

Psychological Distress in Refugee Children: A Systematic Review

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Abstract Nearly one-quarter of the refugees worldwide are children. There have been numerous studies reporting their levels of psychological distress. The aim of this paper is to review systematically and synthesize the epidemiological research concerning the mental health of refugee children residing in Western countries. A Cochrane Collaboration style review was conducted searching nine major databases, bibliographies, and grey literature from 2003 to 2008. Included studies had to meet the reporting standards of STROBE and investigate mental health in non-clinical samples of asylum seeking and refugee children residing in OECD countries. A total of twenty-two studies were identified of 4,807 retrieved citations, covering 3,003 children from over 40 countries. Studies varied in definition and measurement of problems, which included levels of post-traumatic stress disorder from 19 to 54%, depression from 3 to 30%, and varying degrees of emotional and behavioral problems. Significant factors influencing levels of distress appear to include demographic variables, cumulative traumatic pre-migration experiences, and post-migration stressors. Importantly, the research base demands greater contextual and methodological refining such that future research would have greater generalizability and clinical implications.

Keywords Refugee · Asylum-seekers · Mental health · Children · Systematic review

Introduction

The 1951 *United Nations Convention Relating to the Status of Refugees* (Geneva Convention) defines a *refugee* as someone who has a “well-founded fear of persecution for reasons of race, religion, nationality, membership of a particular social group or political opinion” (UNHCR 1951). Common experiences for refugees may include the multiple losses of family and culture, war, persecution, torture, rape, violence, and upheaval (Eisenbruch 1991; Castles et al. 2004). Only a small fraction of refugees arrive in Western countries and claim asylum; petitioning the right to be recognized as refugees under the Geneva Convention. Most refugees, however, remain internally displaced (IDP) or just across the border in neighboring states (Crisp 2003; UNHCR 2008). Rough estimates by the United Nations High Commissioner for Refugees (UNHCR) suggest that by the end of 2006, there were approximately 9.9 million refugees and 744,000 asylum-seekers in the world of which children, young people, and adolescents constituted nearly one-quarter (UNHCR 2007).

As part of their development, children are subjected to various risks or stressors; however, refugee children have the added traumatic stressors inherent in the forced migration process (Garmezy 1988). Miller and Rasco’s (2004) model of assessment for refugee children aptly reflects this by using an ecological and chronological approach that highlights displacement-related events during the *pre-migration (pre-flight)*, *migration (flight)*, and *post-migration (post-flight)* phases of forced migration alongside non-displacement factors (for different models of assessment see: Ahearn 2000; Hodes 2000; Derluyn and Broekaert 2005). Refugee children may experience what is termed the *cumulative stress* of forced migration or the compounding stressors of childhood with the extraordinary and traumatic

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experiences of displacement. Consequently, these children are at greater risk for psychological distress than non-refugee children (Rutter 1985, 1988).

Two high-quality meta-analyses examine the prevalence of psychological distress in refugee populations (Porter and Haslam 2005; Fazel et al. 2005). Fazel et al. (2005) performed a meta-analysis of the results from 20 primary studies using psychiatric interviews to diagnose mental health problems of refugees in Western countries. Results showed that 9% of all the refugees examined were diagnosed with post-traumatic stress disorder (PTSD) and another 5% with major depressive disorder (MDD). Porter and Haslam (2005) examined 56 studies that compared levels of psychological distress of all UNHCR populations of concern with those of non-refugee groups; populations of concern scored 0.41 SD worse on mental health outcomes compared to the other groups. Concerning children, Fazel et al. (2005) identified five studies showing PTSD levels at 11%. Porter and Haslam (2005) identified 16 studies; however, these were not synthesized separately and were only reported as part of the whole meta-analysis.

There are three general literature reviews concerning refugee children's mental health (Rousseau 1995; Berman 2001; Lustig et al. 2004) and one integrative review (Fox et al. 1994). These reviews describe psychological distress in refugee children predominantly as post-traumatic stress disorder, depression, and other symptoms such as irritability, restlessness, sleep problems, somatic symptoms, and conduct disorders; they do not provide an indication of prevalence. Additionally, these reviews describe a variety of potential risk and protective factors—variables showing significant changes in levels of distress. The reviews provide important background information on refugee children; however, they do not provide a systematic approach to selection of studies or any methodological appraisal of studies.

The aim of this paper is to systematically review the evidence concerning the mental health epidemiology of refugee children in Western countries in order to better understand the evidence base concerning their psychiatric morbidity. The objectives are to identify the type and prevalence of psychological distress, clarify what the significantly influencing variables may be, and discuss the methodological difficulties associated with measurement in this field.

Method

The authors devised a protocol aimed at ensuring that this review was conducted in a transparent and unbiased way before independently inspecting searches. A data collection form was constructed to reflect the different inclusion and

exclusion criteria, incorporating the *Strengthening the Reporting of Observational Studies in Epidemiology* (STROBE) statement on reporting quality (von Elm et al. 2007).

Search Strategy

The following electronic databases were searched ending February 20, 2008: Applied Social Science Abstracts (1987–2008), CINAHL (1982–2008), EMBASE (1974–2008), ERIC (1991–2008), Ovid Medline (1980–2008), PAIS international (2003–2008), PsycINFO (1987–2008), Social Services Abstracts (1979–2008), and Sociological Abstracts (1963–2008). These databases cover a broad spectrum of psychological, medical, nursing, applied social studies, and sociological research. Additional gathering of materials included searching reference lists from included articles, identifying potentially relevant grey literature such as unpublished reports, conferences, and dissertations as well as contacting experts in the field.

The following search terms were used:

Child (infant OR infants OR children OR childhood OR kids OR kid OR childhoods OR childhood child OR youth OR adolescent OR adolescents OR adolescent youth OR minor OR minors) AND

Refugee (refugees OR refugee OR refugee camps OR camp OR refugee OR camps) AND

Immigrant (aliens OR alien OR emigrants OR emigrant OR foreigners OR foreigner OR immigrants OR immigrant) AND

Asylum-seekers asylum-seekers.mp search as keyword.

Inclusion and Exclusion Criteria

Inclusion criteria stipulated that studies had to concern refugee children specifically, be conducted in Western countries and be of a non-clinical nature. Limitations were set for a 5-year period and a high level of reporting quality.

The term refugee is operationalized here as being any person who has made a claim for asylum under the Geneva Convention. The claim for asylum may be considered a process of self-referral; the children posit their own experience of some form of traumatic event and fall within our theoretical framework concerning the cumulative stress of forced migration. The requirement that the claim for asylum is made is to provide a clarification concerning the term refugee, which is a bureaucratic marker for managing migration (Zetter 2007). For the purposes of this review, it helps in disaggregating one of several populations that may be considered child forced migrants.

Western countries are defined as members of the Organization for Economic Cooperation and Development

(OECD)—Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Hungary, Republic of Ireland, Italy, Japan, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, South Korea, Spain, Sweden, Switzerland, Turkey, United Kingdom, and the United States. These countries are signatories of both the Geneva Convention and the *UN Convention for the Rights of the Child* (UNCRC).

Children are defined as young people under the age of 25. While the UNCRC stipulates a cutoff of 18 years of age to differentiate childhood from adulthood, this may not practically be the case (Hart 2008). For the purposes of this review, therefore, the definition used for child is set to include all young people aged under 25, reflecting the age limit for state support of young people in the UK Care System (Great Britain 2008). This age limit also provides greater sensitivity to the search.

Study limits were placed on a 5-year period from 2003 to 2008 in order to reflect contemporaneous contextual situations for asylum-seekers and refugees in receiving countries and countries of origin. Arguably, this is important for several key reasons. Chiefly, the two meta-analyses described above ceased their searches at the end of 2002 (Porter and Haslam 2005; Fazel et al. 2005). In another paper (Lustig et al. 2004) also provide a comprehensive review up to 2002. As such, the reviewers wished to avoid duplication of work. Arguably, the populations found in more recent studies will reflect current conflict situations and perhaps be more directly applicable (e.g., Afghanistan, Iraq, Somalia). Also, Western laws concerning asylum and immigration undergo frequent changes; for example, in the United Kingdom, there have been four major pieces of legislation relating to asylum-seekers between 2003 and 2008. Similar examples of changes in other countries may be found on the European Web site on Integration (European Commission 2010).

Only non-clinical samples were included in order to identify prevalence rates. Clinical samples could potentially bias results and lead to an overestimation of mental health problems.

Reporting quality was judged by applying the guidelines set by the STROBE initiative (von Elm et al. 2007). STROBE aims to increase the reporting of complete methods and results in observational studies; it aims to improve the quality of research. For a detailed description, see <http://www.strobe-statement.org/> (STROBE Statement 2008). The Strobe Statement Web site provides a detailed checklist, which was used for the assessment of research in this review. Only studies meeting these criteria were included, meaning that sufficient information concerning the headline items on the *STROBE Checklist of items that should be included in reports of cross-sectional studies*

were considered. Applying STROBE criteria was a mechanism for ensuring a high quality of research in this review.

Results

This highly sensitive search yielded 4,807 citations from which 247 full texts were retrieved. The key reason for exclusion at this point was due to citations or abstracts being unrelated to the aforementioned criteria. After more in-depth analysis, twenty-two studies were accepted providing epidemiological data on fourteen separate samples (Fig. 1). Table 1 provides a list of all the included studies pertaining to population types, outcomes, and data collection methods. Table 4 presents a list of studies that reported on the same study population.

Demographics

A total of 3,003 children were examined in six countries of asylum (Canada, Denmark, Netherlands, Sweden, United Kingdom, and the United States). Males constituted 65% of all young people. Six studies concerned children from one particular country or region of origin: Somalia (Ellis et al. 2008), Sudan (Geltman et al. 2005), Ethiopia (of Oromo Ethnicity; Halcón et al. 2004), Kosovo and Albania (Hollins et al. 2007), and Bosnia (Goldin et al. 2008). The larger proportion of children came from Somalia (14.2%), Sudan (13.3%), Angola (11.3%), Iraq (10.6%), and Ethiopia (9.5%). Other countries made up no more than 5%, leaving the last 41.1% composed of small numbers. Sub-Saharan and Eastern Africans represented 58.4% of the total sample, followed by the Middle Easterners (including Asia Minor, The Persian Gulf, and North Africa) with 20.7%, Europe (predominantly from the Balkan region) with 11.4%, and Asia with 6.6%. South Americans comprised

4807 Total Citations Retrieved	
4560 excluded	editorials, newspaper articles, abstract clearly unrelated to criteria.
247 Full Texts Reviewed	
225 Excluded	
3	Clinical sample
1	Children born in country of asylum
1	Did not meet STROBE criteria
27	No epidemiological data available
64	Mixed child and adult population
23	Not in OECD country
106	Unclear immigration status
22 Studies included	
8	studies reporting on the same sample (see Table 4)

Fig. 1 Inclusion and exclusion of studies

Table 1 Included studies

Citation	Year	Country of study	Population type	Sampling	Country of origin	Accompanied/ Unaccompanied	Sample size	Age range	Outcome	Comparison group
Bean et al.	2007a	Netherlands/ Belgium	Asylum-seekers/ refugees	Random	Range	Unaccompanied	1,078	12–18	Psychological distress, PTSD	Yes—normative local population, non-asylum immigrant population
Ellis et al.	2008	United States	Refugees	Convenience	Somali	Unaccompanied/ Accompanied	135	11–20	PTSD, Depression	No
Fazel and Stein	2003	United Kingdom	Asylum-seekers/ refugees	Convenience	Range	Unaccompanied/ Accompanied	101	5–18	Psychological distress	Yes—normative local population, ethnic minority population
Feder	2005	United States	Refugees	Convenience	Sierra Leone	Accompanied	74	7–16	Psychological distress	Yes—Sierra Leonean Children born in United States
Geltman et al.	2005	United States	Refugees	Convenience	Sudan	Unaccompanied	241	17–19	PTSD	No
Goldin et al.	2008	Sweden	Refugees	Convenience	Bosnia	Accompanied	48	7–20	Psychological distress, PTSD	No
Halcón et al.	2004	United States	Refugees	Convenience	Somalia/ Ethiopia (Oromo)	Unaccompanied/ Accompanied	338	18–25	PTSD	No
Heptinstall et al.	2003	United Kingdom	Asylum-seekers/ refugees	Convenience	Range	Unaccompanied/ Accompanied	40	8–16	PTSD, Depression	Yes—children referred to a mental health service
Hodes et al.	2008	United Kingdom	Asylum-seekers/ refugees	Convenience	Range	Unaccompanied/ Accompanied	113	13–19	PTSD, Depression	Yes—Unaccompanied, accompanied adolescents
Hollins et al.	2007	United Kingdom	Asylum-seekers/ refugees	Convenience	Kosovo/ Albania	Unaccompanied	99	13–18	Psychological Distress	No
Montgomery and Foldspsang	2005	Denmark	Asylum-seekers	Convenience	Range	Accompanied	311	3–15	Anxiety, sleep disturbance, depression	No
Nielsen et al.	2008	Denmark	Asylum-seekers	Convenience	Range	Accompanied	246	4–16	Psychological distress	No
Reijneveld et al.	2005	Netherlands	Asylum-seekers	Convenience	Range	Unaccompanied	122	14–18	Psychological distress, PTSD	No
Rousseau et al.	2004	Canada	Refugees	Convenience	Cambodia	Accompanied	57	17	Psychological Distress	Yes—Normative local population

Any non-randomized sampling techniques were classified as ‘convenience sampling’

0.5%, while ‘stateless’ or unidentified individuals made up another 2.4%.

Psychological Distress

Psychological distress is chiefly described as PTSD (seven studies; $N = 2,124$), depression (three studies; $N = 599$), and general internalizing and externalizing behaviors (seven studies; $N = 1,825$). A full list of the standardized measuring instruments that were used is provided in Table 5. All studies used multi-source methods, which are recognized as the best strategy for understanding and screening of psychological distress (Bowling 2002; Fischer and Corcoran 2007).

The large heterogeneity between populations and methods does not allow for a meaningful meta-analysis of results; therefore, what is presented below is a synthesis of the data following a pre-specified protocol constructed a priori by the authors. This ensured that results were transparent and unbiased. Disagreements were resolved by discussion.

Additionally, to control for any potential cultural bias in the results, the authors chose to focus on self-report measures as they may arguably provide a more accurate indication of distress. Refugee children are likely to exhibit distress that is unique to their country or situation of origin. Self-report measures might reduce the likelihood of misunderstanding that may occur by other sources in the receiving country, e.g., guardians, social workers, or clinicians (Summerfield 2000; Fernando and Campling 2002). As a result, the studies by Fazel and Stein (2003) and Montgomery and Foldspang (2005) are not included in the presentation of results.

Post-traumatic Stress Disorder

Prevalence rates of PTSD are indicated by young people scoring above the clinical cutoff levels on the respective measures (seven studies; $N = 2,124$). These ranged from 19 to 54% in studies that reported findings in terms of percentages, see Fig. 2 (Heptinstall et al. 2003; Geltman et al. 2005; Bean et al. 2007b; Ellis et al. 2008; Hodes et al. 2008).

Two studies did not present their data in the form of percentages, but solely as mean scores and standard deviations (Halcón et al. 2004; Reijneveld et al. 2005). Both studies were conducted in the Netherlands using the same standardized questionnaire—the Reactions of Adolescents to Traumatic Stress (RATS). In each case, it is noticeable that these studies report a mean score around the *high and very high* cutoffs (50.00 and 52.00), however, with wide standard deviations: Bean et al. (2007b) report a total score of 48.4 (SD 11.7) for males and 50.8 (SD 11.2) for females. Reijneveld et al. (2005) report on both male and females at

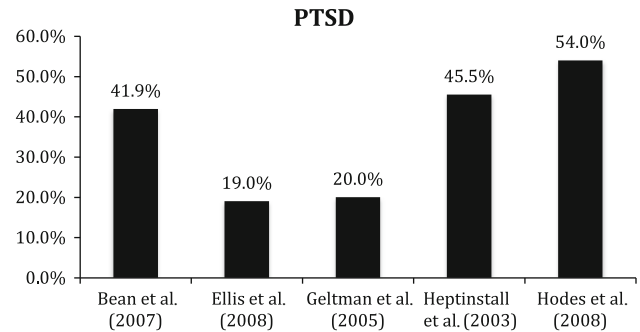


Fig. 2 Percentage of young people scoring above clinical cutoff for PTSD. The Bean study refers to a percentage reported in Bean et al. (2007b), describing a follow-up group of 582 young people from the first study which included 1,078 participants

56.1 (SD 10.4) for refugee children in a restrictive campus setting and 51.5 (SD 11.6) for refugee children in a more open campus setting. Halcón et al. (2004) reported a mean score of 31.8 (SD 13.0) on a measure with a clinical cutoff score at 44.

The findings for PTSD are considerably higher than rates recorded in studies concerning the general population of children, but consistent with the range recorded for populations which experience specific types of trauma. A review of the PTSD literature shows a range of 2–9% prevalence in the general population compared with 5–9% for those surveyed after a natural disaster; 4.5–14% for victims of terror; and 22.1–93.8% in war zones (Gabbay et al. 2004; Dyregrov and Yule 2006; Thienkrua et al. 2006).

Depression

The rate of depression ranged from 3 to 30% (three studies; $N = 599$). All three studies used the *Birleson Depression Self-Rating Scale* (DSRS) and are presented in Fig. 3 (Heptinstall et al. 2003; Ellis et al. 2008; Hodes et al. 2008). This wide range of percentages appears to be greatly different from findings of depressive symptoms in either normative or traumatized populations. One meta-analysis

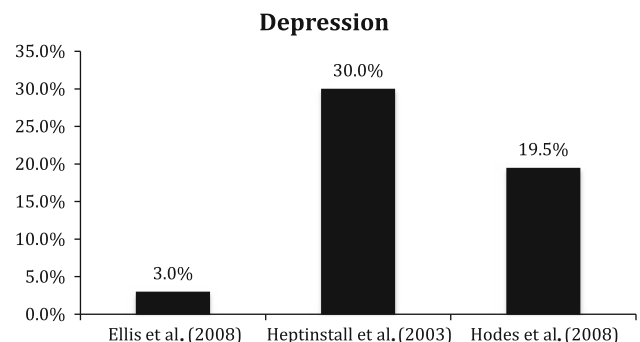


Fig. 3 Percentage of young people scoring above clinical cutoff for depression

of diagnostic interviews for depression in the USA and the United Kingdom reported a 5.7% prevalence rate among a representative sample of children aged up to 18 years (Costello et al. 2006). A national self-report survey of adolescent health in the United States using a randomized sample found rates as high as 9.2% (Rushton et al. 2002). Alternatively, in Thailand, Thienkruea et al. (2006) recorded an 11% prevalence rate using the DSRS with a group of Thai children and adolescents who were forcibly displaced by natural disaster.

General Measures of Psychological Distress

This heading includes studies that used general measures for measuring psychological distress, mainly divided into internalizing and externalizing problem areas—see Table 5 for details ($N = 1,825$ across seven studies). Four studies ($N = 1,545$) reported high internalizing and externalizing scores (Hollins et al. 2003; Reijneveld et al. 2005; Bean et al. 2007a; Nielsen et al. 2008). Two studies ($N = 105$) found similar scores regarding internalizing and externalizing problems (Rousseau and Drapeau 2003; Goldin et al. 2008), while one study ($N = 241$) found an overall good level of general health, but lower levels within young people who experienced high levels of trauma (Geltman et al. 2005). Another study ($N = 74$) found high percentages of young people scoring in the clinical range of subscales regarding PTSD, anxiety, depression, and dissociation (Feder 2005).

Bean et al. (2007b) and Reijneveld et al. (2005) used the *Hopkins Symptoms Check List 37A* (HSCL-37A) and found high levels of internalizing and externalizing problems either near or above clinical cutoffs. The HSCL-37A is a brief screening questionnaire for internalizing and externalizing problems (Bean et al. 2004a). Results are summarized in Table 2 below. Bean et al. (2007b) reported scores close to the established cutoff for total score and internalizing subscale and above the cutoff score for the externalizing subscale. Reijneveld et al. (2005) reported mean scores above established cutoffs in the case of all scores. Notable are the wide standard deviations, which were reported in both studies.

Nielsen et al. (2008) used the *Strengths and Difficulties Questionnaire Self-Report* (SDQ-S) on 70 of their sample

of young people in Denmark; they reported greater internalizing than externalizing problems. The SDQ-S is a self-report instrument for screening general emotional and behavioral well-being in children (Goodman 1994). The SDQ-S subscales include emotional problems, peer problems, hyperactivity problems, conduct problems, and individual pro-social levels. The SDQ-S also includes an impact supplement that asks about respondents' perception of problems with the purpose of estimating degree of problem severity. There are no established cutoff scores for the SDQ-S with refugee children. Nielsen et al. (2008) found that 26% of the young people scored above caseness on total scores; this included 50% for emotional problems, 18% for hyperactivity, 11% for conduct problems, and 19% for peer problems. Only 3% had pro-social behavior scores regarded as abnormal, while 50% recorded high levels for the impact score.

Goldin et al. (2008) and Rousseau and Drapeau (2003) used the *Youth Self-Report* (YSR) and reported mean scores below the established clinical cutoff scores for their respective populations. The YSR measures emotional and behavioral functioning in adolescents (Achenbach 1991); it includes open-ended responses to questions covering physical problems, concerns, and strengths. Goldin et al. (2008) studied a group of Bosnian children in Sweden, while Rousseau et al. (2003) examined Cambodian children in Canada. All mean scores reported were below the cutoff for caseness, with Goldin et al. (2008) reporting large standard deviations. Data are shown in Table 3 below.

Hollins et al. (2007) used the *General Health Questionnaire-28* (GHQ-28) with a group of 99 Albanian youths in the United Kingdom and showed that 23% scored above the clinical cutoff rate. The GHQ-28 measures psychiatric morbidity and was developed as a screening tool for detecting the risk of general anxiety and depression in adult general practice settings (Goldberg 1978; Goldberg and Williams 1988; Bowling 1995). Subscale scores found that 50% of the sample met the caseness for anxiety problems and 80% reported sleep difficulties.

Geltman et al. (2005) administered the *Child Health Questionnaire* (CHQ) to 241 Sudanese young people in the United States and found good levels of overall health. The CHQ is a quality of life instrument related to health (Landgraf et al. 1996) and measures the physical and psychosocial well-being of children through a variety of

Table 2 Hopkins symptoms checklist 37A scores

HSCL-37A	Total score mean (SD)	Externalizing mean (SD)	Internalizing mean (SD)
Clinical cutoff scores	69	15	54
Bean et al. (2007a, b) $N = 1,078$ Netherlands	65.7 (14.4)	15.5 (3.2)	50.2 (12.6)
Reijneveld et al. (2005) $N = 122$ Netherlands	73.7 (17.5)	15.7 (3.6)	58.0 (15.5)

Table 3 Youth self-report (YSR) scores

YSR	Externalizing mean (SD)	Internalizing mean (SD)
Clinical cutoff scores	23.0 Male 20.0 Female	21.0 Male 26.0 Female
(Goldin et al. 2008) ^a N = 18	9.56 (5.54)	13.72 (9.35)
Sweden (Rousseau and Drapeau 2003) ^b N = 76	15.7 Male 14.8 Female	17.0 Male 18.2 Female
Canada		

^a Did not break down into male and female

^b Did not report standard deviation

concepts including a mental health subscale. Results show that 24% of the young people reported their general health as excellent, 34% very good, 32% good, 8% fair, and 3% poor; however, it was noted that mean scores on the CHQ were significantly lower for those who had high numbers of traumatic events as measured by the *Harvard Trauma Questionnaire* (HTQ), a cross-cultural instrument designed for the assessment of trauma and torture (Mollica et al. 1992).

Feder (2005) employed the alternate version of the *Traumatic Symptoms Checklist for Children* (TSCC-A) on a subgroup of his sample consisting of 51 Sierra Leonean refugee young people residing in the United States. The study reported higher levels for internalizing compared to externalizing problems. The TSCC-A is a modification of the original Traumatic Symptoms Checklist for Children that excludes questions on sexual concerns (Briere 1996). It measures post-traumatic symptomatology and other symptom clusters in children aged 8–16. The clinical subscales used by the TSCC are anxiety, depression, post-traumatic stress, dissociation, and anger. Feder (2005) reported that 36% of the young people scored above the cutoff level for PTSD, with 26% for depression, 33% for anxiety, 7% for anger, and 27% for dissociation.

Significant Variables for Mental Health Outcomes

This review indicates a number of factors, which are presented as showing significant group differences (e.g., demographic variables or post-migration variables) or having a significant correlation with psychological distress (e.g., number of traumatic events). These items are presented below under the categorizations of demographic factors, pre-migration cumulative trauma, and post-migration experiences.

Demographic Factors (Age, Gender, Country of Origin)

Older age was significantly associated with higher levels of internalizing and externalizing problems (Bean et al. 2007b; Nielsen et al. 2008), in addition to greater PTSD levels (Halcón et al. 2004; Bean et al. 2007b; Hodes et al. 2008).

Females had significantly greater internalizing, emotional, depression, and PTSD scores (Reijneveld et al. 2005; Bean et al. 2007b; Hodes et al. 2008; Nielsen et al. 2008). Males were found to have higher scores for PTSD (Halcón et al. 2004), total difficulties, and conduct problems (Nielsen et al. 2008).

Of the studies that included children from several different countries, young people from Eritrea, Guinea, and Ethiopia were found to have higher internalizing and externalizing symptoms compared to other populations (Bean et al. 2007b). Oromo Ethiopians were also found to have high PTSD scores (Halcón et al. 2004). Chinese young people scored significantly lower on all mental health measures according to Reijneveld et al. (2005).

Pre-Migration Experiences

Cumulative adverse pre-migration experiences predicted increased internalizing, externalizing, and PTSD scores (Bean et al. 2007b). Other studies found similar effects on PTSD scores (Heptinstall et al. 2003; Halcón et al. 2004; Feder 2005) and depression (Heptinstall et al. 2003). When addressing more specific events, Geltman et al. (2005) reported that separation from parents and direct personal injury correlated with higher PTSD scores. Separation from parents was also considered in comparison studies between accompanied and unaccompanied refugee children, where unaccompanied children displayed greater levels of distress (Hollins et al. 2007; Bean et al. 2007b; Hodes et al. 2008). The violent death of a family member (Heptinstall et al. 2003) appears to be related to higher PTSD scores.

Post-Migration Experiences

Post-migration stresses were found to have a direct relationship to higher scores of PTSD (Heptinstall et al. 2003; Ellis et al. 2008) and depression (Heptinstall et al. 2003). Specific factors such as uncertainty regarding asylum status or failed claims were significantly related to internalizing scores and depression (Heptinstall et al. 2003). The process of immigration and discrimination were both found to result in greater PTSD scores (Ellis et al. 2008). A lack of personal and structural support along with greater restrictions in living arrangements was related to higher internalizing and depression scores (Geltman et al. 2005; Reijneveld et al. 2005; Hollins et al. 2007). A lower

language level was related to higher PTSD scores, while financial difficulties were related to greater levels of depression (Halcón et al. 2004).

Discussion

Chiefly, it appears that the accumulation of stresses does indeed have an adverse effect on the mental health of young refugees. The effects are evident in the forms of PTSD, depressive symptoms, and emotional and behavioral problems. This discussion focuses on methods, or a lack of clarity concerning definitions and contexts as the small number of studies and inconsistent methods do not allow for a deeper, more meaningful analysis of the prevalence rates. That uniform application of standardized measuring tools for psychological distress developed for refugee children needs to be instituted, and it is suggested that greater research into resilience and coping mechanisms is warranted. Such clarity may, in future research, provide a greater ability to statistically synthesize global findings and ultimately lead to greater clinical applications.

Clearer Definitions and Concepts

Greater clarification is required regarding the uniqueness of contexts within this study population. Previous literature has discussed the effects of pre-migration and post-migration factors, and it is clear that there is a wide array of variables that may influence mental health (Silove et al. 1997; Porter and Haslam 2005; Porter 2007). Concise, distinct, and contextual groupings are perhaps a promising way of isolating many important confounds. The authors suggest the groupings described below as a way forward.

Country of Asylum and Status Entitlements

The first contextual area could be in defining the asylum status/immigration label. Labels are described as a bureaucratic tool to facilitate the management of asylum and immigration in receiving countries and directly impact the rights and entitlements of individuals (Zetter 2007). The designation of refugee status can influence support and social variables in the post-displacement context; a person recognized as a *refugee* is likely to have a different set of rights and entitlements in areas such as economic opportunity, living arrangements, or education compared to someone whose asylum claim is still pending or someone whose claim has been refused (Silove et al. 1997; Fell and Hayes 2007; Porter 2007; Hathaway 2007; Waters 2008).

There is no standard/singular policy regarding the granting of asylum or rights and entitlements across the

OECD countries (European Commission 2008; Waters 2008). For example, refugee status granted to unaccompanied asylum-seeking children in the United Kingdom permits only a stay of 5 years in the country (Fell and Hayes 2007), while in Denmark 7 years are permitted (Danish Immigration Service 2008). Similarly, unaccompanied young people applying for asylum in the United Kingdom are placed within the care of the local authority and provided with either foster care, semi-independent, or independent accommodation (Department of Health 1995, 2003). In Denmark, these children are generally placed within accommodation (reception) centers, while their application for asylum is being processed (Signe Smith Nielsen, personal communication).

Country of Origin and Push Factors

A second contextual area may either be the country of origin or the unique push factors, which may have led to the young person's claim for asylum; this allows for a comparison of groups, which may have substantially different experiences. One example that illustrates briefly these differences concerns young people from Somalia and young people from the People's Republic of China (PRC). Since 1991, Somalia has been in a constant state of violence and anarchy due to civil war. The PRC, on the other hand, is a functioning state with a growing economy. The Somali young person may have fled due to fighting and chaos of the situation, while a PRC young person may belong to a group, which is persecuted for national or religious beliefs.

There have been a number of studies concerning refugees and refugee children according to country of origin e.g., (Montgomery 1998; Rousseau and Drapeau 2003; McCrone et al. 2005; Geltman et al. 2005; Momartin et al. 2006). However, as can be seen from the studies in this review, there also needs to be standardization of measuring tools so that results can be compared across contexts.

Standardized Measures

Agreed definitions of psychological distress and culturally validated measuring tools are vital if we are to compare contexts and identify risk and protective factors for psychosocial problems (Hollifield et al. 2002; Porter 2007). Appropriate validated measures will provide a more accurate definition and identification of problems, while standardization of methods across the OECD will facilitate the sharing and comparison of data, ultimately enabling greater exploration of contextual variables and clinical interpretations. As yet, only two instruments identified in this review were developed specifically and validated to measure psychological distress in refugee children: the

Hopkins Symptoms Checklist 37A and the Reactions of Adolescents to Traumatic Stress (Bean et al. 2004a,b). It is important, however, to remember that these measures do not provide a diagnosis but rather give an indication of potential problems, which require further exploration and, in some cases, intervention.

Separation

Unaccompanied or separated young people are a significant subgroup of refugee children. The *Separated Children in Europe Programme* (SCEP) estimated that nearly 12,800 unaccompanied children claimed asylum (UASC) in Europe during 2006, while in the United States there were between 7,000 and 9,000 young people referred to the *Office of Refugee Resettlement* (ORR; Bryne 2008; Separated Children in Europe Programme 2008). In the past 10 years, the United Kingdom has received asylum claims from over 30,000 such children (Home Office 2007). Two of the included studies report significant differences between accompanied and unaccompanied children (Bean et al. 2007b; Hodes et al. 2008). The separation of the young person from their primary caregiver may occur in the pre-migration phase; however, the impact may be felt well into the post-migration phase. Young people could very well view the separation from their parents or primary caregiver as a traumatic event (Bean et al. 2007b; Chase et al. 2008). In the post-migration period, the unavailability of the primary caregiver may be a missing protective factor (Garmezy 1988).

Resilience

Resilience is one of the more widely discussed topics, yet strangely elusive in primary research with refugee children. The studies in this review discuss resilience, and their common message is that despite their experiences, a large number of refugee children appear to be resilient to adversity. Epidemiological studies assess the extent of morbidity within a population. Such studies also highlight non-cases; they show levels or extent of non-problem cases in an exposed population. Perhaps by comparison of non-case groups, examining their coping and problem solving mechanisms, we may possibly identify resilience factors, which could then be incorporated and evaluated in interventions. The contextual groupings suggested above may be bolstered by the inclusion of qualitative methods alongside the quantitative analyses in order to explore the mental state of these children in a more holistic manner (Ahearn 2000; Heptinstall et al. 2003; Miller and Rasco 2004; Lustig et al. 2004; Derluyn and Broekaert 2005; Geltman et al. 2005; Bean et al. 2007a; Chase et al. 2008; Goldin et al. 2008; Hodes et al. 2008; Nielsen et al. 2008).

Limitations

In order to have a clear, operational, definition of asylum-seekers and refugees participants were required to have made a claim for asylum under the Geneva Convention. This operational definition improves the overall evaluation and clarity of this review; however, as a result, a large number of studies had to be excluded. It is possible as well that much data may be found in studies with mixed populations of adults and children, but the process of disaggregation in regard to these data was not always possible. Authors were contacted concerning child-specific data; however, for a number studies, these were not available. All studies reviewed here are cross-sectional apart from one (Bean et al. 2007b). It is important not to draw causal inferences from cross-sectional data, and there is a greater need for more cohort, longitudinal work in the field before these inferences can be made and, perhaps, mediation analyses can be undertaken (Grimes and Schulz 2002).

It is important to remain cautious when applying Western models of mental health upon non-Western societies and cultures, particularly with the use of screening measures (Fernando and Campling 2002). Examination of self-report data provides information directly from the young person, but certain biases may still occur concerning cross-cultural understanding, interpretation, and translation (cultural mediation).

Finally, the standardized screening tools discussed above provide an indication of possible symptoms and problems, but further investigation is required as there may not be much outwardly detectable difference between a young person who scores one point below caseness and a young person who scores one point above. These measures simply provide an indication of symptomatology at a group level, and the ecological fallacy must be remembered.

Conclusion

This STROBE compliant review contained fourteen samples that included 3,003 refugee children claiming asylum in Western countries. It lays out the importance of addressing the issue of mental health problems in this population while highlighting important research directions.

Our results demonstrate that refugee children appear to experience high levels of psychological distress in a number of high-quality studies which employ various methods to primarily identify potential diagnoses of PTSD, depression, and high levels of emotional and behavioral problems. Significant variables found to influence distress appear to include demographic factors such as age, gender, and country of origin of the young person; pre-migration traumatic experiences such as separation from parents,

personal injury, living in a refugee camp, and torture or murder of family members; and post-migration stressors like asylum status and levels of support.

It is clear that future research should pay greater attention to contextual factors and that standardized outcome measures should be used. This would increase the currently limited clinical relevance of existing research and enable comparison of children by immigration status, country of origin, country of asylum, and accompanied status and allow for greater generalizability of results to populations.

In turn, greater precision at this level may lead to higher quality intervention studies. Similarly, there is a need for more longitudinal analyses that may permit greater exploration of potentially mediating factors.

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Table 4 Samples within other studies

Sample	Included in
Bean et al. (2007a)	Bean et al. (2007b)
Kia-Keating and Ellis (2007)	Ellis et al. (2008)
Heptinstall et al. (2004)	Heptinstall et al. (2003)
Hollins et al. (2007)	Hollins et al. (2003)
Nielsen et al. (2007)	Nielsen et al. (2008)
de Boer et al. (2004)	Reijneveld et al. (2005)
Rousseau et al. (2003, 2004)	Rousseau and Drapeau (2003)

Table 5 PTSD and general measures used within the included studies of this review

PTSD	General measures of psychological distress		
	Name	Main outcome	Subscales
Harvard Trauma Questionnaire (HTQ) Mollica et al. (1992)	Hopkins Symptoms Check List 37A (HSCL 37A) Bean et al. (2004a)	Emotional and behavioral problems	Internalizing Anxiety Depression; externalizing
Impact of Events Scale (IES) Horowitz et al. (1979)	Strengths and Difficulties Questionnaire—Self-report (SDQ-S) Goodman (1994)	Emotional and behavioral problems	Emotional problems Conduct problems Hyperactivity Peer problems Pro-social
PTSD Checklist—Civilian Version (PCL-C) Weathers et al. (1993)	Youth Self-Report (YSR) Achenbach (1991)	Emotional and behavioral problems	Internalizing Externalizing Total problems scales
Reactions of Adolescents to Traumatic Stress (RATS) Bean et al. (2004b)	General Health Questionnaire—28 (GHQ-28) Goldberg (1978); Goldberg and Williams (1988)	General psychiatric morbidity	Anxiety and insomnia Somatic symptoms Social dysfunction Severe depression
UCLA PTSD-Index (PSTD-I; Rodriguez et al. 1999)	Child Health Questionnaire (CHQ) Landgraf et al. (1996)	Physical and psychological functioning	Physical functioning Roles: social/emotional, social behavioral, social/physical Bodily pain Behavior

Table 5 continued

PTSD	General measures of psychological distress		
Name	Name	Main outcome	Subscales
	Traumatic Symptoms Checklist for Children (TSCC) Briere (1996)	Psychological functioning	Mental health Self-esteem General health Family activities Family cohesion Aggression Anger Anxiety PTS Dissociation Depression

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