

Clinical Implications

Onyeka, O. C., Spencer, S. D., Salloum, A., Jiannetto, K., & Storch, E. A. (2024). The role of family accommodation in child posttraumatic stress symptoms and functional impairment in the context of cognitive behavioral therapy. *Journal of Affective Disorders*, 346, 252–259. <https://doi.org/10.1016/j.jad.2023.10.144>

PTSD impacts not only the individual, but the entire family system. Family accommodation (FA) can maintain PTSD symptoms, such as when a family member complies with or encourages avoidance of trauma reminders or prevents processing trauma-related emotions. FA may be particularly common in the context of children with PTSD, as accommodation may occur as an expression of caregiving. This study examined the relationship among FA, PTSD symptoms, and functional impairment in a sample of 183 children with PTSD who completed trauma-focused therapy (TFT) and their caregivers. Data was drawn from a randomized control trial comparing two TFTs. Results indicated that at baseline, FA was positively associated with both PTSD severity and functional impairment, and FA partially mediated the association between PTSD symptoms and functional impairment. Further, improvements in FA during TFT were associated with reductions in both PTSD symptoms and functional impairment. Findings suggest that FA may be a helpful process to target throughout TFT, with a focus on differentiating support from accommodation.

Meuleman, E. M., van der Veld, W. M., & van Ee, E. (2024). On the relationship between emotion regulation difficulties and posttraumatic stress symptoms during treatment: A test of reciprocity. *Journal of Affective Disorders*, 350, 197–202. Advance online publication. <https://doi.org/10.1016/j.jad.2024.01.116>

Associations between emotion regulation difficulties and PTSD are common in the literature. However, the reciprocal relationship between these two constructs remains unclear. To determine whether the relationship between these constructs is indeed reciprocal, this longitudinal study examined 293 patients in treatment for PTSD at two time points. Contrary to hypotheses, cross-lagged panel analyses revealed that the association between these two constructs was not reciprocal. However, emotion regulation difficulties did predict the maintenance of PTSD symptoms. Results highlight the importance of addressing emotion dysregulation difficulties as an initial focus during PTSD treatment.

DEI

Lindert, J., Samkange-Zeeb, F., Jakubauskiene, M., Bain, P. A., & Mollica, R. (2023). Factors contributing to resilience among first generation migrants, refugees and asylum seekers: A systematic review. *International Journal of Public Health*, 68, 1606406. <https://doi.org/10.3389/ijph.2023.1606406>

Immigration and migrancy are associated with unique and significant stressors (e.g., experiences leading to transitions including war; leaving family/community; adjusting to a new living space and culture). Despite this, many first-generation migrants, refugees, and asylum seekers show tremendous resilience in the presence of these challenges. This systematic review focused on identifying predictors of resilience among transnational migrants. Seventy-six studies met

inclusion criteria for the review. Results indicated that future orientation, hope and religion/spirituality, caring for others, and having opportunities served as important factors in resilience, and had stronger associations with resilience than did institutional care structures. These findings suggest that supporting and reinforcing these factors (e.g., through policies giving refugees opportunities to work, learn, and help others) may help promote resilience among migrants, refugees, and asylum seekers.

Dieujuste, N., Mekawi, Y., & Doom, J. R. (2023). Examination of race-based traumatic stress symptom networks in Black adults in the United States: A network analysis. *Journal of Traumatic Stress*, 10.1002/jts.23003. Advance online publication. <https://doi.org/10.1002/jts.23003>

Personal experiences of racial discrimination, as well as exposure to the historic and systemic effects of racism, can negatively impact mental health. These experiences are thought to cause mental health symptoms by triggering a race-based traumatic stress (RBTS) response, a multidimensional symptom construct caused by race-based traumatic events (e.g., racial discrimination) and associated with symptoms of depression, intrusion, anger, hypervigilance, somatic symptoms, negative self-image, and avoidance. However, little is known about what aspects of the RBTS response are most important in its maintenance. This study utilized network analysis to identify the symptoms most central to the RBTS response and examine associations between RBTS symptoms and symptom clusters in a sample of 1,037 Black participants living in the United States. Analyses revealed that the depression and physical symptom clusters were the most central nodes in the RBTS response network. Feelings of meaninglessness, intrusions, and physical trembling were most central to the RBTS response at the item-level. These findings provide insight into the most central symptoms and symptoms clusters of the RBTS response, which can be used to better assess and treat the RBTS response in Black adults in the United States.

Shaff, J., O'Keefe, V. M., Atkin, A. L., Wang, X., & Wilcox, H. C. (2024). Examining the unique impacts of Potentially Traumatic Experiences (PTE) and discrimination events on Post-Traumatic Stress Disorder (PTSD) and suicidal thoughts and behaviors among multiracial/ethnic adults in the United States. *Journal of Affective Disorders*, 347, 51–56. <https://doi.org/10.1016/j.jad.2023.11.035>

Potentially traumatic experiences (PTEs) and racial discrimination are risk factors in the development of PTSD and suicidality. However, less is known about how PTEs and racial discrimination may confer risk for PTSD and suicidality among multiracial/ethnic adults. This study examined these associations among 1,012 multiracial/ethnic adults living in or from the United States. After adjusting for demographics, PTEs and discriminatory events were associated with increased odds of both PTSD and suicidality. Further, exposure to discrimination showed slightly greater odds of both outcomes compared to exposure to PTEs. Findings provide support for recognizing discrimination as a risk factor for both PTSD and suicidality among multiracial/ethnic individuals, and for considering the role of discrimination in the assessment of PTSD and in subsequent treatment planning.

Assessment

Jagodnik, K. M., Ein-Dor, T., Chan, S. J., Titelman Ashkenazy, A., Bartal, A., Barry, R. L., & Dekel, S. (2024). Screening for post-traumatic stress disorder following childbirth using the Peritraumatic Distress Inventory. *Journal of Affective Disorders, 348*, 17–25.
<https://doi.org/10.1016/j.jad.2023.12.010>

Traumatic childbirth experiences increase risk for parental PTSD and may impact the wellbeing of both the parent and their child. However, few assessment tools are available to screen for childbirth-related PTSD (CB-PTSD), limiting the feasibility of identification for the purposes of early intervention. Although acute emotional distress in response to a traumatic event strongly correlates with PTSD in non-postpartum individuals, it is unknown how existing measures of trauma-related distress may apply to this trauma type or population. Therefore, this study evaluated whether a modified version of the Peritraumatic Distress Inventory (PDI; i.e., removal of item 4) could correctly identify probable CB-PTSD on the PTSD Checklist for *DSM-5* (PCL-5) among 3039 women with a recent childbirth event. Factor analysis revealed two predominant, correlated factors associated with the modified PDI: negative emotions and bodily arousal/threat appraisal. The modified PDI demonstrated strong psychometric properties, with a cutoff score of 15 best balancing specificity and sensitivity in the prediction of probable CB-PTSD. This study suggests the modified PDI may be a useful screening tool for detecting probable CB-PTSD among women exposed to this type of trauma.

Sistad, R. E., Kimerling, R., Schnurr, P. P., & Bovin, M. J. (2023). The impact of screening positive for hazardous alcohol use on the diagnostic accuracy of the PTSD Checklist for *DSM-5* among veterans. *Journal of Traumatic Stress, 10.1002/jts.22999*. Advance online publication. <https://doi.org/10.1002/jts.22999>

The PTSD Checklist for *DSM-5* (PCL-5) is one of the most widely used self-report measures of PTSD symptoms. However, its ability to appropriately classify individuals with co-morbid hazardous alcohol use has not been explored. This investigation is essential because hazardous alcohol use may impact reports of PTSD symptoms, particularly when assessed through self-report measures. This study examined the validity of the PCL-5 among 385 primary-care seeking veterans with ($n = 122$) and without ($n = 263$) hazardous alcohol use according to the Alcohol Use Disorders Identification Test–Consumption (AUDIT-C). Analyses indicated that the PCL-5 retained its strong psychometric properties across those with and without positive AUDIT-C screens. Although the optimal cutoff score for those with and without hazardous alcohol use differed (34-36 versus 30, respectively), neither was significantly different than the overall cutoff score (32), suggesting that neither veterans with nor without positive AUDIT-C screens require differential PCL-5 cutoff scores. However, findings do suggest that PCL-5 cutoff scores should be used in concert with clinical judgment when establishing a provisional PTSD diagnosis.

Xu, H., Li, M., Cai, J., Yuan, Y., He, L., Liu, J., Wang, L., & Wang, W. (2023). Comparison of ACE-IQ and CTQ-SF for child maltreatment assessment: Reliability, prevalence, and risk prediction. *Child Abuse & Neglect, 146*, 106529.
<https://doi.org/10.1016/j.chiabu.2023.106529>

Childhood maltreatment can have a lasting impact, including increased risk for mental health difficulties in adulthood. As such, retrospective measurement tools of childhood maltreatment are essential for the implementation of evidence-based, trauma-informed care and research. The two most widely used retrospective childhood trauma measures are the Childhood Trauma Questionnaire Short Form (CTQ-SF) and the Adverse Childhood Experiences International Questionnaire (ACE-IQ); however, no study has compared these measures to one another. The current study compared the CTQ-SF to the ACE-IQ in a sample of 1484 Chinese college students. In addition to the CTQ-SF and the ACE-IQ, participants completed measures of trauma-related sequelae (e.g., PTSD, borderline personality disorder, anxiety, depression). Both the CTQ-SF and the ACE-IQ demonstrated strong internal consistency, though the ACE-IQ demonstrated superior fit in predicting trauma-related outcomes, particularly when using the novel scoring methodology introduced in this paper. This study provides support for using retrospective self-report measures, notably the ACE-IQ with the newly developed scoring methodology, when assessing adverse childhood experiences that may relate to current mental health symptoms.

Neuro/Translational

Seligowski, A. V., Grewal, S. S., Abohashem, S., Zureigat, H., Qamar, I., Aldosoky, W., Gharios, C., Hanlon, E., Alani, O., Bollepalli, S. C., Armoundas, A., Fayad, Z. A., Shin, L. M., Osborne, M. T., & Tawakol, A. (2024). PTSD increases risk for major adverse cardiovascular events through neural and cardio-inflammatory pathways. *Brain, Behavior, and Immunity*, *117*, 149–154. Advance online publication. <https://doi.org/10.1016/j.bbi.2024.01.006>

PTSD is associated with increased risk for major adverse cardiovascular events (MACEs), such as stroke and heart failure. This association may be caused by neuro-immune mechanisms. For example, PTSD may cause autonomic nervous system dysregulation and promote increased inflammation and stress-associated neural activity, which may in turn contribute to hypertension and atherosclerosis. However, these mechanisms have not yet been directly examined. This study utilized hospital biobank data to examine the associations between PTSD, neuro-immune markers, and MACEs. Results indicated that, consistent with earlier studies, PTSD was associated with MACEs even after controlling for depression and other MACE risk factors (e.g., age, hyperlipidemia, smoking). Further, as predicted, the relationship between PTSD and MACEs was mediated by neural-immune pathways, specifically stress-associated neural activity, heart rate variability, and high sensitivity C-reactive protein. Findings suggest that neuro-immune pathways may play important roles in the mechanisms linking PTSD to cardiovascular health.

González-Alemañy, E., Ostrosky, F., Lozano, A., Lujan, A., Perez, M., Castañeda, D., Diaz, K., Lara, R., Sacristan, E., & Bobes, M. A. (2024). Brain structural change associated with Cognitive Behavioral Therapy in maltreated children. *Brain Research*, *1825*, 148702. <https://doi.org/10.1016/j.brainres.2023.148702>

Childhood abuse and maltreatment can cause immediate psychological distress and disrupt psychological and neurological development. While trauma-focused psychotherapy, namely

Trauma-Focused Cognitive Behavioral Therapy (TF-CBT), can effectively treat PTSD symptoms in children, it is unclear if this treatment can sufficiently promote recovery or resilience in neurodevelopment. This longitudinal study compared the brain structures of children under 12-years-old with maltreatment-related PTSD to similarly aged healthy controls. Children with PTSD received TF-CBT, and both groups were measured before and after treatment. Prior to treatment, children with PTSD had greater gray matter volume compared to healthy controls. This difference diminished after receiving therapy, and improvements in gray matter volume were predicted by reductions in PTSD symptom severity. This study demonstrates that trauma-focused therapy can not only improve subjective wellbeing after trauma but can also promote meaningful neurological changes that can help children stay on a developmental track that is comparable to their peers.

Zeamer, A. L., Salive, M. C., An, X., Beaudoin, F. L., House, S. L., Stevens, J. S., Zeng, D., Neylan, T. C., Clifford, G. D., Linnstaedt, S. D., Rauch, S. L., Storrow, A. B., Lewandowski, C., Musey, P. I., Jr, Hendry, P. L., Sheikh, S., Jones, C. W., Panches, B. E., Swor, R. A., Hudak, L. A., ... Haran, J. P. (2023). Association between microbiome and the development of adverse posttraumatic neuropsychiatric sequelae after traumatic stress exposure. *Translational Psychiatry, 13*(1), 354. <https://doi.org/10.1038/s41398-023-02643-8>

The microbiome-gut-brain axis proposes a connection between gut microbes, which affect metabolites and neurochemicals, and downstream effects on the regulation of the central nervous system. The gut microbiome is influenced by environmental factors, such as diet and stress. Experiences of trauma may also impact the gut microbiome in a manner that contributes to the development of PTSD and other neuropsychiatric sequelae. In an effort to understand whether gut microbiomes of trauma-exposed emergency department patients who develop adverse post-traumatic neuropsychiatric sequelae (APNS) have dysfunctional gut microbiome profiles, this study examined the microbiome profiles of 51 individuals (from a subset of adults enrolled in the Advancing Understanding of Recovery after trauma [AURORA] study) presenting to emergency departments in the aftermath of trauma, and re-tested these participants' gut microbes in the following weeks. Microbiome characteristics were associated with the development of APNS, specifically those microbes involved in pathways associated with biosynthesis of arginine, ornithine, and citrulline - metabolites that have been previously associated with PTSD and other psychiatric disorders. Further, the authors identified a biological mechanism through which the gut microbiome reduces global arginine bioavailability, a metabolic change that has also been demonstrated in the plasma of patients with PTSD.

Wolf, E. J., Miller, M. W., Hawn, S. E., Zhao, X., Wallander, S. E., McCormick, B., Govan, C., Rasmusson, A., Stone, A., Schichman, S. A., & Logue, M. W. (2024). Longitudinal study of traumatic-stress related cellular and cognitive aging. *Brain, Behavior, and Immunity, 115*, 494–504. <https://doi.org/10.1016/j.bbi.2023.11.009>

Psychiatric conditions, including those caused by trauma, may have epigenetic effects that increase risk for neurodegeneration and cognitive decline later in life. Prior studies on advanced epigenetic age have operationalized advanced DNAm age with the GrimAge (a DNAm-based biomarker of adverse health outcomes and early disease) algorithm. GrimAge has been shown to predict physical decline and time-to-death. Further, trauma exposure and psychiatric symptoms

(e.g., PTSD) have been associated with advanced age adjusted GrimAge estimates (i.e., GrimAge residuals) in cross-sectional studies. This longitudinal study sought to examine the association between psychopathology (including lifetime PTSD severity as well as internalizing and externalizing dimensional indices), epigenetic age, neuropathology, and cognitive performance in a sample of 214 trauma-exposed military veterans over an average of 5.6 years. Results indicated that Time 1 externalizing psychiatric symptoms were associated with Time 1 epigenetic age (per the GrimAge algorithm), which was associated with increases in Time 2 plasma markers. Further, Time 1 epigenetic age and Time 1 neuropathology biomarkers (specifically neurofilament light and glial fibrillary acidic protein) predicted worse performance on Time 2 neurocognitive tasks assessing working memory, executive control, and verbal memory. Findings suggest that advanced GrimAge residuals are predictive of neuropathology and inflammatory biomarkers as well as worse cognitive function. Further, results indicate that GrimAge residuals mediate the association between psychiatric comorbidity (including PTSD) and future cognitive decline.