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The Neuroscience of Cultural Sensitivity: A New Paradigm of PTSD Treatment for Refugees

Executive Summary/Abstract

Post-Traumatic Stress Disorder (PTSD) disproportionately affects the world's burgeoning refugee population, and it may have a unique neurobiology in this subgroup. Refugees should be treated in a way which takes into account neural correlates of culture differences. While PTSD in refugees exhibits many of the typically recognizable features, studies show that some aspects of its symptomatology and even neurobiology are particular to the population. Providers working with this population should be familiar with the ways culture impacts the clinical and neurobiological manifestations of PTSD in this population. In particular, they should consider this in evaluating symptom presentation for diagnosis and modify evidence-based treatments appropriately with supplemental therapy or referrals to social benefits.

Background/Introduction

Post-Traumatic Stress Disorder (PTSD) is a psychiatric condition that develops in some people who have experienced or witnessed a traumatic event such as war, personal assault, or a natural disaster. Symptoms generally fall into four categories: intrusive thoughts, avoiding reminders of the event, negative thoughts and feelings, and arousal and reactive symptoms. Abnormalities observed in the disorder include increased levels of stress hormones like norepinephrine and disrupted function of the hippocampus, amygdala, and prefrontal cortex.[1] These regions of the brain modulate memory, fear responses, and complex cognitive behavior, respectively; as well, all three implicated regions play a role in mediating stress responses.

Both the epidemiology and neurobiology of PTSD manifest differently in various groups. The refugee population is one of particular and timely interest: There are currently 68.5 million people forcibly displaced from their homes worldwide,[2] and this massive population is at exceptionally high risk for PTSD. Estimates for the prevalence of PTSD in refugee populations vary widely, but a meta-analysis of 181 studies estimated it to be 30.6%.[3] In comparison, the WHO estimates worldwide PTSD prevalence to be around 3.9%.[4]

A number of studies have identified features of the neurobiology of PTSD that are specific to refugees. For example, PTSD-affected refugees are shown to have neural hypersensitivity and an impaired ability to downregulate sensory responses compared to healthy controls.[5] Somatic symptoms and chronic pain were found to be of considerable concern in PTSD-afflicted refugees.[7] Study of the subset of refugees who have experienced torture reveals distinct neurobiology. Torture severity and trauma load are correlated with increased engagement of the medial prefrontal cortex in response to fear, avoidance symptoms are correlated with activity of the left interior insula, and emotional numbing symptoms are associated with increased activity in bilateral hippocampus.[8] This observation stands in contrast with the hippocampal functional deficits ascribed to the larger population of PTSD patients.[1] As well, the right amygdala was significantly engaged in torture survivors. These findings suggest that the neural circuits that modulate PTSD in refugees may be distinct from the circuits involved in non-refugee PTSD; indeed, it has been suggested that differences in severity and timing of trauma may result in varied symptomatology. Ongoing research continues to attempt to elucidate the neural substrates of such differences.

Refugee status is a consequence of political forces situated within particular cultures and societies. Accordingly, cultural neuroscience offers additional insights into the nature of PTSD in refugees. Cultural neuroscience is an interdisciplinary approach that studies how culture shapes brain function and how the brain gives rise to cultural capacities.[9] In a discussion of PTSD in refugees, this concept is important because culture, specifically individualistic-collectivistic differences in self-representation, modulates many of the same neural and psychological processes affected by PTSD.[10] The fear dysregulation, attentional biases, emotional memory impairments, self-referential processing deficits, and interpersonal processing alterations characteristic of PTSD arise in part from disrupted function of of fear-processing networks and the ventromedial prefrontal cortex. Notably, culture has been found to play a role in the preferential activation of these circuits and others in fear processing, attention biases, memory, self-referential processing, and interpersonal processing. Members of individualistic versus collective cultures tend to exhibit different patterns of neural activation in these processes. As such, cultural context may not only impact emotional regulation and encoding of trauma, but also provide insight into the neurobiology of an individual's PTSD.[10]

The American Psychological Association strongly recommends four interventions for treating PTSD, all of which are variations of cognitive behavioral therapy (CBT). One is general

CBT, which targets relationships between thoughts, feelings, and behaviors. Cognitive Processing Therapy helps patients modify unhelpful trauma-related beliefs, and Cognitive Therapy aims to disrupt negative patterns of thought and behavior. Finally, Prolonged Exposure Therapy helps individuals gradually approach trauma-related memories, feelings, and situations.[11]

However, these guidelines do not specify any modifications to maximize therapeutic efficacy in a patient subgroup such as refugees. Researchers seeking to develop a better sense of existing therapeutic efficacy have already sought to evaluate interventions for PTSD in refugees; Nose et al. concluded that psychosocial interventions effectively decreased PTSD symptoms in refugees who were resettled in high-income countries, and that of them, exposure therapy was the best-supported intervention.[12] Yet another study found that refugees did not respond as well to standard treatment as did their non-refugee counterparts,[13] hypothesizing that the presence of ongoing external stressors, common for refugees, may influence their ability to benefit from therapy. Thus, the authors recommend that clinicians should focus on improving quality of life beyond symptom management through strategies such as acceptance and commitment therapy (ACT), which intends to remove hindrances from patients' forward progress in life by helping them to accept that their negative emotions are appropriate responses to life experiences.

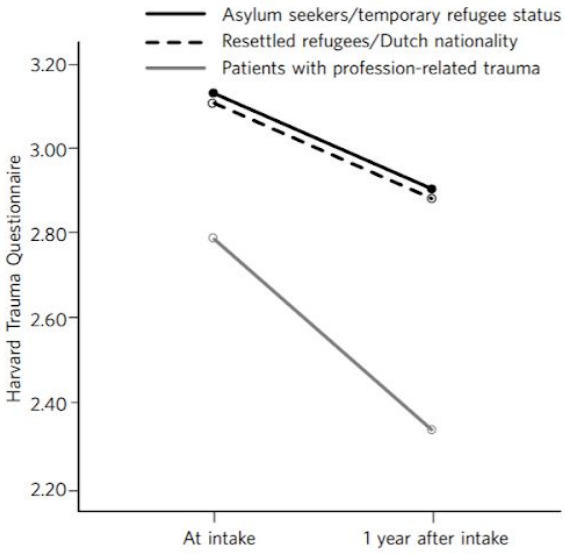

Fig. 1 PTSD symptom severity at intake and after 1 year.

Fig. 1 PTSD symptom reduction in refugees and non-refugees. (ter Heide & Smid, 2015)

Recommendations

The need for personalized and culturally sensitive interventions for PTSD has been widely acknowledged, however, past culture-based models of PTSD focus on the effects of culture on clinical and psychological factors rather than the neural bases of the condition themselves.[10] Integrating the neurobiological evidence with the existing cultural models leads to two main recommendations for practitioners.

First, clinicians should be on the lookout for differences in PTSD manifestation in refugees. This means they should gain sensitivity to the nuances of PTSD both sociocultural and biological in the refugee population and to conceive of cultural difference as an interdisciplinary concept with a neuroscientific dimension. This is based on observations that the neural circuits of PTSD are unique in refugees as well as evidence that the very neurobiology of PTSD may vary based on existing cultural differences; the commonalities in the neural networks governing cultural notions of self-representation and PTSD mean the lens of culture may modify the very neural basis of PTSD. Clinicians must appreciate all of these considerations both as they diagnose and as they administer therapy.

Second, clinicians should use evidence-based treatment for PTSD in refugees while supplementing it with ACT and referrals to other resources aimed at improving quality of life. Studies show that Prolonged Exposure Therapy, the standard of practice PTSD therapy, is the most effective treatment in this subgroup and thus should be promoted. However, the traumatic stressors refugees face are particularly likely to persist even as they seek treatment for PTSD because the consequences of forced relocation are long-term. While ACT has previously been proposed to account for this, a more comprehensive intervention would also connect patients to a caseworker equipped to address social needs beyond the scope of psychotherapy.

Conclusion

Post-Traumatic Stress Disorder is a devastating psychological condition with a prevalence in refugees ten times higher than in the general population. Refugees show unique PTSD symptomatology and neurobiology. As well, the neural correlates of PTSD and culture are overlapping. Prolonged Exposure Therapy shows greatest efficacy against PTSD symptoms

in refugees, but standard versions of this treatment and other CBTs should not be applied indiscriminately given the distinctive neurobiological and cultural characteristics of refugee populations. Perhaps it is these differences that may most fully explain refugees' resistance to treatment, in addition to the hypothesis that the continued presence of environmental stressors hinders treatment progress.[13] Clinicians should acknowledge such neurological and cultural nuances in the treatment of PTSD in refugees and modify their administration of evidence-based therapies accordingly.

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