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### **Clinical Implications**

**Alpert, E., Hayes, A. M., & Foa, E. B. (2023). Examining emotional processing theory and predictors of outcome in prolonged exposure for PTSD. *Behaviour Research and Therapy*, 167, 104341. <https://doi.org/10.1016/j.brat.2023.104341>**

Emotional processing theory (EPT) suggests that PTSD is maintained through pathological memory structures that contain information about feared stimuli, responses to the stimuli, and their meaning. Prolonged Exposure (PE) is designed to reduce PTSD symptomatology by activating these fear structures in a manner that promotes emotional processing and habituation. Although the body of literature examining EPT has provided important insights into the role of emotional processing in exposure therapies like PE, limited research has examined how cognitive rigidity may impact emotional processing during treatment. Further, no study to date has directly tested the EPT contention that new, healthier associations are learned during treatment that can compete with and inhibit pathological associations. To address these understudied aspects of EPT, the authors examined multiple facilitators and indicators of emotional processing during PE as predictors of PTSD symptom change. Video recordings of PE sessions from 42 participants were coded for possible facilitators of treatment, including negative emotion activation, negative and positive trauma-related cognitions, and cognitive rigidity. Contrary to expectations, peak emotion activation, reductions in negative emotions, and increases in positive emotions did not predict PTSD symptom improvement during PE. Self-reported PTSD symptom change was predicted by cognitive variables, including decreased negative trauma-related cognitions and cognitive rigidity; however, this change was not significant when assessed by clinical interview. Future work further examining the role of cognitive rigidity in PTSD change during treatment is warranted.

**Bottari, S. A., Trifilio, E. R., Janicke, D. M., Porges, E. C., Cohen, R. A., Jaffee, M. S., & Williamson, J. B. (2023). Effects of sleep disturbance on trauma-focused psychotherapy outcomes in posttraumatic stress disorder: A systematic review. *Annals of the New York Academy of Sciences*, 1526(1), 30–49. <https://doi.org/10.1111/nyas.15029>**

Disordered sleep is a common presenting concern among those with PTSD. Chronic difficulty sleeping can have numerous downstream effects on mood, concentration, and memory, which may impact one's ability to engage and benefit from treatment. However, it is unclear whether sleep disturbances should be addressed prior to starting trauma-focused therapy. This systematic review synthesized findings from 16 studies examining the impact of sleep on trauma-focused psychotherapy outcomes. Sleep disorder symptoms were associated with higher overall PTSD severity. While sleep disorders generally did not impact treatment effectiveness (except for sleep-disordered breathing), improvements in sleep throughout treatment were associated with greater treatment gains. These results suggest that addressing sleep disorder symptoms prior to trauma-focused therapy may not be needed.

**Sloan, D. M., Marx, B. P., Acierno, R., Messina, M., Muzzy, W., Gallagher, M. W., Litwack, S., & Sloan, C. (2023). Written exposure therapy vs prolonged exposure therapy**

**in the treatment of posttraumatic stress disorder: A randomized clinical trial. *JAMA Psychiatry*, e232810. <https://doi.org/10.1001/jamapsychiatry.2023.2810>**

Written exposure therapy (WET) is a brief (5 session) treatment for PTSD that entails writing about exposure to trauma and its impact. The brief, no-homework format of this treatment may increase rates of treatment completion. A prior study found WET is noninferior to cognitive processing therapy (CPT) and had fewer treatment dropouts; however, is unclear if this would be the case if WET was compared to prolonged exposure (PE). This randomized controlled trial compared WET and PE across 178 veterans diagnosed with PTSD. Results indicated that reductions in PTSD symptom severity during WET were noninferior to those in PE. Further, participants were significantly less likely to drop out of WET compared to PE. Symptom improvement was maintained for both treatments at 30-week follow-up. Results indicate that WET may be an efficacious and effective PTSD treatment that is associated with less treatment dropout and that can be implemented for a variety of trauma survivors, including military veterans, who may be more difficult to treat and are more likely to drop out of treatment.

### **Diversity, Equity, and Inclusion**

**Fernando, M., Tu, J. W., Grau, P. P., Koch, E. I., Blevins, E. J., Jefferson, S., & Sexton, M. B. (2023). Differential associations between posttraumatic cognitions, posttraumatic stress disorder symptoms, and race among Black and White veterans seeking treatment for assaultive Military Sexual Trauma. *Journal of Interpersonal Violence*, 8862605231197773. <https://doi.org/10.1177/08862605231197773>**

Negative posttraumatic cognitions, defined as changes in beliefs about oneself, others, and the world, influence the development of PTSD symptoms and symptom change during trauma-focused treatment. The nature and quality of posttraumatic cognitions may be further influenced by other contextual factors, such as racial identity and trauma type. This study sought to evaluate how the association between posttraumatic cognitions and PTSD may differ based on racial status in a sample of veterans seeking treatment for military sexual trauma. Negative posttraumatic cognitions about the self and the world were significantly associated with PTSD intrusion, arousal, and negative alternations in cognitions and mood symptoms (NACM), but not avoidance symptoms. While these results were maintained in a White veteran subsample, the Black veteran subsample only demonstrated an association between negative cognitions about the self and NACM symptoms. These results suggest negative posttraumatic cognitions may influence PTSD symptoms differently based on racial status.

**Gamio Cuervo, Á., Smith, A., Chang, E., & La Fazia, D. (2023). “Solidarity and community on our terms and through our lens”: Community care and shared trauma for transgender and nonbinary peer supporters during the COVID-19 pandemic. *Psychology of Sexual Orientation and Gender Diversity*. <https://doi.org/10.1037/sgd0000626>**

Community support is a key avenue for promoting psychological wellbeing and resilience in transgender and nonbinary communities. The COVID-19 pandemic – which has decreased physical and psychological well-being for communities around the world – has especially impacted LGBTQ populations due to higher rates of job loss, social isolation, and anti-transgender legislation. However, little is known about how individuals with a shared identity serving in helping roles have experienced this crisis, which is necessary for facilitating bidirectional support. This qualitative study evaluated vicarious traumatization and growth in

transgender and nonbinary peer supporters providing community support during the COVID-19 pandemic. Four themes and 13 subthemes were identified that illuminate how COVID-19 posed a unique stressor to transgendered and nonbinary individuals, particularly as compounded by political extremism and anti-Black racism. Participants discussed difficulties managing vicarious trauma when providing support to those with similar identity characteristics, as well as secondary traumatic growth when witnessing positive change. Peer supporters noted lasting change spurred by COVID-19, including the motivating of community support and allowing space for gender exploration.

**Maguen, S., Batten, A., Hubbard, A., Holder, N., Burkman, K., Cottonham, D., Purcell, N., Mehlman, H., & Shiner, B. (2023). Advancing health equity by understanding race disparities and other factors associated with PTSD symptom improvement following evidence-based psychotherapy. *Journal of Anxiety Disorders, 98*, 102747. <https://doi.org/10.1016/j.janxdis.2023.102747>**

Systemic inequities in trauma-focused treatment utilization, retention, and effectiveness disproportionately impact Black veterans compared to White veterans. However, the source of these inequities, particularly related to treatment effectiveness, is unclear. This study examined racial disparities in symptom improvement after trauma-focused treatment in a nationally representative sample of US veterans who served in Iraq and/or Afghanistan ( $N = 21,751$ ) using VA electronic health records. Black race and group therapy were associated with less PTSD symptom improvement, while greater symptom improvement was associated with PE and treatment density (i.e., number of sessions within 16 weeks). Racial group disparities may be partially explained by disproportionate representation of Black veterans in group CPT, though further investigation of other variables, such as race-based trauma and discrimination, is needed to elucidate these disparities.

**McFarland, M. J., McFarland, C. A. S., Moniz, K., & Manley, L. (2023). Racial slurs by police and posttraumatic stress symptoms: Intrusive policing and perceived injustice. *Journal of Urban Health: Bulletin of the New York Academy of Medicine*. <https://doi.org/10.1007/s11524-023-00747-6>**

Research indicates that discriminatory language, such as racial slurs, can heighten perceptions of injustice and threat to safety and may increase the likelihood that a person may experience trauma-related distress in response to a potentially traumatic event. This study used data from the Future of Families and Child Wellbeing Study to examine how police use of racial slurs may impact posttraumatic stress symptoms in racial minority youth that are detained by police. Results indicated that police use of racial slurs predicted posttraumatic stress symptoms, even after controlling for the use of intrusive policing (i.e., being searched, use of physical force). This association was partially mediated by perceived procedural injustice, further supporting the “injustice hypothesis”, i.e., that psychological distress results from deviations of fairness.

### **Biomarkers**

**Lee, H., Oh, S., Ha, E., Joo, Y., Suh, C., Kim, Y., Jeong, H., Lyoo, I. K., Yoon, S., & Hong, H. (2023). Cerebral cortical thinning in brain regions involved in emotional regulation relates to persistent symptoms in subjects with posttraumatic stress disorder. *Psychiatry Research, 327*, 115345. <https://doi.org/10.1016/j.psychres.2023.115345>**

Trauma-exposure and chronic PTSD may have lasting impacts on brain structure. Reaction to trauma (e.g., engaging in adaptive or maladaptive coping) may influence progression or resilience from such structural changes. This study examined the brain structure of individuals with current PTSD, remitted PTSD, and trauma-exposed healthy controls, and explored how structural differences may be influenced by clinical characteristics such as coping strategies and resilience levels. Participants with current PTSD displayed increased cortical thinning in the superior frontal cortex, insula, superior temporal cortex, dorsolateral prefrontal cortex, superior parietal cortex, and precuneus, compared to those with remitted PTSD and healthy controls. Maladaptive coping strategies and lower resilience were associated with increased cortical thinning in the superior frontal cortex and insula, respectively. This study suggests clinically relevant variables, such as coping strategies and resilience, can also impact brain structure related to PTSD.

**Hinojosa, C. A., VanElzaker, M. B., Kaur, N., Felicione, J. M., Charney, M. E., Bui, E., Marques, L., Summergrad, P., Rauch, S. L., Simon, N. M., & Shin, L. M. (2023). Pre-treatment amygdala activation and habituation predict symptom change in post-traumatic stress disorder. *Frontiers in Behavioral Neuroscience*, 17, 1198244. <https://doi.org/10.3389/fnbeh.2023.1198244>**

Although evidence supports the efficacy of trauma-focused psychotherapy for reducing PTSD symptoms, some patients do not respond to treatment in a clinically meaningful manner. Differences in emotion-related brain activity may further clarify between-patient differences that influence treatment response. This study used fMRI to evaluate brain activity differences in reaction to emotional facial expressions in treatment-seeking adults with PTSD. After fMRI evaluations, participants received prolonged exposure (PE). Reductions in PTSD symptoms after treatment was associated with lesser activation in the amygdala, greater activation in the ventromedial prefrontal cortex, and habituation of amygdala activation over time. These findings suggest that habituation of amygdala activity in response to fear may be an important factor in PTSD treatment success.

**Yang, B., Jia, Y., Zheng, W., Wang, L., Qi, Q., Qin, W., Li, X., Chen, X., Lu, J., Li, H., Zhang, Q., & Chen, N. (2023). Structural changes in the thalamus and its subregions in regulating different symptoms of posttraumatic stress disorder. *Psychiatry Research: Neuroimaging*, 335, 111706. <https://doi.org/10.1016/j.psychresns.2023.111706>**

The thalamus is predominantly responsible for processing incoming sensory information and transmitting this information to other areas of the brain (i.e., the cerebral cortex). During traumatic exposure, the thalamus is tasked with receiving and relaying trauma-related sensory information. Yet, little is known about how the thalamus may influence the development of PTSD or the expression of PTSD symptoms. This study examined the gray matter volume of the thalamus in participants with PTSD and healthy controls. Individuals with PTSD had decreased thalamus gray matter volume compared to controls. Thalamus gray matter volume was associated with PTSD-related intrusions, arousal, and overall severity score. This study highlights the possible role of thalamic changes in PTSD.