



# Exploring the Impact of Family Separation on Refugee Mental Health: A Systematic Review and Meta-narrative Analysis

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## Abstract

The refugee crisis is spreading rapidly, with the number of global refugees this decade doubling in comparison to the last, leading to further concern regarding asylum policies and their psychological impacts. The aim of this systematic review is to further emphasize the correlation between familial separation and the risk of mental health disorders in refugees. This particular review uses quantitative and qualitative data sourced from a variety of countries to comparatively view the mental health status of approximately 8,737 refugees ages 15 and older. This was done to determine if familial separation could potentially impact their overall quality of life. As a result, separation from one's family was found to be correlated with symptoms of posttraumatic stress disorder, depression, anxiety, adult separation anxiety disorder, intermittent explosive disorder, and more. Studies reported a high variance in the prevalence of mental health disorders when models were adjusted for family separation. Methods to improve asylum procedure and mental health services for refugees is taken into consideration.

**Keywords** Refugee · Separation · Mental health · PTSD · Depression · Anxiety

## Introduction

The Annual Canadian Immigration Report [1] reports that over 20,000 refugees migrated to Canada from Asia, Africa, and Central and South America. This increase in individuals seeking asylum globally is expected as more refugees are forced to leave home and seek asylum due to external circumstances beyond their control [2]. Familial separation resulting from forced displacement is a prevalent factor when studying traumatic events experienced by those seeking asylum; both before and throughout their displacement. Familial relations, a source of emotional and social support, are frequently reported to be left behind or separated when asylum seekers make the migration to their host countries [3]. Separation can result from various factors, such as limited refugee acceptance by host countries, certain individuals being

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ineligible to receive refugee status, as well as pre-existing separation due to work, illness, or travel exacerbated by conflict [4]. Forced familial separation and adaptation to completely new environments are difficult processes for many refugees. Excessive worrying about those left behind, feelings of helplessness while navigating foreign environments, as well as language and cultural barriers are reported to make refugees vulnerable to both physical and mental health concerns [5]. Although the difficulty of controlling the underlying reasons behind forced migration is evident, mental health service providers can support the coping abilities of refugees suffering from family separation through early recognition and mental health treatment. Keeping families together both during and after the migration process is crucial in ensuring the successful integration of refugees into their host countries [6].

Separation from family has been linked to long-term trauma in refugees, increasing the risk of developing severe mental disorders such as posttraumatic stress disorder (PTSD), suicidal ideations, depression, and anxiety [7]. Mental anguish is a result of the loss of one's familial support system, feelings of isolation due to lack of communication, and worry regarding the financial and safety needs of family members left behind [8]. Mental health concerns may occur due to events experienced before, during, and/or after entry into the host country. To mitigate these issues, refugees access social assistance programs, which, in turn, contribute to economic costs, such as accommodations, health care, education, and social program costs. However, once resettled, refugees have been reported to significantly benefit their host country, whether directly or indirectly through taxes or entry into the labor market [9]. Mental health services also contribute to economic costs, highlighting the importance of early intervention and treatment. Specialized mental health support services geared towards refugees experiencing family separation are essential. The quality and utilization of health care services by refugees are influenced by the availability of interpreters as well as health care providers and facilities [8]. Many refugees lack knowledge regarding mental disorders as many cultures have a stigma attached to psychological issues [10].

Delayed family reunification has been found to increase the incidence of psychological stress within this population group [11]. A variety of criteria is used when assessing mental health disorders. The most commonly applied methods to measure anxiety disorders are the Diagnostic and Statistical Manual of Mental Disorders (DSM), specifically DSM-IV and DSM-5 criteria, which aid in associating symptoms with their specific disorders. DSM criteria is a reference guide used by mental health officials in identifying, classifying, and diagnosing mental conditions [12]. A prevalent instrument used to assess symptoms of posttraumatic stress disorder includes the Harvard Trauma Questionnaire (HTQ), a screening tool used for trauma exposure documentation [10]. The Hopkins Symptom Checklist (HSCL) is also a common, widely used questionnaire regarding psychological distress, typically used in the assessment of anxiety and depression in trauma-affected refugees [13]. Adequate access to support services, as well as a firm understanding of surrounding refugees' cultural, social, and religious backgrounds are essential when formulating appropriate treatment options. This systematic review aims to identify the impact of family separation on the development of mental health conditions among refugees.

## Methods

The systematic review findings are presented based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines [14]. The protocol was pre-registered on PROSPERO (registration number CRD42022316183). Given this study was a review of published and publicly available research data, institutional review board approval was not required.

## Search Strategy

The search strategy (Online Resource 1) included subject headings and keywords related to “family separation” and “mental health”; “refugee” terms were included from Campbell [15] keyword filter for refugee/immigrant studies. Then, five databases (MEDLINE, Embase, APA PsycInfo, CINAHL, and Core Collection (Web of Science)) were systematically searched. Filters for English were applied.

## Study Selection

The search was conducted till August 11, 2022. For the selection process, sourced studies were imported into the Covidence systematic review software (Veritas Health Innovation, Melbourne, Australia; [www.covidence.org](http://www.covidence.org)), which automatically removed duplicates [16]. The study selection had two steps, namely title/abstract screening and full-text evaluation. Studies were included if they focused on the impact of family separation on the mental health of adult refugees. Only primary quantitative, qualitative, and mixed method studies were considered. The screening of abstracts and full-text articles was performed independently by OAN and TAA. After each level of screening, selections were discussed, and any disagreements were resolved by arbitration by KS. Cohen’s Kappa statistic was used to calculate the inter-rater agreement after each level of screening. Articles were then assessed for quality.

## Quality Assessment

HA assessed the methodological quality of the included studies for the selected articles. The Oxford-based Critical Appraisal Skills Program checklist for qualitative research (CASP Qualitative Studies Checklist) is a 10-item checklist that was used to appraise qualitative and mixed method studies [17]. The Downs and Black Checklist, a 27-item checklist, was used to evaluate the methodological quality of the quantitative records [18].

## Data Extraction

Data extraction was then independently carried out by OAN and TQ using an Excel sheet (Microsoft, Redmond, U.S.). KS evaluated the extracted data, compared it between reviewers, and arbitrated conflicts with them. Data extracted from each study included study description (i.e., demographics of participants and research setting), methods used to identify and select participants, methods of incorporating participant input (e.g., quantitative–surveys or qualitative–interviews), prevalence statistics (i.e., the total number of participants, number of participants with a mental health condition, and number of participants with a mental health condition due to family separation), and types of mental health conditions.

## Analysis

The nature of the review's question and the heterogeneous characteristics of the studies constituted a meta-narrative analysis of the extracted data [19, 20]. The question 'what are the impacts of familial separation on refugee mental health' was investigated through thematic analysis and prevalence calculation. As such, the included studies were extracted until the saturation of themes that corresponded to the different mental health conditions. Additionally, the prevalences of observed conditions were calculated based on the occurrence of family separation within each study. Any differences in results can be explained by differences in study design [21].

## Results

### Study Selection

A total of 2152 articles were recognized through systematic database searches. Upon removal of duplicates ( $N=965$ ), the abstracts of the remaining 1187 articles were reviewed. Of the abstracts, 1096 failed to meet inclusion criteria and were excluded. The full texts of the 91 remaining articles were reviewed and 71 further articles were excluded. In the end, 20 articles met the inclusion criteria and were included in the systematic analysis. All studies included in the systematic review were published in English. The search strategy summary has been provided based on the recommendation of PRISMA (Fig. 1).

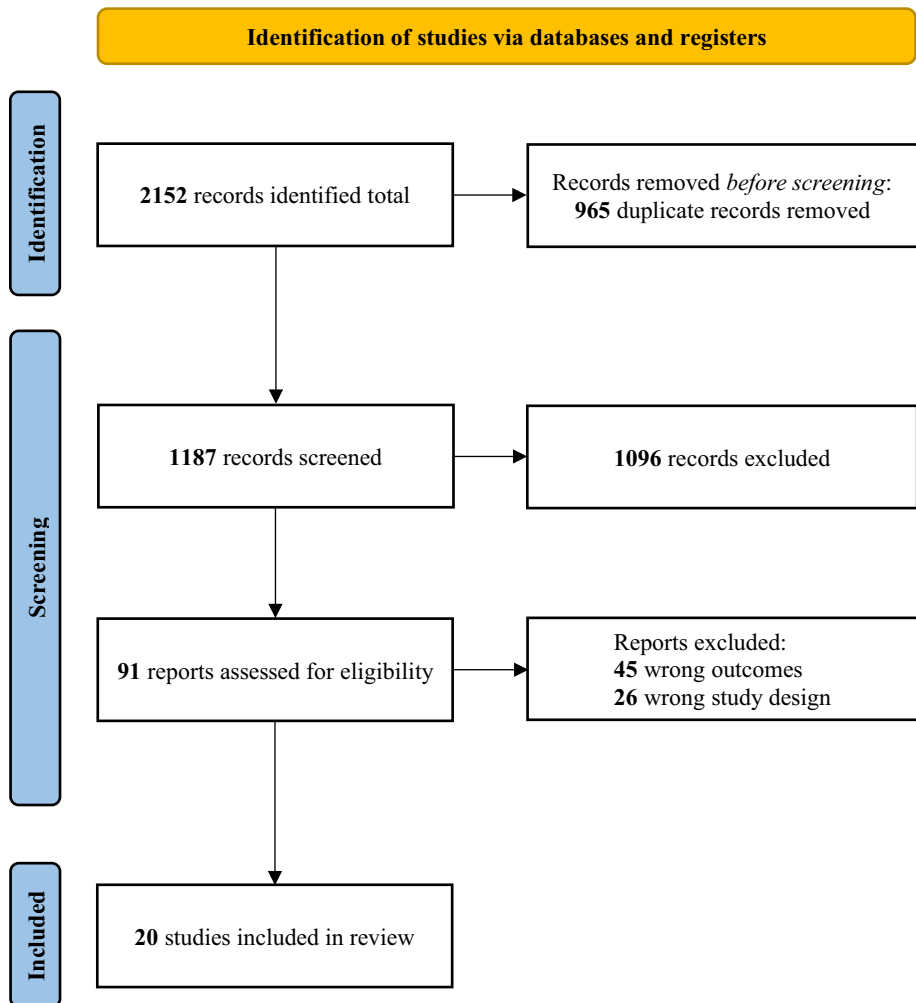
Most of the studies were conducted in Australia ( $N=6$ ), followed by the United States of America (US;  $N=4$ ), Germany ( $N=2$ ), Netherlands ( $N=2$ ), Papua New Guinea ( $N=2$ ), Canada ( $N=1$ ), Norway ( $N=1$ ), Iraq ( $N=1$ ), and South Africa ( $N=1$ ). The refugee groups that participated were diverse and included Afghani, African, Balkan European, Bhutanese, Bosnian, Former Yugoslavian, Iraqi, Iranian, Latin American, Middle Eastern, Myanmar, North African, Papua New Guinean, Sri Lankan, Somalian, Sub-Saharan African, Syrian, Sudanese, and Vietnamese refugees. All studies discussed the familial separation of refugees and the mental health conditions that resulted from the separation. The characteristics of the selected studies are summarized in Table 1.

### Quality Assessment

The included studies were moderate to high quality. Using the Oxford-based Critical Appraisal Skills Program checklist for qualitative research, the scores of the included qualitative and mixed method studies ranged from 5–10 points out of 10. The only quantitative study scored 21 points out of 28 as evaluated by the Downs and Black Checklist. Due to limited evidence, all studies were included despite their quality.

### Separation and Reported Effects on Mental Health

Various mental health disorders including PTSD ( $N=15$ ), depression ( $N=15$ ), anxiety ( $N=8$ ), adult separation anxiety disorder ( $N=2$ ), and intermittent explosive disorder ( $N=1$ ), as well as general mental health ( $N=2$ ) were reported to be correlated with familial



**Fig. 1** PRISMA 2020 flow diagram of included studies

separation (Table 2). Twenty-five diagnostic instruments were used to assess the presence and severity of mental health symptoms within all 20 studies. Participants completed self-reported questionnaires within 7 of the studies, while 8 studies used semi-structured interviews and 6 implemented the use of surveys.

### Separation in PTSD

Separation from family was found to be associated with posttraumatic stress disorder (PTSD). Symptoms of PTSD were most frequently assessed through the use of the Harvard Trauma Questionnaire (HTQ), which was implemented in 8 studies [22–28]. Some studies (N=3) used DSM-IV and DSM-5 criteria [26, 29, 30]. Other instruments used to assess PTSD symptomatology included the Essen Trauma Inventory [31], and the

**Table 1** Characteristic features of included studies

Study	Study Design	Sample Size	Host Country	Country of Origin	Sex (n, %)	Age	Questionnaires
Eckstein [47]	Mixed	-	United States	-	-	-	Refugee Initial overseas CDC Medical examination
Flaskerud and Anh [38]	Quantitative	81	United States	Vietnam	Male (N = 48; 59%) Female (N = 33; 41%)	25–34	Key-informant questionnaire developed by Warheit and associates
Georgiadou et al. [31]	Quantitative	119	Germany	Syria	-	18+	Sense of Coherence Scale, Social Support Questionnaire, Essen Trauma Inventory, PHQ-9, 7-Item Generalised Anxiety Scale, WHOQOL-Bref
Hagaman et al. [22]	Mixed	14	United States	Bhutan	Male (N = 9; 64%) Female (N = 5; 36%)	18–60+	HSC-25, HTQ
Hamrah et al. [32]	Quantitative	66	Australia	Afghanistan	Male (N = 49; 75.2%) Female (N = 17; 24.8%)	18–50+	Two-part survey instrument developed by author: using PMLD, Impact of Event Scale-Revised (IES-R)
Hauff and Vaglum [36]	Mixed	145	Norway	Vietnam	Male (N = 114; 79%) Female (N = 31; 21%)	15–58	(SCL)-90-R, Global Severity Index (GSI)
Jongedijk et al. [23]	Quantitative	1147	Netherlands	Middle East, North Africa, Former Yugoslavia, Sub-Saharan Africa	Male (N = 807; 70.4%) Female (N = 340; 29.6%)	-	HTQ, HSC-25, Pennebaker Inventory of Limbic Languidness (PILL)
Knipscheer et al. [24]	Quantitative	688	Netherlands	Middle East, Sub-Saharan Africa, Balkan Europe	Male (N = 488; 71%) Female (N = 200; 29%)	-	HTQ, HSC-25
Liddell et al. [26]	Quantitative	1085	Australia	Iraq, Iran, Syria, Sri Lanka	-	18+	HTQ, Posttraumatic Diagnostic Scale for DSM-5 (PDS-5), PHQ-9, WHODAS 2.0, PMLD, SCS
Löbel [11]	Quantitative	3400	Germany	Syria, Afghanistan, Iraq, Eritrea, Somalia, Other	-	18–36	IAB-AMF-SOEP Survey of Refugees, MCS, PMLD, SCS
Miller et al. [33]	Mixed	165	United States	Afghanistan, Iraq, Africa	Male (N = 79; 48%) Female (N = 86; 52%)	18–71	HSC-25, PCL-C, WHOQOL-BREF
Rees et al. [27]	Quantitative	44	Australia	West Papua	Male (N = 37; 84%) Female (N = 7; 16%)	18+	HTQ, K10,

Table 1 (continued)

Study	Study Design	Sample Size	Host Country	Country of Origin	Sex (n, %)	Age	Questionnaires
Rousseau et al. [34]	Mixed	113	Canada	Latin America and Africa	Latin American Males (N = 70; 62%) African Males (N = 43; 68%)	20–65	SCL-90R
Savic et al. [8]	Qualitative	20	Informants—Australia	Sudan	Female (N = 14; 70%) Male (N = 6; 30%)	18+	-
Silove et al. [28]	Mixed	126	Australia	Bosnia	Female (N = 77; 61%) Male (N = 49; 39%)	18+	DSM-IV, ASAD Interview
Taha et al. [35]	Mixed	820	Iraq	Syria	Female (N = 506; 61.7%) Male (N = 314; 38.3%)	18–78	HTQ, IV HTQ
Tay et al. [29]	Quantitative	230	Papua New Guinea	West Papua	Male (N = 137; 59.5%) Female (N = 93; 40.4%)	18+	DSM IV, DSM-5
Tay et al. [30]	Quantitative	230	Papua New Guinea	West Papua	Male (N = 137; 59.5%) Female (N = 93; 40.4%)	18+	Adapted Humanitarian Emergency Settings Perceived Needs Scale, DSM-IV, DSM-5
Thela et al. [25]	Quantitative	335	South Africa	Sub-Saharan Africa	Male (N = 178; 53%) Female (N = 157; 47%)	18–67	HSCL-25, HTQ-30
Wilmsen [37]	Qualitative	41	Australia	Sudan, Afghanistan, Myanmar	Male (N = 23; 56%) Female (N = 18; 44%)	20–55	-

HTQ Harvard Trauma Questionnaire, DSM-5/IV Diagnostic and Statistical Manual of Mental Disorders, HESPER Humanitarian Emergency Settings Perceived Needs Scale, HSCL Hopkins Symptom Checklist, K10 Kessler Psychological Distress Scale, MCS Multiple Chemical Sensitivity, PHQ Patient Health Questionnaire, PMLD Post Migration Living Difficulties Scale, SCL Symptom Checklist, SCS Self-Compassion Scales, WHODAS WHO Disability Assessment Schedule, WHOQOL-Bref WHO Quality of Life, IES-R Impact of Event Scale-Revised, GSI Global Severity Index, PILL Pennebaker Inventory of Limbic Languidness, PDS-5 Posttraumatic Diagnostic Scale for DSM-5

**Table 2** Mental health conditions assessed by association to family separation

Mental Health Conditions	Description	Literature Cited (with Prevalence)	Literature Cited (without Prevalence)
Posttraumatic Stress Disorder	Separation from loved ones, primary caregivers and immediate family for prolonged periods during sudden and frightening experiences such as migration is a common PTE, resulting in stronger risk for PTSD diagnosis	Jongedijk et al. [23] Hamrah et al. [32]* Miller et al. [33] Tay et al. [30]* Thela et al. [25]* Tay et al. [29] Silove et al. [28] Taha et al. [35]	Tay et al. [29] Knipscheer et al. [24] Löbel [11] Georgiadou et al. [31] Wilmsen [37] Liddell et al. [26] Eckstein [47]
Depression	Refugees separated from family suffer severe psychological distress, experiencing various symptoms of depression including appetite loss, sleep disturbances, cognitive decline and more. The longer families are separated, the greater the risk of depression becomes	Hagaman et al. [22]* Jongedijk et al. [23] Miller et al. [33] Tay et al. [30]* Thela et al. [25]* Rees et al. [27] Flaskerud and Anh [38] Silove et al. [28]	Knipscheer et al. [24] Löbel [11] Georgiadou et al. [31] Wilmsen [37] Liddell et al. [26] Hauff and Vaglum [36] Eckstein [47]
Anxiety	Familial separation reportedly leads to withdrawal, difficulty trusting others and forming relationships as well as reluctance to venture far, nightmares, distress from anticipation and physical complaints	Jongedijk et al. [23] Miller et al. [33] Thela et al. [25]* Rees et al. [27] Silove et al. [28]	Löbel [11] Georgiadou et al. [31] Wilmsen [37] Eckstein [47] Tay et al. [29]
Adult Separation Anxiety Disorder	Separation results in attachment issues, and excessive further symptoms of anxiety, causing immense distress and difficulty with basic daily functioning	Tay et al. [28]	-
Intermittent Explosive Disorder	Aggressive behaviour is a common result of family separation in refugees. Sudden and prolonged periods of separation from lifelong relations have been reported to cause behavioural outbursts, sudden irritability, tantrums and tremors	Tay et al. [30]*	-
General Mental Health	No specific condition was mentioned, however, family separation was reported to relate to mental health in some capacity	-	Rousseau et al. [34] Savic et al. [8]

\*Includes prevalence based upon family separation



Impact of Event Scale-Revised [32]. One study by Miller et al. [33] assessed trauma exposure through a checklist created for the study in collaboration with several clinical researchers; this survey also included items from HTQ.

In regards to Jongedijk et al. [23], potential traumatic events (PTEs) including familial separation were categorized to be between moderate and highly severe symptoms subgroups. Participants who experienced separation were found to be 1.26 times more likely to be in the Highly Severe Symptoms subgroups.

Psychiatrists in Tay et al. [29] reported consistent identification of symptoms of PTSD and adult separation anxiety disorder (ASAD) among West Papua refugees. The most prevalent symptoms of ASAD included reluctance to venture far, nightmares, physical complaints, and distress from the anticipation of family separation. For PTSD, symptoms included distressing dreams, intrusive memories of trauma, reactions to triggers, insomnia, startle response, and hypervigilance. Many participants ( $N=148/230$ ; 64.6%) said worries were in relation to separation from family, while more than half the participants ( $N=132$ ; 57.4%) reported a minimum of one worry regarding family members.

Knipscheer et al. [24] found a clinical level of symptom severity for PTSD in 84% of participants; 74% of these participants were found to have PTSD linked to familial separation.

Rousseau et al. [34] focused on separation and mental health surrounding Latin American and African refugees in Montreal. African participants reported more incidents of family trauma than Latin American subjects. Participants from Africa had a higher mean of family trauma scores (12.5) than Latin Americans (5.7). The majority of participants arrived in Canada alone; 80% came without their spouse and/or children, 62% of which were separated from their entire family, while 18% were only separated from part of their family. Family trauma was found to be correlated with the global severity index among African participants reunited with all or part of their family. Notably, this study's quantitative data suggests that for the studied Latin American and African refugees the relationship between psychological distress and personal trauma is reversed when subjects are with family members.

Approximately half of the participants (48.8%) in one study focusing on resettled Afghan refugees in Australia met the criteria for a PTSD diagnosis [32]. In a bivariate analysis, individuals with a likely PTSD diagnosis had higher levels of family separation (59.4%) than those who did not. Family separation (Odds Ratio or  $OR=9.9$ ; 95% CI: 1.8–55.5) was strongly and independently associated with probable PTSD diagnosis.

With the use of PTSD Symptom Checklist – Civilian Version (PCL-C) in Miller et al. [33], participants' scores ranged from 17.00 to 81.00 with a mean of 33.91. Researchers of the study chose to use a score of 40 as a cut-point score, with 27.8% of participants having a PTSD score above 40. After accounting for the effects of overall trauma, family separation accounted for an additional 7% of the variance in PTSD symptoms.

Tay et al. study [30] identified four classes: one being PTSD (23%). The PTSD class reported higher stress levels in relation to displacement and separation from families ( $OR=8.06$ , 95% CI: 1.84–35.33).

One-third of participants (32.7%) in Thela et al. [25] experienced family separation since their migration to South Africa. When models determining the risk of anxiety, depression, and PTSD symptoms were adjusted for a history of family separation, they were associated with a higher risk for depressive ( $OR=2.5$ , 95% CI: 1.4–4.5) and PTSD ( $OR=2.2$ , 95% CI: 1.2–4.2) symptoms, further demonstrating familiar separation as an independent predictor of PTSD symptoms and depression.

**Table 3** Prevalence of mental health conditions within each study

Author et al., Year	Prevalence of PTSD	Scale
POST TRAUMATIC STRESS DISORDER		
Hamrah et al., 2021	N = 32/66; 48.8%	Post Migration Living Difficulties Scale (PMLD), Impact of Event Scale-Revised (IES-R)
Jongedijk et al., 2020	N = 1060/1147; 92.4%	Harvard Trauma Questionnaire (HTQ)
Miller et al., 2018	N = 45/165; 27.8%	PTSD Symptom Checklist – Civilian Version (PCL-C)
Rees et al., 2015	N = 39/44; 88.6%	Harvard Trauma Questionnaire (HTQ)
Silove et al., 2010	N = 79/126; 63%	The Clinician-Administered PTSD Scale for DSM-IV
Taha, Taib, and Sulaiman., 2016	N = 134/820; 16.3%	Harvard Trauma Questionnaire (HTQ)
Tay et al., 2015	N = 53/230; 23%	Adapted Humanitarian Emergency Settings Perceived Needs Scale, DSM-IV, DSM-5
Thela et al., 2017	N = 84/335; 24.9%	30-item Harvard Trauma Questionnaire (HTQ-30)
DEPRESSION		
Flaskerud and Anh., 1988	N = 52/81; 64.2%	Warheit and associates developed questionnaire
Hagaman et al., 2016	N = 5/14; 35.7%	Hopkins Symptom Checklist-25 (HSC-25), HTQ
Jongedijk et al., 2020	N = 912/1147; 79.5%	Hopkins Symptom Checklist-25 (HSC-25)
Miller et al., 2018	N = 48/165; 29.4%	Hopkins Symptom Checklist-25 (HSC-25)
Rees et al., 2013	N = 30/44; 68.2%	The Kessler Psychological Distress Scale (K10)
Silove et al., 2010	N = 58/126; 46%	Structured Clinical Interview for DSM-IV
Tay et al., 2015	N = 32/230; 14%	Adapted Humanitarian Emergency Settings Perceived Needs Scale, DSM-IV, DSM-5
Thela et al., 2017	N = 183/335; 54.6%	25-item Hopkins Symptom Checklist (HSCl-25)
ANXIETY		
Jongedijk et al., 2020	N = 918/1147; 80.0%	Hopkins Symptom Checklist-25 (HSC-25)
Miller et al., 2018	N = 48/165; 29.4%	Hopkins Symptom Checklist-25 (HSC-25)
Rees et al., 2013	N = 30/44; 68.2%	The Kessler Psychological Distress Scale (K10)
Thela et al., 2017	N = 165/335; 49.4%	25-item Hopkins Symptom Checklist (HSCl-25)
ADULT SEPARATION ANXIETY DISORDER		
Silove et al., 2010	N = 22/126; 18%	The Adult Separation Anxiety-Structured Interview
INTERMITTENT EXPLOSIVE DISORDER		
Tay et al., 2015	N = 27/230; 12%	Adapted Humanitarian Emergency Settings Perceived Needs Scale, DSM-IV, DSM-5

A total of 23.2% (N=251) participants in Liddell et al. [26] reported being separated from all their families. The separated group reported exposure to double the number of PTEs than the 76.8% (N=832) non-separated participants. Symptoms of PTSD and depression were also found to be higher in the separated group of refugees.

Rees et al. [27], consisted of 44 West Papuan refugees, 40 of which reported one or more PTE. The most frequent post migration stressor regarding this group was separation from family members still residing in West Papua (N=43). Twenty-six participants were at a lower threshold (2.0) for PTSD symptoms, 13 reached the clinical threshold (2.5), and 14 reported severe psychological distress.

Among the 820 Syrian refugees in Taha et al. [35], 13.3% (N=134) had clinical PTSD on HTQ. Based on the various types of traumatic experiences, PTSD rates were higher (25.6%) among participants experiencing one more trauma involving separation.

### Separation in Depression and Anxiety

Depression in refugees was frequently mentioned in correlation with experiences of separation. The most frequent form of assessment for symptoms of depression, psychological distress, and anxiety was the Hopkins Symptom Checklist-25 (HSCL-25), with 6 articles implementing the module within their study [22–25, 28, 33]. Other similar forms of assessment included the Mental Health Component Summary Scale (MCS), the Patient Health Questionnaire (PHQ-9), and the Kessler Psychological Distress Scale (K10). One study [8] used 20 informants consisting of various health care providers as a form of assessment.

One study [22] related to suicides among refugees conducted through use of modified psychological autopsies reported many of the deceased to have been separated from family (43%) and worrying about family back home (57%). Separation of refugees from family and community was determined to be a significant contributor to the majority of suicides within the study.

One study [11] regarding refugee participants residing in Germany, controlling for other relevant migration stressors, found that separation from all nuclear family members is negatively significant, with a decrease in the mean MCS of over 4 points.

Data from semi-structured interviews such as in Miller et al. [33] demonstrated separation from family to be a significant source of distress for participants, causing them feelings of guilt, anxiety, and depression. With the use of HSC-25, it was found that 29.4% of participants had scored above 1.75, suggesting clinically significant distress. After accounting for the effects of overall trauma, family separation accounted for an additional 4% of the variance in the Hopkins measure of anxiety and depression symptoms.

Tay et al. [30] identified four classes: one being the posttraumatic depressive class (14%). Participants assigned to this class reported more stress related to being separated from families (OR=4.96, 95% CI: 1.11–22.08).

### Separation in Other Mental Health Effects

ASAD was assessed through a checklist combined with DSM-IV and DSM-5 criteria [29, 30]. One study utilized clinician-administered measures as means of assessing the presence of ASAD [28]. Symptoms of intermittent explosive disorder (IED) were determined through the use of a mental disorder module by Tay et al. [30], created by experts in consultation with psychiatrists. The Post Migration Living Difficulties Scale (PMLD) was also used in over one study, at times modified to further assess stresses.

Certain studies [34, 36] also made use of the Symptom Checklist (SCL-90-R) in order to measure participants' emotional profiles, though Hauff and Vaglum [36] also implemented examination through clinical psychiatrists. Silove et al. [28] utilized The Core Bereavement Items in order to assess dimensions regarding complicated grief. Lastly, Georgiadou et al. [31] utilized WHOQOL-Bref, a self-report questionnaire based upon the "World Health Organization Quality of Life Assessment". WHOQOL-Bref was used to assess psychological health, social relationships, physical health, environment, and overall quality of life.

Miller et al. [33] made use of the WHOQOL-BREF in order to assess response quality of life from their perspective, with higher scores indicating more positive life quality. Participant scores ranged from 3.00 to 15.00, with a mean of 9.78. Trauma exposure was also assessed using a 27-item checklist specifically curated for this study, with scores ranging from 0 to 25 (indicating some individuals did not endorse any of the 27 exposures while some experienced 25 of the 27 trauma types, with a mean of 8.45). One of said trauma exposure items determined whether the individual had experienced "separation from family or loved ones". This item was endorsed by 93 (56.4%) of participants and then removed from the overall trauma score to examine its separate effects. After accounting for the effects of overall trauma, separation from family demonstrated significant effects for all three psychological well-being measures. Family separation accounted for an additional 5% of the variance in psychological quality of life.

Tay et al. [30] identified four classes: one being an intermittent explosive disorder class (12%). Participants in this class only had one significant association, being the contemporary adversity of displacement and separation from families (OR = 8.37, 95% CI: 1.08–6.57).

Interviews conducted by Wilmsen [37] found family separation to impact refugees in numerous ways, including feelings of worry and guilt, sleeplessness and nightmares, poor concentration, as well as a likely reason for their depression.

Even short periods of separation from family were found to negatively impact refugees. Hauff and Vaglum [36] reported that long-term separation from children and/or spouse during the flight alone was significantly associated with emotional distress and the increased likelihood of suffering from psychiatric disorders.

Flaskerud and Anh [38] assessed the problems and needs of Vietnamese refugees regarding mental health. Much of which revolved around dealing with the impact of familial separation.

## Prevalence of Conditions

Of the 20 studies, 10 were selected for prevalence calculations due to their relevant assessment process regarding mental illness conditions and their diagnosis [22, 23, 25, 27, 28, 30, 32, 33, 35, 38]. The total number of participants collected from all 10 studies is 3028. Of the 3028 refugees, 1431 were diagnosed with PTSD (N = 1431/3028; 47.3% prevalence of PTSD). In terms of depression, 1507 were diagnosed (N = 1507/3028; 49.8% prevalence of depression). Around 1330 individuals were reported with anxiety (N = 1330/3028; 43.9% prevalence of anxiety), 55 with varying levels of psychological distress (N = 55/3028; 1.8% prevalence of distress), 38 with complicated grief (N = 38/3028; 1.25% prevalence), 28 with the intermittent explosive disorder (N = 28/3028; 0.92% prevalence of IED), and lastly, 22 with adult separation anxiety disorder (N = 22/3028; 0.73% prevalence of ASAD).

## Prevalence Related to Separation

In regards to separation, 6 of the 14 refugees (43%) in Hagaman et al. [22] that committed suicide were separated from family (Table 3). In Hamrah et al. [32], 19 of the 32 participants (59.4%) diagnosed with PTSD experienced family separation. The findings in Miller et al. [33] found that familial separation accounted for an additional 4% of the variance in the measure of anxiety and depressive symptoms, a 7% of the variance in PTSD symptoms as well as a 5% variance in psychological quality of life. Based on results from Tay et al. [30], those who experienced separation from the family had an OR of 4.96, 8.06, and 8.37 for posttraumatic depression, PTSD, and intermittent explosive disorder respectively. When models in study by Thela et al. [25] were adjusted for family separation, an OR of 2.8 was found for depressive symptoms and an OR of 2.3 for PTSD symptoms.

## Discussion

This systematic review highlights the various impacts separation from family has on refugees. Family separation was related to various mental health conditions, mainly post-traumatic stress disorder, depression, and anxiety. Familial separation was also correlated to adult separation anxiety disorder and intermittent explosive disorder. Through analysis of the literature on refugee mental health and separation, it is evident that familial networks are protective factors for mental health before and post migration [34, 39]. One cohort study showed that participants who had experienced positive, unified relationships with their families had significantly lower depressive levels than those who had fewer positive experiences [40]. Various symptoms such as feelings of guilt/worry, nightmares, and loss of sleep/appetite can not only be evaded but managed through the reunification of family [37]. Through prevalence calculations, it is evident the majority of individuals reporting symptoms of mental health disorders have experienced familial separation throughout their migration process. As such, familial separation has a significant impact on the mental health of those seeking asylum. Untreated mental health conditions may pose potential threats to the success rate of the reintegration process as well as ultimately pose life-threatening risks [41].

Although our study makes significant contributions surrounding the correlation between familial separation and refugee mental health, certain limitations are present. One limitation included the lack of measures present to assess the forms and extent of contact participants had with their family members post separation. With the rise of technology and means of communication, it is unclear whether participants were able to contact said family members and how this may have further impacted them. This review aimed to determine the prevalences of different mental health conditions that resulted from familial separation. As a result, many refugee populations were included leading to a limitation of heterogeneity. Further, different scales were used to diagnose the conditions, which followed the reasoning that different conditions have different diagnostic measures. As well, the DSM-5 states for a PTSD diagnosis, “the person was exposed to: death, threatened death, actual or threatened serious injury, or actual or threatened sexual violence, in the following way(s): direct exposure, witnessing the trauma, learning that a relative or close friend was exposed to a trauma, indirect exposure to aversive details of the trauma, and usually in the course of professional duties (e.g., first responders, medics) [44]. Following such, family separation,

by itself, is not recognized as a formal stressor inducing PTSD. However, a few studies included in this review and from the literature have mentioned family separation contributing to PTSD [24, 45, 46]. Future studies can further explore the link between the two in the context of the DSM-5.

## Conclusion

Given the importance familial presence has towards successful refugee mental health, integration, and overall quality of life—there is undeniable importance in promoting the migration of families as a unit when working with refugees [25]. The association between migration and family separation was observed to heavily correlate with the risk of mental illness. The observed impacts should be further studied and implemented in a manner to encourage resettlement agencies and government officials to consider family reunification further, prioritizing placing families together to prevent high risks of mental illness, and overall better reintegration into host countries. Furthermore, mental health programs, group therapy, and psychological assessments should be studied more, reviewing how they can be more refugee-focused, in an attempt to benefit displaced family members and their integration process [42]. It is crucial for community health programs to provide a diverse array of health practitioners from various backgrounds, as a means of helping refugees with potential language and culture barriers to further their belief in their host countries' care system, thus allowing further trust and understanding into their mental well-being and overall quality of life [43].

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**Author Contribution** Hana Abdelmeguid, Kavin Selvan, and Monali S. Malvankar-Mehta conceived the review, coordinated the contributors, designed the search strategy, and prepared the manuscript. Ozaay Ali-Naqvi and Tariq A. Alburak selected the studies. Kavin Selvan resolved study selection conflicts, and with Hana Abdelmeguid and Monali S. Malvankar-Mehta, designed the analysis. Ozaay Ali-Naqvi, Hana Abdelmeguid, and Kavin Selvan contributed to the first draft; Ozaay Ali-Naqvi and Tariq A. Alburak contributed to data extraction and analysis. All authors revised drafts of the manuscript and approved the final manuscript. The corresponding author (Monali S. Malvankar-Mehta) had full access to all the data in the study and final responsibility for the decision to submit for publication.

**Data Availability** Data used in this study is available in public domain and has been cited in the results section.

## Declarations

**Research Involving Human Participants and/or Animals** Not applicable.

**Conflict of Interest** All authors declare that they have no conflict of interest.

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