' disrupted sleep, emotion regulation, and STB is not yet well understood. Wearable technology and ecological momentary assessment (EMA) are useful methods for addressing these research questions; several studies highlight the benefits of guidance from a Youth Advisory Board (YAB). The current study reports on the ways in which the Project DREAMS YAB shaped an EMA protocol to assess adolescents' sleep, social media use, and STB. Youth advisors (N=11; *M* age: 16.7 years (*SD*=.84)), grades 10-12; 8 girls, 2 boys, 1 non-binary advisor; 6 White/Caucasian, 5 Hispanic/Latine, 4 Asian, Black/African-American, or another ethnoracial identity advisors) were compensated for their service on the board, including the current study. Advisors trialed a draft protocol via the mEMA app as if they were study participants (i.e., four brief assessments per day for 14 days). Youth advisors provided feedback via a collaborative online document, free-response boxes embedded in the mEMA app, and in group discussions. Major points of feedback related to survey timing and response windows, directions, compensation, user interface, and reminder prompts. In response, adjustments were made to each of these components of the survey protocol. These changes included re-naming each type of assessment for clarity (i.e., scheduled survey vs. self-initiated report when an event occurs), embedding troubleshooting and resource guides into the app for ease of access, increasing flexibility in morning surveys, bolstering reminders prompts from study research assistants, and creating a sensitive protocol for contacting participants when they miss multiple surveys in a row. Findings highlight the major changes to practical and user-interpretive aspects of the current EMA study that will lead to higher quality data. Regarding limitations, YAB perspectives may not fully represent all youth participants, and there were some aspects of the current study that were not able to be changed (e.g., basic functionality of the app, surveys validated for NIH data sharing). Notwithstanding, Project DREAMS' EMA protocol was strengthened by YAB input. Researchers should continue to consider how to make research tools easy for participants to use in their contexts and the importance of human research assistants in facilitating an app-based protocol. Collaborating with youth advisors on research questions, methods, and data interpretation improves the quality of psychological science.

Deep Learning-Based Classification of Small Subcortical Infarcts by Etiology using Convolutional Neural Networks (CNNs)

Milidu Jayaweera B.S., Eric Goldstein M.D.

Small subcortical infarcts (SSIs) are a type of ischemic stroke that is caused by a blockage of a small blood vessel in the brain. While there are many causes of SSIs, differentiating the cause of these types of infarcts based on radiographic features has not been robustly established. In this study, we propose a compact CNN-based deep learning model which classifies SSI patient MRI scans by etiology. A de-identified dataset of 61 SSI patients MRI scans was constructed and categorized by etiology: lacunar stroke, branch atheromatous disease or microembolic.

A convolutional neural network with three convolutional-pooling blocks followed by a fully connected classification layer was implemented. The model comprised approximately 3.7 million trainable parameters and was trained using the Adam optimizer.

Our study demonstrates the feasibility of CNN-based classification in clinical imaging tasks, achieving 75% validation accuracy and perfect precision with no false-positive predictions. While sensitivity was moderate (67%), this performance profile suggests potential utility as an assistive tool for clinicians seeking to inform diagnosis or treatment decisions.

The model's ability to classify SSIs by etiology suggests that there may be subtle radiographic features on MRI scans that are indicative of underlying causes, warranting further investigation and validation.

Title: “I absolutely love that idea”: Patient Perspectives on a Tool to Strengthen the Clinical Alliance and Shared Decision-Making in Obstetrics

Authors: Janet A.J. Johnson[1], Melissa Guillen[1], Hanna Qiu[1,3], Natasha A. Sokol[1,2], L.G. Ward[1,2]
1 Center for Behavioral and Preventive Medicine, The Miriam Hospital
2 Department of Psychiatry and Human Behavior, Brown Medical School
3 School of Public Health, Brown University

Background: Pregnancy is an inherently vulnerable experience in a birthing person’s life. For trauma survivors, childbirth can be an especially activating experience. However, obstetric care that is well-rooted in trauma-informed care (TIC) can reduce re-traumatization and empower birthing people by way of increasing informed and shared decision-making. To propagate this, obstetric (OB) providers will need tools to facilitate choice and shared decision-making with patients. This study aims to examine OB patient feedback on development of the Birth Navigator, an adapted version of the “Strategies for Specific Triggers during Childbirth” worksheet.

Methods: In the parent study, OBTIC, we conducted individual in-depth qualitative interviews with 22 obstetric patients (pregnant/postpartum, white women/women of color, with/without trauma). Participants were asked open-ended questions about their feelings on TIC principles and their personal experiences in OB clinical settings. One part of the interview agenda asked participants how they would feel about a modified version of the “Strategies for Specific Triggers during Childbirth” worksheet which prompts patients to consider potentially activating aspects of childbirth, personal meaning of these experiences, and develop coping strategies to manage trauma-related activation. Interviews were transcribed, double-coded, and entered into Nvivo 14. For this study, all 22 patient interviews were available to be queried for the code related to the Birth Navigator. The qualitative data were summarized to identify emerging themes.

Results: In general, all patients in the sample felt that some form of the Birth Navigator would be a helpful tool to review with their providers. Across the data, emerging themes included acceptability, clinical applications, adaptations, helpful/unhelpful components, and barriers/facilitators to implementation. According to these themes, OB patients feel that a tool like the Birth Navigator would increase transparency around birth-related exams and procedures as well as create space for them to have a voice in their care and flexibly think ahead about potential concerns.

Conclusion: If implemented within obstetric care, the Birth Navigator may serve as a tool to strengthen the clinical alliance, facilitate shared decision-making, and empower birthing people.

Piloting a Multidomain, Time-Sensitive Assessment of Food Insecurity to Inform Tailored Comprehensive Lifestyle Interventions for Cardiometabolic Health

Maria Kalantzis, Kayloni Olson

Background: Higher body weight, operationalized as having a BMI ≥25 kg/m², is highly prevalent in the United States and associated with elevated cardiometabolic disease (CMD) risk. Comprehensive lifestyle interventions (CLIs) improve CMD outcomes through dietary, physical activity, and behavioral strategies, and growing evidence indicates benefits can occur independent of weight change. These 'weight-neutral' (WN) approaches therefore emphasize sustainable health behaviors supported by additional components such as mindful eating, body appreciation, and physical activity enjoyment. However, successful behavior change depends on access to resources needed to implement recommendations. Food insecurity (FI), defined as the inconsistent access to safe, nutritious, and culturally appropriate food, is a structural barrier that may disrupt treatment engagement or the ability to benefit from WN components. Despite this relevance, FI is typically assessed in CLIs as a static construct, overlooking its multidimensional and time-varying nature across food availability, access, utilization, and stability. **Objective:** The goal of this study is to pilot a novel multidomain, time-sensitive FI assessment embedded within an ongoing NIH-funded WN comprehensive lifestyle intervention trial (R03DK140291). Aims are to: (1) examine feasibility and acceptability of repeated FI assessment; (2) evaluate associations between baseline and time-varying FI and treatment engagement and satisfaction; and (3) explore whether within-person FI variability moderates change in key WN treatment mechanisms.
Methods: Participants are enrolled in a 12-week remotely delivered group-based WN CLI designed to improve cardiometabolic health among adults with higher body weight and cardiometabolic risk (target N=50). Participants are randomized to one of five potential conditions. A core condition focused on Mediterranean-style eating and Physical Activity Guidelines for Americans, or the core condition combined with two or more WN components focused on mindful eating, body appreciation, and enjoyment-focused physical activity promotion. FI is assessed using a brief 12-item multidomain instrument adapted from the USDA Food Security Module, Food Insecurity Experience Scale (FIES), FAO food environment indicators, and Household Dietary Diversity frameworks. Items assess behavioral FI (stability), food access and availability, and food utilization (dietary adequacy and food preparation capacity). Participants report experiences over the prior two weeks using a 4-point scale (Rarely–Always). Domain-specific and composite scores permit global and within-person longitudinal analyses. Assessments occur at baseline, week 4, week 8, week 12 and require ~3–4 minutes.
Preliminary Data: Data collection is ongoing, so preliminary data are presented. As of February 2026, baseline data are available from two cohorts (N=15; cohort 1 n=10; cohort 2 n=5).
Participants have a mean age of 53.3 years (range: 42–62), 80% identify as female, and 40% identify as racial/ethnic minority (60% Non-Hispanic White). One participant (6.7%) reported Supplemental Nutrition Assistance Program (SNAP) participation. Across the pooled sample, participants reported low behavioral FI (M=1.14, SD=0.63), moderate food access/availability (M=2.29, SD=0.92), moderate nutritional adequacy (M=2.71, SD=0.64), and high food preparation capacity (M=2.89, SD=0.58). Enrollment and repeated FI assessment are ongoing, all available data will be presented at MBRD.
Impact: Embedding multidomain, time-sensitive FI assessment within a behavioral intervention advances FI measurement beyond static classifications and enables examination of how structural resource constraints influence engagement and mechanisms of behavior change. Findings will inform adaptive, equity-focused CLIs and future precision behavioral interventions targeting CMD risk.

Aleksandr Karnick, PhD, MPH

Missing Data in Intensive Longitudinal Suicide Research: A Monte Carlo simulation study

Background: Ecological momentary assessment (EMA) studies are increasingly used to study the dynamic psychological processes that underlie affect and suicidal ideation (SI). Although these provide a promising directly for modeling those relationships, they often include substantial missing data and use estimators that rely on data being missing completely at random (MCAR) or missing at random (MAR) as underlying assumptions. However, missing data may be driven by systematic relationships between these psychological processes and disengagement.

Methods: We conducted a Monte Carlo simulation study evaluating six estimators of the marginal mean of SI. We generated realistic EMA data under a 4 x 3 x 2 factorial design varying missingness mechanism (MCAR, MAR, missing not at random [MNAR] driven by momentary symptoms, MNAR driven by latent disengagement states), target compliance (40%, 60%, 80%), and study complexity (standard vs. volatility-dependent missingness). Each condition comprised 500 replications of a 21-day EMA protocol with *N* = 300 participants completing 4 prompts per day. Estimator performance was evaluated via bias, root mean standard error, and empirical confidence interval coverage relative to the actual ground truth estimand.

Results: Under MCAR, all estimators exhibited negligible bias, low RMSE, and near-complete coverage. Under MAR, bias remained modest, but coverage degraded at lower compliance, particularly under the complex study type. Under both MNAR mechanisms, all estimators, including doubly robust approaches, exhibited substantial negative bias (~20-65% underestimation of SI), inflated RMSE, and near-zero empirical coverage, even under high (80%) compliance.

Conclusions: Conventional missing data estimators may fail to recover valid inferences regarding sample prevalence when compliance is dependent on latent and temporally emergent psychological processes. Even under high compliance with doubly-robust estimators, inferences may be biased under realistic symptom-dependent missingness.

Title: Childhood Emotional Abuse and Positive Coping Skills: Examining the Role of Adult Sexual Violence as a Moderator

Authors: Isabella G. Kessimian [1], Alexis A. Adams-Clark, Ph.D. [2], Lucy W. Naughton, B.A. [1], Prachi H. Bhuptani, Ph.D. [1], Jennifer Johnson, Ph.D. [3], Caron Zlotnick, Ph.D. [4], Lindsay M. Orchowski, Ph.D [2].
Affiliations: [1] Rhode Island Hospital, [2] The Warren Alpert Medical School of Brown University, [3] Michigan State University, [4] Women & Infants' Hospital

Introduction: Childhood emotional abuse is widely prevalent and related to multiple negative outcomes including reduced use of positive coping skills (e.g., social support, approach activities) (Nguyen-Feng et al., 2017). A person who experiences childhood emotional abuse is at greater risk of experiencing sexual violence as an adult (Chiu et al., 2014). No research has examined the interaction between childhood emotional abuse and adulthood sexual violence as intersecting contributors to coping in young adulthood; however, it is reasonable to hypothesize that adulthood experiences of sexual violence will exacerbate the negative association between childhood emotional abuse and engagement in proactive coping behavior.

Methods: A sample of 511 college women ages 18-24, enrolled in Massachusetts or Rhode Island universities, were recruited to complete an online survey through social media and flyers. The majority of participants self-identified as White (n = 380; 74.3%), and 43.4% were heterosexual (n = 222). Participants completed the emotional abuse subscale of the Childhood Trauma Questionnaire (Hagborg et al., 2022), the Sexual Experiences Survey (Koss et al., 2024), and the Coping Scale (Hamby et al., 2015).

Results: Pearson's r correlation coefficients indicated indicated a significant positive correlation between sexual assault total score and childhood emotional abuse, $r = .31$, $p < .001$. Positive coping was significantly related to childhood emotional abuse, $r = .-16$, $p < .001$, but not adulthood sexual assault $r = .01$, $p = .820$. To test the moderation hypothesis that adult sexual assault would moderate the relationship between childhood emotional abuse and positive coping, we used OLS regression in two steps with centered predictors. In step 1, sexual assault and childhood emotional abuse were entered as independent variables predicting positive coping. Childhood emotional abuse was a significant predictor, $B = -0.23$, $t(507) = -3.83$, $p < .001$, indicating that higher levels of childhood emotional abuse were associated with lower positive coping when controlling for sexual assault. Sexual assault was not a significant independent predictor, $B = 0.10$, $t(507) = 1.42$, $p = .16$. This model accounted for 2.8% of the variance in positive coping, $F(2, 507) = 7.30$, $p < .05$. In step 2, the interaction term between sexual assault and childhood emotional abuse was added $B = -0.003$, $t(506) = -0.30$, $p = .77$, $\Delta R^2 = .0002$, indicating that adult sexual assault did not moderate the relationship between childhood emotional abuse and engagement in positive coping.

Discussion: Results indicate that positive coping was inversely related to childhood emotional abuse, yet adulthood sexual violence did not intensify this association. These findings highlight the importance of childhood experiences in the development of coping skills, consistent with development and trauma-informed frameworks. Childhood experiences of emotional abuse appear to have a lasting impact on how individuals manage stress and employ coping strategies. However, adult sexual violence was not significantly related to positive coping skills, nor did it moderate the relationship between childhood emotional abuse and positive coping. The maturation of coping strategies over time may partially explain the findings; it is possible that while coping skills are developed in childhood, they become stable or shift in adulthood. Another possible explanation could be that adult sexual violence manifests as emotional and psychological distress rather than general positive coping behaviors. This aligns with the evidence that the primary impacts of adult sexual violence are the development of clinical symptoms or disorders such as PTSD, depression and anxiety. Future studies should replicate these findings in more diverse samples, use a longitudinal design, and examine other types of childhood abuse and maltreatment to better understand the relationship between trauma and coping.

A JUVENILE HOMICIDE ASSOCIATED WITH A LEFT CEREBRAL ARTERIOVENOUS MALFORMATION

Abhilasha Khurana, Natalie Myers; Wade Myers, MD

Abstract: Brain lesions are known to affect cognition, emotions, and behavior, and have been implicated in cases of violence, particularly when involving neural circuits responsible for impulse control, emotional regulation, and judgment. While tumors, traumatic brain injuries, vascular abnormalities, and other types of brain lesions have been associated with psychiatric and behavioral disturbances, cerebral arteriovenous malformations (AVMs) have rarely been linked to psychosis and not with homicidal violence. We present the case of a 14-year-old boy with a large inoperable left parieto-occipital arteriovenous malformation extending into the temporal lobe who developed progressive neuropsychiatric symptoms culminating in psychosis and an explosive and fatal knife attack on neighbors. His developmental course was remarkable for early speech delay, ADHD, oppositional behaviors, emotional dysregulation, severe headaches, and eventual psychotic decompensation characterized by paranoid delusions, disorganized thinking, behavioral disinhibition, and medication nonadherence. Prior to the homicidal event, neuroimaging showed progression of his AVM with cerebral edema, and John developed a Psychotic Disorder due to a Medical Condition (AVM). After arrest, he was found incompetent to stand trial and eventually placed in a state psychiatric facility. In contrast, his twin brother, raised in the same environment, was developmentally typical and psychiatrically healthy. How brain lesions can contribute to violent acts is a complex topic given the multifactorial origins of aggression. This case report, using a developmental approach, illustrates the connection between focal brain pathology, a cerebral AVM, and homicidal violence in a teenage boy. Treatment approaches, rehabilitation efforts, and legal implications are considered.

Safety Behavior Assessment in Psychiatric and Medical Conditions: A Systematic Review and Novel Transdiagnostic Model

Mindy M. Kibbey, Joshua J. Kemp & Samantha G. Farris

False safety behaviors relieve distress by seemingly preventing feared catastrophes but sustain long-term anxiety by maintaining maladaptive threat beliefs. This systematic review aimed to (1) identify validated measures of safety behaviors and briefly summarize the state of psychometric literature; and (2) synthesize information to characterize the conceptualization and assessment of safety behaviors transdiagnostically. PubMed, PsycINFO, Web of Science, and Scopus were searched to identify peer-reviewed psychometric studies of safety behaviors assessments (inclusion: full scale/factor with ≥three items; exclusion: items not safety behaviors or not publicly available in English). Study selection and data extraction (measure titles/description, factor structure, item generation, language of development and translations, number of psychometric studies, and types of testing samples) were conducted via dual independent review. The review included 203 studies of 67 measures, illustrating the importance of safety behaviors across many clinical populations. The safety behavior assessment literature is siloed across psychiatric and medical conditions, with construct validity compromised by lack of a clear conceptual model. A proposed transdiagnostic functional model for assessment of safety behaviors integrates extant theoretical conceptualizations together with transdiagnostic measurement findings from the current review. Future assessment tools designed to identify and track safety behaviors—in the context of any psychiatric or medical diagnosis—might consider these transdiagnostic functional dimensions when generating items. The proposed model also provides a framework for clinicians and experimental researchers to evaluate safety behaviors in terms of their relative magnitude of interference with exposure to corrective safety learning, informing a potential hierarchy for elimination of safety behaviors along the course of exposure treatment.

Age-related differences in Locus Coeruleus integrity and their differential relationships with cognition

Ji-Hyun Kim[1], Xiaoyang Hu[1], Jasmine Ranieri[1], Heidi I L Jacobs[2], Hwamee Oh[1,3]

[1] Department of Psychiatry and Human Behavior, Brown University, Providence, RI, USA

[2] Harvard Medical School, Boston, MA, USA.

[3] Department of Cognitive and Psychological Sciences, Brown University, Providence, RI, USA

The locus coeruleus (LC), a key source of norepinephrine production, plays an essential role in arousal and cognitive functions. Abnormal tau begins to appear in the brain stem, the LC in particular, even in young adulthood long before brain tau and amyloid pathology. To what extent LC integrity affects cognitive performance accounting for age is unknown. In this study, we examined age-related differences in LC integrity and its relationship with cognition in the lifespan sample. A total of 184 cognitively normal adults (122 older (mean age: 68.6±5.61; 78 females) and 62 young (mean age: 24.8±6.38; 40 females)) from Brown Multimodal Imaging of Cognition, Aging, and Alzheimer's Disease (MICAAD) study underwent extensive neuropsychological assessment and a subset of 64 adults completed LC MT-MRI imaging. Principal component (PC) analyses were applied to a set of neuropsychological tests that included standard measures of verbal and visual memory, executive function, language, semantic memory, and working memory. LC intensity was calculated by normalizing the LC signal relative to the pontine tegmentum and five highest intensity voxels from each hemisphere were averaged to compute the left LC, right LC, and mean LC (left LC and right LC combined) intensity values. Multiple regressions were performed to assess the relationships between cognitive score and LC intensity, age group, and their interaction, with sex as a covariate. Across the whole sample, age group-related differences were found in executive function, language, semantic memory and visual memory. LC intensity was significantly higher in older compared to young adults and in the left compared to the right hemisphere across both age groups. For working memory, the relationship between LC intensity and performance differs by age group, such that higher LC intensity is associated with lower working memory performance in young adults, but with higher performance in older adults. While there is an age-related difference in LC intensity, the relationships between LC intensity and cognition are domain-specific and age-group dependent.

Age-related differences in regional activation and functional connectivity patterns during visual perceptual categorization

Ji-Hyun Kim[1], Hwamee Oh[1,2]

[1] Department of Psychiatry and Human Behavior, Brown University, Providence, RI, USA
[2] Department of Cognitive and Psychological Sciences, Brown University, Providence, RI, USA

Advanced age is commonly associated with decline in higher-order cognition such as memory and executive functions supported by frontoparietal control and medial temporal memory networks. Age-related changes in perceptual categorization and their underlying neural correlates, however, remain largely understudied. In this study, we examined whether and how regional activations and functional connectivity across brain regions underlying visual object categorization change with age. Twenty-four healthy young (15 females; mean age = 20.3) and 21 cognitively normal older adults (12 females; mean age = 67.5) performed visual categorization tasks with faces and scenes during an fMRI study in which intact and scrambled images for faces and scenes were presented in separate blocks. We applied general linear models to examine regional activations for categorizing faces and scenes presented as intact or scrambled images. To assess functional connectivity, we applied generalized psychophysiological interaction (gPPI) and Dynamic Causal Modeling (DCM) to evaluate age-related differences in connectivity strength and directionality between independently defined seed regions – face fusiform area (FFA) and place parahippocampal area (PPA) for faces and scenes, respectively – and other brain regions. Behaviorally, lower accuracy and slower response time were found for the scrambled compared to intact conditions and for the scene compared to face conditions (ps < 0.001). Older adults, compared to young adults, showed significantly longer response time to scrambled images (ps < 0.001). Collapsing visual categories, greater frontoparietal activation was found for scrambled than intact images, across age groups. Assessing brain-wide functional connectivity patterns with FFA and PPA revealed greater connectivity between the left FFA and the dorsomedial prefrontal cortex for scrambled than intact faces and increased connectivity between the left PPA and the left superior and right inferior parietal lobes for intact than scrambled scenes. Compared to young adults, older adults additionally showed increased left FFA connectivity with the right inferior frontal cortex for intact than scrambled faces. DCM results revealed directed connection from dorsomedial frontal cortex to FFA and PPA visual association cortices for both scrambled and intact images at different degrees. Our results indicate that neural substrates underlying simple visual perceptual categorization changes with age at the brain-wide connectivity level and these age-related changes may affect higher-order cognition involving visual object information processing.

Title: Examining the Role of Blame, Shame, and Coping Drinking Motives in Alcohol Use Among Sexual Violence Survivors

Authors: Ruby King, Prachi Bhuptani, Lucy Naughton, Elizabeth Mayer, Anna Purcell, Jennifer Johnson, Caron Zlotnick, and Lindsay Orchowski

Objective: Sexual violence survivors report higher rates of alcohol use and higher levels of stigma (i.e., shame, self-blame, and victim blame responses to violence disclosure). However, no study has examined whether specific stigma is associated with alcohol use through coping drinking motives. This study examined stigma is associated with alcohol use (freqency of alcohol use, frequency of binge drinking, and consequences) among survivors of sexual violence.

Methods: Participants were 241 college women, aged 18-24, who had experienced sexual violence and had disclosed their assault. Participants enrolled in Massachusetts or Rhode Island universities were recruited to complete an online survey through social media and flyers. The sample was primarily undergraduate, Caucasian, and non-Hispanic/Latina, with most participants reporting casual or long-term dating relationships. Participants filled out self-report measures assessing history of sexual violence, disclosure, trauma-related shame, self-blame, victim blame responses to violence disclosure, coping drinking motives, and alcohol use (freqency of alcohol use, frequency of binge drinking, and consequences). Path analysis was conducted in mPLUS.

Results: The indirect effect of self-blame on alcohol use and related outcomes was significant via coping drinking motives such that higher levels of self-blame were associated with higher levels of coping drinking motives which in turn were associated with higher alcohol use and related outcomes.

Conclusions: Findings highlight the importance of assessing and intervening on self-blame when working with survivors who engage in increased alcohol use. Future research should use longitudinal data to examine temporal pathways.

Family Communication as an Indicator for Emotion Regulation Difficulties: Understanding Differences in Teen and Parent Perspectives.

__Koestler, D.,__ Doyle, M., Chandra, S., Barker, D., Rizzo, C., & Houck, C.

Emotion regulation (ER) is key to managing risk behaviors among adolescents. Developmental Asset Theory emphasizes the importance of internal assets (e.g., ER skills) and external assets (e.g., supportive home environments) for healthy development (Gomez-Baya et al., 2025). Among these assets, parent-child communication has been linked to youth risk behavior (Li et al., 2023). This study focuses on early adolescent boys, who may be particularly vulnerable to ER difficulties and externalizing behaviors due to gender-specific socialization patterns and lower rates of emotional disclosure (Mascaro et al., 2017). The present study examined whether adolescents' and parents' perceptions of parent-child communication, as well as discrepancies between these perceptions, are associated with ER difficulties in early adolescent boys.

Data were drawn from Project STRONG, a randomized controlled trial that included 180 seventh- and eighth-grade boys (ages 12–14) and their caregivers. At baseline, we examined adolescent-reported communication (PAC), parent-reported communication (PPAC), and a discrepancy variable (PACDIF = PPAC – PAC) as predictors of adolescent emotion regulation difficulties (DERS-SF), controlling for race, ethnicity, and income to mitigate confounding. Parent-adolescent agreement on communication was low (ICC(3,1) = .16, 95% CI [.02, .30], p = .006), supporting the examination of perceptual differences.

Previous results from linear regression analyses showed a moderate-to-strong negative association (β = –.47, p < .001, ΔR^2 =.21), whereby teens who reported better parent-son communication reported fewer ER difficulties. A separate regression using parent-reported communication revealed a weaker but still significant association with adolescent ER (β = –.21, p = .008, ΔR^2 =.04). These findings suggest that adolescent perceptions of communication are more strongly linked to their emotional functioning than parent perceptions. This current study further indicated through regression analyses that greater parent-adolescent differences in perceived communication were associated with greater adolescent ER difficulties and served as a small-to-moderate predictor of adolescent ER difficulties (β = .25, p = .002). Specifically, when parents rated communication more positively than adolescents did, adolescents reported greater ER difficulties. These findings suggest that perceptual misalignment in communication (e.g., parental overestimation) may reflect relational dynamics associated with adolescent ER.

One interpretation is that adolescent perception plays a central role in the link between communication and ER. Adolescents who perceive interactions more negatively than their parents may exhibit heightened emotional sensitivity or negative interpretive bias, which may be associated with greater ER difficulties. In contrast, adolescents who perceive communication more positively than their parents may demonstrate a more adaptive appraisal style, buffering them from emotional dysregulation even in the presence of relational strain. These findings suggest that targeting parent-adolescent communication and prioritizing adolescents' perspectives in prevention programs may improve emotional development during adolescence.

Title: Self-referential styles and youth suicide risk: Toward modifiable treatment targets.

Authors: Anastacia Y. Kudinova[1,2,3], Celia Roberto[1,2,3], Sarah Ryan[1,2], Skyler Recel-Chang [1,2,3] and Frances Maratos[4].

Institutions: [1] Emma Pendleton Bradley Hospital
[2] Department of Psychiatry and Human Behavior, Alpert Medical School of Brown University
[3] COBRE Center for Sleep and Circadian Rhythms in Child and Adolescent Mental Health
[4] University of Derby, UK

Background: Suicide is a major public health concern in youth and the second leading cause of death in the U.S. with a devastating impact on families and communities. Alarmingly, rates of STBs have sharply increased in recent years in adolescents, with approximately 30% of youth nationwide reporting seriously considering suicide in the past year. There was also a marked increase in suicide-related visits to Emergency Departments among youth in the past decade. Maladaptive self-referential processing has been well-described as a risk factor for psychopathology in youth, including suicide. Adolescence is a developmental window for forming self-identity and perceiving one's standing among peers. Self-referential processes, including self-criticism–thinking focused on negative self-evaluations, and self-reassurance–providing support and compassion to oneself, are key in forming one's self-concept and relating to others. Prior research findings suggest the link between elevated self-criticism and mental health problems, including suicidality. Self-reassurance has been found to promote psychological resilience and well-being and is linked to lower SI and fewer suicide attempts in adolescents.

Method: We examined the lifetime history of suicidal thoughts and behavior via the Self-Injurious Thoughts and Behavior Interview (SITBI) in 118 children and adolescents between the ages of 12 and 15 (M=13.5, SD=1.09) recruited across the range of child mental health hospital settings (inpatient, partial hospitalization, outpatient) and the community. Reassured and Hated Self subscales of the Forms of Self-Criticizing/Attacking and Self-Reassuring Scale (FSCRS) were used to index habitual self-reassurance and self-criticism levels.

Results: Over a third (36.1%) of participants reported a lifetime history of at least one attempt. Logistic regression showed that higher self-reassurance was associated with significantly lower odds of a lifetime suicide attempt (OR = 0.92, 95% CI [0.85, 0.98]). Higher levels of self-criticism were associated with significantly greater odds of a lifetime suicide attempt (OR = 1.19, 95% CI [1.11, 1.29]). Marginal effects from logistic regression indicated that a one–standard deviation increase in self-compassion was associated with an 8–13% lower predicted probability of lifetime suicide attempts (95% CIs [−11.9, −4.5] to [−22.6, −2.4], *ps* ≤ .016), with larger effects observed at lower levels of self-reassurance. A one–standard deviation increase in self-criticism was associated with a 19–22% increase in the predicted probability of lifetime suicide attempts (95% CI range: [12.4, 27.2]; *ps* < .001), with larger effects observed at higher levels of self-criticism.

Limitations: The cross-sectional design of this study precluded conclusions about causality or directionality; future longitudinal studies are warranted.

Conclusion: These preliminary findings highlight the potential clinical relevance of assessing and eventually targeting self-criticism and enhancing self-reassurance to reduce suicide risk in children and adolescents.

OCPD Symptoms in Veterans Receiving PTSD Specialty Care

Meghan Kulak, Jennifer Barredo*1,2, Jennifer Barredo, Hannah R. Swearingen, Timothy Y. Mariano, M. Tracie Shea, Benjamin D. Greenberg

Background: Post-traumatic stress disorder (PTSD) is associated with high rates of comorbid personality disorders, including Obsessive compulsive personality disorder (OCPD). Despite this, little is known about how OCPD influences PTSD outcomes. This study examined the association between PTSD severity and OCPD traits in a naturalistic sample of veterans.

Methods: This was a retrospective, cross-sectional analysis of 68 patients seen by a single clinician in a PTSD/Trauma Recovery Services clinic. PTSD severity was measured by the PTSD Checklist (PCL-5) and OCPD traits were measured by the Pathological Obsessive-Compulsive Personality Scale (POPS). Relationships between these two constructs were examined using a Spearman's rank-order correlation.

Results: There was a significant positive correlation between PCL-5 and POPS scores ($Rs = 0.46$, $p < 0.001$). For subjects who did not meet the PTSD threshold score ($PCL < 32$; $n = 14$), there was no correlation between PCL-5 and POPS ($Rs = -0.04$). The OCPD subscales with the strongest associations to the PCL-5 were Emotional Overcontrol ($\rho = 0.45$) and Maladaptive Perfectionism ($\rho = 0.45$).

Conclusions: In this naturalistic sample of Veterans, PTSD severity was significantly associated with OCPD traits. This suggests that OCPD traits have the potential to impact PTSD symptom burden in veterans.

Examining Objective Measures of Sleep in Adolescents with Anxiety and Related Disorders (ARD)

Grace Kupka, Phoebe Muntz, Katherine Renschler, David H Barker, Jared Saletin, Giulia Righi

Introduction: Adolescents diagnosed with anxiety and related disorders (ARD) often report sleep difficulties, including shorter sleep duration (Haugland et al., 2021), and greater sleep disturbances (Ye et al., 2024), and longer sleep onset latency (Yan et al., 2025) compared to their peers. However, studies comparing subjective to objective measures of sleep have found inconsistent results (Alfano et al., 2020; Mazza et al., 2020; Lockey et al., 1999), suggesting that objective measures may capture different components of sleep. To better understand the relationship between sleep and ARD, this analysis examined both accelerometer-derived measures [i.e., total sleep time (TST), sleep efficiency (SE), sleep onset latency (SOL) sleep regularity index (SRI), relative amplitude (RA), and sleep midpoint variability (midpoint SD)] and subjective measures (i.e., sleep-related impairment and disturbance) in relation to clinician-rated illness severity.

Method: Participants (*N* = 55) were adolescents aged 11-18 (*M*(*SD*) = 14.63(1.80), Female = 36) enrolled in a CBT-based partial hospitalization program. A majority (*n* = 35) met criteria for an anxiety disorder, others for OCD only (*n* =13), and a subset for both an anxiety disorder and OCD (*n* = 12). Illness severity was obtained by the Clinician Global Impressions Scale (CGI), completed at baseline and post-treatment. Participants wore an ActigPatch (CPS Inc., Newport, RI) on their dominant triceps for two weeks during the early phases of treatment (*M(SD)* = 11.71(4.13)) and completed the PROMIS Pediatric at baseline and post-treatment, as a part of a larger study. Bivariate correlations were employed to investigate relationships between sleep and illness severity within ARD, and one-way ANOVAs were employed to investigate diagnosis-related group differences in sleep variables.

Results: Within the **anxiety-only** group, higher self-reported sleep disturbance was associated with higher illness severity post-treatment ($p = .022$, $t = 2.42$); the relationship between sleep-related daytime impairment and illness severity was not significant ($p = .115$). In addition, there was a trending negative relationship between RA and illness severity post-treatment, such that lower RA—indicative of poorer circadian alignment—was associated with higher severity ($p = .079$, $t = -2.02$). There were no other significant associations between illness severity and objective sleep measures. Results from one-way ANOVAs indicated significant group differences in TST, TIB, and SE between groups (*Fs*(3, 37) = 2.95–3.94, *ps* = .045–.016). Post-hoc Tukey tests revealed that the **anxiety-only** group had significantly higher TST, TIB and SE than those **without anxiety or OCD** (*ps* = .031, .014, .009, respectively). Similarly, the **OCD only** grouped had significantly higher TIB and SE compared to those **without anxiety or OCD** (*ps* = .029, .023), and a trending effect for TST in the same direction ($p = .084$). No other significant group differences were observed.

Discussion: Results indicate that circadian alignment during treatment may influence reductions in illness severity in adolescents with ARD. Increased sleep duration and efficiency observed in adolescents with ARD compared to their peers may be reflective of hypersomnia, though future research is needed to clarify this relationship. Importantly, this sample did not include healthy controls and most participants presented with high severity of illness. Further, as this study cannot establish causality, we do not know whether differences in RA were driving reductions in illness severity. Future work should compare objective sleep measures in ARD to healthy controls and investigate beliefs about sleep to better understand discrepancies between self-report and objective sleep in this population.

Interactions between hippocampus and cortex during replay facilitates reward predictive state abstractions

Y. Lagisetty, M. J. Frank

1 Abstract

Humans flexibly generalize knowledge across contexts. An experienced violinist, for example, can quickly learn to play a song on the viola with little practice despite differences in the strings and finger positioning. While this *deep transfer* is a hallmark of human learning, the underlying neural mechanisms remain poorly understood. Reward-predictive abstractions (RPAs) may offer a computational strategy that supports *deep transfer*. RPAs compress the state space of a task into lower-dimensional representations which combines states that share similar transition and reward functions. Here, we test the hypothesis that RPAs can be facilitated by offline hippocampal–cortical replay during sleep. We propose that if offline replay events were to be sequentially sampled from regions of state space that are similar to one another with respect to reward or feature, then the highly pattern-separated representations of the hippocampus may drive RPA formation in the cortex. To test this hypothesis, we build on an established model of autonomous hippocampal–cortical replay during sleep and extend it by biasing the replay sampling toward a targeted subset of experiences sharing a specific feature. We find that biased replay produces a selective increase in cortical representational similarity among items sharing the replayed feature, while items without the replayed feature show little or no corresponding increase. Critically, this feature-specific effect depends on the learning rule composed of a strong error-driven component and a weaker Hebbian component. Interestingly, it cannot be reproduced by a purely error driven or purely Hebbian learning rule. Together, these results suggest that biased hippocampal–cortical replay provides a mechanistic substrate for learning reward-predictive abstractions and contributing to generalization. Ongoing work will test whether feature conditioned biasing enhances transfer across contexts and will extend the model into more traditional reinforcement learning paradigms.

Preliminary Evidence of a Lifestyle Physical Activity Intervention: Improving Sleep Outcomes in Women with Depression and Alcohol Use Disorder

Authors: [1]Katherine A. Landino, [1,2]Morganne A. Kraines, [1,2]Gemma Wallace, [3]Julia Browne, [1]Eleanor Amer, [1,2,4]Cynthia Battle, & [1,2]Ana M. Abrantes

[1]Butler Hospital, [2]Alpert Medical School of Brown University, [3]Boston Medical Center, [4]Women and Infants Hospital

Background: Research suggests that sleep is an important variable that is negatively impacted in both depression and alcohol use disorder. Physical activity has been shown to improve sleep outcomes in the general population. Most previous research has examined the role of structured physical activity programs' (i.e., scheduled and structured classes, gym attendance, etc.) effects on sleep. Lifestyle physical activity interventions (LPA) address barriers of structured activity by emphasizing accessibility and flexibility with the goal of integrating brief bouts of activity into the context of one's daily life. This study aimed to examine whether there were effects on sleep impairment, disturbance, and quality, in women with depression and alcohol use disorder who participated in a randomized controlled trial of a 12-week program of LPA+FitBit vs. Health Education (HE). We hypothesized that sleep variables would be improved from BL to follow up (12-weeks) in the LPA+FitBit condition. We also examined whether changes in physical activity were associated with changes in sleep over time across the two groups.

Methods: Fifty women (M_{age}=40.88, *SD*=12.03) with Alcohol Use Disorder and elevated symptoms of depression (PHQ-9 *M*=13.56, *SD*= 4.27*)* completed a 12-week intervention of LPA+FitBit vs. HE. At baseline and 3-months, participants completed measures of sleep impairment, sleep disturbance, sleep quality (PROMIS Sleep Inventory), and average physical activity per week for the past three months (AllPA=all physical activity).

Results: At 3-month follow-up, participants who received LPA+FitBit had higher sleep quality (Cohen's *d*=.56) and lower sleep impairment (*d*=.81) and sleep disturbance (*d*=.83) compared to the HE group. The LPA+FitBit group also evidenced larger reductions in sleep impairment (*d*=.42) and disturbance (*d*=.31) between baseline and follow-up. Further, larger increases in AllPA between baseline and 3-month follow-up were associated with larger improvements in sleep quality (AllPA *d*= .26), impairment (AllPA *d*=.31) and disturbance (AllPA *d*=.69).

Discussion: Results provide encouraging preliminary evidence that LPA, in the context of depression and alcohol use disorder, may improve sleep quality, sleep impairment, and sleep disturbance. Increases in physical activity were associated with improved sleep outcomes. It is possible that improved sleep via LPA could contribute to increased abstinence rates and decreased depression symptoms. A fully powered trial with objective sleep data should be conducted to further explore the role of LPA in improving sleep outcomes in this population.

TITLE: Psychosocial Stressors Precipitating Psychiatric Rehospitalization: A Chart Review Study

AUTHORS: Jill Laquidara, Tyffani Monford, Jillian Hack, Sarah Hope Lincoln

BACKGROUND: Inpatient psychiatric hospitalization ideally helps an individual stabilize, return to their community, and remain stable outside the hospital for as long as possible. Research is needed to identify factors associated with inpatient readmission, specifically modifiable factors (variables that are at least partially amenable to intervention). A particularly important factor to address includes significant psychosocial stressors contributing to readmission. Ideally, those stressors can be addressed on an outpatient basis, reducing readmission risk overall. It is important to first identify those stressors contributing to readmission risk.

METHOD: The present exploratory aim was conducted as part of a larger retrospective chart review study and includes electronic medical records for $N = 49$ adults. Subjects were adult psychiatric patients receiving inpatient hospitalization at a community hospital in Cleveland, Ohio at least 2 times within 6 months. Target variables included stressors reported at the time of readmission, as recorded by each patient's admitting psychiatrist within the "Psychosocial and Contextual Factors" section of the psychiatric admission note. Content analysis was conducted through an iterative process with 2 coders, to describe the social and environmental stressors contained within the dataset. Additionally, we tested for differences in length of time out of the hospital before readmission between individuals with versus without each stressor category endorsed.

RESULTS: Six main stressor categories were identified: Interpersonal problems, financial problems, job and education problems, housing problems, legal problems, and health related stressors. Percentage of the sample with each main stressor category endorsed includes: Interpersonal problems (34.7%), financial problems (6.12%), job and education problems (16.33%), housing problems (55.1%), legal problems (16.33%), and health related stressors (53.06%). Two of those categories (interpersonal problems and health related stressors) contained subcategories within them which provide further clarification of the stressors experienced by subjects before readmission. There were no significant differences in time to readmission between individuals who had versus did not have each stressor category listed in their readmission note ($p > .05$).

IMPLICATIONS: Psychiatric hospitalization, particularly when it occurs repeatedly, often does not result from mental health symptoms alone. Psychosocial stressors contribute to an individual's vulnerability to psychiatric decompensation. Results of the present study highlight some particularly common stressors which might play a role, including housing problems, interpersonal problems, and health related stressors. Future research and clinical efforts should aim to understand how these stressors can be addressed on an outpatient basis, and testing whether addressing these stressors reduces the need for repeated psychiatric readmission, which can be costly on both a personal and systemic level. Complexities of working with chart review data and considerations in data analysis will also be discussed.

Investigating Heart Rate as a Physiological Measure of Stressor Controllability and Mental Effort Allocation

Gillian LeBlanc[1], MS; Tony El Nemer[2]; Steven Rasmussen, MD[1,3]; Amitai Shenhav, PhD[4,5], Debbie Yee, PhD[1,2]
[1]*Carney Institute for Brain Sciences, Brown University*
[2]*Cognitive and Psychological Sciences Department, Brown University*
[3]*Psychiatry and Human Behavior Department, Brown University*
[4]*Psychology Department, UC Berkeley*
[5]*Helen Willis Neuroscience Institute, UC Berkeley*

Stressor controllability is a key factor in task performance and influences one's ability to engage in adaptive cognitive control while enduring sustained stress[1,2,3]. However, how the physiological and psychological mechanisms of stress interact to shape adaptive allocation of mental effort remains an outstanding question. We recently developed a novel self-paced rule-guided rotation task (e.g., correct responses are based on stimulus color and orientation) across task conditions varying the controllability, contingency, and predictability of mild electric shocks. We utilize electrocardiogram (ECG) measurements acquired during the stressor controllability task to evaluate the relationship between physiological indicators of stress (e.g., heart rate) and contextual features of shock administration (e.g., controllability, predictability). To quantify the physiological basis of stress, we developed a pipeline that processes ECG data using a mix of an existing package[4] and custom code. Specifically, we examined heart rate (HR) and heart rate variability (HRV; indexed by RMSSD) across conditions in both a behavioral study (Study 1; N=47) and a pharmacology study (Study 2; N=33). This preliminary analysis compares each stressor condition to baseline (no shocks), as well as the *contingency* of controllable stressors (e.g., working to escape from ongoing shocks vs. avoidance shocks for mistakes), and the *predictability* of uncontrollable stressors (predictable vs. random shocks).

Study 1 (Behavioral). We did not observe any differences in HRV between baseline and any task condition, nor between stressor conditions (all corrected p's=1.0). In contrast, HR was significantly lower for predictable uncontrollable stressors t(46)=3.48, p=0.007, d=0.51), random uncontrollable stressors (t(46)=5.31, p<0.0001, d=0.77), as well as escapable controllable stressors (t(46)=4.89, p<0.0001, d=0.71). When comparing the controllable stressor conditions, we observed differentiation in HR with higher HR when working to avoid shocks vs. working to escape from ongoing shock (t(46)=3.57, p=0.005, d=0.52). Conversely, distinct uncontrollable stressor conditions were also modulated by predictability, with lower HR for random vs. predictable shocks (t(46)=2.94, p=0.031, d=0.43).

Study 2 (Pharmacology). HRV was significantly higher for random uncontrollable stressors relative to baseline (t(32)=3.32, p=0.014, d=0.58). We did not observe any significant differences in HRV between stressor conditions. Finally, we did not observe any differences in HR between conditions, with the caveat that these data are agnostic to drug manipulation (20 mg escitalopram), which potentially impacts heart rate measures.

Ongoing analyses of heart rate measures will evaluate the putative modulatory role of stressors on autonomic flexibility. Future work will extend these lab-based findings to real-world settings by comparing task-based HR and HRV measures with continuous biometric data collected via Oura Ring, enabling a multimodal examination of how stressor controllability shapes the physiological and cognitive basis of mental effort allocation.

1. Ligneul, R., Mainen, Z. F., Ly, V., & Cools, R. (2022). Stress-sensitive inference of task controllability. *Nature Human Behaviour*, *6*(6), 812–822. https://doi.org/10.1038/s41562-022-01306-w
2. Limbachia, C., Morrow, K., Khibovska, A., Meyer, C., Padmala, S., & Pessoa, L. (2021). Controllability over stressor decreases responses in key threat-related brain areas. *Communications Biology*, *4*(1). https://doi.org/10.1038/s42003-020-01537-5
3. Yee, D. M., Leng, X., Shenhav, A., & Braver, T. S. (2022). Aversive motivation and cognitive control. In *Neuroscience and Biobehavioral Reviews* (Vol. 133). Elsevier Ltd. https://doi.org/10.1016/j.neubiorev.2021.12.016
4. Kirk, P. A., Bryan, A. D., Garfinkel, S. N., & Robinson, O. J. (2022). RapidHRV: an open-source toolbox for extracting heart rate and heart rate variability. *PeerJ*. https://doi.org/10.7717/peerj.13147

Impact of Medication Regimen on Outcomes in Tms Treatment: A Retrospective Bayesian Approach

Brandon J. Lew, Eric Tirrell, Linda Carpenter

Background: Transcranial Magnetic Stimulation (TMS) for Major Depressive Disorder (MDD) is often administered while patients remain on stable psychotropic regimens. Prior research suggests that some medication classes may enhance (e.g., stimulants) or attenuate (e.g., benzodiazepines) the antidepressant effects of TMS, though existing naturalistic studies have been few and limited by small samples. This study examined whether specific classes of psychotropic medications are associated with differences in clinical response to TMS for MDD.

Methods: We analyzed de-identified data from 889 TMS treatment series (695 unique patients) from an outpatient clinic. Concomitant psychotropic medications were categorized into 18 pharmacological classes. The primary outcome was percent change in PHQ-9 total score ($PHQ9_{\%CHG}$) . Bayesian multiple linear regression was used to evaluate the influence of each medication class on symptom improvement, allowing estimation of evidence either supporting or refuting the null hypothesis.

Results: No medication class showed strong evidence of an association with $PHQ9_{\%CHG}$ ($BF_{10}>3$). Most classes demonstrated evidence in favor of the null hypothesis, with many showing strong support ($BF_{10}<0.3$) indicating no meaningful effect of medication class on TMS-related antidepressant outcomes.

Conclusion: These findings suggest that psychotropic medication class does not significantly influence response to TMS for MDD. Continuing patients' existing medication regimens during TMS appears clinically reasonable and consistent with current practice.

Neural representations are separable under altered geometric contexts

Ruixiang Li, Shane Allcroft, Andrew Dempsey, Alexandra Acosta, Bayardo Lacayo, Lucille Panagos, Carlos Vargas-Irwin, Leigh Hochberg

Abstract

Cursor control has long served as a benchmark task for evaluating the performance of intracortical brain-computer interfaces (iBCIs) which support assistive technologies for individuals with impaired motor or communication capabilities. Over the past two decades, reliable closed loop cursor control has been consistently achieved by linear decoders such as linear regression and Kalman filters. However, nearly all known cursor control tasks involve cursor movement confined to a 2D plane. This conventional design might conflate neural representations of the intrinsic movement of the cursor together with the background geometric context — an important consideration for future applications in non-Euclidean environments. In this study, we investigated whether dissociating intrinsic cursor movements from the ambient geometric context reveals distinct neuralencoding patterns. To do so, we designed a novel cursor control paradigm in which both the cursor and targets were constrained to the surface of a hidden 3D sphere. The visual display remained similar to that of a standard radial-8 cursor task, and participants were unaware of the altered geometric context. The task required participants to move the cursor along geodesics connecting sequential targets, which—due to the designed positions of targets—coincided with cardinal directions (up, down) rather than oblique ones. Neural data were recorded from two participants (T11 and T18) enrolled in the BrainGate2 pilot clinical trial (NCT00912041). A Kalman filter was calibrated using data from the standard radial-8 task and then directly applied for closed-loop control in the cursor-on-the-sphere task. To assess changes in neural representation, we trained a support vector machine (SVM) classifier on neural activities corresponding to “direct” movements in both task types. The classifier achieved an average accuracy of 94.89% across task types, and 94.54% when evaluated separately for each of the two cardinal directions. These results suggest that the altered game visual and underlying geometric context—despite being visually hidden—elicits a measurable shift in neural encoding. This points to the presence of a motor component modulated by the spatial structure. Future work will examine how making the sphere explicitly visible further influences the neural encoding of ambient geometry and its interaction with intrinsic movement representations.

Genetic perturbation underlying a novel autosomal recessive intellectual disability syndrome disrupts progenitor mitosis and cortical neurogenesis

Zhangshen (Johnson) Li, Li Ma, Qing Wu, Hasib Aamir Riaz, Michael Schmidt, Morgan Fleishman, Eric M. Morrow

Abstract

In this study, we investigate the role of a novel gene associated with autosomal recessive intellectual disability (ARID) in brain development. We define the in vivo function of this multifunctional scaffolding protein during neocortical development using a mouse model generated by introducing a patient-derived nonsense mutation. We show that the mutation is a null allele. This mouse model of ARID exhibits neonatal lethality, reduced brain size, and thinning of the cerebral cortex. Histological analyses of neonatal and embryonic brains revealed a marked reduction in neural progenitor populations, accompanied by decreased neuronal density in the developing cortex. These abnormalities arise from defects in cortical progenitor proliferation, including delayed mitotic progression and accumulation of DNA damage, leading to altered cell fate decisions and premature loss of progenitor expansion capacity during early corticogenesis. Together, our findings demonstrate a cellular and neurodevelopmental basis underlying disease-associated brain malformation, providing insights into the pathogenesis of ARID.

Early Life Stress and Left Amygdala Activation During Peer Rejection vs. Acceptance in Female Adolescents

Michael T. Liuzzi, M.A.[1,2], Michelle Morningstar, Ph.D.[3], Chrystal Vergara-Lopez, Ph.D.[1,2],
Margaret H. Bublitz, Ph.D.[1], Sharon Y. Lee, Ph.D.[1,2], Laura R. Stroud, Ph.D.[1, 2]

[1]Department of Psychiatry and Human Behavior, Warren Alpert Medical School, Brown University, Providence, RI, USA
[2]Center for Behavioral and Preventitve Medicine, The Miriam Hospital, Providence, RI, USA
[3]Department of Psychology & Centre for Neuroscience Studies, Queen's University, Kingston, ON, Canada

Background: Early life stress (ELS) is a strong predictor of future psychopathology across the lifespan. In the context of peer rejection, increased ELS is associated with increased feelings of exclusion and frustration. Neuroimaging techniques, such as functional magnetic resonance imaging (fMRI), allow for the exploration of these relationships on a neurobiological level. For example, prior literature has found relationships between early life stress and amygdala reactivity and connectivity (e.g., reduced activation related to social exclusion). The present study investigated the relationship between early life stress and bilateral amygdala activation during peer rejection vs. acceptance.

Method: Participants were 76 female adolescents ($M_{\text{age}} = 13.41$). Early life stress was measured using an adapted version of the Psychosocial Schedule (PSS) for School Age Children. Participants underwent functional magnetic resonance imaging (fMRI) and completed the Chatroom-Interact task designed to elicit feelings of rejection and acceptance from fictitious peers. fMRI data were preprocessed and analyzed using Analysis of Functional NeuroImages (AFNI), and region-of-interest (bilateral amygdala) activation analyses were exported. The relationship between early life stress and left and right amygdala activation was analyzed via linear regression models in SPSS.

Results: Results indicated that early life stress was associated with left, but not right, amygdala activity ($B = -0.007$, $SE = 0.004$, $t(72) = -2.062$, $p = 0.043$). Specifically, increased experiences of early life stress were associated with greater amygdala activity in social rejection relative to social acceptance. This relationship was not observed in analyses with the right amygdala. All analyses controlled for age.

Discussion: The present findings suggest that early life stress is associated with heightened left amygdala sensitivity to peer rejection in adolescence. This relationship may reflect differences in neural sensitivity to social threat. Prior literature also suggests potential functional differences between the left and right amygdala in social threat; however, additional analyses and studies are needed to further elucidate these patterns.

Title: Mental Health Literacy and Associated Factors for Caregivers of Youth with Suicidal and non-Suicidal Self-Injurious Behavior Discharged from the Emergency Department

Authors: Adrian Lopez, BS[1]
Mary Kathryn Cancilliere, PhD[1,2]

Author Affiliation: [1]Rhode Island Hospital, Brown University Health
[2]Alpert Medical School of Brown University

Emergency department (ED) visits for youth with suicidal and non-suicidal self-injurious behavior (SSIB) have continued to rise, with national trends nearly doubling. Suicide is one of the leading causes of death for youth ages 10-18 years in the United States. For caregivers (i.e., parents, legal guardians) of youth with SSIB, mental health literacy is important in the care of their child. Mental health literacy is defined as the knowledge of how to prevent mental disorders, of when a disorder is developing, of available treatments and help-seeking options, of effective self-help strategies for milder problems, and of first aid skills to support others who are developing a mental disorder or are in a mental health crisis. When a caregiver has limited mental health literacy, it can act as a barrier to youth with SSIB mental health treatment, as well as lead to disparities in the utilization of youth mental health services. To explore these disparities, this study examines factors that may be related to caregiver mental health literacy, including a caregiver's combined annual household income, highest level of education, sex, race, and Hispanic vs. non-Hispanic ethnicity. This current pilot study consists of 63 caregiver participants (Biological parent: 89%; Female: 90%) of youth discharged from a Northeastern Pediatric ED with non-acute SSIB. Caregivers completed in the ED a self-report demographics measure as well as the Mental Health Literacy Scale (MHLS) to measure their current level of mental health knowledge on symptoms, diagnoses, and services. Caregivers could score a MHLS total score ranging from 35 to 160 with questions on a 4-point scale: 1 = very unlikely/unhelpful to 4 = very likely/helpful; and a 5-point scale: 1 = strongly disagree/definitely unwilling to 5 = strongly agree/definitely willing. Results revealed that caregivers ranged in age from 27 to 63 (M= 41.67, SD= 7.97). Over two-thirds of caregivers identified as White (71.4%), 15.9% were Black, 6.3% multiracial, 3.2% other, and 3.2% preferred not to answer. 22.2% also identified as Hispanic or Latino. For highest level of education, 3.2% of caregivers completed some high school, 11.1% high school, 7.9% a GED, 36.5% some college, 17.5% a 2-year degree, 14.3% a 4-year degree, 7.9% a Master's-level degree, and 1.6% a Doctorate-level degree. In combined yearly household income, 4.8% of caregiver households earned less than \$5,000, 3.2% \$5,000 to \$9,999, 1.6% \$10,000 to \$14,999, 3.2% \$15,000 to \$25,999, 22.2% \$26,000 to \$49,999, 17.5% \$50,000 to \$74,999, 11.1% \$75,000 to \$99,999, 12.7% \$100,000 to \$149,000, 11.1% \$150,000 or more, and 12.7% preferred not to answer. Regression analysis indicated a positive relationship between caregiver reported mental health literacy (MHLS: M= 122.62, SD= 17.05) and their level of education and combined annual household income ($F(2,57) = 7.006$, $p < 0.01$, adjusted $R^2 = .169$). This study provides insight into how caregiver mental health literacy is related to caregiver characteristics including annual household income and level of education. Future studies need to account for these factors and develop targeted caregiver interventions that incorporate mental health literacy to better outcomes for youth with SSIB, as well as explore additional related factors that may explain the remaining variance.

Association Between Working Memory Task Performance and Clinical Symptoms in Adolescents with ADHD

Elena Lynott, Meg Vigne, Chris Legere, Elena Festa, W. Luke Acuff, Eric Tirrell, Richard Jones, Anthony Spirito, Linda Carpenter, Brian Kavanaugh

Affiliations

1 E.P. Bradley Hospital, 1011 Veterans Memorial Parkway, East Providence, RI 02915, USA
2 Department of Psychiatry & Human Behavior, Brown University, Providence, RI, USA
3 Butler Hospital TMS Clinic and Neuromodulation Research Facility, Providence, RI, USA
4 Providence Veteran's Association Medical Center, Center for Neurorestoration and Neurotechnology, Providence, RI, USA
5 Department of Neuroscience, Brown University, Providence, RI, USA
6 Department of Cognitive, Linguistic, and Psychological Sciences, Brown University, Providence, RI, USA

Background: Working memory (WM) deficits are a core component of attention deficit hyperactivity disorder (ADHD), and is often associated with worse ADHD severity. WM can be measured with performance-based and radar-based paradigms, but the relationship between these methods is often limited. The correlation between WM task performance in adolescents with ADHD and clinical symptom presentation over the course of receiving iTBS remains unknown.

Objectives: Examine the relationship between task performance and clinical symptoms in adolescents with ADHD as part of a clinical trial.

Methods: 29 adolescents (12-18 years old) with ADHD completed the Sternberg spatial working memory task (SWMT) repeatedly (up to eight administrations) as part of their participation in a sham-controlled, double-blind crossover design clinical trial of ten sessions of iTBS to the left DLPFC for ADHD (total participant sessions = 204). We utilized Spearman's rank correlation and partial correlation tests to evaluate SWMT mean accuracy, correct reaction time, and incorrect reaction time in relation to parent-reported ADHD and WM symptom severity across the trial. Statistical significance was evaluated at an alpha level of 0.05 for all two-tailed tests.

Results: Mean accuracy is positively correlated with faster reaction time on correct trials ($r = -0.654$, $p < .001$) and slower reaction time on incorrect trials ($r = 0.554$, $p < .001$). Over the course of the clinical trial, WM and ADHD symptoms improved, but task performance did not. Repeated participant visits are negatively correlated with both WM ($r = -0.178$, $p = 0.01$) and ADHD ($r = -0.157$, $p = 0.03$). Higher WM and ADHD symptoms are both associated with lower accuracy ($r = -0.191$, $p = 0.01$; $r = -0.301$, $p < .001$) and slower reaction time on correct trials ($r = 0.311$, $p < .001$; $r = 0.408$, $p < .001$).

Conclusion: Better WM accuracy is characterized by a faster response time during correct responses and slower response time during incorrect responses, as well as lower clinical symptom severity in adolescents with ADHD.

Title: Parent sleep at 5-6 months postpartum and moment-by-moment responses to infant cues during play: A preliminary analysis

Authors: Gina M. Mason, Ph.D.; Aashritha Sadu, B.S.*; Grace Kupka, B.A.*; Kiara Medeiros, B.S.; Katherine Mitchell; Katherine M. Sharkey, M.D., Ph.D.; Jared M. Saletin, Ph.D.

*Authors contributed equally.

Introduction: Postpartum sleep disturbances are associated with disrupted parenting. While prior studies have linked parent sleep to parenting behavior using composite ratings during parent-infant play, such assessments lack fine-grained information on potentially modifiable behaviors that may be impacted by poor sleep. In contrast, micro-level dyadic analyses quantify the contingency (timing) and content (focus) of parents' moment-by-moment responses, which directly predict infant outcomes. This ongoing study examines relations between parent sleep and these micro-level aspects of dyadic parenting behavior.

Methods: Seven female parents (age=34.6±3.6 years) and the 5-6-month-old infants they gave birth to (age=6.2±0.5 months; 1F) completed a 15-minute video-recorded free-play session following 5-8 nights of actigraph-monitored at-home sleep. Researchers scored 6 minutes (5-7, 9-11, and 13-15) of each session offline, coding infants' visual attention and non-cry vocalizations and parents' verbal/manual actions. Parent contingency was calculated as the percentage of infant vocalizations receiving a parent action within 2sec of offset. Parent response content was quantified as the percentage of contingent actions that were jointly focused (i.e., engaged infants' object of attention). Actigraph-estimated parent sleep variables included mean total sleep time, efficiency (total sleep time/sleep period time [%]), and fragmentation (#wakeups/100-minutes sleep). Partial correlations and regressions controlling for infants' number of vocalizations (mean=30±23, range 7-63) assessed the relations between each sleep variable and parents' contingency and response content.

Results: Parents' mean sleep efficiency ranged from 74.9%-97.0% (mean=86.2%±6.6%), with 42.9% of parents sleeping a mean of <7h/night. Based on 6 dyads with scorable video, parent contingency ranged from 25.6%-85.7% (mean=50.4%±25.7%), and 28.2%±19.6% of parents' contingent actions were jointly focused (range=0%-54.6%). Critically, parents with higher sleep efficiency exhibited significantly more jointly-focused responses (r=.987, p=.002). No other linear relations were significant (all ps>.05), though sleep efficiency also showed a nonlinear relation with parents' overall contingency levels that must be further explored ($\beta_{\text{quadratic-standardized}}$=8.76, t=8.29, p=.014).

Discussion: In this preliminary sample, sleep was associated with the content of micro-level parental responses during free-play: parents with higher sleep efficiency had more jointly-focused contingent responses. Data collection is ongoing. Future analyses will assess whether concordance between parents' and infants' sleep also relates to parent contingent responding.

Support (if any): AASMF 334-BS-24; P20GM139743; R01HD103665

Maternal Childhood Maltreatment Moderates the Impact of Maternal Mental Health on Infant Emotion Regulation

April McCall, Shawn Parra, Lindsay Huffhines, Ronald Seifer & Stephanie Parade
Brown University/E. P. Bradley Hospital

The ability to modulate negative emotions, or emotion regulation (ER), is a pillar of healthy social and emotional development in young children. ER is one of the earliest indicators of infant mental health, and difficulties with ER are associated with a variety of psychiatric disorders. Infants develop ER through caregiving relationships. Although previous research suggests that caregiver mental health is associated with infant ER, prior research in this domain has been limited with inconsistent results. Accumulating evidence demonstrates that caregiver adverse child experiences influence parenting and postpartum emotion processes, but caregiver childhood maltreatment as a moderator of the impact of caregiver mental health on infant ER has not yet been studied. The present study examined maternal depression and posttraumatic stress symptoms at 6 months postpartum as predictors of infant ER at 12 months postpartum, and maternal child maltreatment experience as a moderator of these potential associations.

295 mother-infant dyads participated in this longitudinal study. 42% of mothers were white, 19% Black, 7% multiracial, and 32% other races. 40% were Hispanic. All families were from low-income backgrounds. 53% of infants were female. 49% of mothers reported childhood maltreatment experiences. Mothers reported childhood maltreatment experiences during pregnancy. At 6 months postpartum, mothers reported depressive symptoms and posttraumatic stress symptoms. At 12 months postpartum, mother-infant dyads underwent a 4-minute frustration task in which the infant was presented with an interesting toy locked in a transparent box that they could not open. Video recordings of the task were coded for specific infant ER behaviors including infant visual orienting to the mother, infant approaching the mother, infant cry, and infant self-soothing. Recordings were also coded for maternal sensitivity.

Maternal childhood maltreatment moderated the impact of maternal depression and posttraumatic stress symptoms on infant visual orienting to the mother, infant approaching the mother, and infant cry, but not infant self-soothing. Specifically, maternal depressive symptoms and posttraumatic stress symptoms were negatively associated with infant visually orienting to the mother, ($r=-.21$ and $r=-.27$, both $p<.05$), but only among mothers who experienced childhood maltreatment (interactions significant at $p<.01$). Maternal posttraumatic stress symptoms was negatively correlated with infant approaching the mother, ($r = -.27$, $p < .05$), but again only among mothers who experienced maltreatment (interaction significant at $p<.05$). Lastly, depressive symptoms and posttraumatic stress symptoms were both negatively associated with infant cry ($r=-.34$ and $r=-.35$, both $p=.001$), but only among mothers who experienced maltreatment (interactions significant at $p<.01$). These interactions remained significant when controlling for maternal sensitivity. However, there was no significant relationship between maternal depression or posttraumatic stress symptoms and infant self-soothing.

Results of this longitudinal study underscore the importance of caregiver mental health for the development of ER among infants. Due to the intergenerational impacts of maternal childhood maltreatment, as well as the developmental consequences of postpartum depression and posttraumatic stress, evidence based perinatal mental health supports may be particularly beneficial for families impacted by trauma.

Peer Attitudes and Social Motivations Influence on Drinking-Related Milestones in Autistic Adolescents and Young Adults

Rachel McDonald, Olivia Vezina, Kelli Bradley, Elena Chauhan, Tatyanna Landell, Kristina Jackson, Anthony Spirito, Stephen Sheinkopf

Background. Social factors and peer behaviors are implicated in alcohol use in non-autistic youth, with peer use predicting the onset and progression of alcohol use. Additionally, transitions to new social contexts and life stages (e.g., from high school to college) are also related to increased use in non-autistic people. Alcohol use has been understudied in autistic people. It has often been inferred that autistic youth would be less susceptible to peer influences and expectations of conformity. However, few studies have examined the impact of peer influence and social motivation on alcohol use in autistic youth.

Objectives. The current project examines: 1) motivations for drinking/not drinking in autistic adolescents (12-18) and young adults (19-24), and 2) the relationship between peer attitudes and drinking-related milestones (sip, full drink, drunk, heavy episodic drinking) across age groups.

Methods. Verbally fluent autistic individuals (n = 326) aged 12-24 years (M_{age}=19.37, SD_{age}=3.61, 50% male, 34% gender diverse, 88% White, 13% Hispanic/Latine), reported on their motivations for drinking (Drinking Motives Questionnaire-Revised), reasons for not drinking (RALD Questionnaire), peer tolerance of substance use, peers own substance use, peers participation in deviant behaviors, and their own drinking behaviors.

Results. Drinking was more common in young adults than in adolescents (Table 1). Adolescents reported more reasons for not drinking ($t(313)=7.33$, $p<.001$), the most common being not wanting to lose control and not being old enough. Adults reported more reasons for drinking, including to: be social ($t(319)=-4.73$, $p<.001$), cope ($t(318)=-2.60$, $p<.01$), enhance feelings ($t(321)=-4.87$, $p<.001$), but not to conform ($t(319)=-.41$, $p=.68$). Regressions indicated no predictors were significant for having a sip of alcohol in adolescents (*ps*>.08). In adults, social motivations (ß=.19, $p<.01$) and peer tolerance (ß=.162, $p<.03$) predicted having a first sip of alcohol. Social motives (ß=.45, $p<.01$[Adolescents], ß=.31, $p<.001$[Adults]), peer substance use (ß=.20, $p<.02$ [Adults]), and peer tolerance (ß=.48, $p<.03$ [Adolescents]) predicted having a full drink of alcohol. In adults, social motives (ß=.27, $p<.001$) and peer substance use (ß=.28, $p<.01$) predicted having been drunk, while only social motives predicted binge drinking (ß=.28, $p<.01$).

Conclusion. These findings are the first to provide empirical evidence of the relationship between peer attitudes/social motivations and alcohol use in autistic people. Results suggest that autistic adults engage in more drinking and report more reasons to drink than adolescents. Autistic adolescents in this sample had very low levels of drinking overall, with no adolescents reporting ever being drunk. Across both age groups, peer influences and social motivations influenced alcohol use. Results support similar social motivations for drinking, particularly risky drinking, in autistic youth as non-autistic youth. These new insights into risk factors for alcohol use in autistic young adults suggest that continued study of social risk factors related to unsafe/sustained alcohol use is warranted to determine di^erences between risk for problem use versus normative recreational use of alcohol in autistic youth. Additionally, this work provides informative insights into drinking behaviors in autistic adults, suggesting that psychoeducation and monitoring for changes in drinking behaviors at the provider level may be warranted. However, longitudinal research is needed to determine the trajectory of drinking behaviors and to monitor changes during the transition to adulthood.

Table 1: Percent of autistic adolescents and young adults who endorsed drinking-related milestones

Milestone	**Adolescents**	**Young Adults**
Had a first sip	36.1%	82.6%
Had a full drink	10%	81.1%
Ever been drunk	0%	66%
Had 5+ drinks in 2 hours	0%	40%

THE ROLE OF SLEEP HEALTH IN THE RELATIONS BETWEEN DIET DIVERSITY AND ORAL MICROBIOME DIVERSITY AMONG U.S. ADOLESCENTS AND EMERGING ADULTS

Kiara Medeiros BS[1], *Marie-Rachelle Narcisse, PhD*[2]

[1] Brown University & Bradley Hospital

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

Introduction: The human oral microbiome (OM) is increasingly recognized as a potential biomarker for disease prevention, with greater microbial diversity generally linked to improved systemic health. Diet diversity is a known determinant of OM diversity, and emerging evidence suggests that sleep health may also influence microbiome composition. Adolescents and emerging adults are uniquely vulnerable to insufficient sleep and limited diet diversity. Therefore, we investigated the interplay among diet diversity, OM diversity, and sleep health. We aimed to (1) examine associations between diet diversity and OM diversity among a representative sample of U.S. adolescents and emerging adults, and (2) assess whether sleep health moderated these associations.

Methods: We analyzed data from 1,096 participants aged 16–26 with OM sequencing and 24-hour dietary recall data from the 2011–2012 National Health and Nutrition Examination Survey, linked with the Food Patterns Equivalents Database. The exposure, diet diversity, was measured using the U.S. Healthy Food Diversity (HFD) index. OM alpha-diversity indices—Observed Operational Taxonomic Units (OTU), Faith's Phylogenetic Diversity (FPD), Shannon–Wiener Index (SWI), and Inverse Simpson Index (ISI)—captured richness and evenness. Sleep health indicators included sleep duration, trouble sleeping, and diagnosed sleep disorders. Generalized linear models assessed associations while controlling for key covariates. All descriptive and regression analyses accounted for NHANES' multistage complex survey design.

Results: Participants' mean age was 20.8 years (95% CI: 20.6–21.1), and 50.5% were female. Worse diet diversity (higher inversed HFD scores) was associated with lower OTU ($\beta = -1.48$; 95% CI: –2.68, –0.29; $p = 0.018$) and lower FPD ($\beta = -1.18$; 95% CI: –1.95, –0.40; $p = 0.005$), corresponding to moderate effect sizes (Cohen's $d = -0.65$; 95% CI: –1.07, –0.22 and $d = -0.54$; 95% CI: –0.97, –0.10, respectively). No associations were observed for SWI or ISI. Sleep health indicators did not moderate associations between HFD and OM diversity.

Conclusion: Significant associations were observed only for OM richness indices, suggesting diet diversity may influence the number of taxa present rather than overall evenness. Future research should investigate mechanisms linking diet diversity with OM richness versus evenness and explore interactions involving specific sleep disorder subtypes.

The CAVU Program: Blood Biomarker Changes Reveal Distinct Neurodegenerative Disease-Associated Biotypes

Justin H. Mendiola[1,2,3] & Edward N. Wilson[1,2,3]

[1]Neuroscience, Brown University, Providence, RI
[2]Carney Institute for Brain Science, Brown University, Providence, RI
[3]Brown Center for Alzheimer's Disease Research, Brown University, Providence, RI

Abstract

Aims: Blood biomarkers have revolutionized diagnosis, prognosis, and treatment monitoring in neurodegenerative diseases (NDs). Neuroimaging biomarker modalities, including MRI and PET, often capture clinical ND biotypes that follow predictable neuropathological trajectories. However, whether blood biomarkers show similar patterns is unknown. A predictable, measurable, sequence of blood biomarker changes would offer significantly improved personalized disease staging for prognosis while also providing a sensitive framework by which to monitor treatment response.

Methods: 688 participants spanning the Alzheimer's disease (AD) continuum from cognitively unimpaired (CU), MCI to AD (mean age 71.02 +/- 8.3 years) were drawn from the Stanford ADRC and the Stanford Aging and Memory Study (SAMS). Plasma biomarkers included P-Tau181, P-Tau217, $A\beta_{42}$, $A\beta_{40}$, GFAP, and NfL. Blood biomarker biotypes were determined using the pattern of binary blood biomarker abnormality. Individual biomarker cutoffs were optimized to maximize sensitivity and specificity in distinguishing CU from AD. Cognition was assessed using the Montreal Cognitive Assessment (MoCA). Mixed effects models compared clinical data and cognitive trajectories across identified biotypes.

Results: A sequential ordering of blood biomarker changes emerged such that blood biomarker abnormality proceeded from blood biomarker negativity to amyloid abnormality alone, followed by subsequent abnormality in GFAP, P-Tau181/P-Tau217, and then NfL. Two additional biotypes were observed: GFAP abnormal only and Aβ+, GFAP-, P-Tau+ – a biotype seemingly sparing GFAP. Remarkably, greater than 90% of study participants from across the AD continuum fit neatly into one of these blood biomarker biotypes. Advancement through these biotypes was associated with poorer cognition and predicted worse cognitive trajectories.

Conclusions: ND blood biomarker biotypes show a stereotyped progression of blood biomarker changes across the AD continuum. Adopting this framework is likely to enhance diagnostic and prognostic accuracy and treatment monitoring in ND.

Title: Predictors of Mandated Mental Health Services Among Youth in Juvenile Diversion

Authors: Mikhalyuk, I., Sheerin, K., Grant, M., & Kemp, K.

Abstract

Background. Youth involved in the juvenile justice system experience disproportionately high rates of mental health concerns compared to youth within general population (Teplin et al., 2021). Early contact points within the juvenile justice system, such as diversion programs, provide critical opportunities to identify youth in need of mental health services and facilitate access to mental health treatment (Schneider, 2010). Thus, it is important to understand the factors that influence the decision made by juvenile justice staff to mandate youth to mental health treatment. The present study aimed to: 1) examine demographic and clinical differences between youth who received a mental health mandate and those who did not; and 2) identify demographic and clinical factors associated with receiving a mental health mandate by juvenile justice staff.

Method. Participants were 649 youth (M age = 15.1; SD = 1.51; 60.5% male; 41.1% White/Non-Hispanic, 15.1% Black/Non-Hispanic, 43.8% Hispanic/Latinx) participating in a Northeastern juvenile diversion program. Chi-square and independent sample t-tests examined differences in demographic variables (e.g., ethnoracial, gender, age) and Massachusetts Youth Screening Inventory-2 (MAYSI-2; Grisso & Barnum, 2006) subscale scores. MAYSI-2 subscales included alcohol and drug use, anger/irritability, depressed/anxious, somatic complaints, suicidal ideations, thought disturbance (boys), and traumatic experiences. Logistic regression analyses assessed whether demographic variables and MAYSI-2 subscales predicted whether youth received a mental health mandate.

Results. Chi-square tests of independence found a significant association between gender and youth who received a mental health mandate $\chi^2(1, 647) = 16.46$, *p* < .001, with female youth (45.3%) more likely to receive a mandate than male youth (29.7%). Independent sample t-tests indicated that youth who received a mental health mandate had significantly higher MAYSI-2 subscale scores on alcohol and drug use (*M* = 0.62; SD = 1.35; *t*(643) = −-3.76, *p* < .001); angry/irritable (*M* = 4.38; *SD* = 2.68; *t*(643) = -8.07, *p* = 0.21); depressed/anxious (*M* = 2.42; *SD* = 2.13; *t*(643) = -7.93, *p* < .001); suicidal ideations (*M* = 0.97; *SD* = 1.61; *t*(643) = -8.44, p<.001); thought disturbances for boys (*MD* = 451.9; *SD* = 444.86; *t*(643) = -4.47, *p* < .001); and traumatic experience (*MD* = 1.36; *SD* = 1.44; *t*(643) = -4.08, *p* <.001). Logistic regression analyses revealed that youth scores on the MAYSI-2 subscales for SI (OR = 1.43, *p* < .001) and angry/irritable (*OR* = 1.17, *p* = .001), as well as youth who identified as Hispanic/Latinx (OR = 2.58, *p* = .019) significantly predicted whether they received a mental health mandate, while demographic (e.g., ethnoracial, gender, age) and other MAYSI-2 subscale scores did not. The overall model was significant, $\chi^2(9) = 90.99$, *p* < .001 (Nagelkerke $R^2 = .20$).

Discussion. Youth involved in the juvenile justice system experience elevated rates of mental health concerns, and diversion programs serve as critical points for identifying and mandating needed services to divert youth from the juvenile justice system and towards the behavioral health system. The present study found that youth who received mental health mandates demonstrated significantly higher symptom severity across multiple MAYSI-2 subdomains and were more likely to be female. SI and angry/irritable MAYSI-2 subdomains emerged as the strongest clinical predictors of receiving a mental health mandate, and youth who identified as Hispanic/Latinx were also significantly more likely to receive a mandate from juvenile justice staff. These findings suggest that diversion-based mandate decisions may be influenced by acute and clinically salient factors, as well as ethnoracial factors that warrant further examination. Further research is needed to better understand how decision-making processes can promote equitable and comprehensive mandate practices that address the full range of youths' mental health needs.

Evaluating the Current State of Collaboration Between Local Primary Care Physicians and Elementary Schools

Kandace W. Mossing, PhD, NCSP and Michelle Pievsky, PhD

Background

When families have concerns about their child’s functioning at home, school, or in the community, they may engage with and seek solutions from professionals in multiple settings. These professionals often include primary care physicians and school personnel, and collaboration between the two groups is viewed as a critical component of effective care and service delivery (Moran & Sheppard, 2023). However, there is limited research focusing on the efficacy of these partnerships, especially in the context of school-based interventions, accommodations, or special education eligibility. We also have limited information about these partnerships in our own Pediatric Primary Care clinic at Hasbro Children’s Hospital.

Current Project

The project aims to evaluate the current state of collaboration between primary care physicians at Hasbro Pediatric Primary Care and school personnel from K-6 Providence-area schools. We aim to recruit at least ten school personnel and ten primary care physicians to participate. The project will take place in Spring 2026.

Method

We will be using a mixed methodology called group concept mapping (GCM), which seeks out the perspectives of interested parties and uses quantitative tools to evaluate their responses (Kane & Trochim, 2007). We will use groupwisdom^{TM}, an online tool for GCM data collection and analysis. We will generate a focus prompt, which participants will respond to in a brainstorming process. Participants then sort these ideas into categories or themes, rate how important they are, and rate how well they perceive them to be implemented currently. The data are then analyzed, and the results are presented in the form of visual concept maps and reports.

Discussion

We expect that we will identify areas for improvement, and the data we gather will be used to inform quality improvement projects (QI) in the clinic. Additionally, the project team and advisory committee will determine how to disseminate the results in both communities. Additional discussion will involve the utility of GCM for QI projects in medical settings.

References

Kane, M., & Trochim, W. M. (2007). *Concept mapping for planning and evaluation*. sage publications, Inc.

Moran, K. K., & Sheppard, M. E. (2023). Finding common ground: Medical professionals and special education providers supporting young children and families. *Topics in Early Childhood Special Education*, *42*(4), 370-382.

Flourishing Following Sexual Assault: The Role of Coping, Emotional Regulation, and Trauma-Related Shame

Sam Mulford, Rhode Island Hospital, Providence, RI
Alexis Adams-Clark, The Warren Alpert Medical School of Brown University, Providence, RI
Lindsay M. Orchowski, The Warren Alpert Medical School of Brown University, Providence, RI
Prachi H. Bhuptani, Rhode Island Hospital, Providence, RI
Lucy W. Naughton, Rhode Island Hospital, Providence, RI
Rhoen Hoff, Rhode Island Hospital
Catrina Aglubat, Rhode Island Hospital
Anna Purcell, Rhode Island Hospital, Providence, RI
Elizabeth D. Mayer, Rhode Island Hospital, Providence, RI
Ananya Sharma, Rhode Island Hospital, Providence, RI
Molly Maloney, Brown University School of Public Health, Providence, RI
Jennifer Johnson, Michigan State University, Flint, MI
Caron Zlotnick, Women's and Infants' Hospital, Providence, RI

Approximately one in five college women experience unwanted or nonconsensual sexual contact, with significant implications for well-being (Fedina et al., 2018). Research on survivors' well-being has largely focused on reducing psychopathology and restoring individuals to baseline functioning (Ulloa et al., 2016). Far less attention has been given to understanding what enables survivors to flourish, thrive, and live meaningful lives following sexual assault (Rick, 2021). Flourishing is defined as a state of sustained well-being characterized by positive emotion, engagement, relationships, meaning, and accomplishment (Seligman, 2011). The concept of flourishing remains largely underexplored among college women survivors of sexual assault. Identifying factors that facilitate or impede flourishing is necessary for trauma recovery that goes beyond symptom reduction, and promotes a vision of sustained well-being, meaning, and healing in the lives of survivors. Among survivors of sexual assault, coping skills and other psychological resources have been linked to positive outcomes, including post-traumatic growth (George & Bance, 2019). Additionally, emotional regulation has been associated with growth following trauma (Finstad et al., 2021). These indings suggest that strong coping skills and emotional regulation may play an important role in facilitating flourishing after sexual assault. However, factors that undermine adaptive processes, such as trauma-related shame, may serve as barriers to wellbeing.

The current analyses sought to examine the relationships between flourishing, coping skills, emotional regulation, and trauma-related shame among a sample of college women (ages 18-24) who reported a history of sexual victimization (*n* = 332). Drawing from the Transactional Model of Stress and Coping (Lazarus & Folkman, 1984), we hypothesized that (1) coping skills and emotional regulation would be positively associated with flourishing and (2) trauma-related shame would moderate this association. Flourishing was positively associated with coping skills and emotional regulation, and negatively associated with trauma-related shame. However, trauma-related shame did not significantly moderate the associations between coping or emotional regulation and flourishing. Results suggest that coping skills and emotional regulation may function as facilitators of flourishing following sexual assault, regardless of the degree of shame. Additional research is needed to better understand the mechanisms underlying flourishing in this population, as well as how to conceptualize flourishing in the context of trauma. Further work identifying predictors of flourishing is necessary to inform the development of effective resources, interventions, and practices that emphasize sustained wellbeing among sexual assault survivors.

Untangling Sleep-Aid Behaviors:
Sleep-Aid Use Profiles and Sleep Health among U.S. Adults

Marie-Rachelle Narcisse, PhD

Introduction: Millions of U.S. adults with sleep disturbances use sleep aids, including prescription medications, over-the-counter (OTC) products, cannabidiol (CBD), and marijuana (MJ). Emerging adults are the most frequent users of OTC and CBD products, and many CBD users take other sleep medications concurrently, raising concerns about drug interactions. This study aimed to (1) identify distinct profiles of sleep-aid users and (2) examine the sleep health of these profiles.

Methods: We analyzed data from the 2024 National Health Interview Survey, a nationally representative sample of adults aged 18+. Machine-learning mixture modeling identified latent classes based on probabilities of using three sleep-aid categories: prescription medications, OTC aids, and MJ/CBD. Model-fit indices guided class selection. Sleep outcomes included sleep duration, trouble falling asleep, trouble staying asleep, and sleep restfulness. Generalized Structural Equation Modeling was conducted separately for adults aged 18–26 (n=2,714) and ≥27 years (n=28,665), accounting for complex sampling. Covariates included sociodemographic factors.

Results: Twenty-nine percent of adults used at least one sleep aid. Three latent classes emerged: (1) **Predominant MJ/CBD Users** (probabilities: MJ/CBD=0.84; OTC=0.29; prescription=0.21; (2) **Mixed Traditional Sleep-Aid Users** (probabilities: prescription=0.82; OTC=0.51; MJ/CBD =0.33); (3) **Heavy Multimodal Users** (probability of all three modalities≥0.90). Among emerging adults, compared with Class 1, Class 2 users had lower odds of frequent trouble falling asleep (OR=0.87; p=0.037). Class 3 users had lower odds of short sleep duration (OR=0.80; p<0.001), trouble falling asleep (OR=0.57; p<0.001), and trouble staying asleep (OR=0.74; p<0.001). No differences were found for feeling rested.
Among adults ages ≥27, Class 2 showed no significant differences from Class 1 across outcomes. Class 3 users had lower odds of trouble falling asleep (OR=0.68; p=0.047), with no other significant associations.

Conclusion: In this cross-sectional analysis, multimodal sleep-aid use was associated with better subjective sleep health among emerging adults, but not among adults aged 27+. These findings highlight the need for age-specific sleep-health interventions and monitoring of multimodal sleep-aid behaviors. Although such agents may relieve short-term symptoms, concerns remain about dependency, polypharmacy, and long-term effects. Longitudinal studies are needed to examine trajectories of use, withdrawal patterns, and potential long-term impacts on sleep and mental health.

Poster Title: Qualitative Analysis of Perinatal Substance Use Information on State Department of Health Websites

Authors: Brianna Nee, Laura E. Laumann, & Laura R. Stroud

Abstract:

Perinatal substance use is associated with adverse health outcomes for both the developing fetus and pregnant individual. Pregnancy is viewed as a unique interventional period for substance use treatment due to the social pressures associated with being an expectant mother. Punitive state policies and state health departments aim to address perinatal substance use through legal and public health approaches. Currently, no study has attempted to assess the relationship between state-level policies and state Department of Health (DOH) web-based resources. This study aims to a) evaluate the quality of the language and content of state DOH perinatal substance use webpages b) assess the relationship between the quality of DOH perinatal substance use webpages and state punitive policy. From January 16, 2026 to February 3, 2026, 388 webpages from 46 states were downloaded according to a set of inclusion and exclusion criteria. Connecticut, New Mexico, New Hampshire, and Arizona did not have any webpages that fit our criteria. The downloaded pages were qualitatively coded using nVivo for type of topics, resources, images, and advice as well as mentions of Child Protective Services or Department of Children and Families (DCF) and analyzed on Microsoft Excel. States were coded as having punitive policies if they considered prenatal exposure to substances as child abuse or neglect. 27 states had punitive policies and 34 states had at least one webpage entirely dedicated to perinatal substance use. There was a significant relationship between states with punitive policies and states with entire webpages on perinatal substance use, $\chi^2(1)=4.90$, $p=0.027$. 92.6% of states with punitive policies mentioned consequences of perinatal substance use on infant health, $\chi^2(=1)=4.46$, $p=0.035$. The relationship between states with punitive policies and states mentioning harm to maternal health was not significant, $p<0.05$. No significant relationship was observed between states with punitive policies and mentions of Child Protective Services (CPS), $p>0.05$. Our findings suggest that states with more punitive policies have more dedicated information on perinatal substance use on their state DOH websites. These states also appear to place more emphasis on infant health than maternal health, a common theme in punitive policies. For pregnant individuals seeking information on state DOH webpages, information on CPS or DCF is not always included for states with punitive policies. This lack of accessibility to information on the risk of disclosing use may have implications for pregnant individuals seeking care. Future research can examine whether the quality and content of these webpages is associated with reduced rates of perinatal substance use as a metric to assess the effectiveness of state DOH websites as tools for public health intervention.

Barriers to Specialty Dementia Care in Rural America: The Roles of Travel Distance, Referral Patterns, and Demographic Disparities

Caroline Nester Rooney, PhD[1,2], Laura Korthauer, PhD[1,2], Anna Claire Franklin, BA[3], Hilary Clark, PhD[3], Chrystal Fullen, PsyD[3], Justin B. Miller, PhD,[4] & Lee Isaac, PsyD[3]

[1]Neuropsychology Program, Department of Psychiatry, Brown University Health, Providence, RI; [2]Department of Psychiatry and Human Behavior, Alpert Medical School of Brown University, Providence, RI; [3]Neuropsychology Service, Department of Psychiatry, University of Arkansas for Medical Sciences, Little Rock, AR; [4]Department of Neurology, UW Medicine, Seattle, WA

Purpose: Rural–urban disparities in dementia risk, diagnosis, and outcomes are well documented, yet less is known about which rural older adults overcome structural barriers—such as travel burden and referral pathways—to access specialty dementia care. Identifying these patterns is essential for understanding modifiable system-level contributors to inequities. This study characterized demographic, geographic, and referral-related factors among older adults presenting for specialty dementia evaluation at a single academic medical center serving a highly rural U.S. state.

Methods: This retrospective chart review study included 751 patients (age=72.3, education years=14.1, %White=84.8, %Female=59.8) evaluated for dementia within the University of Arkansas for Medical Sciences Neuropsychology Program. We characterized the impact of travel distance (miles), rurality (Rural-Urban Community Area Codes 4-10), referral source (internal versus external, clinical specialty), and demographic factors on care access, and tested which factors predicted odds of receiving a cognitive diagnosis.

Findings: Travel distance to the clinic was substantial (>10% drove >100 miles) and rural residents were systematically underrepresented in the clinic (*p*s<.001). Being referred by a community-provider, being from a rural area, being older, and having a non-White racial/ethnic identity were all associated with a greater odds of receiving a cognitive diagnosis (*p*s=.002-.027).

Conclusions: Substantial travel burden and referral patterns shape access to specialty dementia care in rural populations. Older adults receiving care in community settings may experience delayed diagnosis, underscoring the need for rural provider education, telehealth consultation, and strengthened referral pathways. Evidence for the disparities affecting rural and ethnic/racial minoritized older adults highlights the need for culturally responsive outreach to promote brain health equity in rural communities.

“Association between amount of yoga practiced and pain-related outcomes: A secondary analysis of a factorial trial”

Camille Neutz, Laura E. Laumann, Bailey O’Keeffe, Michael Stein, Lisa Uebelacker

BACKGROUND:
Chronic pain is highly prevalent among individuals receiving medication for Opioid Use Disorder (OUD). Yoga-based interventions for chronic pain have been increasingly studied and have demonstrated effectiveness in reducing pain severity and impact. However, research examining yoga interventions for chronic pain specifically within OUD populations remains limited. The parent study aimed to investigate the effects of yoga on chronic pain in individuals with OUD and to identify intervention components that, when added to a weekly yoga practice, increase the amount of engagement in both classes and personal yoga practice. In a secondary analysis of the data, we examined the dose–response relationship between the amount of yoga practiced during the trial and pain outcomes in this population.

METHODS:
People with chronic pain taking buprenorphine or methadone for OUD (n=192) were enrolled in a yoga intervention for 12 weeks. All were invited to attend weekly yoga classes. Participants were randomly assigned to receive additional intervention components in a 2x2x2x2 factorial design. These include access to study-specific yoga videos for home practice, two private sessions with a yoga teacher, daily motivational text messages, and/or financial incentives for class attendance. Throughout the trial, we assessed minutes of personal yoga practice each week via interview. Additionally, attendance at study yoga classes was observed by study staff. For each week, we combined class attendance minutes and self-reported personal practice minutes to calculate total minutes engaged in yoga practice that week (and thus were able to calculate total yoga practice for each of the three 4-week periods). Pain interference was assessed monthly using the Brief Pain Inventory–Interference (BPI-I) subscale throughout the 3-month intervention period. Subscale scores range from 0 (does not interfere) to 10 (completely interfere). Pain severity was assessed monthly using numeric rating scales (NRS) ranging from 0 to 10 to assess average and worst pain in the prior week, and monthly values were aligned with the end of Months 1, 2, and 3. We estimated mixed effects linear models to understand between-subject and within-subject associations between amount of total yoga practice in a month, and pain outcomes (interference, average pain, and worst pain) at the end of the month. Time-invariant baseline characteristics included as covariates were data collection site, age, gender identity, and OUD medication at baseline (Buprenorphine vs Methadone).

RESULTS:
Secondary analysis indicated a significant relationship between time spent practicing yoga and improvements in all three pain outcomes when analyzed within subjects. No between-subjects association was observed between time spent practicing yoga and pain outcomes.

CONCLUSION:
Time spent practicing yoga appears to influence pain outcomes within individuals over time. That is, the more one practiced yoga in a given month (relative to their own average), the less pain and the less interference due to pain a participant reported at the end of the month. Further research with the primary aim of understanding the dose-response relationship of yoga and pain outcomes should be conducted.

Sexual Violence–Related Attitudes as Multidimensional Risk Factors for Aggression and Sexual Decision-Making Among Adolescent Boys

Daniel W Oesterle, M.S.[1], Lindsay M Orchowski, Ph.D.[1]

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

Sexual violence–related attitudes are well-established risk factors for sexual aggression perpetration. Although extensive research documents associations between attitudinal risk factors and sexual aggression among adults, less is known about their multidimensional structure and behavioral correlates among adolescent boys, a group at heightened risk for perpetration. Moreover, few studies have examined whether distinct attitudinal dimensions extend beyond sexual assault to broader forms of interpersonal aggression and sexual decision-making. The present study addressed these gaps by (1) examining the underlying factor structure of sexual violence–related attitudes among high school boys and (2) testing whether resultant attitudinal dimensions predicted peer aggression, relationship violence, and sexual consent intentions while accounting for established aggression-related risk factors.

Data were drawn from baseline assessments of a school-based prevention trial conducted in public and private high schools in Rhode Island. Of 1,165 tenth-grade boys who identified as heterosexual, 860 (*M* age = 15.39, *SD* = 0.60) provided attitudinal data and comprised the analytic sample. Nineteen items from the Illinois Rape Myth Acceptance Scale and Hypergender Ideology Scale were subjected to exploratory factor analysis (EFA). Extracted factors were entered into regression models predicting peer-based aggression (bullying, cyberbullying, sexual bullying, homophobic teasing), relationship-based violence (dating violence [DV], sexual assault, contraceptive interference [CI]), and sexual consent behavioral intentions, controlling for age, binge drinking, marijuana use, and pornography use.

Preliminary EFA findings yielded four factors: (1) Gendered Power & Sexual Dominance Norms, (2) Gender-Equitable Masculinity, (3) Anti-Femininity Norms, and (4) Transactional Sexual Expectations. Within peer-based aggression, marijuana and pornography use were robust correlates across outcomes. Factor 1 was positively associated with sexual bullying and homophobic teasing; Factor 2 was inversely associated with bullying, cyberbullying, and homophobic teasing; and Factor 4 predicted bullying, sexual bullying, and homophobic teasing. Within relationship-based violence, marijuana use was associated with DV and sexual assault, and Factor 4 predicted DV perpetration. Sexual assault perpetration was uniquely associated with Factor 3, whereas CI was associated with alcohol and marijuana use but not attitudinal factors. Lower sexual consent behavioral intentions were associated with Factors 3 and 4.

Findings indicate that sexual violence–related attitudes among adolescent boys are multidimensional and differentially linked to both sexual and nonsexual forms of aggression, even after accounting for age and established behavioral risk factors. Notably, marijuana use—but not alcohol use—was consistently associated with multiple aggression outcomes, suggesting that cannabis use may reflect broader patterns of behavioral risk, peer norm exposure, or chronic self-regulatory impairment that amplify the behavioral expression of harmful attitudes. Transactional sexual expectations (Factor 4) emerged as the most consistent attitudinal correlate across peer and relationship aggression, whereas Anti-Femininity Norms (Factor 3) were more specifically associated with sexual assault and diminished consent intentions. Together, these findings suggest that multidimensional gendered sexual belief cognitions and behavioral risk exposures converge during adolescence to shape patterns of peer and sexual aggression, underscoring the urgent need for developmentally informed prevention efforts that address both attitudinal schemas and risk contexts.

Bimanual neural control of two cursors by person with tetraplegia with microelectrode arrays in bilateral precentral gyri.

M.C. Ottenhoff[1,2]**, R. Li**[1]**, T.K. Pun**[1,2]**, S. Allcroft**[1,5]**, A. Dempsey**[3]**, A. Acosta**[3]**, B. Lacayo**[3]**, L.A. Panagos**[3]**, C. Vargas-Irwin**[2,4,5]**, L.R. Hochberg**[1,2,3,5,6]**;** [1]*School of Engineering, Brown University, Providence RI, USA;* [2]*Robert J. and Nancy D. Carney Institute for Brain Science, Brown University, Providence, RI, USA;* [3]*Center for Neurotechnology and Neurorecovery, Dept. of Neurology, Massachusetts General Hospital, Harvard Medical School, MA, USA;* [4]*Department of Neuroscience, Brown University, Providence, RI, USA;* [5]*VA RR&D Center for Neurorestoration and Neurotechnology, Dept. of VA Medical Center, RI, USA; Dept of Neurology, Harvard Medical School, Boston, MA, USA*

Disclosures

M.C. Ottenhoff: None. **R. Li:** None. **T.K. Pun:** None. **S. Allcroft:** None. **A. Dempsey:** None. **A. Acosta:** None. **B. Lacayo:** None. **L.A. Panagos:** None. **C. Vargas-Irwin:** None. **L.R. Hochberg:** The MGH Translational Research Center has a clinical research support agreement (CRSA) with Axoft, Neuralink, Neurobionics, Paradromics, Precision Neuro, Synchron, and Reach Neuro, for which LRH provides consultative input. LRH is a non-compensated member of the Board of Directors of a nonprofit assistive communication device technology foundation (Speak Your Mind Foundation). Mass General Brigham (MGB) is convening the Implantable Brain-Computer Interface Collaborative Community (iBCI-CC); charitable gift agreements to MGB, including those received to date from Paradromics, Synchron, Precision Neuro, Neuralink, and Blackrock Neurotech, support the iBCI-CC, for which LRH provides effort.

Abstract (max 2300 characters)

Restoring upper limb functionality has been rated as top priority to improve life satisfaction by people with tetraplegia. Emerging intracortical brain-computer technology (iBCI) has the potential to restore motor function when no voluntary muscle activation is present, by decoding neural signals recorded from the motor cortical surface directly into a control signal. Although many tasks of daily living require bimanual coordination, the iBCI field has targeted restoration of mostly unimanual motor function. iBCI studies have demonstrated that bimanual control can be achieved using neural ensemble activity from unilaterally placed arrays. However, nonlinear tuning differences of neurons required recurrent neural networks trained on multiple days of data to gain bimanual control. Here, we demonstrate independent neural control of two cursors by a person with tetraplegia with MEAs placed in the bilateral precentral gyri. A rapid-calibration paradigm enabled our participant to gain control of both cursors within minutes of the session day, without the need for any prior training data. We recorded neural data from a single human participant (T18) enrolled in the ongoing BrainGate pilot clinical trial (www.ClinicalTrials.gov; Identifier: NCT00912041). T18 is a 48 y/o male with tetraplegia from a cervical spinal cord injury (C4 ASIA A). T18 has four 64-channel intracortical microelectrode arrays placed in the hand knob area of the left precentral gyrus and two in the right precentral gyrus. T18 was asked to perform a bimanual target acquisition task, by moving two cursors simultaneously to their corresponding targets and holding both in place for 300ms. T18 moved each cursor by attempting to control an imagined gaming joystick with each hand. A single 4D Kalman filter with additional magnitude adjustments was used to decode 2D directional vectors for both cursors simultaneously. In bimanual tasks, T18 was able to reach a mean angle error of 16.8 and 25.5 degrees for left and right respectively, and a time-to-targets of 9.1 seconds. These results demonstrate that neuronal ensemble activity from bilateral precentral gyri enables an iBCI user to rapidly gain 4D independent simultaneous control of two effectors, without the need for an open loop calibration block.

Preliminary Examination of Factors Associated with Hospital Readmission Rates for Patients with and without Suicidal Thoughts and Behaviors

Jung Park, BA[1,2], Sarah Arias PhD[1,2], Elizabeth Chen PhD[1]

[1]Warren Alpert Medical School of Brown University, Providence, RI, [2]Psychosocial Research Program, Butler Hospital, Providence, RI

Introduction: Suicide is a leading cause of death in the United States, with an average of 130 deaths occurring each day.[1] The National Strategy for Suicide Prevention identifies healthcare systems as a critical area for suicide prevention efforts.[2] A large proportion of emergency admissions and subsequent readmissions includes patients with suicide crises characterized by suicidal thoughts and behaviors (STB).[3,4] Electronic Health Record (EHR) systems capture extensive documentation of these hospitalizations, including admissions and diagnostic information related to STB, offering an optimal avenue for investigating underexplored relationships between STB and hospital admission frequency. [5] This investigation uses EHR data to provide a descriptive analysis of factors associated with hospital admission frequency for patients with STB.

Methods: Data were analyzed from the Multiparameter Intelligent Monitoring in Intensive Care IV (MIMIC-IV), a large, publicly available, de-identified EHR database containing detailed clinical information for patients admitted to intensive care units or the emergency department at Beth Israel Deaconess Medical Center between 2008 and 2019.[6] Patients with at least one ICD-9-CM or ICD-10-CM diagnosis code for STB were identified. Descriptive analyses were conducted to characterize the sample across key demographic variables and to summarize hospital admission frequency. To assess whether the number of admissions differed significantly across patients, a logistic regression was conducted with STB group membership as the outcome, incorporating hospital admissions (single versus multiple admissions) and interaction terms with demographic predictors. Model discriminability was evaluated using the area under the receiver operating characteristic curve (AUC). All analyses were conducted in Python 3.9 using scikit-learn.

Results: Among 221,878 unique patients in MIMIC-IV, 1,413 had an STB diagnosis code and were matched to an age- and sex-stratified random sample of 1,412 patients without an STB-related diagnosis. The final sample included 2,825 patients, of whom 1,143 (40.5%) had multiple admissions and 1,682 (59.5%) had a single admission. STB patients had a lower rate of multiple admissions (20.7%, n = 292) compared to non-STB patients (41.6%, n = 587). The logistic regression model included admission status, demographic variables, and admissions-by-demographic interaction terms and demonstrated modest discriminability (AUC = 0.69). Admissions status was a negative predictor of STB group membership (B = −0.83, OR = 0.43), indicating that patients with multiple admissions were less likely to be classified as STB group relative to non-STB. Sex was a significant negative predictor (B = −0.22, SE = 0.10, OR = 0.80, 95% CI [0.66, 0.96], p = .019), with male sex associated with a lower likelihood of STB group relative to female. Age was not a significant predictor (OR = 1.00, p = .753). Marital status (B = 0.32, SE = 0.08, OR = 1.38, 95% CI [1.19, 1.60], p < .001) was a significant positive predictor, indicating that single marital status was associated with a greater likelihood of STB group relative to married, divorced, or widowed status. Insurance (B = −0.25, SE = 0.04, OR = 0.78, 95% CI [0.72, 0.83], p < .001) was a significant negative predictor of STB group membership, indicating that private insurance was associated with a lower likelihood of STB group membership relative to public insurance types such as Medicaid and Medicare. Race showed negligible associations (OR ≈ 1.00).

Conclusion: The findings suggest that social structural factors, including sex, marital status, and insurance type, are associated with STB membership and hospital admissions. Though the negative association between hospital readmission and STB group membership may reflect reduced healthcare engagement over time among patients with STB, the validity of these findings is constrained. The EHR data can inform more targeted suicide prevention strategies within healthcare systems, guiding our future direction to better capture the social, clinical, temporal, and contextual factors surrounding admissions due to STB.

References: 1) CDC. Surveillance of Nonfatal Suicide-Related Outcomes. 2024. 2) U.S. Dept Health & Human Serv. National Strategy for Suicide Prevention. Washington DC; 2012. 3) Fontanella CA et al. *JAMA Netw Open*. 2020;3(8):e2012887. 4) Hugunin J et al. *Psychiatr Serv.* 2023;74(1):2–9. 5) Bommersbach TJ et al. JAMA. 2011. 6) Johnson AEW et al. *Scientific data.* 2023.

Title: Timeline for receiving a polycystic ovary syndrome diagnosis among adolescents and young adults

Authors: Megan N. Parker, Juliana Baldani, Mayor Watts & Elissa Jelalian

Abstract: Polycystic ovary syndrome (PCOS) is the most common endocrine disorder among females of reproductive age and is characterized by excess androgen levels, irregular menstrual cycles, and/or cysts on the ovaries. Around 70% of individuals with PCOS do not receive a diagnosis, and many who do report dissatisfaction with the experience, in part due to experiencing long delays before receiving the diagnosis.

Identification of factors that elongate the diagnosis process (and subsequently delay connection to additional support) could inform targets for interventions aimed at improving healthcare delivery for this population. This study systematically reviewed the electronic health records (EHR) of individuals with PCOS (aged 12-24 years at the time of diagnosis) to describe the time between 1) menarche and PCOS diagnosis, 2) first documented symptom of PCOS and PCOS diagnosis, and 3) PCOS diagnosis and documentation of the diagnosis in the EHR problem list. We aimed to test whether these timeframes differ based on patient demographic factors (e.g., family history of PCOS, race, ethnicity, gender, and sexual orientation). Data were extracted from the Brown University Health EPIC electronic health record of individuals who 1) were diagnosed with PCOS between 2021 and 2025, 2) were aged 15-24 years at the time of PCOS diagnosis, and 3) had a PCOS diagnosis documented in their problem list. A detailed chart review was conducted for a randomly selected 15% of the identified patients (N=1102) who met these criteria. Data related to each patient's age at menarche, the date of their first documented PCOS symptom, the date a PCOS diagnosis was made by a provider, and the date that PCOS was added to their problem list were extracted, along with the patient's demographic characteristics. ANOVAs tested for differences in diagnosis timelines based on patient demographic factors. A total of 163 patients were included: race (13% Black, 32% other Race, 49% white, 6% unknown), ethnicity (31% Hispanic, 64% non-Hispanic, 5% unknown), gender (64% female, 9% other gender, 27% unknown), and sexual orientation (7% bisexual, 8% other, 20% straight, 65% unknown), family history of PCOS (16%). A total of 39 individuals (24%) did not have a documented age at menarche. The time between menarche and PCOS diagnosis ranged from 0 to 14 years (median 4 years, 17% <2 years). The time between the first documented PCOS symptoms and PCOS diagnosis ranged from 0 to 9 years (median 0 years, 21% >2 years). The time between PCOS diagnosis and documentation in the problem list ranged from 0 to 6.5 years (median 2 months, 28% >1y). There were no statistically significant differences in these timeframes based on patients' race, ethnicity, gender identity, sexual orientation, or family history of PCOS. It is promising that 17% of diagnoses were caught early (within two years of menarche). Consistent with self-report data, most individuals with PCOS received the diagnosis in the same year that their symptoms were first documented in the EHR. However, a large minority of patients (21%) experienced delays (more than two years after reporting symptoms). Additionally, it took over a year to document the PCOS diagnoses in ~28% of patients' problem lists, which may reduce other providers' awareness of the diagnosis. We did not detect differences in diagnosis timeframes based on patient characteristics. Future research should investigate other factors that may contribute to drawn out diagnosis timeframes (e.g., PCOS symptom profiles, presence of medical comorbidities, diagnosing provider). Identification of such factors, particularly those documented within the medical record, could be used to power interventions within the EHR that alert providers to the need for enhanced monitoring of PCOS symptoms among at-risk patients. Ultimately, improved monitoring could help improve patients' healthcare experiences and reduce the number of individuals who never receive a diagnosis.

Young Children with ODD and Anxiety: Examining Profiles of Emotional, Cognitive, and Behavioral Functioning in Clinically Referred Preschoolers

Reeya Patel, Dr. Sarah Martin, Dr. John Boekamp

Oppositional Defiant Disorder (ODD) is a prevalent childhood disorder, often emerging in early childhood and characterized by persistently uncooperative, antagonistic behavior and negative affect (Ezpeleta et al., 2014). ODD is associated with significant variability in its clinical presentation. One important source of this variability is comorbidity with anxiety disorders (Drabick & Bubier, 2010; Drabick & Bubier, 2011). Previous research has documented high rates of anxiety among children with ODD, particularly in preschool samples, with comorbidity rates ranging from approximately 41–48% (Ezpeleta et al., 2014; Bufferd et al., 2016). Despite these high rates, our understanding of the emotional, cognitive, and behavioral profiles of children with comorbid ODD and anxiety remains limited.

Prior research suggests that children with both ODD and anxiety show greater emotional dysregulation, internalizing symptoms, and overall impairment compared to children with ODD alone (Greene et al., 2002; Hawes et al., 2023; Burke et al., 2005). Dual-pathway models propose that comorbid ODD and anxiety may reflect broader affective dysregulation across internalizing and externalizing domains (Drabick & Bubier, 2011; Aldao et al., 2016). Relatively few studies have incorporated multi-method approaches (e.g., parent report, child assessment, observational measures) when directly comparing ODD-only and ODD+Anxiety groups (Bubier & Drabick, 2009; Ollendick & White, 2012). As such, the goal of this study is to examine whether children with comorbid ODD and anxiety demonstrate more severe and wider-ranging problems with emotion, cognition, and behavior, using multiple assessment methods, as compared to children with ODD (without comorbid anxiety).

Participants were 67 clinically referred children with ODD (51 males; mean age = 75 months, range = 50–94 months). Of these 67 children, 20 also met diagnostic criteria for generalized anxiety disorder (ODD + GAD), and 47 did not (ODD without GAD). Children were assessed on:

- Observed emotional expressions during structured lab tasks (Laboratory Temperament Assessment Battery)
- Internalizing and externalizing symptoms using parent reports on the Child Behavior Checklist (CBCL)
- Executive functioning skills (NIH Toolbox)

Results: Independent samples t-tests indicated significant differences between groups on:

- Observed negative affect, with the ODD only group demonstrating more negative affect (M = 2.22, SD = 1.08) as compared to the ODD + GAD group (M = 1.47, SD = 0.77), t (8) = 2.70, p = .01, d = 0.75
- Parent-reported externalizing symptoms, with the ODD only group demonstrating more severe externalizing symptoms (M = 77.10, SD = 8.27) as compared to the ODD + GAD group (M = 73.00, SD = 7.90), t (60) = 1.85, p = .07, d = 0.50

No statistically significant group differences were observed in positive affect, internalizing symptoms, or executive functioning, though it was notable that children in the ODD + GAD group showed somewhat lower scores on inhibitory control and working memory.

Conclusions: Children with ODD without GAD showed greater negative affect and externalizing behaviors, as compared to children with both ODD and GAD. These findings are consistent with dual-pathway and transdiagnostic models (Drabick & Bubier, 2011; Aldao et al., 2016), which propose that comorbid anxiety may alter the emotional and behavioral expression of ODD, potentially reflecting greater inhibition and internal distress rather than heightened overt dysregulation. These findings highlight meaningful heterogeneity in ODD and suggest that comorbid anxiety may alter the emotional and behavioral presentation of ODD. These distinctions may have important implications for assessment and intervention in clinically referred preschoolers.

Retrospective Analysis of Daylight Exposure and Transcranial Magnetic Stimulation Treatment Outcomes in Major Depressive Disorder Patients

Andrew Phan, Wenricka Griffith, Brandon Lew, Carissa Perez, Nim Murugan, Eric Tirrell, A Polly Gobin, Meghan Kulak, Linda L. Carpenter

---

Background: Daylight exposure has been shown to affect Major Depressive Disorder (MDD) symptoms, but its effects on transcranial magnetic stimulation (TMS) therapy outcomes remain not well characterized. A recently published study examined patient-level average daylight exposure throughout the TMS treatment course to reflect the potential biological effects of light on clinical outcomes; they found no significant difference between TMS remitter, responder, and nonresponder groups in average daylight duration (Mania et al, 2026). We sought to replicate this null finding in a larger sample and with regression models that accounted for additional clinical variables.

Methods: We retrospectively analyzed 473 patients with a primary diagnosis of MDD who completed at least 25 TMS sessions at Butler Hospital between January 2009 and November 2025. Depressive severity was assessed by the Patient Health Questionnaire-9 Item (PHQ-9) and the Inventory of Depressive Symptomatology-Self Report (IDS-SR) administered pre- and post-treatment. Average daylight exposure was calculated as the mean daylight duration derived from the open-access US Naval Observatory data throughout a patient's TMS treatment period. Data was analyzed using multiple linear regression models, with post-treatment PHQ-9 and IDS-SR scores as the dependent variables, patient-level daylight (hours/day, averaged over all days in the treatment course) duration as the independent variable, and baseline symptom severity, age, and sex included as covariates. Mann-Whitney U tests compared median average daylight exposure across TMS remitter, responder, and nonresponder groups, following the methodology of Mania et al. (2026).

Results: Across all patients, mean daily daylight exposure during the treatment period ranged from 9.25 to 15.17 hours (SD = 1.94 hours). In regression models adjusting for age and sex, baseline PHQ-9 strongly predicted post-treatment PHQ-9 ($N = 468$, $p < 0.001$), whereas patient-level average daylight exposure was not significantly associated with post-treatment PHQ-9 ($p = 0.86$). Similarly, baseline IDS-SR significantly predicted post-treatment IDS-SR ($N = 473$, $p < 0.001$), but average daylight exposure was not significantly related to post-treatment IDS-SR ($p = 0.97$). The median average daylight exposure during treatment was 11.55 hours for Remitters ($n = 143$), 12.60 hours for Responders ($n = 124$), and 11.82 hours for Non-responders ($n = 194$). Pairwise Mann–Whitney U tests indicated higher daylight exposure in Responders compared with Non-responders ($p = 0.02$, $r = -0.128$) and Remitters ($p = 0.02$, $r = 0.141$), but no difference between Non-responders and Remitters ($p = 0.92$, $r = 0.005$). Effect sizes were small.

Discussion: In this study, no significant relationship was observed between patient-level average daylight exposure and post-treatment PHQ-9 or IDS-SR scores when adjusting for baseline symptom severity, age, and sex. Baseline symptom severity remained the strongest predictor of TMS clinical outcomes, consistent with prior literature. Pairwise Mann–Whitney U tests suggested higher median daylight exposure in Responders compared with Non-responders and Remitters. However, these differences did not persist in regression analyses, suggesting that differences in daylight exposure between groups may be confounded by baseline severity and other covariates. Clinically, our findings corroborate previous results, suggesting that TMS treatment may be administered at any time of year. We encourage future prospective research to confirm our findings.

Age-Related Changes in Adaptive Function and Behavior in Christianson Syndrome

Pirzada, Sara; St. Pierre, Danielle G; Best, Carrie R.; Tallam, Sneha; Nguyen, Hanh;
Jones, Richard N.; and Morrow, Eric M.

Christianson syndrome (CS) is a rare X-linked neurodevelopmental disorder caused by mutations in NHE6. It is characterized by intellectual disability, epilepsy, hyperkinesis, ataxia, and minimal or absent speech. Data were collected as part of the *International Christianson Syndrome and NHE6 (SLC9A6) Gene Network Study,* including behavioral and functional measures to better characterize disease progression, as well as relevant medical history. Caregiver-reported behaviors were assessed using the Vineland Adaptive Behavior Scale and the Aberrant Behavior Checklist at enrollment and follow-up visits one year later.

Fifty-six male individuals, age 2-32 years, from the CS International Cohort were included at baseline (Mean age = 11.5 years, SD=7.6). One-year follow-up data was available for a subset of participants (n = 40).

At baseline, mean age-normed adaptive function scores in communication (M=38.6; SD = 15.2), daily living skills (M=41.4, SD=18.3), socialization (M=47.5, SD=18.6), and motor skills (M=53.52, SD=18.7) all fell within the Vineland ‘low adaptive function’ range. Age was negatively correlated with every domain, indicating declining adaptive function across the lifespan in CS (all $p<.001$; Pearson’s r ranged from -.66 to -.56). Additionally, paired-samples t-tests showed significant declines within individuals in communication, daily living skills, and socialization from baseline to follow-up (all $p<.01$).

On the Aberrant Behavior Checklist, irritability scores were well below the clinical benchmark for high irritability (M=6.9, SD=7.37; benchmark=18), while hyperactivity scores fell above the cut-off for clinically meaningful hyperactivity (M=20.7, SD=13; benchmark = 13). Neither irritability nor hyperactivity were correlated with age at baseline; nor did they significantly change from baseline to follow-up (all p=n.s.).

Findings indicate that Christianson Syndrome is associated with substantial and progressive adaptive impairments across multiple domains, with measurable declines over a one-year period. In contrast, behavioral symptoms show a stable profile characterized by relatively low irritability and persistently elevated hyperactivity that does not appear to change over time. Together, these results suggest that adaptive functioning could be a more sensitive marker of disease progression than behavioral symptoms and may represent a key factor for monitoring outcomes in future treatment studies.

Title: Latent Class Analysis of Suicidal Ideation and Attempts Among Psychiatrically Hospitalized Adolescents

Authors: Kit M. Quain, MD, Shira Dunsiger, PhD, Sarah Cunningham, BS, Jennifer Wolff, PhD

Introduction:

Suicide is a significant public health issue and a leading cause of death among adolescents in the United States. It is important to identify profiles of risk for suicidal ideation and suicide attempts to identify adolescents who are most at risk and discern potential treatment targets.

Methods:

Data were collected from adolescents ages 11 to 17 years admitted to the adolescent inpatient psychiatric unit at Bradley Hospital. Adolescents completed self-report surveys including measures of demographics and mental health symptoms as part of the unit's routine clinical intake process at admission. Using latent class analysis, we sought to identify classes (profiles) of suicide risk using a combination of psychosocial constructs, including depression, anhedonia, emotion regulation difficulties, impulsivity, and family dysfunction. The number of potential classes ranged from two to five, and an optimal model was identified based on a combination of AIC, BIC, and log likelihood values. Classes were then compared with respect to Suicidal Ideation Questionnaire-Junior (SIQ) scores, with higher scores indicating greater levels of suicidal ideation, and number of previous suicide attempts using regression-based approaches.

Results:

The total sample included 409 adolescents. A four-class model showed the lowest BIC and high entropy (90%), with 21% of participants belonging to class 1 (moderate mood/multidomain risk), 26% class 2 (high mood/multidomain risk), 19% class 3 (high mood risk/moderate multidomain risk), and 35% class 4 (low risk). The moderate mood/multidomain risk class had moderate levels of depression, anhedonia, emotion regulation difficulty, impulsivity, and family dysfunction. The high mood/multidomain risk class had high levels of depression, anhedonia, emotion regulation difficulty, impulsivity, and family dysfunction. The high mood risk/moderate multidomain risk class had high levels of depression and anhedonia, and moderate levels of emotion regulation difficulty, impulsivity, and family dysfunction. The low risk class had the lowest levels of depression, anhedonia, emotion regulation difficulty, impulsivity, and family dysfunction. There were significant differences in SIQ scores between classes, with highest scores in the high mood/multidomain risk class and the high mood risk/moderate multidomain risk class (means of 53.5 and 50.5 respectively), intermediate scores in the moderate mood/multidomain class (27.0), and lowest overall mean scores in the low risk class (12.1), $p < 0.001$. A similar pattern of results was seen for between-class differences in suicide attempts, with 67.9% of the high mood/multidomain risk class and 68.0% of the high mood risk/moderate multidomain risk class reporting previous suicide attempts, compared to 48.8% of the moderate mood/multidomain risk class and 33.6% of the low risk class, $p < 0.001$. Among participants who had ever made a suicide attempt, those in the moderate mood/multidomain risk class, the high mood/multidomain risk class, and the high mood risk/moderate multidomain risk class were significantly more likely to have made at least two attempts compared to the low risk class, $p=0.041$.

Conclusion:

Four classes were identified, with the high mood/multidomain risk class and the high mood risk/moderate multidomain risk class exhibiting the highest levels of suicidal ideation and previous suicide attempts among hospitalized adolescents. As these classes had high amounts of depression and anhedonia symptoms along with moderate-to-high levels of emotion regulation difficulty, impulsivity, and family dysfunction, these areas are potential treatment targets for future interventions aimed at reducing suicide risk.

Cannabis Cessation in Pregnancy: Reasons for Quitting and Cannabis Use History

Rebecca K. Raisman, MA[1,2], Ruth G. St Fleur, PhD[3], Nicole M. S. Belanger, PhD[3], Laura R. Stroud, PhD[1,3]

[1]Department of Psychiatry and Human Behavior, Warren Alpert Medical School of Brown University
[2]Institute for Health Research and Policy, University of Illinois Chicago
[3]Center for Behavioral and Preventive Medicine, The Miriam Hospital

Supported by: NIGMS 5P20GM139767, NIDA 5R01DA056787, NIDA 5R01DA044504

Aims: Prenatal cannabis use (CU) is rising, despite evidence of maternal and fetal health risks. Understanding differences between people who continue CU in pregnancy and those who quit is crucial to preventing prenatal CU. The present study compared reasons for wanting to quit/reduce cannabis and CU history between pregnant people who continued CU and those who quit.

Methods: Pregnant females age 18-40 were recruited for a longitudinal study on prenatal substance use/infant health reasons for wanting to quit/reduce cannabis and CU history. The present study included *N*=134 who used cannabis within 3 months pre-pregnancy. Chi-square tests of independence compared reasons for wanting to quit/reduce cannabis between those who quit CU in pregnancy and those who did not. Independent samples *t*-tests compared years of CU and age of initiation between those who quit cannabis and those who did not. We hypothesized quitting cannabis in pregnancy would be associated with endorsing reasons of harm to pregnancy/baby, being told by a doctor to quit, not being a bad example for children, and avoiding legal/child services issues, and those who quit would have a later age of initiation and fewer years of use.

Results: Of all participants (40% Hispanic, 14% Black, 31% White, M_{age}=27), 70% quit cannabis in pregnancy. Quitting was associated with endorsing beliefs that cannabis could hurt the pregnancy ($\chi^2(1)=4.8$, $p=.03$) and cause long-term harm to the baby ($\chi^2(1)=4.1$, $p=.04$) as reasons for wanting to quit. There was a trending effect of less years of CU among those who quit ($M=9.6$, $SD=5.8$) than those who continued CU ($M=11.5$, $SD=6.0$; $t(132)=1.7$, $p=.09$). Groups did not differ on other reasons for quitting or age of initiation.

Conclusions: Risk perceptions may inform decisions to stop CU in pregnancy. Interventions for prenatal CU should target risk perceptions and provide information about cannabis-related harms. Future research may investigate strategies for changing risk perceptions.

Association between Prenatal Adversity and Neonatal Outcomes in Infants with Prenatal Opioid Exposure

Madison Ramirez Heil Macie Donahue Marie Camerota Lynne Dansereau Alexandrea Craft
Elisabeth Conradt Barry Lester

An increase in maternal opioid use in the past 10 years has been accompanied by a similar increase in Neonatal Opioid Withdrawal Syndrome (NOWS). NOWS is a withdrawal syndrome that is characterized by dysregulation of the central, autonomic, and gastrointestinal systems in infants exposed prenatally to opioids. Treatment for NOWS includes non-pharmacological care and, in a significant number of cases, pharmacological treatment to alleviate NOWS symptoms. The clinical presentation of NOWS varies depending on factors such as opioid type, maternal infant metabolism, and other maternal factors. There is currently no predictive model to determine NOWS onset or severity in neonates exposed prenatally to opioids. Due to withdrawal symptoms emerging as late as to days after birth, current practices involve monitoring infants during this time which is costly and can delay optimal care. Therefore, an improved tool is needed to predict which neonates are at high risk of NOWS. The aim of this study is to examine if maternal prenatal adversity is associated with NOWS severity and the need for pharmacological treatment in infants with prenatal opioid exposure.

Participants were part of the Child and Family Study (CAFS), a prospective multi-site study examining NOWS severity and developmental outcomes. Mothers and newborns were recruited if opioid use was identified during pregnancy or at birth via the medical record. Maternal prenatal adversity was measured using a combination of maternal sociodemographic, mental health, substance use, and medical risk factors which were collected via medical record review and maternal questionnaires. Outcomes included need for pharmacological treatment and four indicators of NOWS severity length of treatment (LOT), length of stay (LOS), maximum Finnegan score, and need for adjunctive medication. Need for pharmacological treatment was determined using the Finnegan Neonatal Abstinence Scoring Tool (FNAST), Neonatal Withdrawal Inventory (NWI) or Eat Sleep Console (ESC) depending on hospital guidelines at each site. Data pertaining to pharmacological treatment and NOWS severity were abstracted from the medical record. We applied latent profile analysis (LPA) to the set of 2 maternal risk factors to derive mutually exclusive prenatal adversity groups. We then related adversity groups to NOWS outcomes using logistic and linear regression models that controlled for study site.

A -class LPA solution provided the best fit to the data and showed distinct subgroups one low adversity group (Class , .) and 2 high adversity groups. One of the high adversity groups (Class 1, 1.2) was comprised of women with elevated demographic, medical, polysubstance, and mental health risk factors. The second high adversity group (Class 2, 2 .) was comprised of women with elevated medical and polysubstance risk factors. We found that infants born to mothers in Class 1 were more likely to require pharmacological treatment for NOWS (OR .02, CI . 0-1 .) and had higher NOWS severity as indexed by longer LOS (p .001), and higher maximum Finnegan scores (p .001). Infants born to mothers in Class 2 were also more likely to receive pharmacological treatment for NOWS (OR .1 , CI 1. -6.) and had higher NOWS severity, as indexed by higher likelihood of receiving adjunctive medication (OR . , CI 1.0 -11.).

These results suggest that prenatal adversity may contribute to NOWS severity and may predict which neonates will require pharmacological treatment. Early identification of infants at high risk for NOWS could lead to earlier treatment and the potential to reduce NOWS severity, length of stay, and associated healthcare costs.

The Influence of the Dynamic Interaction between Posttraumatic Stress Symptoms and Opioid Use on Suicidal Ideation

Alexa M. Raudales, Ph.D.,[1] Heather T. Schatten, Ph.D.[1,2], Leslie A. Brick, Ph.D.,[3] Manshu Yang, Ph.D.[4], Michael Armey, Ph.D.[1, 2], Josiah D. Rich, M.D., MPH[5, 6], & Nicole H. Weiss, Ph.D.[4]

[1]Department of Psychiatry and Human Behavior, Brown University, Providence, RI, USA
[2]Butler Hospital, Providence, RI, USA
[3]Department of Psychology, The University of New Mexico, Albuquerque, NM, USA
[4]Department of Psychology, University of Rhode Island, Kingston, RI, USA
[5]Department of Epidemiology, Brown University, Providence, RI, USA
[6]Miriam Hospital, Department of Medicine, Providence, RI, USA

Background: Suicidal ideation and opioid use frequently co-occur. According to the self-medication model, posttraumatic stress symptoms (PTSS) may contribute to co-occurring suicidal ideation and opioid use as individuals attempt to cope with trauma-related distress. This study uniquely examines the momentary relations among fluctuations in suicidal ideation, opioid craving/use, and PTSS.

Methods: Community-based participatory research (CBPR) methods were applied to center individuals with lived experiences of suicidal ideation, opioid use, and PTSS. Participants were 53 trauma-exposed community members (M_{age} = 45.2 years; 81% white; 72% disabled; 57% men; 38% without stable housing) experiencing suicidal ideation and using opioids. Participants self-reported on suicidal ideation, opioid cravings and use, and PTSS twice daily for 14 days. A dynamic structural equation modeling framework was applied using Mplus.

Results: There was a significant positive influence of the dynamic PTSS-opioid use interaction on next-survey suicidal ideation (Standardized Fixed Effect Estimate = 0.40, 95% *CI*[0.02, 0.79]). There was not a significant influence of the dynamic PTSS-opioid craving interaction on next-survey suicidal ideation (Standardized Fixed Effect Estimate = -0.08, 95% *CI*[-0.45, 0.31]).

Conclusion: This study provides initial insight into the momentary associations among suicidal ideation, opioid use, and PTSS in a high-risk community sample. Results suggest that opioid use during periods of heightened PTSS may increase risk for suicidal ideation. These findings highlight the potential utility of trauma-informed mobile health interventions to reduce co-occurring suicidal ideation and opioid use.

Implementation of Standardized Screening: Facilitating Program Evaluation of the Hasbro Children's Med-Psych Service Line

Lily Rayor, BS, Jack Nassau, PhD, Diane DerMarderosian, MD, Matthew Willis, MD, MPH, Heather Chapman, MD, Kristin Anderson, MD, Mirabelle Mattar, MD, Rawya Aljabari, PhD, Kamila Kozlowski, MHA, Hannah Park, Barbara Jandasek, PhD

Background. The Hasbro Children's Med-Psych Service Line includes a day treatment program (HCPHP; est. 1998) and an inpatient unit (Selya 6; est. 2012). Both deliver multidisciplinary, family-based care for youth with complex and combined physical and emotional symptoms. HCPHP adopted paper-based psychosocial screening for patients' caregivers in 2015. While valuable, this workflow was inefficient, error-prone, and labor intensive for clinicians. Selya 6 had no routine screening procedures. This QI initiative aims to transition HCPHP screening fully online and implement a parallel electronic process in Selya 6 over the course of 18 months, enabling ongoing program evaluation across lines of service.

Methods. *Framework:* This project utilizes the Model for Improvement, a simple and impactful model for guiding QI efforts (Langley et al., 2009).

Timeline: Between June and November 2025, administrative staff and clinicians outlined the electronic screening workflow via a series of monthly meetings. The process was built to address known challenges with the paper system. Key differences between the inpatient and partial programs informed tailoring of screening procedures to each setting. The service line practice manager and clinical research team procured and tested materials (e.g., iPads, REDCap forms, staff instruction manuals) with support from IT.

Plan-Do-Study-Act (PDSA) cycle 1 for HCPHP launched on December 1, 2025, as a 3-month pilot. The team convened in mid-February 2026 to discuss early successes and challenges, refine the workflow, and review preliminary data. HCPHP is now entering PDSA cycle 2, and outcome data will soon be available. Selya 6's launch is planned for April 1, 2026, with a similar 3-month pilot structure.

Outcome Measure: A challenge of evaluating transdiagnostic programming is identifying a measure that is not disease/symptom specific. The Pediatric Quality of Life Index (PedsQL) was preliminarily selected, consistent with prior paper-based procedures. A 23-item questionnaire that evaluates four domains of functioning, physical, emotional, social, and school (Varni et al., 2001), it is administered at admission, 60 days (when applicable), and discharge.

Process Measures: Quantitatively, completion rates are tracked at each time point. Time required for data cleaning will be compared between electronic and prior paper workflows (previously ~10 hours per 150 participants). Qualitatively, staff are assessing parent/guardian satisfaction and documenting any challenges with the workflow. Facilitators and barriers to implementation and usability are being assessed via team discussions.

Results. Overall, the HCPHP transition has been successful. Completion at admission is 100%; 60-day and discharge rates are forthcoming. Lessons learned include creation of a contingency plan for REDCap and iPad downtime. Caregiver feedback has been positive and allowed us to identify unmet needs (e.g., iPad stylus for accessibility). Importantly, screening has not unduly burdened administrative staff. Challenges unique to Selya 6 rollout are being problem-solved, to promote sustainability at the inpatient level. Facilitators of this transition include a legacy of strong collaboration within and across programs, technology and system access, and trusting relationships with families.

Conclusion. Standardized electronic psychosocial screening of parents/guardians is a natural extension of the integrated, family-based care that the Hasbro Children's Med-Psych Service Line provides. This ongoing QI project has demonstrated early success, and our processes and lessons learned may inform similar initiatives across the BUH system. Future directions include adding additional outcome measures and linking survey responses to electronic medical record data to deepen program evaluation.

Title of Presentation

Distinguishing Visual Scanning Patterns to Identify Post-Hospitalization Suicidal Behavior

Authors

Gabrielle E. Reimann, Christopher D. Hughes, & Michael F. Armey

Abstract:

Suicidal thoughts and behaviors (STB) are common and debilitating clinical presentations that require accurate identification and timely intervention. However, our ability to predict suicide risk remains limited, particularly following hospital discharge. The present study examined whether eye-tracking patterns during a lab task can be used to distinguish psychiatric inpatients based on STB history and/or predict suicidal behavior in the next 6 months. One hundred forty-six psychiatric inpatients hospitalized for suicide attempts (SA), suicidal ideation, or non-suicidal psychiatric concerns freely viewed 12 trials of simultaneously presented neutral, positive, negative, and suicide-related images. Data collection is complete, and analyses are underway. We will comparatively evaluate and report the results of computational models characterizing visual scanning patterns' ability to distinguish STB history and predict SA reported at 6-month follow-up. We will compare the predictive performance of traditional machine learning frameworks (Logistic Regression) and deep learning models (Convolutional Neural Networks). These methods have the potential to model the sequential dependency of features across time and substantially improve our ability to predict suicide risk following hospital discharge. We will discuss implications of attention allocation and implicit processing of emotionally salient stimuli as a data-driven method for detecting and triaging suicidal behavior.

Sex Differences in Neuropsychiatric Symptoms in Frontotemporal Dementia

Franchesca Rolon,[1] Zachary J. Kunicki,[2] Molly Split,[1,2] Alyssa De Vito,[2] Masood Manoochehri,[1,2]
Edward D. Huey,[1,2] Megan Barker,[2] Daliah Ross[1,2]

[1] Butler Hospital [2] Warren Alpert Medical School of Brown University

Background: Frontotemporal dementia (FTD) is a neurodegenerative diagnosis characterized by progressive atrophy of frontal and anterior temporal lobes associated with frontotemporal lobar degeneration (FTLD). FTD is associated with impairments across multiple domains, including behavioral functioning and neuropsychiatric symptoms. Other neurodegenerative diseases, such as Alzheimer's disease, demonstrate sex differences in clinical presentation. Sex differences in FTD remain underexplored and poorly understood. Understanding these differences can lead to more tailored disease management. The purpose of this study is to examine whether there are differences in neuropsychiatric symptoms by sex among individuals diagnosed with FTD/FTLD.

Methods: We used data from the National Alzheimer's Coordinating Center (NACC) as of the September 2024 data freeze. We included participants with an antemortem FTD clinical diagnosis and neuropathology data confirming underlying FTLD. After characterizing the sample in terms of demographic features and clinical syndrome, we examined the presence of neuropsychiatric symptoms on the clinician-rated NACC B9 form and severity of symptoms on the caregiver-reported Neuropsychiatric Inventory Questionnaire (NPI-Q) at individuals' final visit. Neuropsychiatric symptoms were: apathy, anxiety, depressed mood, elation, irritability, agitation, auditory/visual hallucinations, delusions, disinhibition, personality change, motor disturbances, Rapid Eye Movement (REM) sleep behavior disorder, nighttime behaviors, and appetite/eating problems. Logistic regressions were run to compare neuropsychiatric symptoms in men and women.

Results: The sample included N = 305 participants, n = 172 men, and n = 113 women. Men were slightly younger (age mean(*sd*) = 63(7)) than women (age mean(*sd*) = 64(8), p=.13). Groups did not significantly differ on race, ethnicity, cognitive status, or severity of dementia as measured by the CDR® Clinical Dementia Rating Scale. Men were more likely to be diagnosed with behavioral variant FTD (bvFTD; 63% of men, 44% of women, *p*<.001), while women were more likely to be diagnosed with primary progressive aphasia (PPA; 41% of women, 28% of men, *p*=.01). On clinician ratings, men were more likely to present with apathy (*OR*=1.80, *p*=.02) and disinhibition (*OR*=1.37, *p*=.02). On care partner report (NPI-Q), men had higher odds of more severe nighttime behaviors (*OR*=2.12, *p*=.003) . All other neuropsychiatric symptoms did not differ by sex.

Conclusions: We found several sex differences in neuropsychiatric symptom endorsement and severity among individuals with FTD/FTLD. Sex differences in the clinical syndrome (i.e., bvFTD vs. PPA) replicate previous findings. Men generally exhibited more neuropsychiatric symptoms compared to women, including apathy, personality change, motor, and nighttime behaviors. These findings are consistent with preliminary research suggesting higher apathy, irritability, agitation/aggression, and disinhibition in men with FTD. Taken together, findings highlight the importance of considering sex-based differences in FTD clinical presentation, which has implications for understanding biological and behavioral manifestations of the disease as well as the potential to inform precise clinical treatments. In future work, we will examine symptoms longitudinally to assess whether there are sex differences in the neuropsychiatric profile of FTD over time.

Center of Biomedical Research Excellence (COBRE): Sleep and Circadian Methods Research Core

Authors: Aashritha Sadu[1] , Grace Kupka[1], David Barker[1,2], Mary Carskadon[1,2] , Jared Saletin[1,2]

[1]Bradley Hospital Sleep for Science Laboratory; Department of Psychiatry and Human Development, Alpert Medical School

Introduction: The goal of the COBRE Center on Sleep and circadian rhythms in child and adolescent mental health is to build a center that will help bridge the chasm between sleep and circadian science and child and adolescent mental health.

The objective of the Sleep and Circadian Methods (SCM) Research Core is to support researchers in the appropriate use of sleep and circadian methods across the research process. Sleep and circadian data are complex and multimodal, requiring specialized expertise to select, acquire, score, analyze and interpret. The center helps by providing multidisciplinary resources focused on all aspects of the research process starting at study design moving through data acquisition and quality control to data processing and ending at analysis and interpretation. The Long-term goal of this core is to integrate pediatric sleep and circadian methods into Bradley Hospital infrastructure thus providing an enduring resource that will support research addressing the interplay between mental health, development, sleep, and circadian rhythms.

Methods: The aims of the SCM Research Core are 1) Support Center investigators in the selection, acquisition, scoring, analysis, and interpretation of sleep and circadian measures, 2) Facilitate access to in-lab facilities, instrumentation, software, and database resources, required for acquisition, storage, and scoring sleep and circadian data, and 3) Serve as resource for training in current best practices and for identifying novel methodological, measurement, and analytic approaches to sleep and circadian assessments suitable for pediatric mental health populations.

Results: Since the beginning of 2023, the SCM Research Core has provided over 200 consultations to research teams within Bradley Hospital, the larger Brown University Health system, and external teams [2025: 57 internal and 9 external]. These include training workshops in actigraphy, dim-light melatonin assessment, and ambulatory PSG for Brown University Health researchers.

Conclusions: The SCM Research Core is an important resource to support research focused on sleep and mental health in pediatric populations.

Clinical Implications: Integrating sleep and mental health research will help improve mental health chare for young people.

The Role of ADHD Symptom Severity in Sleep Efficiency Across Sleep Schedules

Authors and Institutions: Claire Mayew Sherman* & Aashritha Sadu*; Gina M. Mason, PhD; Luna Sato; David H. Barker, PhD; Daniel P. Dickstein, MD; Mary A. Carskadon, PhD; Jared M. Saletin, PhD

*Mses. Mayew Sherman and Sadu contributed equally to this work as co-first-authors.

Introduction: Previous work indicates that sleep disturbances may be linked to attention-deficit/ hyperactivity disorder (ADHD) in youth. Changes to sleep schedule further alter sleep. For example, the homeostatic sleep pressure built up from sleep restriction can lead to increases in nighttime sleep efficiency. It remains unclear whether ADHD status moderates these effects. The current study examines whether ADHD symptom severity distinguishes changes in sleep efficiency across three at-home sleep schedules: restriction, optimization, and ad-libitum sleep.
Methods: Fifty-two children (29F; ages 10-15 years; n= 26≥50%ile ADHD, n= 26<50%ile ADHD) completed a within-subject sleep protocol including 5-nights of Sleep Optimization (SO; TIB= 10hr), 5-nights of Sleep Restriction (SR; TIB=7.5hr), and optional 5-7 day continuation conditions (participant's natural sleep, TIB varies). Actigraphic sleep efficiency was defined as the percentage of each night's sleep period (elapsed time between sleep onset and offset) spent asleep, averaged across nights in each condition. A 2 x 3 mixed ANOVA was used to examine ADHD group (between-subjects: Conners-3 ADHD Index [≥50=ADHD-high,<50=ADHD-low]) x condition (within-subjects: SO, SR, and continuation) effects on sleep efficiency.
Results: We identified a significant main effect of condition ($F(1.71, 85.67) = 13.93$, $p < .001$), indicating that sleep efficiency was higher in SR ($M = 91.12 \pm 5.01$) relative to both SO ($M = 88 \pm 5.64$) and continuation ($M = 88.75 \pm 4.44$). However, a condition-x-group interaction indicated that this increase in sleep efficiency in SR was only significant in the ADHD-high group ($F(1.71, 85.67) = 4.25$, $p = .022$). Furthermore, in SO only, sleep efficiency was significantly lower in the ADHD-high group compared to the ADHD-low group (mean difference=3.67, bonferroni-corrected p=.017). We did not identify a significant main-effect of the ADHD group, $F(1, 50) = 2.78$, $p = .102$.
Discussion: These data indicate that sleep restriction may differentially affect sleep efficiency as a function of ADHD symptom severity. While the ADHD-high group had lower sleep efficiency than the ADHD-low group when sleep-optimized, sleep restriction raised sleep efficiency near to equal the ADHD-low group in the same condition. Overall, the results indicate that ADHD symptom severity moderates sleep efficiency across different sleep schedules.
Support (if any): R01HD103655; P20GM139743

TITLE: Sleep restriction in adolescents alters caregiver-child discrepancy in detecting adolescent fatigue

Authors: Luna Sato, Gina Mason, Kathleen P. O'Hora, Claire Mayew Sherman, Grace Kupka, David H. Barker, Daniel P. Dickstein, Mary A. Carskadon, Jared M. Saletin

Introduction

Adolescents are susceptible to insufficient sleep due to competing bioregulatory and social pressures, with consequences for daytime fatigue. In the context of attention-deficit/hyperactivity disorder (ADHD), caregivers may misconstrue fatigue and ADHD traits. We examined how caregivers and youth differ in detecting the impact of sleep restriction on adolescent fatigue and sleep disturbances.

Methods

Data were analyzed from 50 adolescents (range: 10.1-15.7 [12.3±1.6] years; 25F) who completed two counterbalanced at-home 5-night sleep conditions: sleep optimization (SO; 10h TIB) vs. sleep restriction (SR; 7.5h TIB). Both caregiver and child completed the PROMIS short form evaluating youth fatigue and sleep disturbances after each sleep schedule. ADHD traits were indexed by Conners 3 *T*-scores for inattention (range: 40-90; 64.28±14.29) and hyperactivity-impulsivity (range: 40-90; 65.59±17.35). Linear mixed models assessed interactions and main-effects of condition (SO vs. SR), respondent (caregiver vs. child), and ADHD traits (separate models for inattention and hyperactivity-impulsivity), on PROMIS *T*-scores.

Results

We identified a significant condition-by-rater interaction for fatigue *T*-scores ($F(1,130.6)=4.54$, $\beta=4.04$, $p=.035$). After SR, caregivers rated child fatigue higher than adolescent self-report (caregiver: 49.05±8.83; adolescent: 44.19±7.83; ($F(1,130.7)=9.30$, $\beta=-4.91$, $p<.01$); this distinction was not present after SO (caregiver: 43.82±7.30; adolescent: 42.95±8.85; ($F(1,130.7)=9.30$, $\beta=0.87$, $p>.05$). For sleep disturbances, we only identified a main-effect of rater (adolescent>caregiver; caregiver: 52.62±8.52, adolescent: 62.72±3.25; ($F(1,132.8)=139.6$, $\beta=-10.09$, $p<.001$) with no interaction of rater by condition or main effect of condition (*ps*>.05). ADHD symptoms did not moderate any findings (all *ps*>.05).

Conclusion

Caregivers rated higher adolescent fatigue after sleep restriction compared to adolescents' self-report; raters did not differ after sleep optimization. Caregivers rated lower levels of sleep disturbances compared to youth overall. These effects indicate that sleep restriction amplifies a discordance between adolescents' experience of fatigue and their caregivers' perception of that experience. These data join a larger literature indicating masked self-perception of sleep loss.

Title: The role of self-as-context for co-occurring posttraumatic stress disorder and borderline personality disorder in an acceptance and commitment therapy-based partial hospital program.

Authors: Regina E. Schreiber, Michael Antonelli, Kristy Dalrymple

PTSD and BPD are highly co-occurring. Lifetime prevalence rates in a nationally representative sample found that about 30% of individuals with BPD were also diagnosed with PTSD, and 24.4% of individuals with PTSD were also diagnosed with BPD. In both clinical presentations individuals often struggle with an instability and/or lack of clarity around sense of self, as well as rigid patterns of thinking, which conceptually maps onto a mechanism of acceptance and commitment therapy (ACT) termed self-as-context (SAC). ACT focuses on increasing SAC to support individuals in achieving a stable sense of self that can also flexibly observe their thoughts and emotions. Notably, ACT and SAC more specifically have been less researched both in the context of co-occurring and non co-occurring PTSD and BPD. The current study examined differences in treatment satisfaction and clinical outcomes including depression and quality of life variables (i.e., coping ability, positive mental health, level of functioning, well-being) among adult patients with co-occurring PTSD/BPD (n = 894), current PTSD (n = 527), and current BPD (n = 175) at time of discharge from a fully telehealth ACT-based partial hospitalization program. For clinical outcomes that significantly differed among diagnoses, we examined whether the relationship between diagnosis and clinical outcomes at treatment discharge was moderated by level of self-as-context at time of treatment admission. Diagnostic categories were dummy-coded with co-occurring PTSD/BPD as the reference group. Results showed that average overall treatment satisfaction was high (M = 3.47, SD = .79), with no significant differences among the three diagnostic groups (p = .12). Among depression and quality of life variables at time of discharge, patients only significantly differed in depression symptoms, F(2, 749) = 9.86, p < .001, such that patients with co-occurring PTSD/BPD had significantly higher depression scores than patients with either a diagnosis of PTSD (p < .01) or BPD (p < .001). There was a modestly significant main effect of self-as-context before the interaction term was entered into the model, such that self-as-context predicted decreased depression symptomatology (b = -.12, p = .048). Self-as-context did not significantly moderate the relationship between diagnostic group and depression symptomatology, but with the moderation term entered into the model, there was no longer a significant relationship between depression and PTSD/BPD compared to PTSD diagnosis.There was still a significant main effect of BPD diagnosis, such that having a BPD diagnosis was associated with decreased depression symptomatology after treatment completion compared to having co-occurring PTSD/BPD (b = -.24, p = .03). In sum, ACT-based treatment delivered in an intensive treatment setting was experienced as effective regardless of clinical presentation, although individuals with co-occurring presentations of PTSD/BPD tended to experience greater depression after treatment compared to those with either PTSD or BPD. Although self-as-context was found to be associated with lower depression generally, it was not found to be a significant moderator between diagnostic status and depression.

Associations between Cognitive Function with Functional Capacity and Health-Related Quality of Life among Patients with Heart Failure and Mild Cognitive Impairment

Danusha Selva Kumar, Barbara Riegel, Hila Pond, Christopher Liu, Vanessa Serrano, Janice Tripolone, Christopher Breault, Ron Cohen, Elena Salmoirago-Blotcher

Significance: Individuals with heart failure (HF) generally have poor functional capacity and health-related quality of life (HRQoL). More than half of these individuals experience cognitive impairment. Better cognitive function is linked with better quality of life, including better functional capacity. We hypothesized that, among individuals with HF, better cognitive functioning would be associated with better functional capacity and HRQoL.

Methods: This was a secondary analysis using baseline pre-randomization data from an ongoing RCT conducted in adults with HF and mild cognitive impairment (MCI; scores 15-26 on MoCA). Participants completed measures from the NIH Toolbox Fluid Cognition Battery: 1) Flanker Inhibitory Control and Attention Test (attention and inhibitory control), 2) Pattern Comparison Test (processing speed), 3) List Sorting Working Memory Test (working memory), 4) Picture Sequence Memory Test (episodic memory), 5) Dimensional Change Card Sort Test (attention and cognitive flexibility). Functional capacity was measured with the 6-minute walk test (6MWT). HRQoL was measured with the Kansas City Cardiomyopathy Questionnaire (KCCQ). We conducted six separate linear regression models with age-adjusted Fluid Composition Cognitive score and age-adjusted scores from each cognitive test as predictors, and KCCQ as the outcome, adjusting for sex and education. We repeated the analyses using 6MWT as the outcome.

Results: The average age of participants (n=114) was 71.9 years (SD = 12.2). Most (78.9%) were White and 39.5% were female. Higher Fluid Cognition Composite scores ($\beta = 0.38$, *95% CI* = 0.08, 0.68, $p = .02$), higher Flanker Inhibitory Control and Attention Test scores ($\beta = 0.67$, *95% CI* = 0.28, 1.05, $p < .001$), and higher Dimensional Change Card Sort Test scores ($\beta = 0.45$, *95% CI* = 0.16, 0.74, $p = .003$), but not the other cognitive measures tests, were associated with higher KCCQ scores. While male participants had higher functional capacity (M=337.6 meters) than female participants (M=281.9 meters), ($\beta = -55.7$, *95% CI* = -100.5, -10.8, $p = .02$), there were no associations between cognitive function or education with functional capacity.

Conclusions: In this cross-sectional analysis, better cognitive function was associated with better HRQoL. While cognitive impairment is highly prevalent among patients with HF, better attention, inhibitory control, and cognitive flexibility are beneficial for HRQoL.

Sleep Quality and Vagal Control among Patients with Heart Failure and Mild Cognitive Impairment

Vanessa B. Serrano, MS, MPH; Hila Pond, BA; Chris Liu; Emily Gathright, PhD; Danusha Selva Kumar, PhD; Janice Tripolone, M.S.; Chris Breault; Barbara Riegel, PhD; Elena Salmoirago-Blotcher, MD, PhD.

Significance: Heart failure (HF) is associated with dysregulation of the autonomic nervous system. Higher vagal control reflects better autonomic balance, while low control has been linked to disease severity and mortality risk in HF. Sleep disturbance, commonly reported in this population, may further disrupt autonomic regulation. This analysis examined whether sleep quality is associated with vagal control among individuals with HF and comorbid mild cognitive impairment (MCI).

Methods: We examined baseline data from participants (*n* = 128) enrolled in an ongoing randomized controlled trial of adults with HF and MCI. At baseline, high frequency power (hf-HRV), a measure of vagal control, was collected by averaging values during a 5-minute relaxation window. The Pittsburgh Sleep Quality Index (PSQI) was used to assess sleep quality. The PSQI consists of seven sleep subscales (quality, latency, duration, efficiency [time slept relative to time in bed], disturbance, medication use, and daytime dysfunction; range: 0-3) and a total score (range: 0-21; higher = worse). Linear regression was used to examine the association between PSQI (total and each subscale scores) and hf-HRV. All analyses controlled for age (a well-known confounder of this relationship).

Results: Mean participant age was 71 years (*SD* = 12.7), with the majority being White (78.1%) and male (63.3%). When examining PSQI total score, overall sleep quality was not associated with hf-HRV (β = 16.76, *p* = .34), though age remained a significant predictor (β = 9.98, *p* = .02). Of PSQI subscales, only poor sleep efficiency was positively associated with hf-HRV (β = 83.3, *p* = .01). After Bonferroni correction, this association trended towards significance (*p* = .07).

Conclusions: In this secondary analysis of adults with HF and MCI, overall sleep quality was not associated with vagal control. These results may reflect design and measurement-related factors (e.g., cross-sectional analysis; self-report measure; residual confounding). The positive association between poor sleep efficiency and higher vagal control may reflect transient increases in vagal activity during daytime study assessments in individuals with poor sleep efficiency. Further research is needed to evaluate whether sleep may affect vagal control and related physiology in this population, as sleep may be an actionable predictor of autonomic regulation and possibly clinical outcomes in this frail population.

Overcontrol and Interpersonal Functioning in Veterans with PTSD

Sonia Sheth[1,2] ; Hannah R Swearingen , MS[1]; W. Luke Acuff, MS[1,2]; Jennifer Barredo, PhD[1,2]

[1]Center of Neurorestoration and Neurotechnology, Providence VA Healthcare System, Providence, RI
[2]Department of Psychiatry and Human Behavior, Brown University, Providence, RI

Introduction: Overcontrolled behaviors associated with obsessive-compulsive personality disorder (OCPD) and obsessive-compulsive disorder (OCD) often co-occur with posttraumatic stress disorder (PTSD) in Veterans. These behaviors can shape interpersonal interactions, but the specific ways in which the disorders are linked with different interpersonal dynamics are not currently well understood. Thus, this study examined the relationships between PTSD, OCPD, and OCD traits in Veterans and characterized the associated interpersonal patterns using the Interpersonal Problems Circumplex (IIP-64).

Methods: We recruited 33 Veterans receiving trauma recovery services from the Providence VA Healthcare System (PVAHCS) who endorsed obsessive-compulsive personality disorder (OCPD) traits on the Pathological Obsessive Compulsive Personality Scale (POPS). Participants completed baseline clinical and personality assessments, including the PTSD Checklist-5 (PCL-5), Yale-Brown Obsessive-Compulsive Scale-II (YBOCS-II), and the IIP-64. Zero- and first-order correlations were conducted among POPS, PCL-5, and YBOCS-II. Mean and correlation-based structural summary method (SSM) analyses were used to characterize interpersonal functioning from the IIP circumplex.

Results: There was a moderately strong positive correlation between Y-BOCS and PCL-5 scores that strengthened after controlling for OCPD ($\rho = .462$, $p = .007$). The IIP circumplex linked OCPD trait severity to increased interpersonal distress (elevation: $r = 0.16$, 95% CI [-0.05–0.36]) and sharply defined interpersonal behavior patterns (amplitude: $r = 0.34$, 95% CI [0.11–0.60]). These participants demonstrated domineering, vindictive, and cold interpersonal personality traits (displacement: 110.3°, 95% CI [60.4–147.0°]; fit: 0.872). OCD trait severity was similarly correlated with greater interpersonal distress (elevation: $r = 0.18$, 95% CI [-0.01–0.36]) and distinctive interpersonal patterns (amplitude: $r = 0.19$, 95% CI [0.07–0.38]). However, these participants demonstrated nonassertive, socially avoidant, and cold interpersonal personality traits (displacement: 238.9°, 95% CI [176.5–306.1°]; fit: 0.816).

Discussion: These findings highlight significant differences in how PTSD, OCPD, and OCD traits manifest as interpersonal behaviors among Veterans. The strengthened association between OCD and PTSD symptoms after controlling for OCPD traits suggests that treating OCD and OCPD the same way will likely not be effective. OCPD traits were associated with domineering, vindictive, and cold interpersonal patterns, which suggests that in treatment settings, these Veterans may present as mistrustful, argumentative, or prone to challenging the provider’s approach. In contrast, OCD traits were characterized by nonassertive, submissive, and cold styles, which may manifest as social withdrawal, limited emotional engagement, and difficulty advocating for needs. Differentiating these disorders through traits that Veterans express may promote improved therapeutic engagement.

Title: Pre-Implementation Determinants and Veteran-Informed Adaptations for a Telehealth Cognitive Rehabilitation Intervention for Alcohol Use Disorder

Authors: Kate Shirley, PhD, Brandon Gaudiano, PhD

Introduction: Veterans with alcohol use disorder (AUD) in early remission are at risk, as cognitive difficulties can impede treatment engagement and increase vulnerability to recurrence of use. Cognitive rehabilitation may help address these challenges, yet little is known about pre-implementation factors relevant to delivering such interventions within VA settings. Before conducting a telehealth cognitive rehabilitation pilot trial, input from a local Veteran Engagement Group (VEG) was collected to identify anticipated implementation determinants and guide early adaptations. This study examined these determinants and the resulting adaptations.

Hypothesis: Guided by implementation science frameworks, we anticipated that pre-implementation activities would identify determinants across multiple domains of the Consolidated Framework for Implementation Research (CFIR) and inform adaptations to strengthen intervention fit, acceptability, and delivery feasibility.

Methods: Using a qualitative approach informed by CFIR, we analyzed data from pre-implementation VEG consultations and planning activities conducted before launching the telehealth pilot trial. Data sources included VEG consultation notes, recruitment pathway records, intervention manual revisions, and telehealth workflow documents. A directed content analysis was conducted: the lead analyst reviewed all materials, coded relevant content to CFIR constructs using a deductive codebook, and added inductive codes when data did not align with existing constructs. Analytic memos documented coding decisions, and emerging determinants were reviewed with the study team. Adaptations were categorized using the Framework for Reporting Adaptations and Modifications-Enhanced (FRAME).

Results: Determinants included concerns about stigmatizing diagnostic labels, preferences for person-first and recovery-oriented language, and considerations related to telehealth usability. Planning activities also identified staffing-related recruitment barriers and the need for standardized mailing, reminder, and workflow procedures. These determinants guided adaptations to recruitment materials, intervention language, and telehealth processes.

Discussion: Identifying pre-implementation barriers and facilitators informed Veteran-centered adaptations to strengthen telehealth delivery. These preparatory activities were incorporated into the completed pilot trial and support progression toward a Hybrid Type 1 implementation-effectiveness trial.

Title: Associations between Cannabis Use and Same-Day Alcohol Co-Use among Adolescents

Authors: Kirstyn N. Smith-LeCavalier, Jane Metrik, Jamie E. Parnes, Hayley Treloar Padovano

Abstract:

Adolescent alcohol use is concerning because early age of initiation robustly predicts unwanted alcohol consequences, which is linked to several deleterious social, academic, physical, emotional, and psychological outcomes. While efforts have been made to better understand adolescent use, significant work is still needed given the notable complexity and developmental nature of contributing factors occurring during this period. One potentially relevant factor influencing adolescent alcohol use is co-use with cannabis. It is increasingly common for adolescents to use both alcohol and cannabis; however, little is known about how cannabis use on a given day relates to alcohol use on that same day. Broader literature has provided support for both substitution (i.e., use of one offsets use of the other) and complementary (i.e., encourages use) effects of alcohol and cannabis co-use, which suggests there are nuanced patterns of co-use . Extant research examining these associations among non-treatment seeking adolescents and young adults suggests greater likelihood of complementary effects. However, to our knowledge, no studies have examined cannabis use as a predictor of alcohol use and overuse (i.e., drinking more than planned) at the daily level among adolescents. Thus, the present study seeks to examine associations between same day cannabis and alcohol use and drinking more than planned. We hypothesized participants would report consuming more drinks and drinking more than planned on days they also report using cannabis. To examine study aims, we conducted a secondary analysis of data from a parent study examining development of alcohol pathology in adolescents (15-17) using three 24-day bursts of ecological momentary assessment. Adolescents (N=89) endorsed recent alcohol use but did not meet criteria for AUD, reported cannabis use at least once during the study, had an average age of 16.44 at screening, and reported primarily white (79.78%), non-hispanic or latin (80.90%), and female sex at birth (60.67%) identities. We utilized negative binomial specified mixed models with random intercepts and slopes to examine day-level associations between cannabis use (within- and between-person) and same day alcohol use quantity and drinking more than planned. Models controlled for sex assigned at birth, sample centered age, weekend day status, and nicotine use. Findings partially supported our hypotheses such that, on days when individuals reported using cannabis, they also reported consuming more alcohol (1.50 drinks) than on days they did not use cannabis (1.26 drinks). However, between-person effects of cannabis on alcohol use were not significant, and cannabis use at within- and between-person levels was not significantly associated with drinking more than planned. Findings from the present study provide support for complementary effects of same-day cannabis and alcohol use in adolescents, above and beyond common individual differences. While associations with drinking more than planned were not supported, this may be due to having plans specific to co-use days or influenced by retrospective recall bias. Future research would benefit from replication of findings in diverse adolescent samples and temporal assessment to examine the order of cannabis and alcohol use and plans for subsequent substance use among adolescents.

Assessing Interest and Preferences in the SOCIAL Clinic - a Dyadic Behavioral Intervention for Individuals with Mild Cognitive Impairment and Their Care Partners

Molly Split*, Shelby Bawden, Zachary Kunicki, Megan S. Barker, Sarah Prieto, Daliah Ross, Alyssa N. De Vito, Laura E. Korthauer, Jennifer Davis, Edward Huey, and Louisa Thompson
**Presenting author*

Objective: Individuals with Mild Cognitive Impairment (MCI) and their care partners commonly experience psychosocial challenges following diagnosis including social and interpersonal stress, emotional strain, and disruptions to daily routines. These experiences can lead to both individual and shared difficulties within the dyad, underscoring the need for targeted interventions that address the complex needs of each role. Dyadic, group-based behavioral programs may offer meaningful support; however, few accessible options exist, and little is known about the specific interests and preferences of patients and care partners regarding this type of treatment. To address this gap, we gathered stakeholder feedback to inform the development of the Supporting Ongoing Connection and Interaction for Aging and Longevity (SOCIAL) Clinic, a 12-week group-based, dyadic psychotherapy program for individuals with MCI and their care partners that uses an Acceptance and Commitment Therapy framework to strengthen psychological well-being, social connection, and everyday functioning.

Participants and Methods: Six MCI–care partner dyads from the Memory and Aging Program at Butler Hospital completed a survey to assess psychosocial needs and indicate their interest in the proposed SOCIAL Clinic after reviewing the program description. Additional items assessed format and delivery preferences, as well as potential participation barriers. Descriptive statistics were used to evaluate responses.

Results: All participants expressed interest in the SOCIAL Clinic. Among those who endorsed psychosocial challenges (92%), all believed the SOCIAL Clinic would address their needs. Most preferred group-based and in-person sessions (58%), though some favored dyadic-only formats (25%) or were open to hybrid delivery (42%). Participation barriers included scheduling conflicts/concerns (1 patient, 3 care partners), driving discomfort (1 patient), group discomfort (1 patient), mobility issues (1 patient), and physical health concerns (1 care partner). No participant reported more than one barrier, and 25% of participants reported no barriers at all. The participant with MCI who endorsed scheduling concerns commented, “My husband and I have enjoyed traveling and especially lately, but I feel that being a part of this program is not only vital to my brain health, but to my husband and family relationships.”

Conclusions: All participants expressed strong interest in the SOCIAL Clinic and believed it would address their needs. Open-ended feedback from one individual with MCI highlighted the value of a dyadic approach that supports both individual and relational well-being. Most individuals preferred group-based and in-person sessions, suggesting this may be a feasible delivery method. At the same time, reported participation barriers and openness to a hybrid format highlight the importance of considering flexibility in program design. These insights will directly inform the SOCIAL Clinic’s development, and future work will pilot the intervention to more rigorously evaluate its feasibility, acceptability, and potential impact on psychosocial outcomes.

Identifying and Validating Infant Neurobehavioral Profiles across Early and Late Neonatal Periods in the BAMBAM cohorts

Ruth G. St Fleur[1], Aaliyah S. Taylor[1], Nicole M. S. Belanger[1], Carmen J. Marsit[2], Laura R. Stroud[1,3]

[1] Center for Behavioral and Preventive Medicine, Brown University Health

[2] Gangarosa School of Public Health, Emory University

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

Background: Neonatal neurobehavioral assessments are early markers of developmental risks and allow for targeted interventions that can ultimately reduce the burden of long-term adverse outcomes. Identifying atypical neurobehavioral profiles, derived from multiple markers of neurological and behavioral functioning, could help screen infants who are at greatest risk and who could benefit from early interventions and preventive services.

Objective: This study aimed to identify, validate, and compare neurobehavioral profiles during the early and later neonatal periods in the BAMBAM (Behavior and Mood in Babies and Mothers) cohorts and to explore links with birth outcomes and sociodemographic factors.

Methods: 872 mother-infant pairs primarily from disadvantaged social backgrounds (42% low socio-economic status, 47% ≤HS education) were enrolled across six prenatal cohorts. The NICU Network Neurobehavioral Scale (NNNS, a comprehensive assessment of neonatal neurobehavior), was completed by certified examiners in the early (*M*=3 postnatal days, *SD*=6) and/or later (*M*= 32, *SD*=5) neonatal periods. 626 infants completed the NNNS at both time points; 246 completed the NNNS at 1 time point. Latent profile analysis, a person-centered method that identifies latent subgroups based on NNNS subscale scores, was conducted to identify and compare neurobehavioral profiles across neonatal development.

Results: In the early neonatal period, infants were classified into 3 distinct profiles: 1) “Regulated” (n=229; 32%) included infants with high levels of self-regulation, attention, and quality of movement; 2) “Fussy” (n=367; 52%), included infants with high levels of excitability and arousal and low self-regulation; and 3) “Lethargic” (n=111; 16%) included infants with the highest levels of lethargy, non-optimal reflexes and lowest levels of arousal and attention. In the later neonatal period, profiles were largely similar to the early neonatal period, with “Regulated” (n=315; 40%), “Fussy” (n=117; 15%), and “Lethargic” (n=122; 15%) profiles emerging, as well as an additional “Unregulated” profile (n=237; 30%) that was similar to the “fussy” profile but with relatively higher levels of attention and self-regulation. In the early neonatal period, infants in the lethargic profile were more likely to require NICU admission vs. those in the regulated (p=.04) and fussy (p=.03) profiles; infants in the lethargic profile had lower gestational age (GA) and birthweight vs. those in the fussy profile (ps≤.001) and those in the regulated profile (ps≤.03). In the later neonatal period, infants in the fussy profile had lower GA and birthweight relative to infants in regulated (ps≤.01) and unregulated (p≤.036) profiles; those in the lethargic profile also had lower GA and birthweight compared to those in the regulated profile (ps≤.05). Infants in the regulated profile were born to mothers with fewer prior live births compared to those in the unregulated (p=.05) and fussy (p=.01) profiles. No associations emerged between NNNS profiles and maternal socioeconomic status.

Conclusion: To our knowledge, this is the first study to identify distinct neurobehavioral profiles in both the early and later neonatal periods. Results confirm and extend prior infant neurobehavioral profile studies focused solely on one neonatal period and highlight stronger associations with birth outcomes relative to maternal factors. Further research is needed to determine if the identified profiles are associated with maternal psychological and medical factors.

Title: Actionable steps to improve training: A synthesis of expert advice from over 100 Navigating Neuropsychology (NavNeuro) podcast guests.

Authors: Mackenzie Stabile, Sarah Prieto, Jennifer K Hoots, Sara Vargas, John A Bellone, W. Curt LaFrance Jr., & Ryan Van Patten

Objective: The journey to becoming a neuropsychologist is highly variable. Trainees are faced with myriad decisions along the way. Neuropsychologists possess a wealth of knowledge that could be helpful to trainees as they navigate the path. To date, most of this wisdom has been passed on in an individual mentorship model wherein supervisors and advisors relay advice to trainees under their direct supervision. While this model has many advantages, it means that the recommendations of many experts in the field are only relayed to those with whom they have a direct mentorship relationship. To our knowledge, there has not been any research published that disseminates mentors' advice from brain-behavior experts to a broad audience. The current study sought to address this gap by consolidating advice for trainees through a qualitative analysis of podcast interview responses from a large, diverse group of brain-behavior experts.

Participants and Methods: Participants were invited guest interviewees (N=102) from the open-access podcast *Navigating Neuropsychology* (mean age=52, SD=11, range=32-87; 55% late-career, 28% mid-career, 15% early-career). Most participants (87%) held a PhD (52% with clinical neuropsychology board certification), and 8% had an MD. Participants were asked a standardized question: "What is one bit of advice you have for trainees, or something that someone told you that made a difference?" Responses were audio-recorded, transcribed, and analyzed. A preliminary codebook was developed deductively through discussion among authors. The first author and two additional coders independently analyzed transcripts and met periodically to arrive at consensus coding. Thematic analysis identified themes pertaining to advice for neuropsychology trainees.

Results: Four major themes were identified: 1. Mentorship & Networking (e.g., how to successfully utilize mentorship relationships, the importance of multiple mentors); 2. Core Knowledge and Skill Acquisition (e.g., training experiences to prioritize, foundational clinical/research skills, business/financial aspects); 3. Decision-Making (e.g., open-mindedness in selecting training experiences); and 4. Personal Growth (e.g., importance of maintaining a lifelong learning attitude, belief in oneself, risk-tolerance, communication skills).

Conclusions: The current study addressed a neuropsychology training gap by synthesizing pearls of wisdom and practical advice for trainees from a large, diverse group of brain-behavior experts. This work can help trainees draw from a broad range of perspectives to inform the multitude of decisions they face as they navigate the path towards becoming neuropsychologists. Moreover, the knowledge emphasizes helpful mindsets to support career advancement. Training programs can utilize this work to enrich their mentorship of trainees by incorporating diverse perspectives on training. Training programs may benefit from experts' advice by modifying program offerings to include instruction and experiential learning that experts think are important for trainees.

Behavioral Modeling of Probabilistic Approach-Avoidance Task in OCD Patients Undergoing Capsulotomy: Preliminary Findings

Paige Stetson, Mohamed Sherif*, Ziwei Cheng, Sarah Milback, Donia Hassan, Nicole McLaughlin, Amitai Shenhav, Steven Rasmussen (*Equal contributions)*

Obsessive Compulsive Disorder (OCD) is a psychiatric disorder associated with altered decision dynamics and approach-avoidance behaviors. The Probabilistic Approach-Avoidance Task (PAAT) examines how uncertainty in rewarding and aversive outcomes shapes decision-making. The task tests how participants navigate approach and avoidance when facing varying probabilistic outcome valences, providing opportunities to integrate the weights of anticipated reward and punishment to examine the computational signatures of motivational conflict.

Participants with severe, intractable OCD underwent laser ventral capsulotomy and completed the PAAT at baseline and at one-year post-surgical follow-up. To delineate latent cognitive processes driving decision-making, we leveraged behavioral modeling using drift diffusion modeling (DDM) within the Hierarchical Sequential Sampling Modeling (HSSM) toolbox. DDM models decision making as a process governed by four basic parameters: drift rate (*v*; the velocity of information accumulation), boundary separation (*a;* the quantity of information requisite to come to a decision), a priori decision bias (*z*; the intrinsic bias to make a specific choice that precedes the presentation of trial-specific variables), and non-decision time (*t*; the time spent on perceptual, motor, and other non-decision-related dynamics).

To test the validity of our hierarchical Bayesian estimates, we employed Markov Chain Monte Carlo (MCMC) sampling. Computational diagnostics, including visual trace plots and $\hat{R} \leq 1.01$, reveal a successful convergence of five independent simulation chains for both baseline and post-operative data, suggesting the ability of the model to fit the data, and the ability to recover the parameter values. These results are the first step toward using computational phenotyping to examine decision-making traces underlying capsulotomy for intractable OCD.

Title: Prospective Validation of Plasma P-tau217 as a Screening Tool for Alzheimer's Disease in a Rhode Island Cohort Study

Authors: Sophia F. Tarro[1], Marycia Malloy[1], Priscilla Villa[1], Esmaeil Rezaei[1], Preeti Sunderaraman[1,2], Edward D. Huey[1,2], Matthew D. Howe[1-3]

Affiliations: (1) Butler Hospital Memory and Aging Program, (2) Brown University Department of Psychiatry and Human Behavior; (3) VA Providence Healthcare System.

Acknowledgement: M. Howe is an employee of the US Department of Veterans Affairs. The views expressed in this article are those of the authors and do not necessarily represent the views of the US Department of Veterans Affairs or the US Government.

Abstract

Background: Plasma phosphorylated tau 217 (P-tau217) is a promising blood biomarker for Alzheimer's disease (AD), but inter-laboratory calibration and external validation against gold-standard measures are essential for prospective research and clinical applications. To address this need, we calibrated a commercial plasma P-tau217 immunoassay against an established reference assay and assessed concordance in matched samples spanning mixed cognitive and amyloid status. We then developed screening cutoffs for AD neuropathology defined by gold-standard amyloid positron emission tomography (PET) or cerebrospinal fluid (CSF) biomarkers. Finally, we validated its performance as a prospective screening tool for the B3 study, a longitudinal Rhode Island cohort spanning cognitively unimpaired and early symptomatic individuals.

Methods: In the development cohort (IBEAT; n=97 after outlier removal), plasma P-tau217 measured using a Lilly-developed Mesoscale Discovery (MSD)-based electrochemiluminescence immunoassay was compared with an established research assay performed at the BioFINDER-2 reference laboratory (Lund University). Inter-laboratory agreement of plasma P-tau217 concentrations was assessed using Deming regression and Bland–Altman analysis. Receiver operating characteristic (ROC) analysis was used to calculate area under the curve (AUC) for prediction of PET or CSF test results. Plasma P-tau217 cutoffs were validated in a separate cohort (B3 Study; n=38 after outlier removal) against flutemetamol PET visual reads, with diagnostic metrics (accuracy, sensitivity, specificity) calculated for each cutoff. In the validation cohort, plasma P-tau217 was also correlated with centiloid values.

Results: In the development cohort, inter-laboratory comparison demonstrated strong correlation (r=0.98; concordance correlation coefficient=0.85), although Deming regression identified proportional calibration differences across the measurement range. Plasma P-tau217 discriminated amyloid positivity with AUC=0.95. In the validation cohort, P-tau217 correlated with centiloid burden (r=0.78) and maintained high discrimination for PET positivity (AUC=0.92), achieving 84% overall classification accuracy and 96% specificity using prespecified development cohort cutoffs.

Conclusions: An MSD-based plasma P-tau217 assay demonstrates robust inter-laboratory agreement and reproducible diagnostic accuracy in an independent validation cohort. However, measurable proportional differences between assays underscore that harmonization is necessary before applying fixed cutoffs across laboratories. These findings support its use as a prospective screening tool to enrich participants for amyloid PET imaging and underscore the importance of assay calibration for reliable implementation of plasma biomarkers across laboratories and studies.

Group interventions for veteran life satisfaction and quality of life: A meta-analytic review

Colin M. Teeter, Fran Blumberg, Min-Kyung S. Park, Eric Chen, Elizabeth Castello

Abstract

More than 200,000 United States service members separate from the armed forces each year, yet few programs are widely available to prepare veterans for the psychosocial challenges of the military-to-civilian identity shift. Interventions in a group format may be uniquely situated to support social and emotional stressors commonly reported after military separation. This meta-analysis aimed to synthesize evidence examining the overall effect of group interventions on veteran life satisfaction and explore possible moderators of group intervention formats and veteran demographics. A comprehensive search of published and unpublished literature using OneSearch Discovery, a database search tool used to aggregate electronic databases such as PubMed, ProQuest, Public Library of Science, JSTOR open shared collections, Medline, APA PsycINFO, and PTSDpubs, identified 19 eligible studies involving a total of 1,635 participants. Using a random-effects meta-analysis, a medium effect of group psychotherapy interventions on quality of life was found ($d = .53$). No significant publication bias was indicated. The medium effect size remained significant after removing studies with high risk of bias and utilizing a trim-and-fill method to test for potential study outliers. These findings provide support that group psychotherapy effectively improves veterans’ quality of life after their separation from service. The current findings and literature review also highlighted the scarcity of research in alternative forms of veteran group intervention, most notably for community activism, peer support groups, and non-therapy-based practices where veterans meet in a group setting. Implications for future group intervention research and recommendations for clinical training are highlighted.

Beyond Locked Doors: Psychological Safety and Child Voice in Pediatric Inpatient Psychiatry

Mitali Temurnikar, M.Ed; Maria Eguia-Brusco, PhD & Karen Holler, PhD

Background: Psychological safety refers to the belief that it is safe to take interpersonal risks such as speaking up without fear of negative consequences (Edmondson, 1999; Edmondson & Lei, 2014). Although extensively studied in workplace and healthcare team contexts, psychological safety has rarely been examined from the perspective of children receiving inpatient psychiatric care. Emerging research in adult inpatient settings suggests that psychological safety may extend beyond voice to include feeling listened to, believed, and emotionally secure (Vogt et al., 2024). Pediatric inpatient units are highly structured, hierarchical, and containment-based environments, yet little empirical work has examined how children perceive safety within them. This pilot study represents an initial investigation designed to begin framing child voice as a component of inpatient psychological safety.

Methods: Twenty-two children admitted to a pediatric inpatient psychiatric unit completed a brief mixed-method survey assessing perceived safety (0 to 10 scale), perceived support, ability to speak up if something bothered them, perceived influences on safety, and open-ended descriptions of what helps them feel most safe. Quantitative data were summarized descriptively. Qualitative responses were reviewed to identify recurring relational and environmental themes.

Results: Safety ratings ranged from 0 to 10, with some children reporting complete lack of safety and others reporting maximal safety, demonstrating sharply divergent experiences within the same unit. Scores distributed across low (0 to 3; 22.7%), moderate (5 to 6; 36.4%), and high (8 to 10; 40.9%) ranges, with 36.4% endorsing maximal safety. Perceived support was inconsistent. Only 36.4% reported unequivocal support, whereas 63.6% reported partial support, uncertainty, or no support. Approximately 36 to 38% reported they could rarely or never speak up if something bothered them, a central dimension of psychological safety (Edmondson, 1999). Importantly, restricted voice was present even among some children reporting high overall safety, suggesting that global safety ratings and perceived voice may represent distinct dimensions. Qualitative responses converged on relational factors. Staff were the most frequently cited influence on safety, followed by peers and unit structure. Physical containment was described as both protective and emotionally constraining, consistent with prior inpatient findings (Vogt et al., 2024).

Conclusion: In this initial investigation, children's reports revealed meaningful divergence in perceived safety within the same inpatient environment and identified voice as a central vulnerability point. Although inpatient units are designed to ensure physical protection, these findings suggest that physical containment does not uniformly translate to psychological safety. Relational dynamics, particularly staff responsiveness and children's perceived ability to speak up, emerged as critical influences. This work begins to position child voice as a measurable and clinically relevant dimension of inpatient safety. Ongoing data collection and continued study are underway to expand this sample, refine measurement, and more rigorously examine how hierarchy, relational climate, and unit structure shape children's experiences of psychological safety during hospitalization.

Examining the Clinical Characteristics Associated with Weekly Nightmares among U.S. Veterans at Risk for Suicide

Authors:
Matthew F. Thompson, PhD[1], Jennifer M. Primack, PhD[1,2], Leslie A. Brick, PhD[1,3], Chelsie Benca-Bachman, PhD[1,2], Isabella Villafuerte, BA[1,2], Sarah McGeary[2], John E. McGeary, PhD[1,2]

Affiliations:
[1] Department of Psychiatry and Human Behavior, Alpert Medical School of Brown University, Providence, RI, USA
[2] VA Providence Healthcare System, Providence, RI, USA
[3] Center on Alcohol, Substance Use, and Addictions, University of New Mexico, Albuquerque, NM, USA

ABSTRACT

Background: Sleep disturbances have been implicated as a potentially modifiable risk factor for suicide. Nightmares, in particular, are associated with suicidal ideation, mood disorder symptoms, and premature termination from sleep-focused psychotherapy. Military Veterans are at particular risk, given high frequencies of both nightmares and posttraumatic stress disorder (PTSD) symptoms compared to the general population. Less is known, however, about the associations of nightmares among Veterans in psychiatric inpatient or other high-risk settings. This study aimed to explore (1) the prevalence, demographics, and clinical characteristics of Veterans with weekly nightmares, and (2) differences in clinical characteristics between U.S. Veterans at risk for suicide with and without weekly nightmares.
Method: Cross-sectional data were drawn from an ongoing VA study on the relationship between sleep and suicide among U.S. Veterans at risk for suicide (n = 66). Participants were sampled from a hospital inpatient psychiatric setting and suicide prevention coordinator office referral. Weekly presence of nightmares was determined through the Pittsburgh Sleep Quality Index, and psychiatric diagnoses were determined through the staff-administered QuickSCID assessment. Those reporting weekly nightmares were compared to those without on demographic characteristics, self-reported psychiatric symptoms (e.g., symptoms of depression, anxiety, alcohol use, and substance use disorders), and staff-rated suicidal thoughts and behaviors (e.g., suicide ideation intensity, lifetime presence of suicidal behaviors). Linear regression models controlled for age and sex; to reduce potential impact of treatment, sensitivity analyses were conducted, removing participants currently prescribed medications to treat nightmares..
Results: A majority of participants reported weekly nightmares (n = 40, 60.6%). Among those with weekly nightmares, the mean age was 45.3 years old, 83% were male, 65% were White/Non-Hispanic, and 60% received service-connected disability for a mental health condition. Among a subsample of those with weekly nightmares who completed the QuickSCID assessment, 74.4% met criteria for PTSD, 59.0% for a substance use disorder (SUD), 51.2% for a major depressive episode (MDE), 48.7% for generalized anxiety disorder, and 43.6% for alcohol use disorder. Groups (i.e., those with and without weekly nightmares) did not differ on demographic characteristics, psychiatric symptoms, or suicide-related characteristics in unadjusted, adjusted, and sensitivity models.
Discussion: In a sample of U.S. Veterans at risk for suicide, a majority reported nightmares at a frequency of at least weekly. Among those with weekly nightmares, frequent mental health diagnoses included PTSD, SUD, and MDE. Similarities between those with weekly nightmares and without might reflect the high acuity within the present sample. Future research should examine the longitudinal relationship between nightmares and clinical outcomes within high-risk Veteran samples.

Caring Through Cancer: A Qualitative Exploration of Caregiver Experiences

Authors: Lillian Tuck, BA/BS., Paige M. Clement, M.S., Bailey O’Keeffe, M.S., Patricia Holland, M.S., Cara Mathews, M.D., Lisa Uebelacker, Ph.D., & Morganne A. Kraines, Ph.D.

Introduction:

With cancer incidence rising worldwide, there are increasing demands placed on the healthcare system, amplifying the need for informal caregivers (i.e., unpaid individuals who care for a loved one) for patients with cancer. Informal caregiving demands a significant amount of time and energy and can be physically, emotionally, socially, and financially taxing. Caregivers of patients with cancer are at elevated risk for developing depressive and anxiety symptoms. Caregiver burden not only impacts the caregivers but can have direct consequences for the patients’ well-being and mortality. Despite these deleterious effects support for informal caregivers is still limited, motivating the need for a qualitative exploration of caregiver experiences and needs.

Methods:

Caregivers (n=16*;* M_{age}=62.06, *SD*=13.07; 56.3% female; 87.5% white) of patients with cancer completed self-report measures of demographics and caregiver burden (Zarit Caregiver Burden Scale-22), and completed qualitative interviews regarding their experiences with caregiving, current helpful and unhelpful support, and wishes for additional kinds of support. We used rapid qualitative analyses to synthesize and summarize emerging themes from qualitative interviews.

Results:

While caregiver burden ranged from none to very severe, participants reported an average of mild-moderate burden (*M*=23.13, *SD*=14.33). 62.5% of participants felt that the term “caregiver” did not fully capture their role, instead preferring labels such as “partner,” their familial relation (e.g., spouse or son), “helper,” or “personal care attendant.” In the qualitative interview, participants described highly variable daily caregiving demands, ranging from an hour a day to near-constant involvement. Almost all participants reported impacts of caregiving on their mental or physical health, most commonly identifying stress or feeling overwhelmed (9/16, 56.25%), sleep difficulties or fatigue (8/16, 50%), and increased worry or anxiety (8/16, 50%). 43.75% (7/16) participants also reported that caregiving has impacted their physical health. Caregivers reported several positive experiences of caregiving, with the most frequent being a sense of purpose through helping (6/16, 38%) and closer relationships with their loved one (6/16, 38%). All participants mentioned having some form of support (e.g., family, friends) yet most (13/16, 81.25%) wished that additional supports were available including access to practical resources (e.g., money, transportation), someone for the caregiver to speak to (e.g., social worker, anonymous support groups), and specific tools to manage worry and stress.

Conclusion:

Caregivers of patients with cancer in our sample experience substantial and complex burdens that affect both their mental and physical health, consistent with prior research. Although most participants reported positive aspects of their caregiving experience, all subjects still faced substantial stress, fatigue, and anxiety about their loved one. Within this sample, caregiving demands and perceptions of the “caregiver” label varied, underscoring the importance of tailoring support to the unique experiences of each participant. Although most caregivers had access to some support, most caregivers still expressed unmet needs, highlighting critical gaps in existing resources. Better understanding and addressing the needs of caregivers of patients with cancer will reduce the prevalence of anxiety, depression, and stress in this population.

a. Title

Effects of Olfactory Stimuli on Vigilance and Sleepiness During Sleep Inertia: Preliminary Results

b. Authors and Institutions

Shreya Varrier, Chloe Lambert, Sarah A. Thomas, Eliza Van Reen, Caroline Gredvig-Ardito, Mary A. Carskadon E.P. Bradley Hospital Sleep and Chronobiology Research Laboratory, E.P. Bradley Hospital Sleep Research Laboratory, EP Bradley Hospital, Department of Psychiatry and Human Behavior, Alpert Medical School of Brown University

c. Introduction

Sleep inertia is a transient period of impaired function upon waking and poses risks for workers who must act quickly after abrupt arousal. We examined whether exposure to an arousing odorant upon waking is associated with greater vigilance and less sleepiness compared to no odorant.

d. Methods

Thirteen adults (10F, mean age 25 ± 3.7 range 21-35 years) completed 2 nights of PSG-monitored sleep with four arousals, each after 5 minutes of continuous slow-wave or REM sleep. Participants were exposed to no odor or a proprietary scent blend (PSB) designed to stimulate the trigeminal system via room diffusion in a counterbalanced within-subjects design. The odorant was delivered throughout each 20-minute arousal from 30 seconds beforehand. Vigilance was measured with two 5-minute Psychomotor Vigilance Tests (PVT; variables: mean reaction time (RT) and lapse count) occurring 1 and 11 minutes into the arousals. Participants completed a Visual Analog Sleepiness Scale (VASS) at minute 17. Separate linear mixed models with random intercept for participants predicted PVT and VASS variables from odor condition, accounting for night and arousal number. PVT models included a variable for PVT number within arousals interacted with odor condition to test whether PSB accelerated task performance relative to no odor.

e. Results

A trend was seen for faster RTs in the PSB condition vs. null (PSB: M=679.5 ms ± A trend was seen for faster RTs in the PSB condition vs. null (PSB: M=679.5 ms ± 609.5; Null: M=858.9 ms ±1047.0), $b = -173.31$, $SE = 90.44$, $t(172.65) = -1.93$, $p = .057$. Night 2 ($b = 446.86$, $p < .001$) and later arousals ($b = 93.19$, $p = .018$) had significantly slower RTs. For lapses, Night 2 ($b = 3.56$, $p < .001$), later arousals ($b = 1.19$, $p = .001$), and timing (first vs. second) ($b = -1.89$, $p = .02$) were significant predictors. For VASS, Night 2 was associated with lower subjective sleepiness (VASS: M=84.2 ± 9.5); (Null M=82.6 ± 14.7); ($b = -4.28$, $p = .025$). No interactions were significant.

f. Conclusion

PSB exposure during nocturnal arousals showed a trend toward improved vigilance (faster RT) but not reduced sleepiness. These findings contribute to limited research on whether olfactory stimulation can mitigate sleep inertia

g. Support, if any:

RI Commerce Corporation; P20GM139743

Title: The Impact of Substance Use on Sleep Among Veterans with Comorbid Mood Disorders

Authors:
Courtney L Vaughan, PhD[1,2] Postdoctoral Fellow
Benjamin Berey, PhD[1] Research Psychologist Research Service
Katherine Hostetler, BS[1] Clinical Research Coordinator Research Service
Brandon A. Gaudiano, PhD[2] Research Psychologist Research Service
Jane Metrik, PhD[1,2,3] Professor of Behavioral and Social Sciences; Professor of Psychiatry and Human Behavior

1 Department of Veterans Affairs Medical Center, Providence, RI, 02908, USA
2 Warren Alpert Medical School of Brown University, Providence, RI 02903, USA
3 Brown University School of Public Health, Providence, RI 02903, USA

Key Words: Veteran, Substance Use, Insomnia, Sleep, Cannabis

Sleep disturbances are prevalent in Veterans and often are comorbid with mood disorders and substance use. However, the impact of substance use on sleep is mixed. While alcohol use can facilitate falling asleep faster, it also causes fragmented and non-restorative sleep. Cannabis' effect on sleep is less understood. Cannabis can also facilitate faster sleep onset and may improve subjective experiences of sleep quality. Mood disorders also significantly impact sleep and may exacerbate substance-related sleep disturbance. The present study tested whether alcohol and cannabis use were associated with insomnia symptoms and whether mood disorder moderated the relationship between substance use and sleep in a sample of Veterans with comorbid substance use (SUD) and mood disorders.

Veterans (n = 95, 90% male, 79% white, M (SD) = 49 [13] age) meeting DSM-5 diagnostic criteria for a recent mood episode (Depression 72%; Mania, Hypomania, or Mixed 23%) and current SUD were recruited from Providence VA Medical Center as part of a larger clinical trial. At baseline, participants completed semi-structured interviews assessing substance use frequency (Timeline Followback [TLFB]) and recent mood episode (Mini International Neuropsychiatric Interview [MINI]), and self-reports on sociodemographics, substance use problems (Alcohol/Cannabis Use Disorder Identification Test [AUDIT/CUDIT, respectively], and insomnia symptoms (Insomnia Severity Index [ISI]).

Results from linear regression models indicated cannabis use was negatively associated with ISI total scores (*B=-0.04, 95% CI [-0.08, -0.001], p<0.05*). There were no significant associations between cannabis-related problems or frequency of alcohol use with ISI insomnia or alcohol-related problems and ISI. Likewise, most recent mood episode did not moderate associations of alcohol or cannabis use/problems on ISI total scores.

Overall, Veterans who reported more cannabis use had less severe insomnia symptoms, regardless of recent mood episode. However, it remains unclear how cannabis use impacts objective sleep phenotypes (e.g., sleep architecture). Future research would benefit from using technologies (e.g., actigraphy) to better characterize relations between sleep and cannabis use. Further, longitudinal studies are needed to determine how cannabis and sleep are related over time. Finally, cannabis potency, formulation, and mode of administration may all influence sleep architecture and warrant further examination.

Loss of UBE3A Disrupts Ribosomal Biogenesis Pathways: Transcriptomic Insights into Angelman Syndrome

Kai Vestergaard[1], Steve Defreitas[1], Qing Wu[2], Megha Jhanji[1], Li Ma[1], Eric Morrow[1], Sofia Lizarraga[1]

[1]Brown University, Providence, USA. [2]Brown, University, USA

Background: Angelman Syndrome (AS), a severe neurodevelopmental disorder associated with developmental delay, seizures, and speech impairment, is caused by loss-of-function mutations in the maternally inherited allele of *UBE3A*, a neuronal ubiquitin E3 ligase essential for normal neurodevelopment. While *UBE3A* is known to regulate ubiquitin-mediated proteostasis, the downstream molecular pathways contributing to AS pathophysiology remain incompletely defined. To characterize transcriptomic alterations resulting from *UBE3A* loss and identify cellular pathways potentially contributing to neurodevelopmental impairments in AS, we generated a *UBE3A* knockout (KO) line in HAP1 cells, a haploid human model system that is ideal for precise genomic editing. Bulk RNA sequencing was performed on UBE3A-KO and isogenic wild-type cells to characterize genome-wide transcriptional changes. Differential expression analysis was followed by Gene Ontology (GO) enrichment analysis and evaluation of alternative splicing to identify significantly affected biological processes. Transcriptomic analysis revealed significant downregulation of genes involved in ribosomal biogenesis and rRNA processing. Gene Ontology enrichment highlighted suppression of structural ribosomal constituents and nucleolar factors, suggesting a potential reduction in translational capacity. Differential splicing analysis identified events in several neurodevelopmental genes, including FOXG1 and ASH2L**,** although the splicing signature was weaker than differential gene expression. These findings suggest that UBE3A deficiency impacts fundamental ribosomal assembly and translational capacity, extending its role beyond proteostasis to core biosynthetic machinery. Loss of ribosomal biogenesis may play a previously underrecognized role in disrupting neuronal development in Angelman Syndrome, underscoring the need to examine this pathway in neural models.

In-Person vs. Online: Predictors of Social Satisfaction in Autistic Youth

Olivia Vezina, Xiangyu Tao, María Eugenia Contreras-Pérez, Rachel G. McDonald, Elena Chauhan, Tatyanna Landell, Tejaswini Venkat Venkat, Becky Smith, Kristina M. Jackson, Stephen J. Sheinkopf, Anthony Spirito

Background: Autistic adolescents and young adults experience unique social challenges that can impact well-being. Social support has been identified as a protective factor, with higher perceived support associated with reduced internet-related problems and greater life satisfaction. However, autistic youth experience high rates of bullying and are at greater risk of victimization than neurotypical peers. Cyberbullying, in particular, is associated with increased anxiety and decreased life satisfaction. While online platforms may offer opportunities for connection, they can also pose risks, including interpersonal conflicts, privacy concerns, and cyber victimization. The present study examined how in-person and online experiences, including bullying and social support, relate to social satisfaction among autistic adolescents and young adults.

Methods: The sample included 380 autistic adolescents and young adults aged 12–24 years with an IQ ≥ 75 (M_{age}=19.6, SD_{age}=3.55, 50% female, 23% gender diverse, 88.7% White, 12.4% Hispanic/Latine). Participants completed the Cyberbullying Victimization Scale, Gatehouse Bullying Scale, researcher-derived items assessing in-person and online close friend support, and the Global Functioning: Social (GF:Social) scale.

Results: Correlation analyses revealed that cyberbullying was significantly associated with lower satisfaction ($r = -.134$, $p = .010$), while online social support was not ($r = .053$, $p = .419$). In-person bullying was not significantly associated with satisfaction ($r = -.058$, $p = .269$), whereas in-person social support was positively associated ($r = .187$, $p < .001$). Hierarchical regression analyses indicated that adding bullying and social support variables accounted for an additional 3.9% of the variance ($\Delta R^2 = .039$, $p = .024$). Interaction terms were not significant ($\Delta R^2 = .006$, $p = .648$), indicating that social support did not moderate associations between bullying and satisfaction. The full regression model was statistically significant, $F(8, 220) = 9.03$, $p < .001$, explaining 24.7% of the variance in social satisfaction ($R^2 = .247$; adjusted $R^2 = .220$). Online social support ($b = 0.10$, $p = .043$) was a positive predictor and cyberbullying ($b = -0.41$, $p = .008$) a negative predictor; in-person bullying and in-person social support were not significantly associated with satisfaction (all *p*s > .10). Accounting for covariates, greater GF:Social was associated with higher social life satisfaction, whereas older age and higher IQ were associated with lower satisfaction, and sex was not significantly associated with satisfaction.

Conclusion: Bullying and social support were differentially related to social life satisfaction among autistic adolescents and young adults. Digital experiences, particularly cyberbullying, may undermine well-being, whereas online social support may confer benefits when accounting for broader factors. These findings highlight the importance of fostering safe and supportive online environments to promote social satisfaction in this population.

Assessing Behavioral Health Integration in Pediatric Primary Care Using the Practice Integration Profile 2.0

Van Vuong, PsyD; Michelle Pievsky, PhD
Brown University, Rhode Island

Background / Rationale

Integrated behavioral health (IBH) within pediatric primary care improves access, coordination, and clinical outcomes (Tomopoulos & Greenblatt, 2024). Degree of integration varies across settings and is often under-measured (Mullin et al., 2019). Evaluation of integration can guide targeted improvements in workflow, access, and interdisciplinary collaboration (Dunn et al., 2023). This project establishes baseline integration metrics within Hasbro Children's Pediatric Primary Care clinic ("Lower Level," LL) in Providence, RI to support subsequent quality improvement cycles.

Purpose

The aim of this project is to establish baseline measures of behavioral health integration within LL using a Plan Do Study Act (PDSA) framework. This Plan phase evaluates current integration to inform future quality improvement efforts targeting improved access to appropriate care and interdisciplinary collaboration.

Measure

Behavioral health integration was assessed using the Practice Integration Profile, Version 2.0 (PIP 2.0; Mullin et al., 2019), which measures five domains: Workspace and Integration Methods, Patient Identification, Clinical Services, Patient Engagement, and Practice Workflow. The measure demonstrated strong internal consistency (α > .80) and good inter-rater reliability (ICCs = .62–.85 ; Mullin et al., 2019). Factor analysis supported the domain structure, with most items loading ≥ .50 on their intended factors, providing evidence that the instrument captures meaningful, distinct aspects of integration (Macchi et al., 2016(. For this assessment, the following key interdisciplinary stakeholders provided insights across domains: medical director, group practice manager, pediatric site coordinator, integrated psychiatrist, social worker, psychologists, and lead medical assistants.

Timeline and Future Planning

This project serves as a baseline assessment of behavioral health integration in LL and is intended to guide future quality improvement initiatives. PIP 2.0 data collection was completed by the end of February 2026. Preliminary quantitative and qualitative results are expected by mid-March 2026, with full analysis projected for July 2026.

Data from the PIP 2.0, together with stakeholder insights, will be examined to identify baseline patterns of integration, as well as potential barriers and facilitating factors. The results will help prioritize targets for future quality improvement initiatives, providing recommendations for next steps in PDSA cycles and ensuring that any subsequent interventions are grounded in clinic specific data and are actionable.

Deficits of response inhibition in depression arise from subphases of inhibitory control

Darcy A. Waller, Eric Tirrell, Linda L. Carpenter, Stephanie R. Jones

Inhibitory control deficits may underlie depression's most troubling symptoms. Response inhibition (RI), measured during the Stop-Signal Task (SST), is often but not always impaired in major depressive disorder (MDD). We predict paradoxical findings arise from imprecision of estimated RI metrics such as the Stop-Signal Reaction Time (SSRT). Furthermore, recent RI literature emphasizes that stopping involves a fast, nonselective Pause-phase followed by a slower, selective Cancel-phase. If and how Pause and Cancel processes are disrupted in MDD is unknown. We measured muscle and brain (EMG/EEG) correlates of Pause and Cancel in MDD patients to test if they significantly differ from Healthy Controls (HC).

MDD patients (N=29) completed the SST while EEG and hand EMG were collected. Their performance and EMG/EEG signatures of Pause and Cancel were compared to a sample of healthy controls with open-source SST data (N=20).

MDD patients responded more slowly than HCs. Their SSRT was also significantly longer (t = -2.76, p = .008), indicating impaired RI. Though timing of the Pause process did not differ in MDD versus HCs (t = -1.24, p = .22), residual EMG during stopping was higher during the Cancel period in MDD (t = 2.37, p = .02). MDD was also associated with significantly smaller frontal P3 peaks (348-402ms, *p's* < .05).

Result support that RI abnormalities in depression are driven by changes to the Cancel process, purportedly implemented by indirect pathway circuits that change in depression. Our work sets the stage for investigation of Cancel as a cognitive factor in MDD.

Title: FutureU for Mental Health: A Virtual-Reality Based Intervention on Thoughts of the Future Self for Depression and Suicidal Ideation

Margaret A. Webb van Baar & Jean-Louis van Gelder

Abstract:

Thinking about the future – and, specifically, *oneself* in the future – in a clear, detailed way is critical to daily life, generating meaning, motivation, and well-being overall. In depression and suicidal ideation (SI), executive functioning deficits can make future-oriented thinking (FT) particularly effortful. Many interventions address quality of future thinking in depression and SI but are limited by the thoughts that a person can generate on their own. Finding ways to intervene on FT that do not rely fully on the overburdened cognitive processes of a person experiencing depression or SI may improve the efficacy of these interventions. The present pilot RCT investigates the feasibility, acceptability, and proof of concept for a novel virtual-reality (VR) based intervention on thoughts of the future self (FutureU for Mental Health; FU-MH) to improve a person's ability to think about the future and to reduce symptoms of depression and SI.

FU-MH consists of two separate intervention exercises that build upon elements of the Safety Planning intervention. Participants are introduced to and embody themselves (via a realistic age-progressed digital avatar) at a point 1-wk and 10-yrs into the future to practice coping skills and increase the salience of their reasons life is worth living.

A total of n = 41 participants experiencing clinically significant levels of depressive symptoms and/or SI were consented into the study and randomized to either a treatment as usual (TAU) plus FutureU (TX) condition or the TAU control condition. The Safety Planning intervention was conducted as the TAU control. Participants were 18–24-year-olds in Germany, assessed at 5 time points over a four-month period. Primary outcomes were depression (BDI-II), suicidal ideation (C-SSRS), future thinking (FSCQ and FSIQ), and self-efficacy (GSES).

Preliminary findings show significant improvement in FutureU participants' ability to think positively and vividly about themselves in the future, a reliable reduction in depressive symptoms, and a significant improvement in self-efficacy. Too few participants endorsed suicidal ideation for any meaningful analyses to be conducted, however there were no differences between outcomes for FutureU and Safety Planning. Clinical implications and next steps are discussed.

Title: Associations Between Dysregulation, Treatment Adherence, and Hospitalization in Autistic Youth

Authorship: Sara Welch, Rachel G. McDonald, PhD, Catrina Elizardo, BS, David Lichtenstein, PhD, Ethan Moore, Rabia Ni, Devon Ryan, Kelsey Lynch, Paul Bum Kim, Karen Cammuso, PhD, and Petya D. Radoeva, MD, PhD

Abstract:

Approximately 28% of autistic youth demonstrate aggressive behaviors (Baweja et al., 2023) toward themselves and others (e.g., hitting, spitting, biting, head banging, etc.) Dysregulation, including aggression and broader symptom severity, is an important factor in treatment engagement. Prior research suggests that autistic youth with higher levels of dysregulation are less likely to receive mental health treatment and more likely to receive medication management (Vasa et al., 2021). However, some research indicates that treatment adherence can be improved through targeted and tailored support for families (Cai et al., 2025). It is currently unclear how treatment adherence may be affected by varying levels of child dysregulation, particularly aggression, and how modality of treatment (e.g., virtual vs. in-person) or treatment type (e.g., family therapy, medication management, etc.) may alter this relationship over time. Understanding these relationships is critical to identifying cumulative risk factors for reduced treatment adherence among youth with neurodevelopmental conditions. The current project seeks to explore the relationship between varied levels of dysregulation in youth with neurodevelopmental conditions, treatment adherence over several months, treatment modality, and type.

Treatment adherence will be examined through a retrospective chart review in approximately 20 youth with autism or another developmental condition who presented for treatment (e.g., family therapy, individual therapy, group therapy, medication management) at an outpatient specialty clinic. Dysregulation will be operationalized in our project through measures of symptom severity and aggression. To assess dysregulation at admission and over the course of 12 months, aggression reports from each time point and the Clinical Global Impression Scale (CGI) will be used to obtain a combined measure of symptom severity. Aggression is operationalized by reports of aggression when analyzing data obtained from the patient's therapy notes. Over the course of 1 year, missed appointments will be tallied and stratified by appointment type and treatment. Bivariate correlations will then be used to examine relationships between the variables and child aggression at baseline and at follow-up points (3, 6, 9, and 12 months). We anticipate that as dysregulation improves, adherence to treatment will be higher. In addition, we anticipate that baseline dysregulation severity will be associated with treatment modality (e.g., hospitalizations). This work will help assess whether dysregulation affects service type, adherence, and treatment availability to a subset of youth with aggressive behaviors. Long-term, if replicated in larger samples, this work can inform therapeutic practices to improve service utilization among families with youth with severe dysregulation.

The BRAVE-AD Study: Brown Resilience Against Vulnerability in Early-onset Alzheimer's Disease

Edward N. Wilson[1,2,3] & Justin H. Mendiola[1,2,3]

[1]Neuroscience, Brown University, Providence, RI
[2]Carney Institute for Brain Science, Brown University, Providence, RI
[3]Brown Center for Alzheimer's Disease Research, Brown University, Providence, RI

Abstract

Background: The BRAVE-AD (Brown Resilience Against Vulnerability in Early-Onset Alzheimer's Disease) Study is an ongoing, multidisciplinary research program at Brown University dedicated to uncovering protective mechanisms that enable cognitive resilience in at-risk populations, particularly those with genetic predispositions to early-onset Alzheimer's disease (EOAD). The study investigates genetic variants which delay symptom onset by years despite high amyloid and tau pathology. It aims to pinpoint factors—genetic, environmental, and lifestyle—that preserve synaptic health.

Methods: The program uses a longitudinal cohort comprising carriers of pathogenic genetic variants in *PSEN1*, *PSEN2*, *APP*, and *APOE* and non-carrier control subjects. Multidisciplinary team members include clinical neurologists, neuropsychologists, neurobiologists, bioinformaticians, geneticists, and engineers working together to identify brain resilience pathways.

Results: Study of individuals with extreme resilience in the face of significant genetic risk factors have uncovered numerous candidate resilience-associated genetic variants and biological pathways. Validation and prioritization of these variants and biological pathways is ongoing.

Conclusions: Ultimately, the BRAVE-AD Study seeks to translate findings into precision therapies to enhance endogenous resilience, delay EOAD progression, and inform broader sporadic AD strategies. Individuals interested in collaborating with the BRAVE-AD Study should email study PI Dr. Ted Wilson: Edward_wilson@brown.edu.

Title: Sleep Restriction Alters Time-varying Attention in Adolescents: Moderation by Parent-Reported ADHD Traits

Authors: Isabella D. Wright, M.S[1]., Claire Mayew Sherman[1], Luna Sato[1], Grace Kupta[1], Aashri Sadu[1], Gina Mason[1], PhD, Kathleen O'Hora, PhD[1], David H Barker[1], PhD, Daniel P Dickstein[1], Mary A Carskadon, PhD[1], Jared M Saletin, PhD[1]

Introduction:

Adolescents are exposed to insufficient sleep due to bioregulatory and social pressures. Attention-deficit/hyperactivity disorder (ADHD) may increase vulnerability to the neurobehavioral consequences of this sleep loss. Traditional measures of attention (e.g., median reaction time [RT] from the Psychomotor Vigilance Task [PVT] do not capture temporal fluctuations in attention. Time-varying analysis of reaction time can better index moment-to-moment slowing or speeding. We tested whether sleep restriction changes the trajectory of PVT responses over time and whether ADHD traits moderate these effects.

Methods:

Seventy-eight adolescents (range 10.1-15.7 [12.2±1.4] years; 42F) completed a 10-minute afternoon PVT after two counterbalanced 5-night at-home sleep conditions: sleep optimization (SO; 10h time-in-bed) and sleep restriction (SR; 7.5h time-in-bed). Youth were indexed for ADHD traits by parent-rated Conners-3 T-scores for inattention (range 40-90 [60.1±14.9]) and hyperactivity/impulsivity (range 40-90 [61.4±17.1]). We extracted each PVT response as a reciprocal reaction time (RRT=1/RT). Linear mixed models examined whether RT varied across time-on-task (i.e., elapsed time within the PVT), condition (SO vs. SR), and ADHD status (mean-centered Conners T-scores).

Results:

We identified a series of effects. A significant interaction of time-on-task and condition ($b=0.012$, $p=.017$) indicated that after SO, RRT slowed across the task ($b=-0.018$, $p=.12$); however, after SR, RRT sped up over time ($b=0.021$, $p=.017$). This time-on-task-by-condition effect was moderated by both inattention ($b=0.056$, $p=.001$) and hyperactivity/impulsivity ($b=0.058$, $p<.001$) traits. In both cases, the effect of sleep condition on time-varying RRT was attenuated in youth with lower ADHD traits.

Conclusion:

Sleep restriction altered adolescents' time-varying attention,with responses increasing over time compared to a temporal slowing after sleep optimization. Youth with higher ADHD traits showed a stronger shift toward this speeded pattern, suggesting a distinct response phenotype under sleep loss. The consequences of these effects are not yet clear; however, they may reflect either a compensatory attention in youth with ADHD, or conversely, a shift towards impulsivity. Future analyses will link these data to other brain-behavioral outcomes to better understand these effects.

Support (if any): P20GM139743; R01HD103665

Title: Relating Stimulus Quality to Biases and Variability in Visual Speed Perception
Authors: Daniel Yu, Jovan Kemp, Fulvio Domini

Abstract:

We rely on our visual perception of speed to coordinate actions in dynamic environments and interpret how physical events unfold. Although we often assume that the visual system can accurately encode the true velocities of moving objects, research has shown that these estimates are often biased by stimulus properties such as contrast. Modern theories of vision propose that the visual system infers the true properties of the environment from noisy sensory measurements and prior expectations. When the quality of a stimulus is weak or degraded, it produces noisier measurements that remain unbiased on average. In visual speed discrimination tasks where the contrast of a grating corresponds to its quality, low-contrast stimuli yield noisier measurements that may lead to biased estimates when combined with prior expectations about the world. Stocker and Simoncelli (2006) formalized this approach with a Bayesian model, under which the perceived speeds of moving gratings are underestimated due to a contrast-dependent prior favoring low speeds. However, it is plausible that low-contrast stimuli may directly induce smaller estimates without necessarily being correlated with increased noise. In the field of depth perception, Kemp et al. (2023) demonstrated that low-quality visual cues can systematically produce reduced estimates of an object's depth according to a deterministic mapping. Crucially, this finding accounts for estimation biases without involving priors or sensory uncertainty, raising the question of whether other visual domains such as speed perception may be similarly characterized in a parsimonious manner. Building on this framework, we hypothesize that visual information is processed according to the general principle that low-quality stimuli specify attenuated, rather than ambiguous, measurements of visual properties. This principle is motivated by the idea that the visual system prioritizes the stability of perceptual estimates for supporting visually-guided actions over optimizing representational accuracy. In the context of speed perception, our hypothesis entails two key predictions: first, when judging whether two moving stimuli have the same speed, the discrimination thresholds of these judgments should depend on the contrast of the stimulus being adjusted rather than the stimulus it is being matched to; second, variability in speed estimates should arise primarily from task-related processes rather than sensory noise. By testing these predictions, the proposed research will determine whether speed perception is better characterized as probabilistic inference under uncertainty, or as an attenuated mapping of visual signals that supports stability at the cost of bias.

References:

Kemp, J. T., Cesanek, E., & Domini, F. (2023). Perceiving depth from texture and disparity cues: Evidence for a non-probabilistic account of cue integration. Journal of Vision, 23(7), 13. https://doi.org/10.1167/jov.23.7.13

Stocker, A. A., & Simoncelli, E. P. (2006). Noise characteristics and prior expectations in human visual speed perception. Nature Neuroscience, 9(4), 578–585. https://doi.org/10.1038/nn1669

Sequential chaotic oscillations induced by unsynchronized E-I oscillations in excitatory–inhibitory threshold–linear networks

Jie Zang, Carina Curto

E-I oscillations have a long-standing history in neuroscience, with their functional role typically linked to synchronized activity. To explore potential functions of E-I oscillations beyond synchronization, we investigate excitatory-inhibitory threshold-linear networks (E-I TLNs). Based on a series of graph rules developed in this work, we characterize the fixed point structures of E-I TLNs with underlying graphs given by paths and cycles. Around singleton fixed points, we identify a novel sequential activity pattern driven by unsynchronized E-I oscillations—which we term sequential chaotic oscillations (SCOs). In SCOs, nodes activate in a fixed sequential order, but with irregular, aperiodic durations at each node, even under constant external input. This behavior arises from the interplay between E-I oscillations, which prolong activation at individual nodes, and the graph structure, which determines the sequential firing order among excitatory subpopulations.

Moreover, for the full-support fixed points, we introduce a decomposition: z-mode and mean mode, which captures the relative differences between excitatory nodes and the overall network activity. This decomposition enables a clear classification of parameter regimes exhibiting synchronized E-I oscillations, CTLN-like oscillations, and flower-like chaotic dynamics.

Title: Speed vs. accuracy in aDDM inference: Where shortcuts fail!

Andrew Zhang, Sicheng Liu, Alexander Fengler

Attentional drift diffusion models (aDDMs) provide a mechanistic account of how visual attention influences value-based decision-making. However, full Bayesian inference has been computationally intractable due to trial-wise unique within-trial drift rate dynamics driven by gaze patterns. This intractability forced researchers to rely on time-averaged drift approximations (TADA), whose parameters were treated as if they reliably mapped onto aDDM parameters. In recent work, we derived an algorithm that speeds up proper aDDM likelihood computation by three orders of magnitude (Liu et al., 2026). We further demonstrated that TADA methods are statistically inconsistent and showed with targeted counterexamples how they can bias conclusions about attentional effects when the true data-generating process is the aDDM (Liu et al., 2025). Here we present the culmination of this research. First, we provide a software integration bridging the gap toward practical application: our methods are now available to be used naturally via the probabilistic programming library PyMC. We extended our algorithm to an autodifferentiable JAX implementation, enabling gradient-based MCMC methods like NUTS. Second, we present a comprehensive, systematic Bayesian parameter recovery study comparing TADA against proper aDDM inference. This provides clear guidance for experimentalists on when TADA might remain appropriate and pinpoints specific risks to scientific conclusions when it is applied for computational convenience.

People Impose a Tradeoff on Physical and Mental Skills Needed for Task Performance

Xiuyuan Flora Zhang & David Levari

Many tasks require both physical and mental skills, but the amount needed can vary widely. How do people judge the physical and mental skills necessary for different tasks, and how do these perceptions relate to labor valuation? Philosophers and other thinkers have long distinguished mental (cognitive) from physical labor (Plato, 370 B.C.E.; Smith, 1776/2008; Marx & Engels, 1975). This classification has concrete economic consequences: Jobs demanding higher cognitive skill also confer greater pay (Acemoglu & Autor, 2011; Frank et al., 2024). In psychology, the mental-physical distinction has been used to explain differences in skill, effort, and associated social status (Ashforth & Kreiner, 1999; Rotundo & Sackett, 2004; Shenhav et al., 2017; Ackerman et al., 2020). However, less is known about how lay people perceive this distinction when evaluating tasks.

Across four studies, we examine people's judgments of physical and mental skill demands for different jobs and tasks. In preregistered Studies 1a and 1b, participants show striking consistency with O*NET occupational expert (2024) when rating physical and mental skill demands, at both the job and occupational task level. However, participants impose a mental-physical tradeoff – jobs perceived as requiring more physical skill are consistently rated as needing less mental skill. In preregistered Study 2, we find that participants (*N* = 100) tend to perceive a job as primarily requiring one type of skill or the other. These binary categorizations track people's continuous judgments of skill from Study 1a: Jobs with higher mental and lower physical skill ratings are more likely to be categorized as "mental". To probe how people decide a job's primary type of skill demand, in Study 3, we ask participants (*N* = 60) to generate typical tasks performed on different jobs and use a large-language-model to categorize 1141 participant-generated tasks as primarily requiring "physical" or "mental" skill. Participants generate more "mental" tasks for jobs with higher perceived mental and lower physical skill demands from Study 1a, suggesting that judgments about job skill can be guided by what specific tasks come to mind.

Linking our study findings with external datasets revealed surprising patterns: Higher perceived mental skill – but not physical skill – predict higher prestige, higher wages, and lower risk of being replaced by traditional automation programs (Hughes et al., 2024; Bureau of Labor Statistics, 2024; Frey & Osborne, 2017). But these long-held perception and valuation of mental skill may be challenged with the rapid developments of AI. We find that jobs with higher perceived mental skill demands have more tasks exposed to AI assistance (Anthropic Economic Index, 2025).

Taken together, we show that people systematically distinguish between mental and physical skill and impose a mental-physical tradeoff when evaluating tasks and jobs. Crucially, perceived skill demands can diverge from actual demands: Jobs seen as more physical may have their mental requirements under-recognized, while jobs perceived as more mental are increasingly more exposed to AI assistance, raising questions about how our perceptions of human skill may flexibly update or remain anchored.

Title: **History of Adverse Childhood Experiences and Adverse Cardiometabolic Pregnancy Outcomes: A Pilot Study**

Authors: Peiting (Christy) Zhao MPH, Victoria Scarfo BA, Margaret Bublitz PhD

Background: Prior research suggests that adverse childhood experiences (ACEs) are associated with heightened risk of adverse cardiometabolic outcomes in adulthood. In pregnancy, the results are mixed. As well, the commonly used instruments for measuring ACEs do not account for the severity or duration of exposure. This study examined the association between adverse cardiometabolic pregnancy outcomes and the severity and duration of ACEs.

Methods: This was a secondary analysis using data from a clinical trial examining prenatal mindfulness training for women at risk for adverse cardiometabolic pregnancy outcomes. Participants completed the Maltreatment and Abuse Chronology of Exposure (MACE) questionnaire prior to randomization to assess severity and duration of ACE exposure. They reported whether they had ever experienced each event during childhood, and whether they experienced it in each year of childhood from age 1 to 18. MACE composite scores reflecting the duration and severity of ACEs were calculated using weights and cutoffs established in prior research. Diagnoses of cardiometabolic conditions during the current pregnancy were ascertained from medical records after delivery. Multivariable linear regression models were used to assess associations between cardiometabolic condition status and each MACE composite score, adjusting for mindfulness group randomization, maternal age, body mass index, low dose aspirin use, and gravida.

Results: 28 women (mean age = 32.6 years, mean BMI = 28.9) completed the MACE questionnaire. 64.3% identified as White, 17.9% as Black, and 14.3% as Hispanic. 28% were diagnosed with a cardiometabolic condition during the current pregnancy. Participants who developed a cardiometabolic condition reported experiencing a longer duration of childhood adversity (B=0.61, p=0.01), greater severity of adversity (B=0.53, p=.03), and marginally higher overall abuse in childhood (B=0.42, p=0.08) compared to those who did not develop a cardiometabolic disorder.

Conclusion: This analysis suggests that adverse cardiometabolic pregnancy outcomes are associated with both the duration and severity of ACE exposure. Future studies are needed to replicate these findings in larger samples.