Introduction

War is a human-made humanitarian emergency, often involving direct targeting of civilians and consequently causing human rights atrocities [1]. The United Nations High Commissioner for Refugees (UNHCR) [2] estimated 59.5 million persons worldwide had been forcibly displaced from home as a result of war, conflict or persecution, of which 15.9 million became refugees, and fifty-one percent of refugees were children under the age of 18. A recent 2017 statistic [3] revealed that the estimated number had increased to an unprecedented 65.6 million people worldwide, of which nearly 22.5 million were refugees and over half of whom were under the age of 18.

Most research studies and literature reviews include both refugee adults and refugee minors. While there are many war-related post-traumatic stress disorder (PTSD) studies related to refugees worldwide, the literature that focuses specifically on children and adolescents is limited. The scarcity of this type of research can be attributed to the inherent difficulties in studying refugee mental health in this population and the lack of appropriate cross-cultural validation of assessment tools [1].
populations with challenges of working in unsafe areas and low research funding resources may be the reasons why much of the research is focused on refugees who have resettled in high-income countries [1].

This paper aims to create such awareness by providing a short and concise overview of available literature about the refugee minors’ experiences, current prevalence, risk and preventative factors, clinical assessments, interventions, and issues surrounding working with this specific PTSD population.

The Refugee Minors’ Experiences

Studies have repeatedly shown that refugees often face tremendous traumatic experiences that force them to flee their country [4]. According to Pacione and associates, children and adolescents may experience war differently than adults because of their dependent nature [1]. During pre-migration, war experiences may include high exposure to violence, separation from family and peer networks, and disruption of life routine, especially schooling. Some have experienced multiple traumas including witnessing war atrocities, becoming victims of torture and intimidation, and living with constant hunger and thirst. When migrating, they face the traumas of migration: being separated from caregivers, harsh living conditions, and uncertainty about the future. Post-migration experiences can also be very stressful and traumatic for refugee minors. For the unaccompanied refugee minor, they have to adapt to a new environment and new life dynamics separated from family and peers, learn a new language and culture, maintain their ethnic and religious identity, and at the same time undergo acculturation and the experiences of discrimination and social exclusion [1]. For the majority of child and adolescent refugees who were unable to seek asylum in high-income countries, they had to remain in refugee camps and faced the risks of infectious disease and malnutrition, and exposure to domestic violence and sexual abuse [1, 5, 6].

Prevalence

Because of the major stressors of witnessing and/or experiencing trauma and adversity, refugee minors, just like adults, are at a particularly high risk of developing post-traumatic stress disorder (PTSD) [1, 4, 7]. Indeed, Schwarz and Perry reported figures up to 100% for those children who have been exposed to sudden, unexpected violence [8]. However, the inclusion criteria and analytic strategy of this meta-analysis are unknown, and many new studies have since been conducted. A meta-analysis by Attanayake and colleagues found that up to 89% of 7,920 children affected by war met the criteria for PTSD, with an overall pooled estimate of 47% for PTSD, 43% for depression, and 27% for a non-PTSD anxiety disorder [9].

The war and military violence crisis in the Middle East have documented PTSD prevalence rates that range from 58–69% (for Palestinian children) to 80% (for Iraqi children) [10]. Meanwhile, following resettlement in Western countries, 40% of refugee minors met criteria for PTSD and 16% of them had late-onset PTSD [11]. In addition, comorbidity between PTSD and other types of mental health disorders related to depression, anxiety, sleep disturbance, adjustment difficulties, cognitive impairments, and much more has been found to be quite common for this population [1, 12, 13].

Assessment

Assessing young refugees can be quite
difficult as there is no standardised, evidence-based procedure to draw upon [14]. The main techniques and approaches used include (a) semi-structured clinical interviewing – to establish rapport and child/family engagement; (b) structured clinical interviews – to determine whether the young refugee meets diagnostic criteria for a specific disorder; (c) screening instruments/questionnaires – helpful in tracking treatment progress and effectiveness of interventions, but caution is needed when interpreting results due to the nature of this approach; (d) anecdotal and observation – rarely used [14, 15].

Since interviews and observational approaches are time-consuming, most researchers prefer the self-report measures to identify refugee minors who need further assessment and treatment [16]. Recent studies including a systematic review had highlighted the urgent need to develop validated trauma and mental health screening and measurement tools for refugee children and youth [17, 18]. According to these studies, there is a lack of validated screening tools for refugee minors, especially for refugees below the age of 6 [18]. Recommendation of a ‘best practice’ in the choice of screening tools to use is further complicated by the conditional and context-specific factors related to where the screening takes place [17]. Up till now, the validation studies for the following screening tools have been identified: Child Behavior Checklist (CBCL); Child Posttraumatic Stress Disorder Symptom Scale Interview format (CPSS-I); Hopkins Symptom Checklist-37 (HSCL-37); Reaction of Adolescents to Traumatic Stress questionnaire (RATS); UCLA PTSD Index for DSM-IV (UCLA PTSD); Posttraumatic Stress Symptoms in Children (PTSS-C); and The Impact of Event Scales (IES) [17].

The IES has been used widely as a self-report measure of PTSD in adults. The revised version of IES known as the Children’s Revised Impact of Event Scale (CRIES) was recommended as the best practice to screen for PTSD in minor refugees in clinical settings [16, 19]. The use of CRIES suits 8-18 years old children and is available in more than 20 languages. However, children may need supports to complete the questionnaire [16].

Early screening assessment and intervention can prevent refugee minors from having chronic trauma conditions [19]. For refugee minors, assessment of trauma history should be done once trust has been established and in a safe environment where children and adolescents do not feel like they are being interrogated [20]. Clinicians may consider involving the family when necessary, include a professional interpreter, and be culturally sensitive about stigma related to mental health problems [20]. Often, separate interviews in which the refugee minor is interviewed without their parents are useful, as children and adolescents often hide their difficulties and emotions from their parents to protect them [14]. The population of minor refugees with PTSD, however, may be underrepresented due to the only small percentage of them was reported to seek help [19].

**Effects, Risk and Protective Factors**

Beyond basic survival and safety needs, refugee minors may be affected by challenges that can also precipitate, increase, or maintain PTSD symptoms or any mental health disorders. Learning a new language, bad economic and family situations, changes in family dynamics, a heavy load of school work to catch up to peers, the possibility of culture conflict and conflicting gender roles, facing discrimination, and stigma are just
some of the possible post-arrival daily psychological stressors for most refugee minors that can cause great distress [20, 21].

Several studies in Afghanistan and Sri Lanka reported a correlation between exposure to war and the types and degree of domestic violence as an additional trauma for child survivors of wars [22]. In a Canadian study conducted by Tatsoglou and associates, findings suggest that many young refugee females were victims of sexual violence [23]. Often, they lose the protection of the community, struggle to access help to deal with the violence experienced in their home country, and feel unsafe to report such incidents [21]. Thus, it comes as no surprise that young refugee females have higher rates of being diagnosed with mental health problems compared to their male counterparts [24, 25].

Recently, several studies have examined the effects of exposure to war, conflict, and terrorism on young children [4]. It was revealed that bed-wetting is not uncommon for children who have gone through a traumatic event. Besides the effects of PTSD and post-traumatic stress symptoms, some children display behavioral and emotional symptoms, psychosomatic symptoms, and sleep problems; they may become mute, extremely clingy to their parents, act out their trauma experience through play (i.e., disturbed play) or art, and develop disruptive behavior and aggressiveness [4, 26, 27].

Table 1 illustrates how trauma reactions are manifested in children and adolescents (excerpted with slight modifications from Porterfield [28].

**Table 1. The manifestation of trauma reactions in refugee minors**

<table>
<thead>
<tr>
<th>Preschool</th>
<th>School-age</th>
<th>Adolescents</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Fearful and presence of separation anxiety</td>
<td>• Anxious and easily irritated</td>
<td>• Anger outbursts and revengeful</td>
</tr>
<tr>
<td>• Loss of developmental milestones (e.g., toileting, motor skills, language)</td>
<td>• Aggression, conduct problems</td>
<td>• Detachment feelings</td>
</tr>
<tr>
<td>• Sleep dysregulation</td>
<td>• Concentration difficulties</td>
<td>• Recurring intrusive thoughts, nightmares, flashbacks</td>
</tr>
<tr>
<td>• Repetitive and even disturbed play</td>
<td>• Sleep dysregulation</td>
<td>• Guilt, shame</td>
</tr>
<tr>
<td>• Aggression</td>
<td>• Stomach pains</td>
<td>• Avolition</td>
</tr>
<tr>
<td></td>
<td>• Worry and fear of trauma events occurring again</td>
<td>• Disillusionment with adults/authority</td>
</tr>
</tbody>
</table>
Despite high symptom presentations of PTSD, depression, and anxiety disorders among refugee minors, some researchers caution on over-pathologising refugees [20]. Even though young refugees had experienced major traumatic circumstances, findings indicate that the majority of them demonstrated adaptability, perseverance, and resilience, which helped them adjust positively to a new home [1, 20, 21, 29].

Exposure to war-related trauma is the most common predictor of the development and maintenance of PTSD among this group [7, 30, 31, 32]. However, researchers have found that there are various protective and risk factors that mediate or moderate the effect of the trauma [10, 13].

Under the ecological and chronological approach developed by Miller and Rasco, researchers view children’s mental health as dependent on the child’s family microsystem, the community mesosystem, and the regional cultural, historical, and political macrosystem during the pre-migration, migration, and post-migration phases [33]. Thus, studies exploring the protective factors for the development and maintenance of PTSD symptoms revolve around the individual’s characteristics, the family system, and the social supports available [14].

Among the risk factors (refer Table 2) that have been found to have an impact on the development and maintenance of war-related PTSD in refugee minors include exposure to war-related trauma [7, 30, 34, 35], parental factors [5, 6, 36, 37], older population [38, 39] and post-emigration stressors [5, 14, 29].

While the protective factors (refer Table 2) include the role of the family [40, 41, 42], good parenting style [27, 43], individual factors [7, 11, 29, 44], and optimal post-emigration environment [5, 14].

Table 2. Risk factors and protective factors in the development and maintenance of PTSD in refugee minors:

<table>
<thead>
<tr>
<th>Risk Factors</th>
<th>Protective Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Related to Trauma</strong></td>
<td></td>
</tr>
<tr>
<td>Exposure to war-related trauma</td>
<td>Family</td>
</tr>
<tr>
<td>• Multiple trauma events</td>
<td></td>
</tr>
<tr>
<td>• Severity of the trauma (violent death of a</td>
<td></td>
</tr>
<tr>
<td>family member or witnessing someone being</td>
<td></td>
</tr>
<tr>
<td>injured, tortured, or killed)</td>
<td></td>
</tr>
<tr>
<td>• Perception of the degree of personal threat</td>
<td></td>
</tr>
<tr>
<td>• Level of personal involvement</td>
<td></td>
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<tr>
<td>Unknown fate of missing family members</td>
<td></td>
</tr>
<tr>
<td>Separation from family and peer network</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Family</th>
<th></th>
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</table>
### Parental factors
- PTSD in either parent
- Maternal depression
- Political persecution & imprisonment of father
- Torture, especially in the mother
- Death or separation of parents
- Underestimation of stress levels in children by parents
- Unemployment of parents

#### Being an unaccompanied refugee minor, i.e., unaccompanied by family members

### Role of the family
- Cohesion and adaptability
- Perceived security and parental support
- Father-involvement
- Mother’s education

### Parenting & Child attachment styles
- Good parental functioning
- Good parental trauma communication

### Characteristics of the individual

#### Pre-existing vulnerability
- Previous conduct problems
- Physical illness due to trauma or malnutrition
- Expressive language difficulties

#### Age
Older age increased risk due to higher internalising and externalising problems

#### Gender
Females may have increased risk due to higher internalising problems

### Disposition
- Good temperament, positive self-esteem, ability to respond to new situations
- High resilience

### Educational experience
- Reading and writing abilities
- Formal schooling experiences

#### Refugee adolescent who has implicit thinking of duty to parents to succeed

### Belief systems
- Religion

### Post-migration environment

#### Low levels of social/societal supports

### Post-migration stressors
- Process of seeking asylum; time and negotiation took for immigration status to be determined
- Period in a refugee camp
- Financial difficulties or poverty
- Unemployment
- Inadequate living conditions/communal housing
- Number of transitions/frequent moves

#### High levels of social support
- High parental and peer support
- Family cohesion

#### Positive school experience
- Same ethnic-origin foster care
• New language
• Social isolation, racial discrimination
• Exposure to post-migration violence

New socio-cultural adaptation

Cumulative experiences of trauma

Treatment Approaches and Psychosocial Interventions

The models of interventions for refugee minors are based on an ecological perspective. It primarily begins with catering basic survival and safety needs such as food, housing, protection, and health care [19]. In Australia, new refugee minors usually have undergone a comprehensive health evaluation to identify children and adolescents at risk of poor health and to provide them with effective care, advocacy, and appropriate referral [45]. This evaluation may include the assessment of general health, infectious diseases, immunisation, growth and nutrition, oral health, development and disability, mental health, and child protection [45]. However, in many host countries, mental health screening was not included as part of refugee’s health screening following resettlement [46]. The lack of consistent mental health evaluation calls for policy changes to support these types of services.

Next, interventions are focused on the other aspects of needs including strengthening family and community support, providing specialised care and treatment, and giving access to non-specialized mental health services for those in need [19, 47].

Generally, interventions for children and adolescents with PTSD involve recognition and sharing of grief/loss, group trauma and grief therapy, processing traumatic memories, adaptive grieving, mind-body skills, psycho-education, emotion-focused coping, crisis intervention, experiential techniques, creative play, art therapies, and other forms of expressive techniques [15]. For the complex PTSD cases, the second-line intervention approaches for emotional, attentional, and behavioural issues (e.g., aggression) may include meditation and mindfulness [48].

Individualized, group, and school-based interventions aiming to reduce PTSD symptoms that have been reported to benefit refugee minors include Trauma-Focused Cognitive behavioral therapy (CBT) [49, 50], Narrated Exposure Therapy (NET), and Narrative Exposure Therapy adapted for children (KIDNET) [51, 52]. Other approaches with limited empirical support and needing further investigations include Eye Movement Desensitization and Reprocessing (EMDR) [53], Arts-based therapy [54, 55], and Trauma Systems Therapy (TST) [56].

For refugee minors who are suffering from PTSD symptoms, Trauma-Focused CBT is mainly based on cognitive processing and prolonged exposure therapy, which involves cognitive restructuring, psychoeducation about trauma, emotional regulation, interpersonal skills training, and anxiety/stress management [48]. Thus, such approaches aim to process the traumatic and painful events in a coherent and detailed narrative of past experiences [14]. Similarly,
NET uses this strategy. KIDNET therapy, which has been adapted for children older than eight, encourages children to extend their narrative beyond the present to include a description of their hopes and future aspirations [14].

The school-based CBT group intervention has been found to benefit refugee minors in reducing PTSD symptoms and emotional and behavioural problems [57]. The manual includes the following strategies and techniques: psycho-education about stress reactions, intrusions, arousal, and avoidance; elements of coping skills and normalizing; imagery techniques; the dual attention task – an EMDR technique; dream-focus; homework; sleep hygiene; and building hopes for the future [58]. In a study by Ehntholt and associates, refugee children aged 11–15 years old underwent six sessions of CBT while at school, while the control group was placed on a waiting list [58]. Those who received CBT showed modest improvement with an overall decrease in severity of post-traumatic stress symptoms, while the control group did not show any improvement. However, follow-up report suggests that such gains were not maintained after two months [58].

Evidence-based psychosocial interventions to enhance family relationships may include psycho-education and parenting interventions that focus on strengths, resiliency, the role of family processes in facilitating adjustment, and positive family environment [20, 27]. In contexts where the dynamic between trauma, domestic violence, and child/family functioning are high, parenting intervention programs related to parental discipline methods, emotional regulation training, and stress management are highly suggested [22]. Moreover, additional support to parents or caregivers of war-affected children under the age of eight is deemed appropriate [14].

Psychosocial prevention programs and treatment interventions are usually conducted through school, university, or community-based services with the aim of decreasing stigma, to reduce discrimination, and to enhance a sense of belonging. For example, at the community level, mass media programs, sensitisation campaigns, social dialogue, and community-based rehabilitation have been carried out [47]. There is a dearth of evidence that shows that pharmacological treatments have significant benefits for war-related refugee children and youth with PTSD. The use of alpha- and beta-adrenergic blocking agents, tricyclic antidepressants, anticonvulsants and antipsychotic medications are reported as the common practice among child psychiatrists to treat children with significant PTSD symptoms [59]. However, such practice should be used with extreme caution and acts only as the last resort when other psychotherapeutic approaches fail to relieve or improve PTSD symptoms, and the child or adolescent is in severe distress [14].

Other Considerations Related to Clinical Work with Refugee Minors

Many mental health professionals have raised issues regarding obstacles to providing care for war-related refugee minors. Besides the lack of resources and specialists in the field, the language barrier, lack of education about mental health, and cultural stigma can influence refugee minors and their guardian (if there are any at the time) such that they may report that they do not require services [4]. Thus, a revised budget and proper long-term planning on social policy implications should be prioritised to create a positive post-emigration environment for refugee minors.
More training of mental health professionals is crucial, and these professionals must practice cultural competency in their work to establish trust and safety within the therapeutic relationship [21].

Moreover, because few mental health professionals speak the same language as the refugee minor, much can be gained by collaborating with interpreters who can bridge the cross-cultural experience and facilitate communication [14, 20]. Another practice recommendation is to extend services to the family unit when counselling refugee minors with or without PTSD [21].

Mental health professionals should follow the appropriate guidelines when working with refugee minors, e.g., the UNHCR guidelines of *Refugee Children: Guidelines on Protection and Care*. Professionals should also pay attention to guidelines that cover the importance of conducting proper assessments and constructing medico-legal reports of young refugee clients to be submitted along with the asylum applications [14].

Finally, there is one important aspect that should not be overlooked by mental health professionals when working with war-related refugee minors with or without PTSD. They should have adequate supervision, have an established means of personal support, and prioritise proper self-care [14]. These self-care components are essential when the work that one does has a high emotional impact.

**Future Directions**

Importantly, evidence of the effectiveness of interventions targeting psychopathology in refugee minors who meet criteria for PTSD, especially in the form of a randomised controlled trial, have been scarce [10]. Most studies of refugee populations have research limitations such as small sample size, convenience sampling, unclear methodology, and lack of cultural sensitivity and contextual diversity in conceptualisation and the use of assessment tools – all which can jeopardise the validity of findings [4].

Moreover, even though most research indicates that Trauma-Focused CBT benefits a range of trauma survivors, it has been found that almost half of the Trauma-Focused CBT treatment completers maintained their diagnosis a few months after completion, while those who no longer had PTSD still suffered from significant residual symptoms, indicating an urgent need for improvement in therapies for both refugee adult and refugee minor populations [7, 60]. Furthermore, although there is evidence of treatment effectiveness for individual-level trauma-focused interventions, the effects of community or societal level interventions remain unknown [5]. For example, preventive interventions influencing multiple domains of war-related refugee minors’ growth development and the application of protective factors should be further explored [5, 10].

Efforts to provide a positive post arrival experiences in the resettlement country are critical to the children’s and youth’s ongoing mental health and well-being [61]. Moreover, given the nature of their traumatic experiences are unique to themselves, each refugee minors’ needs are unique as well. Therefore, it follows logically that all traumatised refugee minors should have the right to be treated based on an individualised evaluation and treatment plan. Indeed, studies support this notion. For example, a study by Kinzie and colleagues supports the individualised diagnosis and treatment approach because they found that
the war-traumatised refugee children showed a variety of diagnoses besides PTSD when compared to the domestic violence-traumatised group [62]. About 20% of war-related refugee children also met full criteria for a learning or cognitive disability. More importantly, the study found that the “one size fits all” model of using trauma-focused therapy was not appropriate for all refugee children [62].

Such caveats of implementing trauma-focused therapy for all populations have undermined refugees’ experiences of complex trauma and their heterogeneous symptom profiles [60]. In fact, recent research suggests that trauma-focused approaches may neither be necessary for effective treatment nor are they the first-line treatment needed for recovery. Advances in the treatment of PTSD for refugees have taken into account significant factors that promote tailoring of interventions according to the individual’s optimal needs. These factors include the different types of patient populations, differential responses based on patient characteristics, different responses based on different therapies, and patient preferences. The focus has now shifted to the use of traditional trauma-focused therapies and sequenced multi-component contextual, cultural, and developmental approaches [48, 63]. Moreover, the intergenerational traumatisation factor should be further explored as a recent study has found mothers’ posttraumatic stress symptoms can mediate the effects of mother’s past torture on their children’s adjustment [64]. Since it appears that children may be more susceptible to PTSD compared to other populations [4], there is more reasons for the need to explore an individualised approach, especially for the treatment of PTSD in war-related refugee minors.

Exploring the neurophysiology of trauma and PTSD in this population may be difficult because of ethical concerns. However, research that highlights the relationship of trauma to neurodevelopmental changes and neurobiological differences can enrich knowledge on the effects of trauma, symptom profiles, and possibly biopharmacological interventions [60].

Finally, the use of mobile connections and online counselling such as e-health/ e-counselling, as part of bridging mental health services to inaccessible areas due to increasing safety concerns, have been explored recently [4, 21]. However, the applications of this technology for war-related refugee clients (both adult and minors) are still limited and have yet to be explored.

Compliance with Ethical Standards

Conflict of Interest

We declare that we have no conflict of interest.

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Ethical Approval

This article does not contain any studies with human participants performed by any of the authors.

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**Corresponding Author**

Izaida Ibrahim
25 Sandbrook, Sarsfield Road,
Wilton, Cork, Ireland
**Tel:** +353 85 196 34 32

**Email:** izaidaibrahim@gmail.com