

Summer 2023

Clinical Implications

Nilni, Y.I., Baul, T.D., Paul, E., Godfrey, L.B., Sloan, D.M., & Valentine, S.E. (2023). Written exposure therapy for treatment of perinatal PTSD among women with comorbid PTSD and SUD: a pilot study examining feasibility, acceptability, and preliminary effectiveness. *General Hospital Psychiatry, 83*, 66-74. <https://doi.org/10.1016/j.genhospsych.2023.04.013>

This open-trial pilot study examined the feasibility, acceptability, and preliminary effectiveness of Written Exposure Therapy (WET) for PTSD during pregnancy. WET is a 5-session, evidence-based, trauma-focused intervention. Each session lasts 45-60 minutes and covers treatment rationale, PTSD psychoeducation, and 30 minutes of writing about the traumatic event. Ten pregnant women with comorbid PTSD and substance use disorder (SUD) receiving prenatal care in a high-risk obstetrics-addictions clinic completed the intervention. PTSD symptoms significantly decreased from pre-intervention to post-intervention and were sustained through the 6-month postpartum follow-up visit. Therapists demonstrated high adherence to WET and excellent competence. Although RCTs are needed, this study indicates that WET may be feasible, acceptable, and effective for treating PTSD among pregnant women.

Morris, A.T., Temereanca, S., Zandvakili, A. et al. Fronto-central resting-state 15-29 Hz transient beta events change with therapeutic transcranial magnetic stimulation for posttraumatic stress disorder and major depressive disorder. *Scientific Reports, 13*, 6366 (2023). <https://doi.org/10.1038/s41598-023-32801-3>

Resting 8-electrode EEG was collected from 23 patients with MDD and PTSD before and after 5 Hz repetitive transcranial magnetic stimulation (rTMS) targeting the left dorsolateral prefrontal cortex (dlPFC). Using the “Spectral Event” method (quantification of transient changes in event rates, amplitudes, durations, or frequency spans), the authors sought to quantify the impact of rTMS on EEG-measured brain dynamics. The study found that rTMS-induced improvement in comorbid MDD PTSD was associated with pre- to post-treatment changes in fronto-central electrode beta event features, including frontal beta event frequency spans and durations and central beta event maxima power. These findings suggest that beta events may provide new biomarkers of clinical response and advance the understanding of rTMS.

Valentine, S. E., Fuchs, C., Olesinski, E. A., Sarkisova, N., Godfrey, L. B., & Elwy, A. R. (2023). Formative evaluation prior to implementation of a brief treatment for posttraumatic stress disorder in primary care. *Implementation Science Communications, 4*(1), 48. <https://doi.org/10.1186/s43058-023-00426-2>

PTSD treatments are largely unavailable in safety net primary care (i.e., primary care clinics in settings that provide health care services to patients regardless of their ability to pay). As a step towards making these treatments more readily available in these settings, this project aimed to collect data on organizational, attitudinal, and contextual factors relevant to implementing evidence-based treatments (EBT) for PTSD. The formulative evaluation was guided by the Consolidated Framework for Implementation Research (CFIR). It consisted of surveys and semi-

structured interviews with primary care physicians, integrated behavioral health clinicians, community wellness advocates, and clinic leadership. Based on this work, the authors described several recommendations for the successful implementation of PTSD EBTs in these settings, including tailoring the intervention to meet existing workflows (adaptability); system alignment efforts focused on improving detection, referral, and care coordination processes; protecting clinician time for training and consultation; and embedding a researcher in the practice.

McLean, C. P., Foa, E. B., Malek, N., Young-McCaughan, S., Peterson, A. L., Hanson, B. S., Lillard, I. J., Patterson, T. J., Rosado, J., Scott, V., & Rosenfield, D. (2023). A multistep mediation model examining how consultation in prolonged exposure therapy affects PTSD treatment outcomes. *Psychological Services*, 10.1037/ser0000769. Advance online publication. <https://doi.org/10.1037/ser0000769>

The present study used a multistep mediation model to examine associations between consultation, provider self-efficacy, use of prolonged exposure (PE), and patient outcomes to determine how postworkshop consultation can relate to evidence-based psychotherapy (EBP) adoption and patient outcomes. PTSD patients ($N=242$) received care from providers ($N=103$) participating in a larger study comparing two PE-training models: standard training (workshop only) and extended training (workshop + 6-8 months of postworkshop expert consultation). Results showed that providers that received extended training reported greater PE self-efficacy than standard training providers, but this reported self-efficacy was unrelated to either their use of PE components or patient outcomes. In addition, extended training providers used more PE components and had superior patient outcomes than standard training providers, and patient outcomes were mediated using PE components. These data suggest that EBP consultation leads to improved patient clinical outcomes through increased use of the EBP.

Diversity, Equity, and Inclusion

Chang, C.J., Fischer, I.C., Depp, C.A., Norman, S.B., Livingston, N.A., & Pietrzak, R.H. (2023). A disproportionate burden: Prevalence of trauma and mental health difficulties among sexual minority versus heterosexual U.S. military veterans. *Journal of Psychiatric Research*, 161, 477-482. <https://doi.org/10.1016/j.psychires.2023.03.042>

Data from a nationally representative sample of U.S. veterans ($N = 4,069$) participating in the National Health and Resilience Veterans Study (NHRVS) completed assessments to determine how sociodemographic, military, trauma characteristics, and mental health concerns differed by sexual orientation. Veterans who identified as sexual minorities were more likely than veterans identifying as heterosexual to be younger, women, Hispanic, unmarried/partnered, have lower household income, and have served for 4-9 years in the military. Even after adjusting for demographic variables, sexual minority veterans reported more childhood sexual abuse, military sexual trauma, adverse childhood experiences, current and lifetime drug use disorders, current alcohol use disorder, current and lifetime PTSD, non-suicidal injury (NSSI), and future suicide intent than heterosexual veterans. Among sexual minority veterans, more years of military service were associated with greater odds of lifetime PTSD and lower annual household income with greater odds of lifetime drug use disorder and NSSI. Consistent with work examining non-

veterans, findings suggest that sexual minority veterans experience greater trauma and mental health burden than their heterosexual peers.

Cole, T. A., Dubuclet, C. M., Valentine, J., Meyer, E. A., & Orcutt, H. K. (2023). Assessing the mediating role of emotion regulation and experiential avoidance within a posttraumatic stress disorder and racial trauma framework. *Psychological Trauma: Theory, Research, Practice, and Policy*, 10.1037/tra0001487. Advance online publication. <https://doi.org/10.1037/tra0001487>

This cross-sectional study investigated how difficulties in emotion regulation and experiential avoidance differ in their associations with PTSD and racial trauma (i.e., the psychological response to cumulative racism and race-based stress experienced by people who are racial and ethnic minorities). Undergraduates who identified as racial or ethnic minorities ($N=304$) completed an online survey collecting information on discrimination, experiential avoidance (EA), emotion regulation, PTSD symptoms, and racial trauma. A path model suggested that emotion regulation difficulties and EA significantly mediated the relationship between perceived discrimination and PTSD symptoms. However, only emotion regulation difficulties mediated the relationship between perceived discrimination and racial trauma symptoms. Compared to racial trauma, pairwise comparisons suggested that emotion regulation difficulties and EA indirect effects were significantly greater when predicting PTSD symptoms. Additionally, the effects of emotion regulation difficulties were greater than EA when predicting PTSD symptoms and racial trauma. The present study's findings suggest that individual psychological factors may play a lesser role in the development of racial trauma than PTSD symptoms.

Ravi, M., Mekawi, Y., Blevins, E. J., Michopoulos, V., Stevens, J., Carter, S., & Powers, A. (2023). Intersections of oppression: Examining the interactive effect of racial discrimination and neighborhood poverty on PTSD symptoms in Black women. *Journal of Psychopathology and Clinical Science*, 10.1037/abn0000818. Advance online publication. <https://doi.org/10.1037/abn0000818>

This study assessed the interactive effects of racial discrimination and neighborhood poverty on PTSD symptoms in an urban sample of 300 trauma-exposed Black women. A moderation analysis was used to determine the main and interactive effects of racial discrimination and neighborhood poverty on PTSD symptoms. The overall model significantly predicted PTSD symptoms, with a main effect of racial discrimination and neighborhood poverty, independent of prior trauma exposure and the percentage of black residences in the zip code. Results suggest that people who have experienced more racial discrimination show high PTSD symptoms regardless of neighborhood poverty rates and highlight the importance of considering multiple levels of oppression that Black individuals face while diagnosing and treating stress-related psychopathology.

Scheer, J. R., Helminen, E. C., Cascalheira, C. J., Jaipurayar, V., Shaw, T. J., Zabelski, S., Behari, K., Pirog, S., Batchelder, A. W., Possemato, K., Hughes, T. L., & Sullivan, T. P. (2023). Probable PTSD, PTSD symptom severity, and comorbid PTSD and hazardous drinking among sexual minority women compared to heterosexual women: A meta-analysis. *Clinical Psychology Review*, 102, 102283. <https://doi.org/10.1016/j.cpr.2023.102283>

This meta-analysis aimed to clarify disparities in probable PTSD, PTSD symptom severity, and probable comorbid PTSD/hazardous drinking (HD) between heterosexual and sexual minority women (SMW). Forty-five peer-reviewed publications written in English, and which reported quantitative data on PTSD specific to SMW, were included. Results indicated probable PTSD, PTSD symptom severity, and probable comorbid PTSD/HD are highly prevalent among SMW, with SMW of color, transgender, and gender diverse people, and bi+ women (e.g., bisexual, pansexual, queer) at greatest risk for these outcomes. These findings suggest a need to improve the accurate assessment of trauma-related sequelae among SMW and to develop, disseminate, and implement culturally sensitive treatments to reduce PTSD and comorbid PTSD/HD among at-risk SMW.

Biomarkers

Wolf, E. J., Hawn, S. E., Sullivan, D. R., Miller, M. W., Sanborn, V., Brown, E., Neale, Z., Fein-Schaffer, D., Zhao, X., Logue, M. W., Fortier, C. B., McGlinchey, R. E., & Milberg, W. P. (2023). Neurobiological and Genetic Correlates of the Dissociative Subtype of Posttraumatic Stress Disorder. *Journal of Psychopathology and Clinical Science*. Advance online publication. <https://dx.doi.org/10.1037/abn0000795>

Post-9/11 male veterans ($n = 374$ at baseline and $n = 163$ at follow-up) were evaluated to examine the psychometric evidence for the dissociative subtype of PTSD and evaluate its biological correlates with resting state functional connectivity, brain morphology, neurocognitive functioning, and genetic variation. Analyses identified a class structure superior to both dimensional and hybrid structures, with 7.5% of the sample in a stable dissociative class. Derealization/depersonalization severity was associated with decreased default mode network (DMN) connectivity between bilateral posterior cingulate cortex and right isthmus; increased bilateral whole hippocampal, hippocampal head, and molecular layer head volume; worse self-monitoring; and a candidate genetic variant previously associated with dissociation. These biomarkers have relevance for sensory integration, spatial awareness, and memory, suggesting that alterations in these basic processes may underlie the clinical manifestations of the dissociative subtype of PTSD.

Jagger-Rickels, A. Stumps, A., Rothlein, D., Evans, T., Lee, D., McGlinchey, R., DeGutis, J., & Esterman, M. (2023). Aberrant connectivity in the right amygdala and right middle temporal gyrus before and after a suicide attempt: Examining markers of suicide risk. *Journal of Affective Disorders*, (335), 24-35. <https://doi.org/10.1016/j.jad.2023.04.061>

This study aimed to replicate and extend the findings that aberrant connectivity in the right amygdala and right middle temporal gyrus (MTG) differentiated a group of Veterans with a suicide attempt from a Veteran control group. In a trauma-exposed veteran sample, results indicated that the right MTG and amygdala connectivity differed between Veterans with and without a history of suicide attempts, replicating previous findings. In addition, in an independent sample of Veterans for whom neuroimaging data was available before a suicide attempt, the authors found that this aberrant MTG connectivity was present in these Veterans before engaging in a suicide attempt. Neither MTG nor amygdala connectivity differed between

those with and without suicidal ideation. This data suggests that right MTG aberrant connectivity may be a potentially stable marker of suicide risk. In contrast, right amygdala connectivity may be a potential marker of acute risk or recent suicide attempts independent of current ideation.

Crombie, K. M., Azar, A., Botsford, C., Heilicher, M., Moughrabi, N., Gruichich, T. S., Schomaker, C. M., Dunsmoor, J. E., & Cisler, J. M. (2023). Aerobic exercise after extinction learning reduces return of fear and enhances memory of items encoded during extinction learning. *Mental Health and Physical Activity*, 24, 100510.

<https://doi.org/10.1016/j.mhpa.2023.100510>

This study utilized a novel three-day category-based fear conditioning protocol (that uses categories of non-repeating objects [animals and tools] as conditioned stimuli during fear conditioning and extinction) to determine if aerobic exercise enhances the consolidation of extinction learning (reduces the return of fear) and memory (for items encoded during extinction) during subsequent tests of extinction recall. Forty participants completed fear acquisition (day 1), fear extinction (day 2), and extinction recall (day 3) protocols. On day 2, participants were randomly assigned to either receive moderate-intensity aerobic exercise (EX) or a light-intensity control (CON) condition. During the fear recall tests, the EX-group reported significantly lower threat expectancy ratings to the CS+ and CS- and exhibited greater memory of CS+ and CS- stimuli presented during day 2. There were no significant group differences for SCR. Findings suggest that the administration of moderate-intensity aerobic exercise following extinction learning contributes to reduced threat expectancies during tests of fear recall and enhanced memory of items encoded during extinction.