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Posttraumatic Stress Disorder in Refugees

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Abstract

The number of refugees and internally displaced people in 2022 is the largest since World War II, and meta-analyses demonstrate that these people experience elevated rates of mental health problems. This review focuses on the role of posttraumatic stress disorder (PTSD) in refugee mental health and includes current knowledge of the prevalence of PTSD, risk factors, and apparent differences that exist between PTSD in refugee populations and PTSD in other populations. An emerging literature on understanding mechanisms of PTSD encompasses neural, cognitive, and social processes, which indicate that these factors may not function exactly as they have functioned previously in other PTSD populations. This review recognizes the numerous debates in the literature on PTSD in refugees, including those on such issues as the conceptualization of mental health and the applicability of the PTSD diagnosis across cultures, as well as the challenge of treating PTSD in low- and middle-income countries that lack mental health resources to offer standard PTSD treatments.

Contents

INTRODUCTION

Refugees are formally defined as people who have a "fear of being persecuted for reasons of race, religion, nationality, or membership of a particular social group or political opinion that is outside the country of his/her nationality" (UN Gen. Assem. 1967). Asylum seekers are defined as people who state that they are a refugee but their claim for asylum has not been definitively evaluated (UNHCR 2014). Apart from these groups, many more people are displaced in their own countries because of war, civil conflict, or fear of persecution. As of May 2022, more than 100 million people worldwide have been forcibly displaced by war and conflict, of whom more than 27 million are formally registered refugees and many more who are not registered (UNHCR 2022b). The vast majority of these refugees live in community settlements, with ~2.5 million people living in refugee camps (UNHCR 2020b). Notably, as of 2019, fewer than 1% of identified refugees have been permanently resettled, which means many millions have been waiting for lengthy periods in exile (UNHCR 2022a).

Much research attention has focused on posttraumatic stress disorder (PTSD) in refugees (and internally displaced people) because this population has been subjected to a disproportionate amount of trauma, as well as ongoing stressors during displacement (Bogic et al. 2012). This review provides a detailed overview of the current evidence of PTSD in refugees, including the prevalence of PTSD in refugees, the factors that contribute to PTSD, the mechanisms that underpin refugees' PTSD, the evidence base for treating PTSD in this population, and the challenges that lie ahead in understanding and managing PTSD in refugees.

PREVALENCE OF PTSD IN REFUGEES

Many earlier studies that indexed the prevalence of PTSD in refugees reported extremely variable rates of PTSD; systematic reviews identified rates ranging from 0% to 99% (Steel et al. 2009) and 4.4% to 86.0% (Bogic et al. 2015). This variability can be attributed to a range of methodological

differences between studies, including sample size, timing of the assessment relative to when people fled their homeland, nonrepresentative sampling techniques, the use of self-report measures versus structured clinical interviews, and the use of different PTSD diagnostic criteria. For example, one meta-analysis noted PTSD prevalence of 29% when individuals were assessed via clinical diagnosis as compared with 37% when investigators relied on self-report (Henkelmann et al. 2020). Another meta-analysis found that methodological factors accounted for 12.9% of the variance (Steel et al. 2009). Acknowledging these methodological limitations, meta-analyses of available studies have noted PTSD in ~30% of refugees (Blackmore et al. 2020a, Steel et al. 2009). Notably, the observed rates of PTSD in refugee populations are markedly higher than observed rates in community samples; the World Mental Health Survey (which is composed of nationally or regionally representative surveys in 29 countries) found PTSD rates of 3.9% across the entire sample (Koenen et al. 2017). Prevalence of PTSD in refugees has been greater than community rates in the host populations (Fazel et al. 2005). Moreover, evidence indicates higher rates of PTSD in refugees relative to nonrefugee migrants (Browne et al. 2017). Some studies have focused on specific refugee groups. In recent years, considerable focus has been placed on Syrian refugees because they currently represent the largest groups of refugees in recent years (UNHCR 2020a). One meta-analysis reported that 31% of Syrians who have resettled in other countries experience PTSD (Nguyen et al. 2022). Across systematic reviews of PTSD prevalence rates, however, better-quality studies result in lower rates of PTSD in refugees (Bogic et al. 2015, Steel et al. 2009).

One variant of PTSD that is relevant for refugees is the recently recognized construct of complex PTSD, which was introduced in the eleventh revision of the *International Statistical Classification of Diseases and Related Health Problems* (ICD-11) to accommodate PTSD presentations that, in addition to the standard PTSD criteria, also comprise problems in "self-organization" (WHO 2018). These problems manifest primarily in terms of difficulties in affect regulation, social relationships, and negative self-concepts (Brewin et al. 2017). The vast majority of studies of complex PTSD have focused on adults who have suffered prolonged childhood abuse, and these studies have consistently found that the symptoms of disturbed self-organization load onto a separate factor than do the standard PTSD symptoms (Brewin et al. 2017). Complex PTSD is theorized to occur after exposure to prolonged and severe trauma, and many refugees have experienced these types of traumatic events. Recent work has shown that many refugees experience complex PTSD, demonstrating that the two-factor solution (i.e., PTSD and disturbances in self-organization) can account for the distinct complex PTSD presentations of many refugees (Liddell et al. 2019b). Estimating the prevalence of complex PTSD in refugees is difficult because of the aforementioned methodological problems in many prevalence studies of PTSD, in particular the lack of representative sampling of refugees because most studies base their estimates on treatment-seeking or convenience samples. One systematic review of 19 studies (Mellor et al. 2021) noted considerable diversity of reported complex PTSD prevalence, with rates between 3.0% and 85.5%, although this higher rate focused on a sample of Kuwaiti women following the Iraqi invasion who may have been severely affected by prolonged violence and abuse.

RELATED PSYCHOLOGICAL CONDITIONS IN REFUGEES

PTSD is not the only psychiatric disorder to affect refugees; depression, anxiety, and suicidality occur both in association with PTSD and in the absence of PTSD. In 1 review of 15 studies, prevalence estimates for PTSD, depression, and anxiety in refugees were all more than 50% (Storm & Engberg 2013). Another review of 35 studies found comparable prevalence rates for depression (44%), anxiety (40%), and PTSD (36%) (Lindert et al. 2009). A more recent meta-analysis found

prevalence rates of depression and anxiety to be 31.5% [95% confidence interval (CI) 22.64–40.38] and 11% (95% CI, 6.75–15.43), respectively (Blackmore et al. 2020a). One umbrella review that summarized five systematic reviews concluded that rates of depression and anxiety were somewhat higher than rates of PTSD, with point estimates of 4–40% for anxiety, 5–44% for depression, and 9–36% for PTSD (Turrini et al. 2017). However, studies in these reviews were also subject to the methodological limitations noted above.

Another condition worth noting in the context of refugees is prolonged grief disorder, which involves sustained longing for the deceased and accompanying emotional pain (WHO 2018). This condition is highly relevant for refugees because of the frequent bereavements, and especially the traumatic loss of life, experienced by refugees. Refugees often experience traumatic bereavement because of their exposure to war, torture, detention, or dangers encountered in flight from the country of persecution (Tay et al. 2015). Several studies provide representative population estimates of prolonged grief disorder. One population-based study of refugees resettled in Australia reported an estimated prevalence of 15% of bereaved refugees (Bryant et al. 2020). Another study that sampled consecutive households in a Syrian refugee camp also reported a prevalence rate of 15% (Bryant et al. 2021). One meta-analysis (which did include studies of less than optimal quality) reported a pooled estimate of 33.2% (95% CI, 15.2–54.2) and noted that risk of problematic grief was heightened by traumatic and multiple bereavements (Kokou-Kpolou et al. 2020). Furthermore, prolonged grief disorder and PTSD can co-occur in refugees as well as presenting independently (Nickerson et al. 2014b).

Another common consequence of severe traumatic events among refugees is the somatic presentation of problems, including chronic pain. There is high comorbidity between PTSD and somatic symptoms in refugees (Teodorescu et al. 2015) and torture survivors (Carlsson et al. 2006). Many refugees can experience physical problems in the context of having been tortured, endured injuries during war or while fleeing persecution, or experienced poor health during their post-migration period as a result of detention, poor access to health care, or poverty. Some evidence indicates that different types of somatic problems reported by refugees are differentially related to specific PTSD symptoms. Symptoms associated with sympathetic activation (difficulty breathing, dizziness) have been linked to hyperarousal PTSD symptoms, and somatic problems involving weakness of limbs, back pain, or muscle soreness have been associated with negative alterations in mood and cognition (Morina et al. 2018b).

In summary, although much attention is rightly given to PTSD in refugees, it is important to contextualize the issue of PTSD in relation to other forms of psychopathology that can occur in this population. The observation that the risk of refugees developing other clinical disorders may be greater than their risk for developing PTSD underscores the need for a broad perspective regarding refugee mental health. To focus myopically on PTSD, which has often been the approach of much previous research, may omit critical information regarding a refugee's mental health.

PTSD IN REFUGEE CHILDREN

More than half of the world's refugees are under age 18. There are discrepancies between reports indicating that children and adolescent refugees report more (Henkelmann et al. 2020) or fewer (Porter & Haslam 2005) mental health problems than do their adult counterparts. Rates of mental health problems including PTSD, anxiety, and depression are reportedly higher in children and adolescent refugees relative to other young people in the countries in which they reside (Kien et al. 2019). One meta-analysis reported an overall PTSD prevalence of 22.71% (95% CI, 12.79–32.64), as well as elevated rates of depression (13.81%; 95% CI, 5.96–21.67) and anxiety disorders (15.77%; 95% CI, 8.04–23.50) (Blackmore et al. 2020b). Another review of young refugees in

Europe that included studies comprising 24,786 refugees reported PTSD rates ranging from 19.0% to 52.7% (Kien et al. 2019), noting that the rates may be artificially elevated by reliance on self-report measures in many studies. Some studies indicate that the prevalence of PTSD in young refugees is higher as age increases (Khamis 2019), which may be attributed to greater exposure to traumatic events or to the more sustained impact of poor parental mental health.

One of the refugee groups that is particularly vulnerable to mental health problems is unaccompanied minors because they are separated from primary caregivers and are more likely to be exposed to ongoing threats because of a potential lack of protection. Consistent with this proposal, some evidence shows that unaccompanied minors have higher rates of PTSD symptoms than do other young refugees (Michelson & Sclare 2009). Furthermore, while the rates of mental health problems tend to decrease over time in a refugee's resettlement country (Khamis 2021), unaccompanied minors tend to have more persistent mental health difficulties (Vervliet et al. 2014).

RISK FACTORS FOR PTSD IN REFUGEES

Many risk factors for the development of PTSD in refugees overlap with risk factors for PTSD observed in other trauma-exposed populations. There are specific risk factors for PTSD in refugees, however, that relate to the nature of the refugee experience. These can be broadly categorized into two types: exposure to potentially traumatic events and ongoing stressors. In terms of trauma exposure, considerable research demonstrates that a key predictor of PTSD is the extent of exposure to war, interpersonal violence, and torture (Bogic et al. 2015). Indeed, greater exposure to traumatic events increases the risk in refugees for more severe PTSD, including complex PTSD (Mellor et al. 2021). This factor is important because refugees are exposed to these traumatic events more than nonrefugees (Betancourt et al. 2017), which accords with evidence showing that people who live in countries affected by conflict experience higher rates of mental disorders (Charlson et al. 2019). One systematic review has found that torture is a particularly strong predictor of PTSD in refugees (Steel et al. 2009). Furthermore, exposure to traumatic events also often continues during and after flight from one's home. That is, refugees often experience traumatic events prior to becoming a refugee (Keller et al. 2017), and it is often these events that cause the person to become a refugee in order to find relative safety. However, many refugees are vulnerable to high rates of trauma exposure even after they have fled their home country (Pérez-Vázquez & Bonilla-Campos 2022). For example, fleeing a war zone and potentially drowning while traveling represent significant threats to a refugee's well-being and can realistically cause PTSD. Moreover, once settled in a host country, refugees can be susceptible to a range of traumatic events because poor housing, poverty, and the lack of appropriate protections can expose them to more trauma. The evidence base is limited in terms of identifying the relative contributions of the extent to which traumatic events occur prior to or following an individual becoming a refugee, and this relationship between traumatic events and refugee status is context dependent because each country has its own particular trauma risk factors.

One of the aspects of risk for PTSD in refugees is the role of stressors that can occur during and after resettling into a new host country. The extent to which a refugee is exposed to stressors in the postmigration environment can be dependent largely on the legal policies pertaining to refugees in the specific context. Where countries are signatories to the United Nations High Commissioner for Refugees (UNHCR) Convention and Protocol, refugees may be afforded greater rights and protections than they would be in countries where refugees hold no legal status. In these settings, refugees often have little access to financial resources, medical care, employment opportunities, and housing and may be at greater risk of exploitation, detainment, and deportation. Even in countries that have committed to protecting refugees, refugees may be subject to immigration

detention for prolonged periods while their refugee status is assessed. One systematic review concluded that detention led to significantly elevated rates of PTSD, anxiety, and depression, and these rates increased the longer the refugee was in detention (von Werthern et al. 2018). These effects appear to linger whereby refugees who have been in detention for prolonged periods suffer worse mental health following release from detention (Steel et al. 2006) than do asylum seekers hosted in the community (Robjant et al. 2009). This pattern is also seen in refugee children (von Werthern et al. 2018), with the additional factor that their mental health deteriorates more when they are separated from their primary caregivers (MacLean et al. 2019).

Refugees can experience many other ongoing stressors beyond detention, including poverty and unemployment, poor housing, discrimination, inadequate health care, language barriers, and poor social integration, that can increase risk for PTSD (Bogic et al. 2015, Li et al. 2016). Many of these factors can predispose refugees to additional stressors that can trigger PTSD. For example, living in poverty and inadequate housing can lead to increased risk for interpersonal violence and vulnerability to harm from weather events and environmental catastrophes (Logie et al. 2019). Although considerable evidence shows that premigration trauma is a major driver of PTSD in refugees, evidence also indicates that the strongest contribution comes from postmigration stressors (Miller & Rasmussen 2017). One meta-analysis of young refugees' mental health found that the association between prior trauma and PTSD symptoms was fully mediated by daily stressors (Hou et al. 2020). This finding has resulted in a significant debate regarding the relative contributions of premigration traumatic events and postmigration stressors in the etiology of PTSD in refugees (Miller & Rasmussen 2010).

One factor that can contribute to poorer mental health in refugees is fear that they will be returned to their home country where they may face persecution or death. Many studies indicate that temporary visas that do not provide permanent protection against being deported are associated with worse mental health (Blackmore et al. 2020a, Nickerson et al. 2019). This factor may contribute to PTSD because of fear of being returned to one's hostile home country or because it can limit access to employment opportunities, government benefits, or certain rights for one's children in the host country (Nickerson et al. 2011). Temporary visa status is particularly prevalent in refugees with complex PTSD (Liddell et al. 2019b) and is associated with impoverished emotion regulation (Specker & Nickerson 2023), reflecting the impact of the lack of visa security on refugees' mental health.

Many of the same risk factors exist for refugee children and adolescents. Cumulative trauma poses greater risk (Jensen et al. 2019), as does the extent of postmigration stressors (Jensen et al. 2019, Vervliet et al. 2014). Most studies suggest that mental health problems in refugee children and adolescents tend to ease over time in a host country (Scharpf et al. 2021), although this pattern does not exist when children and adolescents are in camp settings (Braun-Lewensohn & Al-Sayed 2018). Having refugee visa status rejected is also a risk for PTSD and depression in young refugees (Müller et al. 2019). Consistent with the adult literature, girls are more likely to develop PTSD than boys (Braun-Lewensohn & Al-Sayed 2018). Of course, being separated from family is a significant predictor of PTSD in young refugees (Mace et al. 2014) because they can lack important attachment figures. Considerable attention has also focused on the impact of forced detention on the mental health of young refugees; numerous studies have indicated that detention results in worsened mental health (Mace et al. 2014).

The mental health of refugee youth is also influenced to an extent by the PTSD severity of their parents or caregivers. The association between the mental health conditions of refugees, including PTSD, and those of their children has been documented (Beiser & Hou 2016). One means by which the mental health of refugees is influenced by parental PTSD is the impact of PTSD on refugees' parenting behavior (Sim et al. 2018). For example, one population-based study noted

that refugees' PTSD severity was associated with harsh parenting, which was in turn associated with worse psychological problems in refugees' children (Bryant et al. 2018).

MECHANISMS OF PTSD IN REFUGEES

Relative to what we know about mechanisms underpinning the development and maintenance of PTSD in other populations, we have limited evidence on these processes in refugee populations. These factors can be discussed in terms of neural, cognitive, and social mechanisms.

Neural and Biological Mechanisms of PTSD

In contrast with the vast evidence base on the neural bases of PTSD in mainstream populations, the research on neural processing in PTSD of refugees is relatively limited. This lack of data is potentially problematic because most neuroscience research on PTSD does not account for key characteristics, including the neural effects of cumulative trauma exposure or ongoing stressors experienced following trauma, that distinguish refugees from other trauma-exposed groups (Liddell et al. 2018). Consistent with predominant neural models of PTSD, the same networks can be engaged in refugees with PTSD as with other PTSD populations; however, refugees with PTSD appear to also have distinct neural processes. One neuroimaging study demonstrated in refugees that the amount of trauma exposure and postmigration stress, but not PTSD symptoms, can drive fear-based reactivity patterns in the insula and perigenual anterior cingulate cortex (Liddell et al. 2019a). Resting state functional magnetic resonance imaging studies also support the importance of considering the neural costs of trauma load in refugees. Jeon et al. (2020) reported weaker left thalamo–left precentral cortical connectivity in refugee groups both with and without PTSD compared with nonrefugee controls; connectivity was positively correlated with cumulative trauma exposure in the PTSD group and with PTSD symptom severity in the group without PTSD (Jeon et al. 2020). In contrast, another study conducted with the same sample of North Korean refugees found that refugees (compared with nonrefugee controls) exhibited stronger amygdala and hippocampal activity when perceiving negative images and stronger prefrontal cortical and amygdala/hippocampal–prefrontal connectivity during emotion suppression (Lee et al. 2021). These neural patterns, but not cumulative trauma exposure or time of residence in host country, positively correlated with PTSD symptom severity. Similarly, resting state brain connectivity between the amygdala and dorsolateral and dorsal anterior cingulate cortex was also stronger in refugees compared with nonrefugee controls, which appeared to be specifically associated with alexithymia symptoms while controlling for trauma exposure, depression, and PTSD symptoms (Kim et al. 2020). Overall, too few neuroimaging studies have been conducted with refugees to definitively profile a distinctive neural pattern of PTSD in this population. Evidence to date does suggest, however, that the nature and cumulative load of traumatic events in refugees may have long-lasting impacts on refugees' neural functioning.

While functional connectivity between networks underlying PTSD may be stronger in refugees, white matter structures within key emotion and cognitive limbic and prefrontal regions appear to be weaker in male refugees with PTSD relative to refugees without PTSD (Uldall et al. 2022), which is consistent with findings in nonrefugee groups (Siehl et al. 2018). This study also reported that the right cingulum bundle was negatively associated with PTSD avoidance symptoms, and the uncinate fasciculus—which connects limbic structures such as the amygdala and temporal pole to the ventral prefrontal cortex—was positively correlated with dissociative PTSD symptoms. Overall, findings from the few neuroimaging studies conducted to date point to heterogeneity of neural correlates of PTSD in refugees. Larger sample sizes and more replication studies are needed to clarify the exact relationship between trauma exposure and PTSD symptoms and neural functioning.

The experience of distinctive refugee traumatic events, such as torture, can have a specific impact on the brain, affecting the structural (Zandieh et al. 2016) and functional integrity of brain systems responsible for emotion and cognitive processing (Adenauer et al. 2010, Liddell et al. 2021a). Some studies have found that refugee survivors of war and torture who have PTSD showed hyperactivity in ventrolateral prefrontal and superior parietal regions in response to threat cues (Adenauer et al. 2010), which correlated with the severity of torture exposure (Catani et al. 2009). Other studies have found that torture exposure in refugees affects brain functioning independently of PTSD symptoms in terms of both interpersonal threat and reward processing (Liddell et al. 2021a). In addition, patterns of hyper- and hypoconnectivity between intrinsic functional brain networks reflect enhanced cognitive control mechanisms and problematic internal-external processing (principally the central executive network and default mode network) (Liddell et al. 2022). It is possible that hyperconnective networks are echoes of neural adaptations to torture trauma, which may be beneficial in the immediate aftermath by inducing shutdown responses that overregulate strong emotions to facilitate coping with this severe stressor. However, sustaining this overregulation in the long term may be detrimental for healthy psychological and social functioning by promoting social withdrawal, emotional rigidity, and reduced self-regulation (Liddell et al. 2022).

Emerging studies have examined biological mechanisms that contribute to risk for PTSD (as well as other forms of psychopathology) among refugees, encompassing neuroendocrine, molecular, and genetic factors (Bartlett et al. 2021). These data are particularly important as refugees are exposed to significant trauma and ongoing stress that may erode mechanisms developed to cope with stress. Cortisol secretion—the glucocorticoid hormone released from the hypothalamic-pituitary-adrenal (HPA) axis to regulate the body's stress response—has been examined in the context of refugee trauma and stress, with diverse findings. Higher (Sabioncello et al. 2000) and lower (Rohleder et al. 2004) levels of salivary cortisol have been reported in displaced populations regardless of PTSD symptoms. Variability in cortisol patterns may be explained by the measurement context. For example, elevated morning cortisol observed in Somalian refugees correlated with higher trauma exposure and PTSD symptoms, but this study also found that cortisol release was dampened during explicit trauma reminders (Matheson et al. 2008). The measurement of cortisol from hair follicles, which reflects chronic levels of cortisol release, appears to be higher in refugees living with insecurity such as asylum seeker status (Mewes et al. 2017), owing to elevated daily stressors and fears (Dajani et al. 2018), or among survivors of sexual violence (Gola et al. 2012). In contrast, PTSD symptoms were more likely to be associated with patterns of hypocortisol release (Dajani et al. 2018), similar to the dominant pattern observed in nonrefugee PTSD groups (Daskalakis et al. 2013). One study also found that refugees with PTSD with high glucocorticoid sensitivity showed increased expression of the glucocorticoid receptor, which was correlated with the binding protein FKBP5, suggesting hypersensitivity to cortisol in some refugees (Pitts et al. 2016). Collectively, these studies highlight the disruption to cortisol and HPA axis functioning in refugees, which may or may not be linked to PTSD, but the specific nature of this disruption may depend on various contextual and measurement factors.

Studies have also revealed disrupted bodily inflammation and immune system response patterns in refugees. For instance, refugees with PTSD showed greater levels of interleukin-6, a proinflammatory cytokine that reflects an overactive immune system (Rohleder et al. 2004). Moreover, alterations in the representation of T cells—critical to orchestrating an immune response to invasive microorganisms—were observed in refugees with chronic PTSD (Sommershof et al. 2009) and in displaced women (Sabioncello et al. 2000). Finally, genetic factors may underscore individual vulnerability to the adverse repercussions of refugee trauma and daily stressors. Risk alleles of the *SLC6A4* gene that encodes serotonin (short-short allele) and the catechol-*O*-methyltransferase enzyme—which regulates dopamine, epinephrine, and norepinephrine

release (the Val158Met polymorphism)—have both been associated with very high risk for PTSD in a large cohort of displaced Rwandan genocide survivors (Kolassa et al. 2010). Overall, to derive more targeted interventions that address underlying pathophysiology, it is important to understand how dysregulated stress responses and immune system functioning contribute to the development of PTSD in refugees.

Cognitive Mechanisms

Emotion regulation skills have the potential to improve emotional well-being and reduce PTSD. Refugees have been shown to have deficits in global emotion regulation skills (Doolan et al. 2017), which are associated with experiences of torture, postmigration difficulties, and visa insecurity (Nickerson et al. 2016). Impoverished emotion regulation accounts for a significant amount of variance in PTSD (Koch et al. 2020). In terms of specific regulation strategies, one study found that refugees who were instructed to cognitively reappraise while viewing trauma-related images had fewer intrusive memories than did those instructed to suppress, and especially fewer than refugees with lower levels of trait suppression (Nickerson et al. 2017). Conversely, refugees who report suppression while watching aversive stimuli report more negative affect, and refugees with low trait reappraisal and high suppression tendencies report more severe PTSD (Nickerson et al. 2016) and greater emotion dysregulation (Specker & Nickerson 2023).

Trauma memories are pivotal in all models of PTSD, and it is not surprising that the extent to which these memories are central to one's identity and sense of self is strongly associated with PTSD in mainstream populations. The centrality of trauma memories is also strongly associated with PTSD in refugees (Chung et al. 2021). Furthermore, more severe PTSD is associated with refugees' reactivity to their trauma memories (Reebs et al. 2017). Whereas evidence in mainstream populations suggests that people with PTSD avoid these memories (Marx & Sloan 2005), this pattern is less evident in refugees, which may be attributed to cultural factors (Reebs et al. 2017). Specifically, whereas intrusive memories, arousal, and vigilance may be more biologically hardwired features of PTSD, avoidance may be more determined by cultural influences. Refugees have also been shown to have poorer retrieval of specific autobiographical memories (Graham et al. 2014), which may be the case particularly for trauma memories in refugees with PTSD (Wittekind et al. 2017). The impoverished retrieval of specific memories correlates with evidence that refugees often report inconsistent memories (Khan et al. 2021). Trauma memories change over time in refugees; longitudinal studies indicate that the memories that are most distressing remain stable for only a minority of refugees (Panter-Brick et al. 2015). This pattern has been potentially problematic for asylum seekers who apply for refugee status because a lack of consistent recall of events can be interpreted by immigration officials as evidence of fabrication rather than being a common function of the fluctuating nature of trauma memories (Saadi et al. 2021).

Much work has focused on the pattern of maladaptive appraisals being associated with PTSD in refugees. One of the major appraisals identified in research are those involving a sense of control or self-efficacy over one's environment. Many of the aversive events experienced by refugees are uncontrollable, ranging from the trauma endured during persecution to the difficulties that can occur in new host countries. For example, refugees' PTSD severity has been associated with the sense of uncontrollability during torture and other forms of trauma (Le et al. 2018). Conversely, self-efficacy is protective against poor mental health in refugees (Sulaiman-Hill & Thompson 2013). One experimental study found that inducing self-efficacy in treatment-seeking refugees increased their tolerance for distress (Morina et al. 2018a). Furthermore, an open trial reported that an intervention that aimed to increase self-efficacy led to increased self-reported self-efficacy and reduced psychological symptoms in refugees (van Heemstra et al. 2019). The role of

self-efficacy in refugees' PTSD appears complex, however; other survey evidence has suggested no role for self-efficacy beyond the impact of postmigration stressors (van Heemstra et al. 2021). Miller & Rasmussen (2017) have suggested that because refugees often lack control, the contrast between self-efficacy and the sense of uncontrollability reduces the capacity of self-efficacy to improve mental health.

Related to the domain of maladaptive appraisals, scholarly attention in recent years has also focused on moral injury in refugees. This construct is defined as "the lasting psychological, biological, spiritual, behavioral, and social impact of perpetrating, failing to prevent, or bearing witness to acts that transgress deeply held moral beliefs and expectations" (Litz et al. 2009, p. 697). Although this construct was initially conceptualized predominantly in the context of military trauma in which personnel were involved in acts of commission (e.g., killing a civilian) or omission that led to severe guilt or shame, it has also been applied to the experiences of refugees. For example, a refugee who is forced to reveal the location of a family member during torture and interrogation, or who must ignore requests by a friend to assist them in hiding from persecutors, may experience these events as having transgressed their morals or values. Although limited at this stage, the available evidence suggests that moral injury appraisals in refugees are associated with more severe PTSD and depression over and above trauma exposure (Hoffman et al. 2019, Nickerson et al. 2022) and are also linked with complex emotional responses such as anger, guilt, and shame (Hoffman et al. 2019). Different types of moral injury appraisals appear to be associated with distinct posttraumatic problems. While moral injury appraisals about one's own actions and about others' actions have been linked to increased depression and anger symptoms, moral injury appraisals about one's own actions are linked more to fear-related PTSD symptoms (Nickerson et al. 2022).

Social Factors

Refugees being separated from their main social networks, including family members, because they have fled their homes is a very common experience. Refugees can also experience significant social stressors in the postmigration environment—including isolation and loneliness—which are exacerbated by family separation and can impede trauma recovery (Liddell et al. 2021b). This experience may lead to attachment system fragmentation, which can be problematic because secure attachments are important for mental health and represent a key emotion regulation strategy to buffer the effects of adversity. Indeed, priming awareness of attachment figures shows reduced buffering of neural responses to threats in refugees with PTSD or subsyndromal PTSD when experiencing grief connected to separation from family (Liddell et al. 2021c). The attachment systems of refugees can be further compromised by the experience of interpersonal losses incurred through frequent bereavement resulting from war and other severe trauma. Evidence suggests that refugees with PTSD have more insecure attachment tendencies (De Haene et al. 2010), especially after interpersonal trauma (Morina et al. 2016). Furthermore, there is strong comorbidity between PTSD and adult separation anxiety disorder in refugees (Silove et al. 2010), and this form of attachment insecurity appears to mediate the association of traumatic loss and PTSD (Tay et al. 2015). The importance of separation from attachments is underscored by evidence that it is the worry about the separation from others rather than the physical separation itself that is associated with PTSD (Fogden et al. 2020). Concern about the safety of family members who may be subject to ongoing conflict, persecution, or displacement may perpetuate feelings of insecurity and contribute to the maintenance of PTSD. One factor that has shown to be protective for refugees in host countries is the degree of social support received in their new environment (Nosè et al. 2020).

Much scholarly attention has focused on refugee children and the relationship between disorganized attachments that result from separation from their attachment figures and children's mental health (Eruyar et al. 2020). This issue is critical for understanding PTSD in refugee

children because attachment security typically develops during childhood when one learns the availability and nature of attachments from caregivers. Refugee children can experience impoverished attachments as a result of the severity of PTSD in their caregivers (van Ee et al. 2016). This process can affect refugee children via several mechanisms. The traumatization of refugees can contribute to attachment difficulties in caregivers (van Ee et al. 2017), which can then have downstream effects on children's mental health via the caregivers' difficulties in expressing emotions, anger, or withdrawal (Sim et al. 2018). Caregivers' PTSD may also adversely affect their parenting behavior, which can then lead to mental health problems in their children (Bryant et al. 2018). This finding is supported by observations that refugee children's PTSD is predicted by the lack of perceived attachment security with their caregivers (Eruyar et al. 2020).

TREATMENTS FOR PTSD

The frontline treatment for PTSD is trauma-focused psychotherapy, which is an umbrella term that includes treatments such as prolonged exposure, eye-movement desensitization and reprocessing (EMDR), and cognitive processing therapy. This group of interventions involves cognitive behavioral strategies that comprise some form of emotional processing (typically via repeatedly reliving the trauma memory) together with restructuring of maladaptive appraisals about the trauma, oneself, or one's environment. Similarly, this approach has been the most supported treatment for PTSD in refugees. Meta-analytic studies indicate moderate-quality evidence of trauma-focused psychotherapy for PTSD and that these treatments also reduce anxiety and depression (Morina et al. 2017a, Nosè et al. 2017, Turrini et al. 2019). One meta-analysis showed that relative to control conditions, the standardized mean difference was −1.03 (95% CI, −1.55 to −0.51); the number-needed-to-treat suggests that 4–5 refugees need to be treated for 1 refugee to be successfully treated (Nosè et al. 2017). This review was focused, however, on refugees in high-income countries. A larger meta-analysis that included refugees from both high-income and low- and middle-income countries (LMICs) reported a standardized mean difference of −1.08 (95% CI, −1.81 to −0.35), and the number-needed-to-treat was between 6 and 7 when there was a moderate frequency of unsatisfactory outcomes (Turrini et al. 2019).

One form of trauma-focused psychotherapy has been developed specifically for refugees: narrative exposure therapy (NET). This therapy employs a form of prolonged exposure to trauma memories that is observed in other trauma-focused psychotherapies but modifies this approach to incorporate the multiple traumatic events that many refugees experience (Bichescu et al. 2007). NET achieves this aim by assisting the refugee with reliving trauma memories in the form of a life narrative that also includes their positive memories. The refugee can make a record of their life story, and, building on testimonial therapy, the refugee may use this record in formal submissions to human rights organizations or tribunals. Meta-analyses provide support for this approach in reducing PTSD symptoms (Kip et al. 2020, Nosè et al. 2017). One network meta-analysis of treating PTSD in refugees reported that the extent to which NET reduces PTSD symptoms may not be as strong as more mainstream forms of trauma-focused psychotherapy, such as prolonged exposure and EMDR (Turrini et al. 2021). Evidence indicates that the beneficial effect of NET may be stronger in high-income countries (Nosè et al. 2017, Turrini et al. 2021), which may reflect that fewer studies of NET have been conducted in LMICs.

One of the limitations of trauma-focused psychotherapies in treating PTSD in refugees is that most of the world's refugees are hosted in LMICs that lack appropriate mental health infrastructures and mental health specialists who are trained in these approaches. This form of therapy typically requires personnel with mental health expertise (e.g., psychiatrists, psychologists), capacity for diagnostic skills to identify PTSD, and knowledge of disorder-specific treatment protocols, and these treatments often comprise many sessions (more than 10), which is not scalable

in LMICs that have limited health budgets. This situation has led to a treatment gap between the extent to which PTSD and other mental health conditions are treated in LMICs compared with treatment in better-resourced countries (Chisholm et al. 2016). To address this issue, task-sharing approaches have been adopted in which nonspecialists are trained in simple, transdiagnostic treatment strategies to alleviate mental health problems in LMICs. One meta-analysis of 27 studies found that these approaches achieved a moderate effect in reducing common psychological disorders (0.49; 95% CI, 0.36–0.62) (Singla et al. 2017). Although these approaches are not restricted to refugees, and are not focused on PTSD, numerous trials using this approach have measured their impact on PTSD symptoms in refugees.

One of the commonly used approaches is the World Health Organization (WHO)'s Problem Management Plus (PM+) program, a five-session behavioral program that teaches nonspecialists to teach people skills in arousal reduction, problem management, behavioral activation, and social support access (Dawson et al. 2015). One pilot trial of resettled refugees found that PM+ can reduce the severity of PTSD symptoms in refugees resettled in Europe (de Graaff et al. 2020). However, another fully powered large trial of refugees in a camp setting did not show significant improvement in PTSD (Bryant et al. 2022). An even more scalable program developed by the WHO is the 5-session Self-Help Plus program, which is intended to be more of a self-help intervention that is delivered by a booklet and administered in groups of 20–30 people at a time (Epping-Jordan et al. 2016). This program has also been shown to reduce the severity of PTSD symptoms in refugee populations (Tol et al. 2020) as well as to prevent the onset of PTSD in refugees with subsyndromal distress (Acarturk et al. 2022, Purgato et al. 2021).

One transdiagnostic approach that has been used with refugees and that is more targeted at PTSD is the Common Elements Treatment Approach (CETA), which employs a modular framework that allows nonspecialists to be trained to determine which treatment strategies meet the person's mental health needs, thereby allowing a more personalized approach (Murray et al. 2014). Distinct from the WHO programs, CETA has modules that involve exposure to trauma memories and trauma reminders and, in this sense, is closer to trauma-focused psychotherapy. This approach has been used successfully in reducing PTSD severity in refugee populations (Bolton et al. 2014, Weiss et al. 2015). The extent to which CETA is a scalable intervention is questionable, however, because although it can be successfully delivered by nonspecialists, it is typically delivered over 8–12 sessions, which can be costly for many LMICs to scale up. A shortened version of CETA that comprises 5 sessions has been compared with the standard 10-session version with internally displaced people in Ukraine, and both versions performed equally in reducing PTSD symptoms; this trial was limited, however, by its comparison with a wait-list as a control condition (Bogdanov et al. 2021).

Although fewer studies have been conducted in refugee children and adolescents, meta-analyses suggest that trauma-focused psychotherapies are also effective in reducing PTSD in younger refugees (Morina et al. 2017b, Nosè et al. 2017). NET has been adapted to address PTSD in youth (KIDNET), and some evidence shows that it can be effective in reducing PTSD (Fazel 2018). Overall, these studies indicate that these programs have the potential to improve PTSD symptoms in refugees of different ages. Despite this capacity, these programs have not been scaled up in LMICs, where most young refugees are hosted. In terms of programs that have been evaluated in LMICs, one umbrella review found nine meta-analyses of psychological interventions for children or adolescents in LMICs and noted that there was only suggestive evidence for the efficacy of PTSD treatments (Barbui et al. 2020). Moreover, most studies have been conducted on middle-to-late-adolescent refugees (>15 years of age), and there is a dearth of evidence regarding younger refugees. In addition, trials have taught young people life skills to manage daily stressors, and these have resulted in reduced PTSD symptoms (Singla et al. 2020); however, these

studies with young refugees have also included elements of trauma-focused psychotherapy, which makes interpretation difficult (Ertl et al. 2011). In summary, considerably more trials are needed to determine how to optimally address PTSD symptoms in younger refugees.

One of the distinctive methods of addressing PTSD and other mental health conditions in refugee children and adolescents is by employing school-based deliveries. This context allows ready access to many young refugees because host countries typically initiate educational programs for refugees. One systematic review noted that treatment of PTSD in children and adolescents can be effective in school contexts. Half of the identified studies reported significant reductions in PTSD; notably, these studies typically used trauma-focused therapy approaches (Fazel et al. 2014).

CHALLENGES FOR THE STUDY OF PTSD IN REFUGEES

Cultural Relevance of PTSD

One of the ongoing debates in the study of PTSD in refugees is the extent to which a diagnosis developed primarily within Western contexts is applicable to the many cultural backgrounds that refugees represent. Critiques have historically assumed that all cultural perceptions will comply with *Diagnostic and Statistical Manual of Mental Disorders* conceptualizations of PTSD. However, the assessment and treatment of mental health conditions in different cultures need to accommodate factors such as language, relationship between the person and the counselor, metaphors, concept of illness, and methods by which the assessment/intervention is delivered.

One of the core differences between Western and non-Western understandings of mental health can be shaped by the extent to which a person holds an individualistic or collectivistic worldview. People with a more individualistic perspective (which is the predominant view in Western cultures) perceive events from one's own viewpoint, which involves independence and self-valuing autonomy. In contrast, a collectivist worldview emphasizes an interdependent self that engages in more holistic thinking and social relatedness. The extent to which one engages in an individualist or collectivist perspective can influence not only a person's understandings of mental health but also the mechanisms that drive mental health because the extent to which one holds an individualist or collectivist worldview can involve distinct perceptual, attentional, and memory systems. For example, people from collectivist groups tend to give greater attention to contextual details and doing so can impact how they process emotions and memories (Hareli et al. 2015), which can impact PTSD (Liddell & Jobson 2016). Relevant to PTSD, the collectivist worldview can modulate the nature of intrusive memories following exposure to an analog trauma in that people from collectivist cultures and those who place a greater emphasis on others report fewer intrusions after analog trauma (Jobson & Dalgleish 2014). Moreover, collectivism appears to mediate the relationship between the roles of specific cognitive appraisals and emotion regulation strategies in PTSD symptom severity, irrespective of cultural group. One study found the association that whereas collectivist self-construal mediated the relationship between interpersonal regulation strategies (such as soothing and social modeling) with PTSD in a Malaysian sample, this was not evident in a Western sample (Jobson et al. 2022).

Apart from potentially holding a collectivist worldview, refugees may also have distinct conceptualizations of mental health. For example, a series of studies of Cambodians who survived the Khmer Rouge noted the frequency of *khyâl* attacks, which appear to be a form of panic attack but are experienced as a wind-like substance in the body that causes an imbalance in *khyâl* and can create a range of stressful reactions, including trauma memories (Hinton et al. 2010). Another example is a form of panic attack that is described in Latino cultures as *ataque de nervios* (attack of nerves), which can be used to account for severe peritraumatic distress. *Ataque* is regarded across Latino cultures as a common reaction to intense stress and can involve strong catastrophic

appraisals about future episodes of this fearful state; accordingly, *ataque* may be an important component of PTSD in these cultural groups because it can contribute to elevated arousal and maladaptive appraisals that can heighten one's sense of threat (Hinton & Lewis-Fernández 2011). The cultural variability of how severe traumatic stress responses can be manifested underscores that the prevailing Western diagnostic descriptions of PTSD may also need to be carefully considered in the local cultural context of refugees in order to ensure that it is accurately capturing the nature of their traumatic stress.

The issue of cultural appropriateness has been highlighted in studies of the treatment of PTSD and other mental health problems in refugees. One review found that cultural adaptation of the "illness myth" was an important moderator of larger effect sizes in culturally adapted treatments (Benish et al. 2011). Furthermore, one meta-analysis reported a medium effect size (Hedge's $g = 0.52$) of culturally adapted treatments relative to those that were not adapted for the particular culture (Hall et al. 2016). Recent commentaries have highlighted that treatments for refugees and those in cultures separate from where the treatment was developed need to undergo a substantial cultural adaptation to ensure the appropriateness of the intervention (Perera et al. 2020). Despite the importance of cultural suitability, there is currently no evidence to suggest that the underlying mechanisms of PTSD in people from different cultures are fundamentally different from those from Western backgrounds. More sustained research attention is needed on how these mechanisms may function in people with collectivist worldviews and how symptoms that are manifested may map onto well-documented mechanisms, such as fear conditioning and cognitive appraisals.

Limitations of PTSD Treatment

Despite the success of the trauma-focused psychotherapies, only one-half to one-third of patients respond optimally to this type of intervention (Loerinc et al. 2015). This situation is similar in the treatment of PTSD in refugees (Haagen et al. 2017). A comparable pattern is observed in trials of transdiagnostic interventions that assess PTSD as one of their outcomes (Bryant et al. 2022), with evidence that sleep, concentration difficulties, and anger symptoms of PTSD are particularly persistent following a transdiagnostic intervention (Akhtar et al. 2022). These findings highlight the need for better understanding of the factors that impede an optimal treatment response for refugees with PTSD.

One potential explanation for treatment nonresponse in refugees is their greater exposure to extreme trauma, such as torture, persecution, and prolonged war. This finding is supported by evidence that a history of abduction is a predictor of poor treatment response in refugees (Djelantik et al. 2020). More severe and prolonged traumatic events, such as the ones that refugees can experience, can lead to greater comorbidity and somatic problems, which can impede treatment response. Another possible contributing factor to poor treatment response in refugees is that treatment can occur in the context of ongoing trauma or extreme daily stressors. Whereas many other populations can have their PTSD treated in a context of relative safety, refugees may be being treated while in detention; while being exposed to sustained discrimination, overcrowding, or poverty; or while being threatened with eviction from their host country. Indeed, postmigration stressors and lack of refugee status are known predictors of poor treatment response (Djelantik et al. 2020).

The trend for a sizable proportion of refugees with PTSD to respond to scalable interventions has led to proposals that refugees with more severe PTSD that is resistant to these interventions may benefit from stepped care models. This framework can involve refugees being triaged either to brief and transdiagnostic interventions if they present with less severe psychological problems or to more intensive treatments if they have severe disorders, such as PTSD. Although such programs

have been successfully implemented in LMICs (Patel et al. 2010), this framework has not been evaluated for treating PTSD in refugees. Another form of stepped care is to provide brief, scalable interventions to refugees, and if their PTSD persists after receiving the intervention, then they could be offered more intensive PTSD-specific treatment. This approach would potentially address the mental health needs of the refugee with persistent PTSD but also minimize the demands on an LMIC health service. This framework has yet to be tested in samples of refugees with PTSD.

Implementation of Evidence-Based Treatments of PTSD

Despite the growing number of treatment studies of PTSD in refugee populations in both LMICs and high-income countries, most refugees still do not receive sufficient care for their PTSD or comorbid problems. In most countries where rigorous trials of treating PTSD in refugees have been conducted, study investigators have not translated these findings to large-scale implementation in these settings. This next step would require implementation research in which local providers are trained to routinely integrate these interventions into regular health care practice. Efficacy trials are typically resourced by substantial research grants, have the focused support of experienced trialists and academic experts, and receive sustained attention to detail that is often not available in regular health care delivery, especially in LMICs. More research is needed on how to successfully scale up proven interventions in resource-poor health settings, including a focus on cost-effectiveness analyses. Metrics from implementation science are required to document the barriers to implementing evidence-based programs in local health systems, acceptance of interventions by local providers and recipients, improvement in the skill level of local health providers, and obstacles that recipients experience in accessing the full dose of the intervention under normal health delivery conditions. This form of research often requires a mixed-methods approach in which both qualitative and quantitative paradigms are used to profile factors that need to be addressed if implementation is to succeed.

Methodological Limitations in Trials of PTSD

In terms of the current evidence base for treating PTSD in refugees, several methodological limitations restrict a full understanding of how these interventions function. First, the majority of trials use a comparator condition that is not optimal. Many trials have used wait-lists as a control (Bogdanov et al. 2021, Bolton et al. 2014), which can artificially increase the effect size of the active intervention. Other trials have used treatment as usual as the comparator (Bryant et al. 2022, de Graaff et al. 2020), which is problematic because this design does not allow for delineation of nonspecific treatment effects such as time, counselor attention, or group involvement. Careful consideration of comparator conditions is needed when evaluating the effect of a psychological intervention because these forms of control can artificially inflate the apparent effectiveness of the treatments (Gold et al. 2017). Second, trials of PTSD treatments in refugees have limited follow-up assessments; very few trials have assessed outcomes beyond six months (Turrini et al. 2019). Considering the ongoing stressors experienced by many refugees and the deleterious effects that these can have on refugees' mental health, it is important to determine whether recommended treatments are beneficial in the long term. Third, studies to date have often failed to investigate mechanisms of change during treatment, which limits the conclusions that can be drawn regarding the active ingredients in particular interventions. By determining the mechanistic pathways by which treatments improve psychological symptoms in refugees, we will be better equipped to develop tailored approaches to addressing specific clinical presentations in refugees. In this context, there is an apparent disconnect between brief scalable interventions that are often provided to refugees in LMICs and more intensive interventions typically delivered to people with PTSD; in

the case of the latter, considerable research has been conducted on change mechanisms, whereas work on scalable interventions in LMICs is markedly lacking.

Barriers to Accessing Psychological Treatment for Refugees

One of the practical challenges for treating PTSD in refugees is the low rate of treatment-seeking in this population (Slewa-Younan et al. 2014). Alongside logistical barriers to help-seeking (e.g., lack of access to health care, limited financial resources, lack of availability of interpreters, child care responsibilities, difficulties in accessing transport), there is considerable evidence that stigma—or negative beliefs about mental health and help-seeking—hampers the uptake of psychological treatments for refugees (Byrow et al. 2020). Consistent with this finding, studies have suggested that refugees show higher levels of mental health stigma than do other immigrants and the broader community in the host country (May et al. 2014). Beliefs about mental health and help-seeking vary enormously between and within cultural groups and may be influenced by the extent to which refugees hold independent versus interdependent self-construal (Papadopoulos et al. 2013). Accordingly, approaches to address stigma should be tailored to specific cultural groups. Low levels of mental health literacy, defined as knowledge and beliefs about mental disorders which aid their recognition, management, or prevention, are a second related barrier to treatment-seeking in refugees (Slewa-Younan et al. 2014). Refugees' understanding of mental health is likely more closely aligned with the normative expression of mental health concepts within their cultural group than with models of mental health care implemented in resettlement countries (Byrow et al. 2020). This mismatch may create barriers for recognizing psychological distress in refugee communities and may hamper the uptake of interventions that are perceived as less relevant. The refugee experience itself can give rise to specific barriers to treatment uptake. For example, refugees have often been exposed to interpersonal or persecution-related trauma, which can erode trust in other people as well as in the societal institutions charged with caring for their people (e.g., health care systems) (Nickerson et al. 2014a). This exposure to traumatic events can result in a lack of trust in authority figures and concerns about confidentiality, which may negatively impact refugees' help-seeking for psychological disorders.

CONCLUDING COMMENTS

Our understanding of PTSD in refugees has grown enormously over the past decade. The need to progress this knowledge is underscored by the growing number of refugees around the world, which will increase the need to address the complex issues of PTSD and other related psychological conditions experienced by this population. Despite the advances made in understanding the nature, assessments, and treatments of PTSD in refugees, many more questions require attention. The nature of PTSD in refugees from various cultures should be investigated using complementary cross-cultural, longitudinal, and experimental paradigms to map the specific mechanisms underpinning refugee PTSD. The limited treatment response in refugees with PTSD also requires concerted research attention to understand the obstacles to better optimize treatment response as well as to remove the barriers to refugees accessing evidence-based treatments. The number of refugees around the world has increased over the past decade and continues to do so, which underscores the urgency of research to address current knowledge gaps and to translate this evidence into implementation programs that can scale up effectively to reach the many refugees with mental health needs.

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LITERATURE CITED

Acarturk C, Uygun E, Ilkkursun Z, Carswell K, Tedeschi F, et al. 2022. Effectiveness of a WHO self-help psychological intervention for preventing mental disorders among Syrian refugees in Turkey: a randomized controlled trial. *World Psychiatry* 21:88–95

Adenauer H, Pinösch S, Catani C, Gola H, Keil J, et al. 2010. Early processing of threat cues in posttraumatic stress disorder—evidence for a cortical vigilance-avoidance reaction. *Biol. Psychiatry* 68:451–58

Akhtar A, Koyiet P, Rahman A, Schafer A, Hamdani SU, et al. 2022. Residual posttraumatic stress disorder symptoms after provision of brief behavioral intervention in low- and middle-income countries: an individual-patient data meta-analysis. *Depress. Anxiety* 39:71–82

Barbui C, Purgato M, Abdulmalik J, Acarturk C, Eaton J, et al. 2020. Efficacy of psychosocial interventions for mental health outcomes in low-income and middle-income countries: an umbrella review. *Lancet Psychiatry* 7:162–72

Bartlett R, Sarnyai Z, Momartin S, Ooi L, Schwab SG, Matosin N. 2021. Understanding the pathology of psychiatric disorders in refugees. *Psychiatry Res.* 296:113661

Beiser M, Hou F. 2016. Mental health effects of premigration trauma and postmigration discrimination on refugee youth in Canada. *J. Nerv. Ment. Dis.* 204:464–70

Benish SG, Quintana S, Wampold BE. 2011. Culturally adapted psychotherapy and the legitimacy of myth: a direct-comparison meta-analysis. *J. Couns. Psychol.* 58:279–89

Betancourt TS, Newnham EA, Birman D, Lee R, Ellis BH, Layne CM. 2017. Comparing trauma exposure, mental health needs, and service utilization across clinical samples of refugee, immigrant, and U.S.-origin children. *J. Trauma Stress* 30:209–18

Bichescu D, Neuner F, Schauer M, Elbert T. 2007. Narrative exposure therapy for political imprisonment-related chronic posttraumatic stress disorder and depression. *Behav. Res. Ther.* 4:2212–20

Blackmore R, Boyle JA, Fazel M, Ranasinha S, Gray KM, et al. 2020a. The prevalence of mental illness in refugees and asylum seekers: a systematic review and meta-analysis. *PLOS Med.* 17:e1003337

Blackmore R, Gray KM, Boyle JA, Fazel M, Ranasinha S, et al. 2020b. Systematic review and meta-analysis: the prevalence of mental illness in child and adolescent refugees and asylum seekers. *J. Am. Acad. Child Adolesc. Psychiatry* 59:705–14

Bogdanov S, Augustinavicius J, Bass JK, Metz K, Skavenski S, et al. 2021. A randomized-controlled trial of community-based transdiagnostic psychotherapy for veterans and internally displaced persons in Ukraine. *Glob. Ment. Health* 8:e32

Bogic M, Ajdukovic D, Bremner S, Franciskovic T, Galeazzi GM, et al. 2012. Factors associated with mental disorders in long-settled war refugees: refugees from the former Yugoslavia in Germany, Italy and the UK. *Br. J. Psychiatry* 200:216–23

Bogic M, Njoku A, Priebe S. 2015. Long-term mental health of war-refugees: a systematic literature review. *BMC Int. Health Hum. Rights* 15:29

Bolton P, Lee C, Haroz EE, Murray L, Dorsey S, Robinson C, et al. 2014. A transdiagnostic community-based mental health treatment for comorbid disorders: development and outcomes of a randomized controlled trial among Burmese refugees in Thailand. *PLOS Med.* 11:e1001757

Braun-Lewensohn O, Al-Sayed K. 2018. Syrian adolescent refugees: How do they cope during their stay in refugee camps? *Front. Psychol.* 9:1258

Brewin CR, Cloitre M, Hyland P, Shevlin M, Maercker A, et al. 2017. A review of current evidence regarding the ICD-11 proposals for diagnosing PTSD and complex PTSD. *Clin. Psychol. Rev.* 58:1–15

Browne DT, Kumar A, Puente-Duran S, Georgiades K, Leckie G, et al. 2017. Emotional problems among recent immigrants and parenting status: findings from a national longitudinal study of immigrants in Canada. *PLOS ONE* 12:e0175023

Bryant RA, Bawaneh A, Awwad M, Al-Hayek H, Giardinelli L, et al. 2022. Effectiveness of a brief group behavioral intervention for common mental disorders in Syrian refugees in Jordan: a randomized controlled trial. *PLOS Med.* 19:e1003949

Bryant RA, Bawaneh A, Giardinelli L, Awwad M, Al-Hayek H, Akhtar A. 2021. A prevalence assessment of prolonged grief disorder in Syrian refugees. *World Psychiatry* 20:302–3

Bryant RA, Edwards B, Creamer MC, O'Donnell ML, Forbes D, et al. 2018. The effect of post-traumatic stress disorder on refugees' parenting and their children's mental health: a cohort study. *Lancet Public Health* 3:e249–58

Bryant RA, Edwards B, Creamer M, O'Donnell M, Forbes D, et al. 2020. A population study of prolonged grief in refugees. *Epidemiol. Psychiatr. Sci.* 29:e44

Byrow Y, Pajak R, Specker P, Nickerson A. 2020. Perceptions of mental health and perceived barriers to mental health help-seeking amongst refugees: a systematic review. *Clin. Psychol. Rev.* 75:101812

Carlsson JM, Olsen DR, Mortensen EL, Kastrup M. 2006. Mental health and health-related quality of life: a 10-year follow-up of tortured refugees. *J. Nerv. Ment. Dis.* 194:725–31

Catani C, Adenauer H, Keil J, Aichinger H, Neuner F. 2009. Pattern of cortical activation during processing of aversive stimuli in traumatized survivors of war and torture. *Eur. Arch. Psychiatry Clin. Neurosci.* 259:340–51

Charlson F, van Ommeren M, Flaxman A, Cornett J, Whiteford H, et al. 2019. New WHO prevalence estimates of mental disorders in conflict settings: a systematic review and meta-analysis. *Lancet* 394:240–48

Chisholm D, Sweeny K, Sheehan P, Rasmussen B, Smit F, et al. 2016. Scaling-up treatment of depression and anxiety: a global return on investment analysis. *Lancet Psychiatry* 3:415–24

Chung MC, AlQarni N, AlMazrouei M, Al Muhairi S, Shakra M, et al. 2021. Posttraumatic stress disorder and psychiatric co-morbidity among Syrian refugees: the role of trauma exposure, trauma centrality, self-efficacy and emotional suppression. *J. Ment. Health* 30:681–89

Dajani R, Hadfield K, van Uum S, Greff M, Panter-Brick C. 2018. Hair cortisol concentrations in war-affected adolescents: a prospective intervention trial. *Psychoneuroendocrinology* 89:138–46

Daskalakis NP, Lehrner A, Yehuda R. 2013. Endocrine aspects of post-traumatic stress disorder and implications for diagnosis and treatment. *Endocrinol. Metab. Clin. North Am.* 42:503–13

Dawson KS, Bryant RA, Harper M, Tay AK, Rahman A, et al. 2015. Problem Management Plus (PM+): a WHO transdiagnostic psychological intervention for common mental health problems. *World Psychiatry* 14:354–57

de Graaff AM, Cuijpers P, McDaid D, Park A-L, Woodward A, et al. 2020. Peer-provided Problem Management Plus (PM+) for adult Syrian refugees: a pilot randomised controlled trial on effectiveness and cost-effectiveness. *Epidemiol. Psychiatr. Sci.* 29:e162

De Haene L, Grietens H, Verschueren K. 2010. Adult attachment in the context of refugee traumatisation: the impact of organized violence and forced separation on parental states of mind regarding attachment. *Attach. Hum. Dev.* 12:249–64

Djelantik AAAMJ, de Heus A, Kuiper D, Kleber RJ, Boelen PA, Smid GE. 2020. Post-migration stressors and their association with symptom reduction and non-completion during treatment for traumatic grief in refugees. *Front. Psychiatry* 11:407

Doolan EL, Bryant RA, Liddell BJ, Nickerson A. 2017. The conceptualization of emotion regulation difficulties, and its association with posttraumatic stress symptoms in traumatized refugees. *J. Anxiety Disord.* 50:7–14

Epping-Jordan JE, Harris R, Brown FL, Carswell K, Foley C, et al. 2016. Self-Help Plus (SH+): a new WHO stress management package. *World Psychiatry* 15:295–96

Ertl V, Pfeiffer A, Schauer E, Elbert T, Neuner F. 2011. Community-implemented trauma therapy for former child soldiers in Northern Uganda: a randomized controlled trial. *JAMA* 306:503–12

Eruyar S, Maltby J, Vostanis P. 2020. How do Syrian refugee children in Turkey perceive relational factors in the context of their mental health? *Clin. Child Psychol. Psychiatry* 25:260–72

Fazel M. 2018. Psychological and psychosocial interventions for refugee children resettled in high-income countries. *Epidemiol. Psychiatr. Sci.* 27:117–23

Fazel M, Patel V, Thomas S, Tol W. 2014. Mental health interventions in schools in low-income and middle-income countries. *Lancet Psychiatry* 1:388–98

Fazel M, Wheeler J, Danesh J. 2005. Prevalence of serious mental disorder in 7000 refugees resettled in Western countries: a systematic review. *Lancet* 365:1309–14

Fogden G, Berle D, Steel Z. 2020. The impact of family separation and worry about family on psychological adjustment in refugees resettled in Australia. *J. Trauma Stress* 33:894–907

Gola H, Engler H, Schauer M, Adenauer H, Riether C, et al. 2012. Victims of rape show increased cortisol responses to trauma reminders: a study in individuals with war- and torture-related PTSD. *Psychoneuroendocrinology* 37:213–20
Gold SM, Enck P, Hasselmann H, Friede T, Hegerl U, et al. 2017. Control conditions for randomised trials of behavioural interventions in psychiatry: a decision framework. *Lancet Psychiatry* 4:725–32
Graham B, Herlihy J, Brewin CR. 2014. Overgeneral memory in asylum seekers and refugees. *J. Behav. Ther. Exp. Psychiatry* 45:375–80
Haagen JFG, Ter Heide FJJ, Mooren TM, Knipscheer JW, Kleber RJ. 2017. Predicting post-traumatic stress disorder treatment response in refugees: multilevel analysis. *Br. J. Clin. Psychol.* 56:69–83
Hall GC, Ibaraki AY, Huang ER, Marti CN, Stice E. 2016. A meta-analysis of cultural adaptations of psychological interventions. *Behav. Ther.* 47:993–1014
Hareli S, Kafetsios K, Hess U. 2015. A cross-cultural study on emotion expression and the learning of social norms. *Front. Psychol.* 6:1501
Henkelmann J-R, de Best S, Deckers C, Jensen K, Shahab M, et al. 2020. Anxiety, depression and post-traumatic stress disorder in refugees resettling in high-income countries: systematic review and meta-analysis. *BJPsych Open* 6:e68
Hinton DE, Lewis-Fernández R. 2011. The cross-cultural validity of posttraumatic stress disorder: implications for DSM-5. *Depress. Anxiety* 28:783–801
Hinton DE, Pich V, Marques L, Nickerson A, Pollack MH. 2010. *Khyâl* attacks: a key idiom of distress among traumatized Cambodia refugees. *Cult. Med. Psychiatry* 34:244–78
Hoffman J, Liddell B, Bryant RA, Nickerson A. 2019. A latent profile analysis of moral injury appraisals in refugees. *Eur. J. Psychotraumatol.* 10:1686805
Hou WK, Liu H, Liang L, Ho J, Kim H, et al. 2020. Everyday life experiences and mental health among conflict-affected forced migrants: a meta-analysis. *J. Affect. Disord.* 264:50–68
Jensen TK, Skar A-MS, Andersson ES, Birkeland MS. 2019. Long-term mental health in unaccompanied refugee minors: pre- and post-flight predictors. *Eur. Child Adolesc. Psychiatry* 28:1671–82
Jeon S, Lee YJ, Park I, Kim N, Kim S, et al. 2020. Resting state functional connectivity of the thalamus in North Korean refugees with and without posttraumatic stress disorder. *Sci. Rep.* 10:3194
Jobson L, Dalgleish T. 2014. Cultural differences in the relationship between intrusions and trauma narratives using the trauma film paradigm. *PLOS ONE* 9:e106759
Jobson L, Haque S, Abdullah SZ, Lee B, Li H, et al. 2022. Examining cultural differences in the associations between appraisals and emotion regulation and posttraumatic stress disorder in Malaysian and Australian trauma survivors. *Int. J. Environ. Res. Public Health* 19:1163
Keller A, Joscelyne A, Granski M, Rosenfeld B. 2017. Pre-migration trauma exposure and mental health functioning among Central American migrants arriving at the US border. *PLOS ONE* 12(1):e0168692
Khamis V. 2019. Posttraumatic stress disorder and emotion dysregulation among Syrian refugee children and adolescents resettled in Lebanon and Jordan. *Child Abuse Negl.* 89:29–39
Khamis V. 2021. Impact of pre-trauma, trauma-specific, and post-trauma variables on psychosocial adjustment of Syrian refugee school-age children. *J. Health Psychol.* 26:1780–90
Khan S, Kuhn SK, Haque S. 2021. A systematic review of autobiographical memory and mental health research on refugees and asylum seekers. *Front. Psychiatry* 12:658700
Kien C, Sommer I, Faustmann A, Gibson L, Schneider M, et al. 2019. Prevalence of mental disorders in young refugees and asylum seekers in European countries: a systematic review. *Eur. Child Adolesc. Psychiatry* 28:1295–310
Kim N, Park I, Lee YJ, Jeon S, Kim S, et al. 2020. Alexithymia and frontal-amygdala functional connectivity in North Korean refugees. *Psychol. Med.* 50:334–41
Kip A, Priebe S, Holling H, Morina N. 2020. Psychological interventions for posttraumatic stress disorder and depression in refugees: a meta-analysis of randomized controlled trials. *Clin. Psychol. Psychother.* 27:489–503
Koch T, Liedl A, Ehring T. 2020. Emotion regulation as a transdiagnostic factor in Afghan refugees. *Psychol. Trauma* 12:235–43
Koenen KC, Ratanatharathorn A, Ng L, McLaughlin KA, Bromet EJ, et al. 2017. Posttraumatic stress disorder in the World Mental Health Surveys. *Psychol. Med.* 47:2260–74

Kokou-Kpolou CK, Moukouta CS, Masson J, Bernoussi A, Cénat JM, Bacqué M-F. 2020. Correlates of grief-related disorders and mental health outcomes among adult refugees exposed to trauma and bereavement: a systematic review and future research directions. *J. Affect Disord.* 267:171–84

Kolassa I-T, Kolassa S, Ertl V, Papassotiropoulos A, De Quervain DJ-F. 2010. The risk of posttraumatic stress disorder after trauma depends on traumatic load and the catechol-*O*-methyltransferase Val[158]Met polymorphism. *Biol. Psychiatry* 67:304–8

Le L, Morina N, Schnyder U, Schick M, Bryant RA, Nickerson A. 2018. The effects of perceived torture controllability on symptom severity of posttraumatic stress, depression and anger in refugees and asylum seekers: a path analysis. *Psychiatry Res.* 264:143–50

Lee KH, Lee HY, Park I, Lee YJ, Kim N, et al. 2021. Neural correlates of emotional reactivity and regulation in traumatized North Korean refugees. *Transl. Psychiatry* 11:452

Li SSY, Liddell BJ, Nickerson A. 2016. The relationship between post-migration stress and psychological disorders in refugees and asylum seekers. *Curr. Psychiatry Rep.* 18:82

Liddell B, Malhi GS, Felmingham KL, Cheung J, Outhred T, et al. 2021a. The impact of torture on interpersonal threat and reward neurocircuitry. *Aust. N. Z. J. Psychiatry* 55:153–66

Liddell BJ, Byrow Y, O'Donnell M, Mau V, Batch N, et al. 2021b. Mechanisms underlying the mental health impact of family separation on resettled refugees. *Aust. N. Z. J. Psychiatry* 55:699–710

Liddell BJ, Cheung J, Outhred T, Das P, Malhi GS, et al. 2019a. Neural correlates of posttraumatic stress disorder symptoms, trauma exposure, and postmigration stress in response to fear faces in resettled refugees. *Clin. Psychol. Sci.* 7:811–25

Liddell BJ, Das P, Malhi GS, Felmingham KL, Outhred T, Cheung J, et al. 2022. Torture exposure and the functional brain: investigating disruptions to intrinsic network connectivity using resting state fMRI. *Transl. Psychiatry* 12:37

Liddell BJ, Jobson L. 2016. The impact of cultural differences in self-representation on the neural substrates of posttraumatic stress disorder. *Eur. J. Psychotraumatol.* 7:30464

Liddell BJ, Malhi GS, Felmingham KL, Den M, Das P, et al. 2021c. Activating the attachment system modulates neural responses to threat in refugees with PTSD. *Soc. Cogn. Affect. Neurosci.* 16:1244–55

Liddell BJ, Nickerson A, Bryant RA. 2018. Clinical science and torture survivors' right to rehabilitation. *Lancet Psychiatry* 5:102–3

Liddell BJ, Nickerson A, Felmingham KL, Malhi GS, Cheung J, et al. 2019b. Complex posttraumatic stress disorder symptom profiles in traumatized refugees. *J. Trauma Stress* 32:822–32

Lindert J, von Ehrenstein OS, Priebe S, Mielck A, Brähler E. 2009. Depression and anxiety in labor migrants and refugees—a systematic review and meta-analysis. *Soc. Sci. Med.* 69:246–57

Litz BT, Stein N, Delaney E, Lebowitz L, Nash WP, et al. 2009. Moral injury and moral repair in war veterans: a preliminary model and intervention strategy. *Clin. Psychol. Rev.* 29:695–706

Loerinc AG, Meuret AE, Twohig MP, Rosenfield D, Bluett EJ, Craske MG. 2015. Response rates for CBT for anxiety disorders: need for standardized criteria. *Clin. Psychol. Rev.* 42:72–82

Logie CH, Okumu M, Mwima S, Hakiza R, Irungi KP, et al. 2019. Social ecological factors associated with experiencing violence among urban refugee and displaced adolescent girls and young women in informal settlements in Kampala, Uganda: a cross-sectional study. *Confl. Health* 13:60

Mace AO, Mulheron S, Jones C, Cherian S. 2014. Educational, developmental and psychological outcomes of resettled refugee children in Western Australia: a review of School of Special Educational Needs: Medical and Mental Health input. *J. Paediatr. Child Health* 50:985–92

MacLean SA, Agyeman PO, Walther J, Singer EK, Baranowski KA, Katz CL. 2019. Mental health of children held at a United States immigration detention center. *Soc. Sci. Med.* 230:303–8

Marx BP, Sloan DM. 2005. Peritraumatic dissociation and experiential avoidance as predictors of posttraumatic stress symptomatology. *Behav. Res. Ther.* 43:569–83

Matheson K, Jorden S, Anisman H. 2008. Relations between trauma experiences and psychological, physical and neuroendocrine functioning among Somali refugees: mediating role of coping with acculturation stressors. *J. Immigr. Minor. Health* 10:291–304

May S, Rapee RM, Coello M, Momartin S, Aroche J. 2014. Mental health literacy among refugee communities: differences between the Australian lay public and the Iraqi and Sudanese refugee communities. *Soc. Psychiatry Psychiatr. Epidemiol.* 49:757–69

Mellor R, Werner A, Moussa B, Mohsin M, Jayasuriya R, Tay AK. 2021. Prevalence, predictors and associations of complex post-traumatic stress disorder with common mental disorders in refugees and forcibly displaced populations: a systematic review. *Eur. J. Psychotraumatol.* 12:1863579

Mewes R, Reich H, Skoluda N, Seele F, Nater UM. 2017. Elevated hair cortisol concentrations in recently fled asylum seekers in comparison to permanently settled immigrants and non-immigrants. *Transl. Psychiatry* 7:e1051

Michelson D, Sclare I. 2009. Psychological needs, service utilization and provision of care in a specialist mental health clinic for young refugees: a comparative study. *Clin. Child Psychol. Psychiatry* 14:273–96

Miller KE, Rasmussen A. 2010. War exposure, daily stressors, and mental health in conflict and post-conflict settings: bridging the divide between trauma-focused and psychosocial frameworks. *Soc. Sci. Med.* 70:7–16

Miller KE, Rasmussen A. 2017. The mental health of civilians displaced by armed conflict: an ecological model of refugee distress. *Epidemiol. Psychiatr. Sci.* 26:129–38

Morina N, Bryant RA, Doolan EL, Martin-Sölch C, Plichta MM, et al. 2018a. The impact of enhancing perceived self-efficacy in torture survivors. *Depress. Anxiety* 35:58–64

Morina N, Kuenburg A, Schnyder U, Bryant RA, Nickerson A, Schick M. 2018b. The association of post-traumatic and postmigration stress with pain and other somatic symptoms: an explorative analysis in traumatized refugees and asylum seekers. *Pain Med.* 19:50–59

Morina N, Malek M, Nickerson A, Bryant RA. 2017a. Meta-analysis of interventions for posttraumatic stress disorder and depression in adult survivors of mass violence in low- and middle-income countries. *Depress. Anxiety* 34:679–91

Morina N, Malek M, Nickerson A, Bryant RA. 2017b. Psychological interventions for post-traumatic stress disorder and depression in young survivors of mass violence in low- and middle-income countries: meta-analysis. *Br. J. Psychiatry* 210:247–54

Morina N, Schnyder U, Schick M, Nickerson A, Bryant RA. 2016. Attachment style and interpersonal trauma in refugees. *Aust. N. Z. J. Psychiatry* 50:1161–68

Müller LRF, Gossmann K, Hartmann F, Büter KP, Rosner R, Unterhitzenberger J. 2019. 1-year follow-up of the mental health and stress factors in asylum-seeking children and adolescents resettled in Germany. *BMC Public Health* 19:908

Murray LK, Dorsey S, Haroz E, Lee C, Alsiary MM, et al. 2014. A common elements treatment approach for adult mental health problems in low- and middle-income countries. *Cogn. Behav. Pract.* 21:111–23

Nguyen TP, Guajardo MGU, Sahle BW, Renzaho AMN, Slewa-Younan S. 2022. Prevalence of common mental disorders in adult Syrian refugees resettled in high income Western countries: a systematic review and meta-analysis. *BMC Psychiatry* 22:15

Nickerson A, Bryant RA, Rosebrock L, Litz BT. 2014a. The mechanisms of psychosocial injury following human rights violations, mass trauma, and torture. *Clin. Psychol. Sci. Pract.* 21:172–91

Nickerson A, Byrow Y, Hoffman J, O'Donnell M, Bryant RA, et al. 2022. The longitudinal association between moral injury appraisals and psychological outcomes in refugees. *Psychol. Med.* 52:2352–64

Nickerson A, Byrow Y, O'Donnell M, Mau V, McMahon T, et al. 2019. The association between visa insecurity and mental health, disability and social engagement in refugees living in Australia. *Eur. J. Psychotraumatol.* 10:1688129

Nickerson A, Garber B, Ahmed O, Asnaani A, Cheung J, et al. 2016. Emotional suppression in torture survivors: relationship to posttraumatic stress symptoms and trauma-related negative affect. *Psychiatry Res.* 242:233–39

Nickerson A, Garber B, Liddell BJ, Litz BT, Hofmann SG, et al. 2017. Impact of cognitive reappraisal on negative affect, heart rate, and intrusive memories in traumatized refugees. *Clin. Psychol. Sci.* 5:497–512

Nickerson A, Liddell BJ, Maccallum F, Steel Z, Silove D, Bryant RA. 2014b. Posttraumatic stress disorder and prolonged grief in refugees exposed to trauma and loss. *BMC Psychiatry* 14:106

Nickerson A, Steel Z, Bryant R, Brooks R, Silove D. 2011. Change in visa status amongst Mandaean refugees: relationship to psychological symptoms and living difficulties. *Psychiatry Res.* 187:267–74

Nosè M, Ballette F, Bighelli I, Turrini G, Purgato M, et al. 2017. Psychosocial interventions for post-traumatic stress disorder in refugees and asylum seekers resettled in high-income countries: systematic review and meta-analysis. *PLOS ONE* 12:e0171030

Nosè M, Tarsitani L, Tedeschi F, Lotito C, Massetti P, et al. 2020. Association of traumatic events with levels of psychological distress and depressive symptoms in male asylum seekers and refugees resettled in Italy. *BMC Psychiatry* 20:576

Panter-Brick C, Grimon M-P, Kalin M, Eggerman M. 2015. Trauma memories, mental health, and resilience: a prospective study of Afghan youth. *J. Child Psychol. Psychiatry* 56:814–25

Papadopoulos C, Foster J, Caldwell K. 2013. 'Individualism-collectivism' as an explanatory device for mental illness stigma. *Commun. Ment. Health J.* 49:270–80

Patel V, Weiss HA, Chowdhary N, Naik S, Pednekar S, et al. 2010. Effectiveness of an intervention led by lay health counsellors for depressive and anxiety disorders in primary care in Goa, India (MANAS): a cluster randomised controlled trial. *Lancet* 376:2086–95

Perera C, Salamanca-Sanabria A, Caballero-Bernal J, Feldman L, Hansen M, et al. 2020. No implementation without cultural adaptation: a process for culturally adapting low-intensity psychological interventions in humanitarian settings. *Confl. Health* 14:46

Pérez-Vázquez S, Bonilla-Campos A. 2022. Women refugee's perceptions, experiences and coping mechanisms in situations of sexual and gender-based violence (SGBV): a metasynthesis. *Trauma Violence Abuse*. In press. **https://doi.org/10.1177/15248380221126470**

Pitts KP, Joksimovic L, Steudte-Schmiedgen S, Rohleder N, Wolf JM. 2016. Determinants of altered intracellular endocrine-immune interplay in Bosnian war refugees suffering from PTSD. *Biol. Psychol.* 118:1–7

Porter M, Haslam N. 2005. Predisplacement and postdisplacement factors associated with mental health of refugees and internally displaced persons: a meta-analysis. *JAMA* 294:602–12

Purgato M, Carswell K, Tedeschi F, Acarturk C, Anttila M, et al. 2021. Effectiveness of self-help plus in preventing mental disorders in refugees and asylum seekers in Western Europe: a multinational randomized controlled trial. *Psychother. Psychosom.* 90:403–14

Reebs A, Yuval K, Bernstein A. 2017. Remembering and responding to distressing autobiographical memories: exploring risk and intervention targets for posttraumatic stress in traumatized refugees. *Clin. Psychol. Sci.* 5:789–97

Robjant K, Robbins I, Senior V. 2009. Psychological distress amongst immigration detainees: a cross-sectional questionnaire study. *Br. J. Clin. Psychol.* 48:275–86

Rohleder N, Joksimovic L, Wolf JM, Kirschbaum C. 2004. Hypocortisolism and increased glucocorticoid sensitivity of pro-inflammatory cytokine production in Bosnian war refugees with posttraumatic stress disorder. *Biol. Psychiatry* 55:745–51

Saadi A, Hampton K, de Assis MV, Mishori R, Habbach H, Haar RJ. 2021. Associations between memory loss and trauma in US asylum seekers: a retrospective review of medico-legal affidavits. *PLOS ONE* 16:e0247033

Sabioncello A, Kocijan-Hercigonja D, Rabatić S, Tomasić J, Jeren T, et al. 2000. Immune, endocrine, and psychological responses in civilians displaced by war. *Psychosom. Med.* 62:502–8

Scharpf F, Kaltenbach E, Nickerson A, Hecker T. 2021. A systematic review of socio-ecological factors contributing to risk and protection of the mental health of refugee children and adolescents. *Clin. Psychol. Rev.* 83:101930

Siehl S, King JA, Burgess N, Flor H, Nees F. 2018. Structural white matter changes in adults and children with posttraumatic stress disorder: a systematic review and meta-analysis. *Neuroimage Clin.* 19:581–98

Silove D, Momartin S, Marnane C, Steel Z, Manicavasagar V. 2010. Adult separation anxiety disorder among war-affected Bosnian refugees: comorbidity with PTSD and associations with dimensions of trauma. *J. Trauma Stress* 23:169–72

Sim A, Bowes L, Gardner F. 2018. Modeling the effects of war exposure and daily stressors on maternal mental health, parenting, and child psychosocial adjustment: a cross-sectional study with Syrian refugees in Lebanon. *Glob. Ment. Health* 5:e40

Singla DR, Kohrt B, Murray LK, Anand A, Chorpita BF, et al. 2017. Psychological treatments for the world: lessons from low- and middle-income countries. *Annu. Rev. Clin. Psychol.* 13:149–81

Singla DR, Waqas A, Hamdani SU, Suleman N, Zafar SW, et al. 2020. Implementation and effectiveness of adolescent life skills programs in low- and middle-income countries: a critical review and meta-analysis. *Behav. Res. Ther.* 130:103402

Slewa-Younan S, Mond J, Bussion E, Mohammad Y, Uribe Guajardo MG, et al. 2014. Mental health literacy of resettled Iraqi refugees in Australia: knowledge about posttraumatic stress disorder and beliefs about helpfulness of interventions. *BMC Psychiatry* 14:320

Sommershof A, Aichinger H, Engler H, Adenauer H, Catani C, et al. 2009. Substantial reduction of naïve and regulatory T cells following traumatic stress. *Brain Behav. Immun.* 23:1117–24

Specker P, Nickerson A. 2023. An experimental investigation of spontaneous emotion regulation variability, negative affect, and posttraumatic stress disorder among traumatized refugees. *Psychol. Trauma* 15(2):219–26

Steel Z, Chey T, Silove D, Marnane C, Bryant RA, van Ommeren M. 2009. Association of torture and other potentially traumatic events with mental health outcomes among populations exposed to mass conflict and displacement: a systematic review and meta-analysis. *JAMA* 302:537–49

Steel Z, Silove D, Brooks R, Momartin S, Alzuhairi B, Susljik I. 2006. Impact of immigration detention and temporary protection on the mental health of refugees. *Br. J. Psychiatry* 188:58–64

Storm T, Engberg M. 2013. The impact of immigration detention on the mental health of torture survivors is poorly documented—a systematic review. *Dan. Med. J.* 60:A4728

Sulaiman-Hill CMR, Thompson SC. 2013. Learning to fit in: an exploratory study of general perceived self efficacy in selected refugee groups. *J. Immig. Minor. Health* 15:125–31

Tay AK, Rees S, Chen J, Kareth M, Silove D. 2015. Pathways involving traumatic losses, worry about family, adult separation anxiety and posttraumatic stress symptoms amongst refugees from West Papua. *J. Anxiety Disord.* 35:1–8

Teodorescu DS, Heir T, Siqveland J, Hauff E, Wentzel-Larsen T, Lien L. 2015. Chronic pain in multitraumatized outpatients with a refugee background resettled in Norway: a cross-sectional study. *BMC Psychol.* 3:7

Tol WA, Leku MR, Lakin DP, Carswell K, Augustinavicius J, et al. 2020. Guided self-help to reduce psychological distress in South Sudanese female refugees in Uganda: a cluster randomized trial. *Lancet Glob. Health* 8:e254–63

Turrini G, Purgato M, Acarturk C, Anttila M, Au T, et al. 2019. Efficacy and acceptability of psychosocial interventions in asylum seekers and refugees: systematic review and meta-analysis. *Epidemiol. Psychiatr. Sci.* 28:376–88

Turrini G, Purgato M, Ballette F, Nosè M, Ostuzzi G, Barbui C. 2017. Common mental disorders in asylum seekers and refugees: umbrella review of prevalence and intervention studies. *Int. J. Ment. Health Syst.* 11:51

Turrini G, Tedeschi F, Cuijpers P, Del Giovane C, Kip A, et al. 2021. A network meta-analysis of psychosocial interventions for refugees and asylum seekers with PTSD. *BMJ Glob. Health* 6:e005029

Uldall SW, Lundell H, Baaré WFC, Siebner HR, Rostrup E, Carlsson JM. 2022. White matter diffusivity and its correlations to state measures of psychopathology in male refugees with posttraumatic stress disorder. *Neuroimage Clin.* 33:102929

UN Gen. Assem. 1967. Protocol relating to the status of refugees. *UN Treaty Ser.* 606:267–76. **https://www.refworld.org/docid/3ae6b3ae4.html**

UNHCR (UN High Comm. Refug.). 2014. Asylum-seekers. *UNHCR*. **http://www.unhcr.org/pages/49c3646c137.html**

UNHCR (UN High Comm. Refug.). 2020a. *Global trends: forced displacement in 2019*. Rep., UNHCR Glob. Data Serv., Copenhagen. **https://www.unhcr.org/globaltrends2019/**

UNHCR (UN High Comm. Refug.). 2020b. Refugee camps. *UNHCR*. **https://www.unrefugees.org/refugee-facts/camps/**

UNHCR (UN High Comm. Refug.). 2022a. *Global trends: forced displacement in 2021*. Rep., UNHCR Glob. Data Serv., Copenhagen. **https://www.unhcr.org/62a9d1494/global-trends-report-2021**

UNHCR (UN High Comm. Refug.). 2022b. *Ukraine, other conflicts push forcibly displaced total over 100 million for first time*. Press Release, May 23. **https://www.unhcr.org/en-au/news/press/2022/5/628a389e4/unhcr-ukraine-other-conflicts-push-forcibly-displaced-total-100-million.html**

van Ee E, Jongmans MJ, van der Aa N, Kleber RJ. 2017. Attachment representation and sensitivity: the moderating role of posttraumatic stress disorder in a refugee sample. *Fam. Process* 56:781–92

van Ee E, Kleber RJ, Jongmans MJ, Mooren TT, Out D. 2016. Parental PTSD, adverse parenting and child attachment in a refugee sample. *Attach. Hum. Dev.* 18:273–91

van Heemstra HE, Scholte WF, Haagen JFG, Boelen PA. 2019. 7ROSES, a transdiagnostic intervention for promoting self-efficacy in traumatized refugees: a first quantitative evaluation. *Eur. J. Psychotraumatol.* 10:1673062

van Heemstra HE, Scholte WF, Nickerson A, Boelen PA. 2021. Can circumstances be softened? Self-efficacy, post-migratory stressors, and mental health among refugees. *Int. J. Environ. Res. Public Health* 18:1440

Vervliet M, Lammertyn J, Broekaert E, Derluyn I. 2014. Longitudinal follow-up of the mental health of unaccompanied refugee minors. *Eur. Child Adolesc. Psychiatry* 23:337–46

von Werthern M, Robjant K, Chui Z, Schon R, Ottisova L, et al. 2018. The impact of immigration detention on mental health: a systematic review. *BMC Psychiatry* 18:382

Weiss WM, Murray LK, Zangana GAS, Mahmooth Z, Kaysen D, et al. 2015. Community-based mental health treatments for survivors of torture and militant attacks in Southern Iraq: a randomized control trial. *BMC Psychiatry* 15:249

WHO (World Health Organ.). 2018. *International Classification of Diseases for Mortality and Morbidity Statistics*. Geneva: WHO. 11th rev. **http://www.who.int/classifications/icd/revision/en/**

Wittekind CE, Jelinek L, Kleim B, Muhtz C, Moritz S, Berna F. 2017. Age effect on autobiographical memory specificity: a study on autobiographical memory specificity in elderly survivors of childhood trauma. *J. Behav. Ther. Exp. Psychiatry* 54:247–53

Zandieh S, Bernt R, Knoll P, Wenzel T, Hittmair K, et al. 2016. Analysis of the metabolic and structural brain changes in patients with torture-related post-traumatic stress disorder (TR-PTSD) using ^{18}F-FDG PET and MRI. *Medicine* 95:e3387