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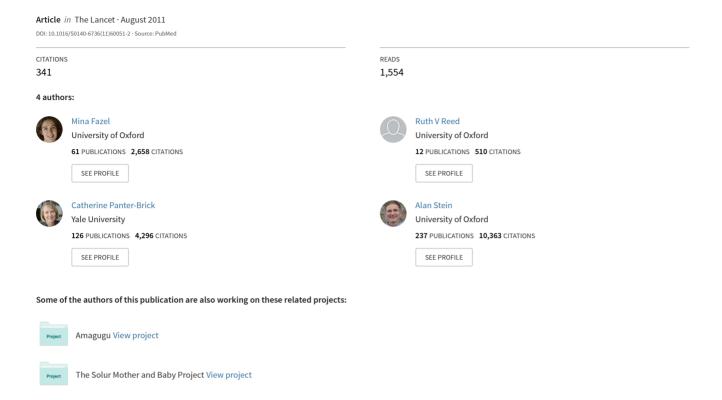
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Review

Mental health of displaced and refugee children resettled in high-income countries: risk and protective factors

Mina Fazel, Ruth V Reed, Catherine Panter-Brick, Alan Stein

We undertook a systematic search and review of individual, family, community, and societal risk and protective factors for mental health in children and adolescents who are forcibly displaced to high-income countries. Exposure to violence has been shown to be a key risk factor, whereas stable settlement and social support in the host country have a positive effect on the child's psychological functioning. Further research is needed to identify the relevant processes, contexts, and interplay between the many predictor variables hitherto identified as affecting mental health vulnerability and resilience. Research designs are needed that enable longitudinal investigation of individual, community, and societal contexts, rather than designs restricted to investigation of the associations between adverse exposures and psychological symptoms. We emphasise the need to develop comprehensive policies to ensure a rapid resolution of asylum claims and the effective integration of internally displaced and refugee children.

Search strategy and selection criteria

The Medline, Scopus, PsycINFO, Embase, Web of Science citation, and Cochrane databases were systematically searched for studies about risk and protective factors that were reported from January, 1980, to July, 2010. Searches of similar terms were combined such as "asylum seeker", "refugee", "displaced person", "migrant" with "child", "adolescent", "young", "minor", "youth" or "teenage", and terms including "psychiatr*", "psycholog*", "psychosocial", "mental", "resilience", "outcome", "development", "protective factor", "adaptation", "modifying factor", "vulnerability factor", "risk factor", "recovery", "wellbeing", "emotion", "behaviour", "behavior", "trauma", "traumatic", and "adjustment". We also searched for specific countries of origin. Adaptations to the terms and MeSH searching were implemented, depending on the search style of each database. Additionally, reference and citation lists in published works, grey literature, and the authors' databases were reviewed. Inclusion criteria included study population, publication date, data about risk or protective factors, and sample size. There were no language restrictions.

We included studies of risk and protective factors for psychological, emotional, or behavioural disorders with a minimum sample size of 50 participants, and studies with 25 participants or more if a predictor variable was assessed for which there was minimal evidence from larger studies. Studies with participants aged up to and including the age of 18 years were eligible for inclusion; those with wider age categories were only included if all participants were younger than 25 years and mean age was 18 years or younger. We contacted investigators who had undertaken more than one study to clarify whether samples overlapped. Countries were defined by income in accordance with the World Bank classification.

5296 potentially relevant reports were identified through database searches, of which 1581 were duplicates. 737 summaries were reviewed and 257 full-text papers were obtained. Our final sample consisted of 44 studies from high-income countries, with 5776 displaced children and adolescents (nine studies had overlapping samples). They included forcibly displaced children from Bosnia, Cambodia, Central America, Chile, Croatia, Cuba, Iraq, Middle East, Somalia, Sudan, Vietnam, and the former Yugoslavia, who were either internally displaced or resettled in Australia, Belgium, Canada, Croatia, Denmark, Finland, the Netherlands, Sweden, the UK, and the USA. Mental health outcomes measured in these studies were generally grouped as internalising or emotional problems, including depression, anxiety, and post-traumatic stress disorder; and externalising or behavioural problems. We adhered to the terms used in each study describing the mental health outcomes and groups of displaced or refugee children. A meta-analysis was not done because of clinical and methodological heterogeneity.

Introduction

Children and adolescents who flee persecution and resettle in high-income countries often endure great physical and mental challenges during displacement, and suffer continuing hardships after arrival. Most of these refugees come from geographically distant, low-income settings.[1] The adverse events that necessitated their flight are often only the beginning of a long period of turbulence and uncertainty. Young people might travel for weeks or months in dangerous circumstances to seek asylum in a high-income country, and are sometimes temporarily or permanently separated from family and need to use professional traffickers to reach their destination.[2] The challenges typically encountered after arrival include, first, the complex legal immigration processes that asylum seekers must negotiate to gain refugee status or be repatriated,[3] and second, the huge social, cultural, and linguistic differences between the place of origin and the new setting.

The process of sociocultural adaptation can be quite gradual, and refugees integrate to different extents with the host community.[4] Children with disrupted or minimal school education are suddenly immersed in a new education system. Racial discrimination and bullying, exacerbated by policies to accommodate asylum seekers in already impoverished and disadvantaged areas, are widespread.[5] Immigration policies for dispersal and detention can negatively affect refugees' attempts to settle in their host community.[6] However, rapid resolution of asylum decisions eases access to social, health, education, and employment opportunities and infrastructures. Refugee children in high-income countries do not usually lack basic material necessities, yet certain factors nonetheless place their healthy development at risk. In this Review, we draw attention to the specific risk and protective factors that affect the psychological wellbeing of refugee children. Table 1 summarises all the studies included in this Review. Table 2 summarises the main findings according to individual factors, and table 3 according to family, community, and societal factors.

Effects of displacement

Although there are a reasonable number of reports about children exposed to conflict,[51] the importance of displacement, as an additional variable to exposure to organised violence, has only been assessed in four Croatian studies.[23,29,31,50] In a study[31] with a 30-month follow-up, post-traumatic stress disorder, depression, and somatic complaints decreased with time in internally displaced and non-displaced children, but psychosocial adaptation remained worse in displaced children and did not improve with time. In another study,[29] comparison of Bosnian refugee children and displaced and non-displaced Croatian children showed that the refugee children had higher anxiety and had

(R V Reed MRCPsych); and Yale University, New Haven, CT, USA (Prof C Panter-Brick, DPhil)

Correspondence to:
Dr Mina Fazel, Department of Psychiatry, Oxford University, Oxford OX3 7JX, UK
mina.fazel@psych.ox.ac.uk

	Study site	Study population	Number	Age* (years)	Domain assessed	Measurements
Ajdukovic et al,[7] 1993	Croatia	Internally displaced children and their mothers	319	Up to 18	Family	Semistructured interviews, authors' own exposure and stress (checklist of emotional, behavioural, and psychosomatic symptoms) scales
Almqvist et al,[8] 1997	Sweden	Iranian refugee children	50	4–8	Individual and family	Semistructured interview and observation of child's play
Almqvist et al,[9] 1999	Sweden	Iranian refugee children	39	6–10 (at follow-up)	Individual, family, and community	Semistructured interview, Social Adjustment Index, Global Self-Worth
Angel et al,[10] 2001	Sweden	Bosnian refugee children	99	6–16	Individual and family	Clinical interviews, observation of child, short Cederblad questionnaire
Bean et al,[11] 2007	Netherlands and Belgium	Unaccompanied refugee children in the Netherlands; Dutch normative sample; immigrant and refugee group in Belgium	920 UASC (and 1059 Dutch children, and 1294 migrants and refugees in Belgium)	12–18	Individual and family	HSCL-37A, SLE, RATS
Bean et al,[12] 2007	Netherlands	Unaccompanied refugee children from 48 countries	582	12–18	Individual, family, community, and society	HSCL-37A, SLE, RATS, CBCL for age 4–18 years (guardian report), TRF for 4–18 years
Berthold et al,[13] 1999	USA	Khmer refugee adolescents (born in Cambodia or in refugee camps or in Vietnam)	76	11–19 (mean 16)	Individual	SCECV, LA PTSD Index, CIS
Berthold et al,[14] 2000	USA	Khmer refugee adolescents	144	14–20 (mean 16)	Individual, family, and community	HTQ part 1, modified SCECV, LA PTSD index, CES-DC, Personal Risk Behaviour scale, Perceived Social Support from Family and Friends, Orthogonal Cultural Identification Scale
Cohn et al,[15] 1985	Denmark	Chilean children whose parents had been tortured	85 (58 born in Chile)	Not stated	Family	Clinical interview
Daud et al,[16] 2008	Sweden	Second-generation Iraqi children whose parents had been tortured versus North African children whose parents had not been tortured	80	7–16	Family	WISC-III, DICA-R, PTSS, I Think I Am scale, SDQ
Derluyn et al,[17] 2007	Belgium	Unaccompanied refugee children	166	9–18	Individual	HSCL-37A, SDQ-self, RATS, SLE, social workers completed CBCL for age 6-18 years and SDQ-parent
Derluyn et al,[18] 2009	Belgium	Newly arrived adolescents; 10% were UASC	124 UASC	11–18	Family	HSCL-37A, SLE, RATS
Ekblad et al,[19] 1993	Sweden	Refugee children and their mothers from former Yugoslavia residing in a refugee camp	66	5–15	Individual, family, community, and society	Structured interview
Ellis et al,[20] 2008	USA	Somali adolescent refugees	135	11–20 (mean 15)	Individual, family, community, and society	UCLA-PTSD RI, WTSS, DSRS, Everyday Discrimination Scale, Adolescent Post War Adversities Scale, Acculturative Hassles Inventory
Fox et al,[21] 1999	USA	Vietnamese and Cambodian adolescents	47	9–15 (mean 11)	Individual and society	Structured interview, authors' own assessment of emotional effect of violence; CDI

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	Study site	Study population	Number	Age* (years)	Domain assessed	Measurements
(Continued from previous page)						
Geltman et al,[22] 2005	USA	Sudanese unaccompanied adolescents	304	Mean 18 (range not stated)	Individual, family, community, and society	HTQ-CHQ
Grgic et al,[23] 2005	Croatia	Croatian camps for internally displaced people	112	12–15 (mean 14)	Individual and family	CDI, WTQ, Index of Family Relations
Grgic et al,[24] 2005	Croatia	Returned previously displaced adolescents versus never displaced	57	16–18 (mean 17)	Displacement	CDI, HSC, C-PTSDI
Hjern et al,[25] 1991	Sweden	Chilean refugees	50	2–15 (mean 6)	Individual	Adapted Cederblad questionnaire
Hjern et al,[26] 1998	Sweden	Chilean and Middle Eastern refugee children 18 months after arrival	63	2–15 (mean 6)	Individual, family, community, and society	Authors' own questionnaires for organised violence, family stress, social situation in exile, school and nursery teacher questionnaire, and Cederblad questionnaire
Hodes et al,[27] 2008	UK	78 unaccompanied and 35 accompanied refugee adolescents from various countries	113	13–18	Individual, family, and society	HTQ, IES, BDSR
Kia-Keating et al,[28] 2007	USA	Somali adolescent refugees	76	12–19 (mean 16)	Individual and community	WTSS, PSSM, UCLA-PTSD RI, DSRS, Multidimensional Scales of Perceived Self-Efficacy
Kocijan-Hercigonja et al,[29] 1998	Croatia	Non-displaced and displaced Croatian children, and refugee children from Bosnia	35 displaced and 35 refugees (and 35 non-displaced)	6–14	Displacement	SCSI, questionnaires on psychosomatic symptoms, psychosocial adjustment, anxiety and depression
Kovacev et al,[30] 2004	Australia	Adolescents from former Yugoslavia	83	12–19 (mean 15)	Family and community	Social Support Scale for Children, Global Self Worth and Peer Social Acceptance scales, Acculturation Attitudes Scale
Kuterovac Jagodić et al,[31] 2000	Croatia	Displaced and non-displaced children resident in the same area	93 displaced (and 161 non-displaced)	Mean 13 at follow-up	Displacement	Locally developed questionnaires for war experiences, psychosocial adaptation, PTSD, depression and somatic symptoms
Liebkind et al,[32] 1993	Finland	Vietnamese refugee adolescents and their parents or carers	159	14–24 (mean 18)	Individual, community, and society	HSCL-25, Vietnamese Depression Scale
Liebkind et al,[33] 1996	Finland	Vietnamese refugee adolescents	159	14–24 (mean 18)	Individual and community	Vietnamese Depression Scale, HSCL-25, RCRG
Montgomery et al,[34] 2006	Denmark	Middle Eastern refugee children	311	3–15 (mean 8)	Individual and family	Structured parental interview for exposures to violence and current mental state
Montgomery et al,[35] 2008	Denmark	Middle Eastern refugee adolescents	131	11–23 (mean 15 at follow-up)	Individual, family, community, and society	Structured parental interview, semistructured interview, YSR, YASR
Montgomery et al,[36] 2010	Denmark	Middle Eastern refugee adolescents	131	11–23	Individual and family	Structured interviews with young person and parents: YSR or YASR depending on age at follow-up
Nielsen et al,[37] 2008	Denmark	Accompanied refugee children in Danish Red Cross asylum centres—mixed country of origin	246	4–16	Community and society	Teacher SDQ, and self-report SDQ for children aged 11–16 years
Porte et al,[38] 1987	USA	Indochinese refugee adolescents; 58 unaccompanied, in various types of alternative care; 24 accompanied	82	12–19 (mean 16)	Family	CES-DC, authors' own method of assessment of acculturation and support systems
Reijneveld et al,[39] 2005	Netherlands	69 UASC in a restrictive reception centre; 53 UASC in a routine reception centre	122	14–18	Individual and society	HSCL-25, RATS
Rothe et al,[40] 2002	USA	Cuban refugee children in a refugee camp	87	6–17 (mean 15)	Individual	PTSD RI, TRF

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	Study site	Study population	Number	Age* (years)	Domain assessed	Measurements
(Continued from previous page)						
Rousseau et al,[41] 1998	Canada	100 southeast Asian, and 56 Central American refugee children	156	Mean 10 (range not stated)	Family, community, and society	CBCL, a trauma scale, a separation index, FES, SRDS for parental depression, a social network score
Rousseau et al,[42] 1999	Canada	Cambodian adolescent refugees	67	Mean 14 (range not stated)	Family	YSR, AFI, measurements of school performance, authors' index of trauma exposure
Rousseau et al,[43] 2000	Canada	76 Cambodian and 82 Central American refugee adolescents	158	14–15	Individual and family	CBCL, YSR
Rousseau et al,[44] 2003	Canada	Cambodian refugee adolescents	57	Mean 14 (range not stated)	Family	YSR, a measurement of risk behaviour, AFI, SES, CSES, Racism Experience Scale
Rousseau et al,[45] 2004	Canada	Cambodian refugee adolescents	67	Mean 14, 16 at follow-up	Individual, family, and community	YSR, CBCL, FES, BAS
Slodnjak et al,[46] 2002	Slovenia	Bosnian refugee adolescents and local Slovenian adolescents	265 refugees (and 195 local adolescents)	14–15	Individual	CDI, IES, adapted WTQ, local Teacher's Report
Sourander et al,[47] 1998	Finland	UASC in an asylum reception centre awaiting placement	46	6–17	Individual	CBCL
Sujoldzic et al,[48] 2006	Bosnia, Croatia, and Austria	Adolescents from Bosnia resettled in three contexts: internally displaced in Bosnia or living as refugees in Austria or Croatia	499 refugee Bosnians (and comparator groups of 359 internally displaced and 424 non-displaced Bosnians)	15–18 (mean 17)	Individual, family, community, and society	Perceived health problems, objective health problems, index of psychological distress, SES, FAS, scale of risk and protective environmental factors, religious commitment scale
Tousignant et al,[49] 1999	Quebec	Refugees from various countries	203	13–19	Individual, family, community, and society	Diagnostic Interview Scale for Children (version 2.25) and Children's Global Assessment Scale
Zivcic et al,[50] 1993	Croatia	Displaced and non-displaced Croatian children in Rijeka during wartime	160 refugees (and 320 non-displaced)	8–15 (mean 11)	Displacement	CDI, authors' own emotion scale

Nine studies were either follow-up or used the same children in more than one study, and so were not recounted.[9,12,25,33,35,36,42,44,45] UASC=unaccompanied asylum-seeking children. HSCL-37A=Hopkins Symptom Checklist-37 for Adolescents. SLE=Stressful Life Events checklist. RATS=Reactions of Adolescents to Traumatic Stress. CBCL=Child Behaviour Checklist. TRF=Teacher's Report Form (CBCL). FAS=Family Affluence Scale. SCECV=Survey of Children's Exposure to Community Violence. LA PTSD=Los Angeles post-traumatic stress disorder. CIS=Columbia Impairment Scale. Cederblad questionnaire=Cederblad questionnaire for children's mental health. HTQ=Harvard Trauma Questionnaire. IES=Impact of Event Scale. CES-DC=Center for Epidemiologic Studies Depression Scale for Children. WISC=Wechsler Intelligence Scale for Children. DICA-R=Diagnostic Interview for Children and Adolescents. PTSS=Post-Traumatic Symptom Scale. SDQ=Strengths and Difficulties Questionnaire. UCLA-PTSD RI=University of California at Los Angeles Post-traumatic Stress Disorder Reaction Index. WTSS=War Trauma Screening Scale. DSRS=Depression Self-Rating Scale. CDI=Children's Depression Inventory. HTQ=Harvard Trauma Questionnaire. CHQ=Child Health Questionnaire. WTQ=War Trauma Questionnaire. HSC=Hopelessness Scale for Children. C-PTSDI=Children's Post-Traumatic Stress Disorder Inventory. BDSR=Birleson Depression Self-Rating Scale. PSSM=Psychological Sense of School Membership. PTSD=post-traumatic stress disorder. SCSI=Schoolagers' Coping Strategy Inventory. HSCL-25=Hopkins Symptom Checklist-25. RCRG=Role Construct Repertory Grid (interview and questionnaire on acculturation). YSR=Youth Self Report (CBCL). YASR=Young Adult Self Report. PTSD RI=Post-Traumatic Stress Disorder Reaction Index. FES=Family Environment Scale. SRDS=Self-Report of Depressive Symptoms. AFI=Adolescent Friendship Inventory. SES=Rosenberg's Self-Esteem Scale. CSES=Collective Self-Esteem Scale. BAS=Behavioural Acculturation Scale. *Mean ages have been rounded to the nearest whole number.

Table 1: Summary of studies

fewer effective coping strategies to manage stressful situations than did the displaced and non-displaced children. In a further study,[50] the prevalence of depression in internally displaced Croatian children was not different from that in non-displaced children. Prevalence of hopelessness, post-traumatic stress disorder, or depression was not different in a comparison of internally displaced Croatian teenagers (aged 16–18 years) who had returned after 7 years in exile with those who were displaced for 6 months or less.[23] Because the results of these studies have not been conclusive, further larger studies are needed to provide useful insights into whether displacement places children at additional risk of poor mental health, and whether they have different needs from local children exposed to conflict.

Individual factors
Exposure to violence
Direct experience of adverse events is associated with an increased likelihood of psychological disturbance in refugee children. The degree of post-traumatic stress disorder was associated with personal experiences of traumatic events, especially those occurring when away from home.[22] Internalising difficulties in the initial phase after displacement were associated with adverse events before migration,[35] whereas the rates of sleep disturbances and anxiety were increased in children with direct

exposure to adverse events before migration.[25] The degree of perceived personal threat during traumatic exposures was a determinant of generalised anxiety[10] and post-traumatic stress disorder.[40]

Additionally, migration journeys and postmigration experiences might be highly distressing. Thus, Cuban children who witnessed violence while they were detained in a refugee camp en route to the USA showed more withdrawn behaviour than did children without exposure to violence in the camp.[40] Direct and indirect exposure to violence or other potentially traumatic events, after entry into the host country, was associated with a range of negative psychological outcomes in most[13,35,36,48] but not all[21] studies.

Cumulative exposure to traumatic events is associated with a broad range of psychological problems in refugee groups exposed to violence during war.[8,17,20,24,46] However, in some studies, the number of traumatic events before migration was not a predictor of post-traumatic stress disorder.[13,14] The results of two studies have indicated that the number of lifetime traumatic events could be more consequential than are predisplacement events,[13,36] emphasising the importance of considering the refugee's whole experience so far rather than just the premigration events. However, in one longitudinal study, a high number of adverse events before displacement continued to affect the mental health of refugees even 9 years after arrival, but those who subsequently recovered from initial symptoms were likely to have suffered fewer additional adverse events after displacement than had those who remained symptomatic.[36]

Physical, psychological, or developmental disorders

In a longitudinal study in Sweden,[9] pre-existing vulnerability (consisting of delayed development, long-term physical illness, or psychological problems) was a predictor of mental ill-health, poor social adjustment, and low self-worth 3·5 years after arrival, whereas the absence of evidence of such vulnerability before exposure to adverse events was a strong predictor of emotional wellbeing. Personal injury that was sustained during potentially traumatic premigration events was associated with an increased risk of post-traumatic stress disorder. Head injury, in particular, was associated with a doubling of risk.[22] These potentially important factors were not investigated in other studies.

Age and sex

The relation between age and psychological symptoms is not clear from existing evidence because of the difficulty in differentiation of potential confounding factors, including age at the onset of adverse events, age at migration, and age-related policies for education, accommodation, and the decision-making processes for asylum in host countries. These variables intersect with the nature and duration of adverse exposure, affecting age-specific responses. For example, children

in their late teens confronted with a short period of exposure to violent conflict are likely to have benefited from a long period of stable psychosocial development, whereas children growing up in situations of long-standing conflict are likely to have had greater cumulative adversity. This greater adversity might increase the likelihood of psychological difficulties in these children, or conversely, strengthen their capacities for resilience.

In a UK cross-sectional survey of unaccompanied asylum-seeking children (UASC), increase in age was associated with an increase in symptoms of post-traumatic stress disorder, whereas accompanied children had fewer problems with increasing age.[27] This difference might indicate a difference in immigration status— ie, unaccompanied adolescents feared possible deportation after the age of 18 years, whereas most accompanied adolescents had been granted the right to remain in the UK as refugees. Similar findings have been reported in other studies of UASC in Belgium and the Netherlands.[11,12,17] The living arrangements of UASC might have a negative effect particularly on children younger than 15 years, as reported in one study of asylum centres.[47] No independent relation was noted between age and psychological disorders in other studies.[10,13,20,26,49]

Relations between sex and psychological functioning also show much variation. In about half the studies of accompanied and unaccompanied children, the prevalence of mental health disorders, notably depression and internalising difficulties, was higher in girls than in boys.[13,17,27,32,39] These disorders sometimes occurred with other diagnoses,[48,49] including post-traumatic stress disorder.[12,46] No sex-related differences were noted in the remainder of the studies.[10,13,20,26,28,34,40,43] Changes in sex-related effects with time were inconsistent.[13,14,20,26,28,34,40,43,45] A protective effect of male sex for internalising disorders is consistent with findings from non-refugee populations[52] and Reed and colleagues' Review[53] about low-income and middle-income countries, but biological and social causal pathways need to be assessed further.

Education

The period of formal education before displacement was unrelated to psychological distress or behavioural problems.[12] Bosnian adolescent refugees to Slovenia with high educational achievement were more likely to have post-traumatic stress disorder than were those with low achievement.[46] Although the reasons for this difference are not clear, evidence suggests that good overall functioning in refugee children can coexist with mental health symptoms.[54] In a longitudinal study, refugees whose mental health improved at follow-up after 8–9 years were more likely to be in education or employment than were those who remained symptomatic, but whether education or employment were contributing to recovery or whether children with

persistent symptoms tended to withdraw from such situations is not clear.[36]

Family factors

Exposure to violence

Familial experiences of adverse events affect children's psychological functioning. Some types of parental exposures are more strongly associated with children's mental health problems than are children's own exposures,[34,44] particularly if parents have been tortured[9,15,16,34,55] or are missing.[34] Familial adverse events before the child's birth were a major determinant of children's later psychological outcomes in Central American, but not in southeast Asian[56] or Middle Eastern refugees.[34] Family communication might be relevant—awareness of a parent's detention was an independent predictor of post-traumatic stress disorder in the child[34] and a lack of discussion by the family about adverse events

was protective with respect to the child's mental health.[10] These findings need to be replicated because of the small sample sizes, to compare consistency with other reports about family communication, and especially because of the substantial evidence from other situations that key family processes play an important part in helping family members to recover in times of crisis.[36,57] Further research is needed to identify which kinds of communication are helpful or not in the different contexts.

Family composition and bereavement

Being unaccompanied on entry to the host country puts a child at risk of psychological disorders,[11,27,58] although the experiences of UASC and accompanied children are heterogeneous. UASC often experienced higher numbers of adverse events than did accompanied children.[18,27] Separation from the immediate family was associated with post-traumatic stress disorder in one study,[22] though

	Summary
Exposure to violence	
Almqvist et al,[8] 1997	Post-traumatic stress disorder frequency was linked to degree of adverse event exposure (38%, if severe exposure; 11%, if some exposure)
Angel et al,[10] 2001	Degree of perceived personal threat during adverse event was predictive of anxiety symptoms subsequently
Berthold et al,[13] 1999	Lifetime and postmigration violence correlated with symptoms of post-traumatic stress disorder, but premigration violence did not
Berthold et al,[14] 2000	Although degree of violence exposure was not predictive of diagnoses of depression and post-traumatic stress disorder, high rates of symptoms were associated with increased exposure
Derluyn et al,[17] 2007	Number of traumatic experiences were predictive of symptoms of anxiety, depression, post-traumatic stress, and emotional problems
Ekblad et al,[19] 1993	Experience of direct violence was associated with poor mental health of child
Ellis et al,[20] 2008	Exposure to traumatic events was most strongly associated with post-traumatic stress disorder, and was also associated with depression
Fox et al,[21] 1999	Violence before migration was associated with depression subsequently. Frequency of violence while in a refugee camp was not associated with depression subsequently
Geltman et al,[22] 2005	Direct personal trauma was associated with post-traumatic stress disorder, but witnessing assaults on other people was not Post-traumatic stress disorder was doubled in children who suffered head trauma. Children in their own village at the time of an adverse event had a lower risk of post-traumatic stress disorder than did those who experienced adverse events when away from their village
Grgic et al,[24] 2005	A relation was noted between the number of war traumas and Children's Depression Inventory score
Hjern et al,[25] 1991	Sleep disturbances and separation anxiety were significantly associated with direct experiences of persecution
Hjern et al,[26] 1998	Witnessing violence was a significant predictor of symptom scores at follow-up after 17–19 months
Montgomery et al,[34] 2006	Witnessing violent acts and direct exposure to organised violence were predictive of various psychological symptoms, but not the full symptom complex of post-traumatic stress disorder
Montgomery et al,[35] 2008	High numbers of different premigration traumatic experiences were predictive of high internalising scores Witnessing attacks on other people after arrival in Denmark was associated with an increase in externalising behaviour
Montgomery et al,[36] 2010	Traumatic experiences before arrival were significantly more common in those who were symptomatic at arrival and at follow-up than in those who never attained symptom thresholds. Numbers of types of stressful events after arrival in the host country were much lower in children who recovered from symptoms during follow-up than in those who remained symptomatic
Rothe et al,[40] 2002	Degree of perceived personal threat during an event was predictive of withdrawn behaviour later Witnessing violence in a refugee camp was predictive of withdrawn behaviour, but time spent in a camp and separation from family in the camp and witnessing suicide attempts were not significant Fear of dying during migration while at sea was associated with withdrawn behaviour but not with post-traumatic stress disorder
Slodnjak et al,[46] 2002	Small correlation between Children's Depression Inventory and trauma exposure
Sujoldzic et al,[48] 2006	Violence from peers and adults was associated with poor psychological functioning in Bosnian children who were resettled in Croatia
Physical, psychological, or developmental disorders	
Almqvist et al,[8] 1999	Absence of reported signs of vulnerability (poor physical, emotional wellbeing, or delayed development) before exposure to violence strongly determined emotional wellbeing at follow-up
Geltman et al,[22] 2005	Personal injury during premigration was associated with an increased risk of post-traumatic stress disorder; head injury, particularly, was associated with a doubled risk of post-traumatic stress disorder
Time since displacement	
Geltman et al,[22] 2005	Residence in resettlement country for less than 6 months was not associated with post-traumatic stress disorder

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	Summary
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Age	
Angel et al,[10] 2001	No association was noted between age and scores on symptom scales
Bean et al,[11] 2007	Psychological distress was higher with increasing age in unaccompanied asylum-seeking children
Bean et al,[12] 2007	Older age was associated with higher internalising, externalising, and Reactions of Adolescents to Traumatic Stress scores at follow-up
Berthold et al,[13] 1999	No difference was noted in rates of post-traumatic stress disorder or functioning
Berthold et al,[14] 2000	No association of age with post-traumatic stress disorder or depression was noted
Derluyn et al,[17] 2007	Adolescents aged 17–18 years had higher depression scores; conduct problems peaked at age 16 years
Ellis et al,[20] 2008	Age was not associated with post-traumatic stress disorder or depression
Hjern et al,[26] 1998	Age was not an independent predictor of symptom scores in regression analyses
Hodes et al,[27] 2008	For unaccompanied asylum-seeking children, Impact of Event Scale scores increased with age, and decreased with age for accompanied children
Montgomery et al,[35] 2008	Fewer externalising behavioural problems were noted with increasing age
Rothe et al,[40] 2002	Children had higher scores of post-traumatic stress disorder; Child Behaviour Checklist scores were not affected by age
Sourander et al,[47] 1998	Children younger than 15 years had more psychological distress and behavioural problems than did older children
Tousignant et al,[49] 1999	No association of age with the prevalence of psychopathology was noted
Sex	
Angel et al,[10] 2001	No association between sex and scores on symptom scales was noted
Bean et al,[12] 2007	Girls had higher Reactions of Adolescents to Traumatic Stress and internalising scores, but not externalising scores
Berthold et al,[13] 1999	No difference was noted in rates of post-traumatic stress disorder or functioning
Berthold et al,[14] 2000	Girls were more likely to be depressed than were boys
Derluyn et al,[17] 2007	Girls had higher scores for anxiety, depression, withdrawal, intrusion on the Reactions of Adolescents to Traumatic Stress, and total problems
Ellis et al,[20] 2008	Sex was not associated with post-traumatic stress disorder or depression
Hjern et al,[26] 1998	Girls had an increase in symptoms soon after arrival in the host country, but no difference was noted between boys and girls at 18 months after arrival
Hodes et al,[27] 2008	Girls had higher scores on the Impact of Event Scale and Birleson Depression Self-Rating Scale than did boys
Kia-Keating et al,[28] 2007	Sex was not a predictor of depression or post-traumatic stress disorder
Liebkind et al,[32] 1993	Girls had higher scores than did boys
Liebkind et al,[33] 1996	Premigration traumatic experiences were predictive of boys' Hopkins Symptom Checklist-25 scores
Montgomery et al,[34] 2006	Sex was not a predictor of post-traumatic stress disorder
Montgomery et al,[35] 2008	Male sex was predictive of fewer internalising behaviours at follow-up
Reijneveld et al,[39] 2005	Girls had higher internalising symptoms than did boys Girls in a restrictive reception facility had higher anxiety, depression, and emotional problems than did girls in a less restrictive reception setting, whereas boys in a restrictive reception setting had similar rates to those in a less restrictive reception facility
Rothe et al,[40] 2002	Sex was not associated with scores for Child Behaviour Checklist or post-traumatic stress
Rousseau et al,[43] 2000	Sex was not associated with internalising or externalising symptoms
Rousseau et al,[45] 2004	No sex difference was noted in early adolescence (mean age 14 years); but boys had more internalising symptoms at follow-up in mid-adolescence (16 years)
Slodnjak et al,[46] 2002	Girls had higher frequencies of post-traumatic stress disorder and depression than did boys
Sujoldzic et al,[48] 2006	Girls had worse functioning than did boys
Tousignant et al,[49] 1999	All disorders except conduct disorder were more prevalent in girls than in boys
Education	
Bean et al,[12] 2007	Period of child's education before migration had no effect on scores for behavioural problems or psychological distress
Montgomery et al,[36] 2010	Refugees whose mental health improved by 8–9-year follow-up were more likely to be in education or employment than were those who remained symptomatic
Slodnjak et al,[46] 2002	Adolescents with better school achievement had more symptoms of post-traumatic stress disorder than did those with lower school achievement

Table 2: Summary of principal findings in relation to individual factors assessed in each study

arriving with a family member was not protective in another study.[20] UASC who had at least one family member already resident in the host country had lower scores for internalising difficulties and post-traumatic stress symptoms.[12]

Accompanied children subsequently separated from their relatives were also at risk of poor mental health.[26] Children whose relatives were in difficult circumstances (eg, imprisoned), and those who had difficulty contacting their relatives had worse psychological functioning.[7] Boys living with both parents had rates of psychological symptoms five times lower than those living in other family arrangements,[49] and fewer changes of family structure were protective for boys. From interviews, many single mothers had difficulty asserting their authority over adolescent boys, and their authority could be undermined by the boys' peers. Conflict with a mother's new partner was also postulated as a contributory factor. Adolescents

living with both parents had lower internalising scores in mid-adolescence, whereas those in single-parent households reported greater feelings of competence.[45]

Family functioning and parental health

Family cohesion and perception of high parental support were associated with fewer psychological difficulties in children than were poor family support or cohesion.[13,23,30,45,48] The results of one study showed that children whose parents divorced after displacement showed more psychological symptoms than did those whose parents did not divorce,[26] but this finding was not supported in another study.[9] Displaced Croatian children whose mothers reported adaptation difficulties or conflicts had high levels of psychological distress.[7] Evidence about the effect of postmigration changes in parental behaviour is insufficient and equivocal.[7,34] In particular, the role of communication within families is potentially important, but there has been little investigation thereof; a lack of information about experiences of migration or exile was associated with an increased likelihood of psychological disorders[19] or had no effect.[34] Situations in which children spoke often with mothers about difficulties were associated with an absence of substantial psychological difficulties at arrival in Denmark and at follow-up 8–9 years later.[36] Good parental mental health, particularly in mothers, is an important protective factor,[19,21,26] in keeping with the evidence from non-refugee populations.[59] Refugee parents with poor mental health were noted in one study to direct feelings of anger towards their children.[60] Among Bosnian refugee families in Sweden, shared stressful experiences accounted for the correlation between the parent and child's mental health.[10]

Household socioeconomic circumstances

Socioeconomic status might provide some protection, in that access to material and social resources could allow an early flight from conflict and reduction in cumulative exposure to adversity.[5,61] However, findings of studies are contradictory, with socioeconomic circumstances before displacement not being predictive of post-traumatic stress disorder;[34,41] or parental employment status, particularly employment in a private enterprise rather than administrative or manual work, being associated with post-traumatic stress disorder in the child,[34] whereas being like others in the middle stratum of society might be protective (Montgomery E, Rehabilitation and Research Centre for Torture Victims, Denmark, personal communication).

Attention to mental health in the context of everyday stressors, including socioeconomic disadvantage, needs greater attention.[62] Economic circumstances after displacement can affect the child's psychological functioning. Parental worries about financial problems have a particular adverse effect on the mental health of refugee children.[7,63] Thus, low socioeconomic status of Bosnian refugee adolescents was linked to more depressive symptoms and poor self-esteem.[48] By contrast, clear correlations were not noted between psychological disorders and markers of socioeconomic status in two reports.[26,49] Paternal unemployment for longer than 6 months during the first year of resettlement was predictive in one study,[49] but not in another study[43] of psychological disorders in children. Conclusions cannot yet be drawn about the effect of socioeconomic status, and causal pathways are difficult to interpret because most of the studies have heterogeneous designs in terms of the inclusion of predictor variables.

Parental education

Education of the parents has a variable effect—having educated parents might be protective[35,36,41] or have no effect.[34,49] In a longitudinal study,[36] refugees whose symptoms resolved during follow-up had fathers with long periods of education in the home country, perhaps indicating resources within the family that fostered resilience. Educated, intellectual families might be targeted in some political conflicts,[64] which could outweigh any protective effect of parental education.

Community factors
Social support and community integration

Perceptions of acceptance or discrimination within host countries are highly relevant. In a study of displaced Bosnian adolescents,[48] those internally displaced or displaced to Croatia reported more perceived discrimination than did those who had resettled in Austria. Low peer violence and discrimination were positively linked to self-esteem. Boys were more likely to report discrimination than were girls,[35,48] and this difference was predictive of poorer psychological functioning. Perceived discrimination was the best predictor of outcomes such as depression and post-traumatic stress disorder in Somali adolescents in the USA,[20] but had no effect in another study.[33] 41% of refugee children in a Swedish study[9] reported bullying and those with few peers to play with were likely to show poor general adaptation.[9,35] High perceived peer support was associated with improved psychological functioning.[14,30] Subjective childhood experiences, including the strength of peer relationships, are integral to healthy psychological development; however, longitudinal data in the refugee context are lacking, and actual effect sizes are often left unspecified in reports.

A perceived sense of safety at school has been associated with low risk of post-traumatic stress disorder,[22] and an increased sense of school belonging was shown to protect against depression[28,45,48] and anxiety.[48] This sense of belonging is important because of the potential for modification of school learning and social environments. In one study, a change of school was not associated with deterioration in psychological functioning of UASC,[11] whereas in an 8-year follow-up in Denmark attendance at several different schools was predictive of high externalising behaviour scores in young refugees.[35] Strong school connectedness was positively linked to

	Summary
Family exposure to violence	
Almqvist et al,[8] 1997	Most children whose fathers had been imprisoned showed abnormal play behaviour
Almqvist et al,[9] 1999	Severe traumatic exposure in parents correlated with severe traumatic exposure in children
Angel et al,[10] 2001	Lack of family discussions about adverse events during conflict was associated with fewer psychological problems
Cohn et al,[15] 1985	Children whose parents had been tortured showed high rates of emotional and somatic disorders
Daud et al,[16] 2008	Values for I Think I Am and Strengths and Difficulties questionnaires were similar for children with traumatised and non-traumatised parents
Montgomery et al,[34] 2006	Two violent exposures—mother tortured and father disappeared—and a child being informed about parents' detention were independently predictive of post-traumatic stress disorder (many other exposures were predictive of individual symptoms but not the post-traumatic stress disorder complex); parental torture before the child's birth did not increase risk
Rousseau et al,[41] 1998	Family trauma before the child's birth was a predictor of internalising and externalising symptoms in Central American but not southeast Asian children
Rousseau et al,[42] 1999	Family trauma before the child's birth was protective in terms of externalising symptoms, risk behaviour, and school failure in boys; in girls, it was associated positively with social adjustment
Rousseau et al,[44] 2003	Family trauma after a child's birth showed no relation with any assessment measurements. No relation was noted between internalising and externalising symptoms in adolescence with prebirth familial trauma. In boys, the severity of prebirth exposure to familial trauma correlated with increased self-esteem in later adolescence, and decreased perception of racism, but no effect was noted in girls
Family composition and bereavement	
Bean et al,[11] 2007	Unaccompanied adolescents had higher internalising problems, traumatic stress reactions, and stressful life events than did other groups
Bean et al,[12] 2007	Change of guardian did not affect measurements. Reactions of Adolescents to Traumatic Stress and internalising scores were much higher if no family member was in the host country, or if living in a large residential setting rather than foster care or a small group setting
Derluyn et al,[18] 2009	Unaccompanied children were more likely to have experienced all types of adverse events than were accompanied children
Ellis et al,[20] 2008	Arriving with or without parents was not associated with post-traumatic stress disorder or depression
Geltman et al,[22] 2005	Separation from family was associated with post-traumatic stress disorder, whereas presence of any biological family member or friend during migration or in camp was not associated with post-traumatic stress disorder. Sudanese children living in a group home or foster care without other Sudanese people were more likely to have post-traumatic stress disorder than were those in foster care with other Sudanese people (other fostered children or foster family)
Hodes et al,[27] 2008	Unaccompanied asylum-seeking children had higher numbers of traumatic events and scored higher on the Impact of Event Scale than did accompanied refugee children; Birleson Depression Self-Rating Scale scores were not different Unaccompanied asylum-seeking children in low-support living arrangements showed significantly higher scores for post-traumatic stress symptoms than did those living with more support For accompanied children, there was no difference in scores between those living in two-parent or single-parent households
Porte et al,[38] 1987	Refugee children in homes with people of the same ethnic origin (own families or foster care) were much less depressed than were those living in either foster or group homes with local families
Rousseau et al,[41] 1998	In children of southeast Asian origin, but not Central American children, being from a single parent household was a predictor of internalising symptoms; number of people in household was not a predictor
Rousseau et al,[43] 2000	Increasing household size and living with a single parent were associated with internalising symptoms in Cambodian but not Central American refugees
Rousseau et al,[45] 2004	Living in a one-parent or two-parent household had no effect in early adolescence (mean age 14 years); at follow-up in mid-adolescence (16 years), single-parent households were associated with higher feelings of competence, but those in two-parent households had fewer internalising symptoms; no association was noted between one-parent or two-parent household and externalising symptoms
Tousignant et al,[49] 1999	Prevalence of psychological problems was five times lower in boys living with both parents than in boys living in other family arrangements. Number of residences since birth was higher in boys with a diagnosis than in boys without a diagnosis. Children in host families with no kin contacts had more psychological problems
Family functioning and parental health	
Ajdukovic et al,[7] 1993	Children had high stress scores if their mothers reported difficulties in adapting to their new environment or felt burdened with conflicts, if they had difficult mother–child relationships, if their separated family members were in difficult circumstances (such as being prisoners of war), or if they had difficulty contacting separated family members Children living in host families rather than in shelters had lower stress scores, but had high stress scores if their mothers had negative views of the people they were living with
Almqvist et al,[9] 1999	Maternal emotional wellbeing was a determinant of the child's emotional wellbeing at follow-up Marital discord predicted poor general adaptation
Angel et al,[10] 2001	Children whose parents were in need of psychiatric treatment had high total problem and anxiety scores, but association was attributable to shared stressors in multiple regression analysis; parents' talking about the war seemed to exacerbate negative effects of stress in worst-affected children, but not in those least affected
Berthold et al,[14] 2000	Perceived family support negatively correlated with post-traumatic stress disorder and depression
Ekblad et al,[19] 1993	Having a mother who was described as apathetic or unstable was linked to poor mental health of the child; an optimistic mother was linked to good mental health Lack of information about the flight was associated with poor mental health in children
Grgic et al,[23] 2005	Number of traumatic events was associated with Hudson's Index of Family Relations score; most children perceived family relationships as positive, but 21% reported substantial problems with family relationships
Hjern et al,[26] 1998	Separation from family members and parental divorce after migration were associated with high symptom scores initially and at follow-up. Having a parent in psychiatric care was associated with high symptom scores at follow-up. Recent family stressors were a predictor of poor mental health
Kovacev et al,[30] 2004	Greater parental support was associated with high Global Self Worth scores

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	Summary
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Montgomery et al,[34] 2006	Current family structure, a change in parental behaviour towards the child, and the child being informed about family exposures to violence and the reason for escape were not predictors of post-traumatic stress disorder
Montgomery et al,[36] 2010	Refugees without many symptoms were likely to speak to their mothers frequently about problems, both at arrival and 8–9-year follow-up
Rousseau et al,[43] 2000	No association of emotional and behavioural problems was noted with parental unemployment
Rousseau et al,[45] 2004	Protective effect of family cohesion was associated with feelings of competence in early adolescence (mean age 14 years), and reduced externalising symptoms in mid-adolescence (16 years) Family conflict did not increase risk in early adolescence, but was associated with increased parental report of externalising symptoms in late adolescence
Sujoldzic et al,[48] 2006	Poor family connectedness was associated with depression
Household socioeconomic circumstances	
Ajdukovic et al,[7] 1993	Children whose mothers reported having poorer financial and material support had high stress scores
Angel et al,[10] 2001	No independent effect of preflight socioeconomic status was noted on the child's psychological wellbeing at follow-up
Hjern et al,[26] 1998	Socioeconomic conditions in the host country did not correlate with symptom scores
Hodes et al,[27] 2008	Premigration socioeconomic circumstances of unaccompanied asylum-seeking children and accompanied refugee children were not different
Montgomery et al,[34] 2006	Parents who had premigration occupations and fathers who had worked in private enterprises were predictive of post-traumatic stress disorder, but the parents' economic situation and social class were not
Sujoldzic et al,[48] 2006	Low affluence was associated with depression
Tousignant et al,[49] 1999	Downward professional mobility or current parental employment status was not associated with psychological problems, but a period of prolonged paternal unemployment in the first year of arrival was associated with psychological problems
Parental education	
Ekblad et al,[19] 1993	Father's high educational achievement was linked to poor mental health of child
Montgomery et al,[34] 2006	Parents' education was not a predictor of post-traumatic stress disorder
Montgomery et al,[35] 2008	Less maternal education was associated with more externalising behaviours
Montgomery et al,[36] 2010	Refugees whose symptoms resolved during follow-up had fathers with long periods of education in the home country
Rousseau et al,[41] 1998	In children of southeast Asian origin, parental education was associated with externalising behaviour
Rousseau et al,[43] 2000	No association with emotional or behavioural problems was noted with parental education
Tousignant et al,[49] 1999	Parental education was not a predictor of psychological problems
Social support and community integration	
Almqvist et al,[9] 1999	Having peers to play with was predictive of higher scores of general adaptation and social adjustment
Bean et al,[12] 2007	Change of school during 1-year follow-up did not affect levels of psychological distress or behavioural problems
Berthold et al,[14] 2000	Perceived support from friends negatively correlated with post-traumatic stress disorder and depression
Ekblad et al,[19] 1993	Social support associated with good mental health in child
Ellis et al,[20] 2008	Carer fluency in the host language (English) was not associated with post-traumatic stress disorder or depression; acculturative stressors were related to post-traumatic stress disorder, but not depression; perceived discrimination was associated with post-traumatic stress disorder and depression
Hjern et al,[26] 1998	Extent of the social network did not affect symptom scores
Geltman et al,[22] 2005	In Sudanese children, living in a group home or foster care with an American family without other Sudanese people was associated with post-traumatic stress disorder, whereas living with a Sudanese family or with an American family alongside other Sudanese children was not, and feeling safe at home was associated with a reduced risk Feeling safe at school was associated with a reduction in risk of post-traumatic stress disorder This disorder was associated with children feeling less comfort with host society and culture, feeling lonely or isolated where they were living, and reduced participation and satisfaction in group activities
Kia-Keating et al,[28] 2007	Sense of school belonging was negatively predictive of depressive symptoms, irrespective of past exposure to adversities
Kovacev et al,[30] 2004	Increased support from classmates and close friends was associated with high Global Self Worth scores The acculturation styles of assimilation and separation were not predictive of Global Self Worth scores; integration was positively predictive of Global Self Worth and marginalisation was negatively predictive
Liebkind et al,[32] 1993	Children identified increasingly with host country with time
Liebkind et al,[33] 1996	Presence of people of the same ethnic origin in the community was protective against anxiety for girls but not boys Discrimination experiences were not predictors of disorders Dissociation from traditional family values and a positive attitude towards acculturation was predictive of anxiety symptoms in girls but not boys For boys, adherence to traditional family values had a protective effect
Montgomery et al,[35] 2008	The number of types of postmigration discrimination experiences was associated with increased internalising behaviours Not attending school or work and high number of school changes were associated with externalising behaviour Higher numbers of Danish friends was associated with lower internalising behaviours
Nielsen et al,[37] 2008	Children who had at least four relocations had poor mental health
Rousseau et al,[41] 1998	In children of southeast Asian origin, having a large potential social network of the same ethnic origin was a predictor of internalising and externalising symptoms Central American children having an active social network from the host country was a predictor of internalising behaviour, possibly related to greater demands and obligations associated with an extended family network in some cultures Number of people in the household was not a predictor
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	Summary
(Continued from previous page)	
Rousseau et al,[45] 2004	Acculturation alone had no effect on externalising or internalising symptoms, or on competence, but it interacted with sex such that less acculturated boys had more symptoms The degree of acculturation did not change with the duration of follow-up Parental fluency in the host language had no effect
Sujoldzic et al,[48] 2006	Poor school connectedness was associated with depression, anxiety, and somatic stress. Poor attachment to the neighbourhood was associated with depression; perceived discrimination was associated with poor psychological functioning in Bosnians in Croatia but not Austria
Tousignant et al,[49] 1999	Parental fluency in the host language, social integration, and frequency of conversations outside the home were not associated with psychological effects, but mothers with few visitors and few wider kin contacts were both associated with psychological problems
Ideological and religious contexts	
Montgomery et al,[35] 2008	Being Christian or Muslim negatively predicted clinically significant internalising behaviour, but not overall internalising or externalising symptoms
Sujoldzic et al,[48] 2006	Religious commitment was protective against depression and anxiety
Ethnic origin	
Bean et al,[12] 2007	Unaccompanied asylum-seeking children from Eritrea, Ethiopia, and Guinea had higher externalising and internalising scores than did those from other African countries and China
Hjern et al,[26] 1998	Region of origin had no effect on symptom scores
Hodes et al,[27] 2008	Region of origin had no effect on trauma scores, but refugees from the Middle East had higher Birleson Depression Self-Rating Scale scores than did those from Europe or Africa
Rousseau et al,[41] 1998	Ethnic origin was the main determinant of children's emotional profile
Tousignant et al,[49] 1999	Rates of psychological problems were similar for all regions except the Middle East, which showed lower rates
Resettlement location	
Bean et al,[12] 2007	Children relocated to another regional immigration office during 1 year follow-up had higher internalising scores than did those who were not relocated
Ellis et al,[20] 2008	Housing adequacy was not associated with post-traumatic stress disorder or depression
Fox et al,[21] 1999	No association was noted between adverse events in refugee camps and subsequent psychological problems
Geltman et al,[22] 2005	Living in an urban neighbourhood in the host country was not associated with post-traumatic stress disorder
Liebkind et al,[32] 1993	Area of residence in host country had no effect on mental health
Nielsen et al,[37] 2008	In children who had four or more relocations within the host country, the odds ratio of having mental health difficulties was 3
Tousignant et al,[49] 1999	No association was noted between residence in a refugee camp en route to the host country and psychological effects later. Boys with psychiatric diagnoses had a greater number of changes in residence
Immigration process	
Bean et al,[12] 2007	Lack of a temporary residence permit was linked to high internalising scores
Ekblad et al,[19] 1993	Long period in a refugee camp in the host country was linked to poor mental health
Ellis et al,[20] 2008	Number of years in the USA was negatively associated with depression; no association with post-traumatic stress disorder was noted Resettlement stress was associated with post-traumatic stress disorder but not depression
Nielsen et al,[37] 2008	Children who had been seeking asylum for more than 1 year had poor mental health
Reijneveld et al,[39] 2005	Unaccompanied girls seeking asylum in a restrictive reception centre showed more internalising symptoms than did girls in a less restrictive setting

Table 3: Summary of principal findings in relation to family, community, and societal factors assessed in each study

self-esteem, whereas low social support at school was correlated with increased depression.[48]

Little connectedness to the neighbourhood was associated with depression.[48] The presence of wide kin contacts and the mother often receiving visitors at home were protective.[49] Living and socialising alongside other people of the same ethnic origin seems to provide protection from psychological morbidity, particularly while in foster care.[22,38] The presence of people of the same ethnic origin had a protective effect against anxiety in Vietnamese girls, but no effect in boys.[33] However, the extent of social networks per se was not associated with psychological functioning in one report,[26] and large social networks with people of the same ethnic origin were associated with poor functioning in another report.[41]

Acculturation is usually a slow, subtle, and continuous process, and is especially difficult to measure quantitatively.[65] It is usually assessed as linguistic competency and time since migration, which are only some of its components. Notably, the usefulness of the term acculturation in health research has been extensively debated by social scientists. Some degree of alignment with the host culture is probably protective. In an Australian study[30] of acculturation in adolescent refugees, integration into the host society (maintaining the individual's original culture while participating in the host society, as assessed with a range of scales to measure self-worth, peer acceptance, and attitudes to acculturation) was linked to improved psychosocial adjustment. Separation (mainly maintaining the individual's own culture) or assimilation (adaptation to the values of the host society) were not predictors of psychosocial adjustment, whereas marginalisation had negative effects.[30]

Many adolescents perceive themselves to be more acculturated than are their parents, and an increasing gap in acculturation during adolescence can generate

discord.[66,67] Achievement of competence in the host country's language can be associated with a reduced likelihood of depressive symptoms[68] and internalising behaviour scores[35] in young refugees, but the parents' language proficiency seems unrelated to children's psychological outcomes.[20,45,49] Adherence to traditional values of family hierarchy according to age and sex seemed to be protective, whereas dissociation from these values and a positive attitude towards adoption of the host country's culture were predictive of poor psychological functioning.[33] In Somali adolescents resettled in the USA, closer alignment with the Somali culture was associated with better mental health for girls, whereas closer alignment with the American culture was associated with better mental health for boys.[69] A high rate of post-traumatic stress disorder was predicted by acculturative stress in the same population,[20] and among Sudanese refugees who felt lonely, isolated, or less comfortable in US society than in their own.[22] Bosnian refugees who felt connected to their neighbourhoods had low rates of depression,[48] and refugees with support from friendships had improved psychosocial adjustment.[30] In a longitudinal study of Cambodian refugee adolescents in Canada,[45] changes in acculturation were not noted over 2 years, although the refugees were assessed 10–12 years after arrival. The degree of acculturation alone (as measured by the adoption of customs, habits, and language of the host country) was not associated with psychological functioning, but when combined with sex the least acculturated boys seemed most vulnerable.[45] This evidence shows complex associations between the experiences of the adolescent, family, and society, as expected from the ecological model of concentric spheres of effect.[53,70]

Societal factors
Ideological and religious contexts
The evidence for religious beliefs is mixed. Among Bosnian adolescents resettled in Austria and Croatia, religious commitment (assessed as a composite of frequency of participation in religious activities and degree of subjective personal belief) was associated with low anxiety and depressive symptoms.[48] Among Middle-Eastern groups in Denmark, Muslim and Christian refugee adolescents had lower scores for internalising behaviours than did those who belonged to a persecuted minority religion or had changed or abandoned their faith.[35] Spiritual attributions about the meaning of adverse events might also be important, but no studies met our inclusion criteria; nonetheless, in a small qualitative study of unaccompanied Sudanese boys (aged 16–18 years), attribution of adverse events to God's will contributed to fairly good functioning.[71] The links between religion, faith, hope, agency, and sense of coherence and responsibility implicated in risk and resilience pathways are complex, as shown for conflict-affected populations,[72] and reports often do not do justice to these complexities.[73]

Ethnic origin
The effect of ethnic origin on child mental health has been assessed in several studies,[26,27,41,49] with mixed findings indicating that refugees from different countries of origin have different types and duration of exposure to potentially traumatic events and premigration circumstances, as well as cultural differences in the response to distressing events. In Bean and colleagues' study[12] of UASC, coming from 48 different countries, adolescents from different

	Domain assessed	Number of studies*	Total number of children†	Risk or protective factor
Exposure to premigration violence	Individual	13[8,10,14,17,19,20,22,24,26,35,40,46,48]	3099	Risk
Female sex	Individual	11[12,14,17,26,27,32,35,39,46,48,49]	3425	Risk (mainly for internalising or emotional problems)
High parental support and family cohesion	Family	4[14,30,45,48]	1576	Protective
Self-reported support from friends	Community	4[8,14,30,35]	397	Protective
Unaccompanied	Family	3[11,22,27]	3690	Risk
Perceived discrimination	Community	3[20,35,48]	1548	Risk
Exposure to postmigration violence	Individual	3[13,35,48]	1489	Risk
Self-reported positive school experience	Family	3[28,30,48]	1441	Protective
Several changes of residence in host country	Community	3[12,37,49]	1031	Risk
Parental exposure to violence	Family	3[8,34,41]	517	Risk
Poor financial support	Family	2[7,48]	1601	Risk
Same ethnic-origin foster care	Family	2[22,38]	386	Protective
Single parent	Family	2[41,49]	359	Risk
Parental psychiatric problems	Family	2[10,26]	162	Risk

Only factors that were validated in at least two studies resulting in the same direction of effect, were included in the Review. *Reported as one study if the same sample was used in more than one reported study. †Includes forcibly displaced children and comparator groups, hence high numbers of participants.

Table 4: Summary of risk and protective factors for mental health outcomes in forcibly displaced children

countries of origin had different patterns of psychological distress. Therefore, the heterogeneity of a refugee population needs careful attention in terms of policy and clinical need.

Resettlement location

No associations were noted between mental health outcome and whether children had lived in a refugee camp before arriving in the host country,[49] or specific adverse events in a refugee camp.[21]

UASC who were transferred to a different regional asylum office had higher scores for internalising difficulties and traumatic stress symptoms than did those who were not transferred.[12] Four or more relocations within the asylum system were predictive of poor mental health in children and adolescents in Denmark.[37] The fewer the lifetime residence changes for boys the better their mental health outcomes.[49] High-support living arrangements reduced psychological symptoms for UASC,[12,17,27] although a change of guardian during a 1-year follow-up did not adversely affect psychological distress or behaviour in UASC.[11]

Displaced Croatian children whose families were accommodated with host families rather than in shelters had few symptoms of stress.[7] Accommodation in centres, rather than living alone or in foster care, was associated with poorer functioning in UASC in Belgium.[17] Feeling safe in an individual's own home was associated with low occurrences of post-traumatic stress disorder,[22] but housing adequacy was not a predictor of depression or post-traumatic stress disorder in Somali adolescents in the USA.[20] Area of residence within the host country, whether urban or rural, does not seem to be associated with psychological functioning.[22,32,49] Thus a sense of safety and privacy rather than housing quality or location might be most important to wellbeing.

Time since displacement

Residence duration in the host country has been negatively associated with depression[20] but not post-traumatic stress disorder.[20,22] Results of long-term studies indicate a trend towards reduction of symptoms with time.[36]

Immigration process

Postmigration detention seems to be especially detrimental to children's mental health. Cuban refugee children, detained for many months in Guantanamo Bay before entry to the USA, showed high levels of psychological symptoms.[40] The high prevalence of psychiatric illness during and after children's detention have been shown in small-scale studies,[39,74,75] and girls might be especially vulnerable to the adverse effects of restrictive reception settings.[39] After detention, intrusive memories are common,[74] since children might be exposed to fires, rioting, violence, and self-harm attempts by parents or others while detained.[76] Children are more likely to suffer adverse mental health consequences when detained in restrictive rather than routine reception facilities.[39]

Rapid but careful resolution of asylum claims reduces the duration of uncertainty, insecurity, and associated distress for children. Insecure asylum status is associated with a range of psychological problems.[12,37,77] Experiences during immigration interviews[22] and detention after migration can be especially distressing for children, compounding premigration negative experiences of authority and placing them in situations that can be perceived as being worse than adversity before migration.[76]

Long-term outcomes

The importance of longitudinal studies to help understand prospectively which risk and protective factors are causally associated with psychological outcomes should not be underestimated. Few such studies, however, have been reported.[35,78–80] The results of Hjern and colleagues'[78] 6–7-year follow-up of refugee children in Sweden showed

improvements in mental health outcomes with time, although past exposure to violence in the home country and recent family stressors were predictive of psychological disturbance. In Sack and colleagues' 12-year follow-up study[79,81] of Cambodian adolescents, starting when they were aged 14–20 years (mean 17 years) in the USA, depression was more closely related to postmigration stressors than to past conflict-related events, whereas diagnoses of post-traumatic stress disorder were linked to adverse conflict-related experiences. Mental health trajectories were variable with time, and although post-traumatic stress disorder tended to persist, depression initially decreased substantially during 3–6 years of follow-up, only to rise again between 6–12 years of follow-up. The refugees in this study seemed to be fairly resilient overall, having few comorbid problems such as behavioural problems or substance misuse, and most were in education or employment. In Montgomery's follow-up study[35] of 131 refugees in Denmark, the long-term effects of premigration adversity were mediated by a variety of different risk and protective factors.[35] Aspects of social life in Denmark and stresses experienced in exile were more predictive of psychological problems 8–9 years after arrival than were adverse experiences before arrival, emphasising the importance of the postmigration environment in easing recovery from distressing experiences.

Conclusions and recommendations

Many different factors affect the mental health of forcibly displaced children in the presence of substantial life challenges. Table 4 summarises the key protective and risk factors. In accord with Reed and colleagues' Review,[53] premigration exposure to violence was strongly predictive of psychological disturbance. Family factors and living arrangements have received much more attention in high-income settings than in the low-income and middle-income settings. Overall, the ability to integrate into the host society while maintaining a sense of one's cultural identity is protective, but its effect has not been quantified.

The evidence lends support to the idea of spirals of loss,[82] drawing attention to the way many challenges affect refugees at all stages of their journeys. The after-effects of migration on the wellbeing of refugee children are wide-ranging and powerful, and many are modifiable. Increased prevalence of mental health disorders among displaced children is likely to be a result of the increased exposure to risk factors. Postmigration factors provide opportunities for high-income countries to intervene directly to achieve improved outcomes for vulnerable children, yet the possibility of intervention by governments and non-governmental organisations in high-income countries to keep negative exposures to a minimum in countries of origin and countries of transit should not be neglected.

Cumulative adversities usually worsen health outcomes, exerting more powerful effects than any factor alone.[83] The most harmful pathways are those that involve

Panel 2: Summary of policy implications for forcibly displaced children in low-income, middle-income, and high-income settings

Individual
- Reduction in postmigration exposure to different types of violence and threat, including interventions that address intrafamilial violence, bullying, and racism
- Access to physical and psychological health services

Family
- Harness local community resources to assist with integration of children and families
- Support safe and appropriate cultural beliefs and social practices
- Prioritise reunion of children with families or other carers
- Provide support for families to remain intact and to reduce conflict

Community and societal
- Stable settlement in host country, including rapid resolution of asylum claims; minimisation of relocation; supported educational placements and employment opportunities for children older than 16 years and parents; specific support for unaccompanied children; improved provision of services, enabling cultural continuity for religion and language
- Concerted action in health, social, economic, and political sectors to reduce inequalities in access to resources

exposure to violence—whether individually experienced, witnessed, or feared—and the loss of family support by death or violence,[84] for both behavioural and emotional mental health outcomes. As emphasised by the WHO framework,[85] risks cannot be simply added up, but the inter-related pathways that lead to the outcomes need to be assessed.[86,87] Thus, although distal or premigration factors contribute to childhood adversities, repeated exposure to violence and lack of safety soon after migration or displacement are of pivotal importance. In the model proposed by Pynoos and colleagues[88] to understand the complex processes involved in trauma-related psychological changes, one important issue is that new traumatic experiences can reawaken previous traumatic memories, erode previous adaptation, and create secondary adversities; however, the possibility of post-traumatic growth—in which individuals might be better able to achieve various goals after their experiences—might be an alternative trajectory, but remains to be investigated in depth in relation to refugee children.[89]

Health professionals need to assess the multiplicity of ongoing challenges to the wellbeing of refugees, if they are to advocate on refugees' behalf when the implementation of immigration, social, or health policies is to the disadvantage of a highly vulnerable community. The ecological model[70] provides a helpful conceptual framework to shape humanitarian responses to children in crisis.[90] This model emphasises that children develop in a social milieu in which family, community, and society contribute to the quality of daily life.[90] Thus prioritisation of certain policies such as the reunification of children with their families or other carers, the reinstitution of school education, and community-building activities are key.[91]

Successful intervention with distressed refugee children requires not only psychotherapeutic skills, but also these in combination with structural interventions such as those targeting adequate housing and psychosocial interventions like access to skills training.[92] Ideally such resources should be available to ease integration for refugee children and their families from the time of arrival,[93] with the aim of preventing adverse mental health outcomes. Additionally, the ability to advise families of ways they can optimise and integrate all the important factors identified in this Review, as they forge a new path in the host country, is essential.

The elucidation of protective factors provides the building blocks in the identification of pathways to resilience in children. There is general recognition that an understanding of resilience is important for the development of interventions: focus on the identification and mobilisation of adaptive systems within the individual, family, and cultural systems is key.[91] Hodes and colleagues[27] have suggested further investigation of the role of past periods of stable family life and education, the young person's own appraisal of adversity, the role of fostering within the individual's own ethnic or language group, and the value of social networks in promoting resilience.[27] Little is understood about the nature and effects of parenting styles in refugee families[94] and whether interventions could promote resilience and modify outcomes for parents and children. Help in terms of support to integrate into local communities, and language acquisition for both parents and children are interventions that warrant formal assessment. One way forward is to provide a comprehensive and sophisticated approach to understanding the inter-relationships between individual, family, community, or societal risk and protective factors in the assessment of the causal pathways that link psychological problems to mental health outcomes.[53] More research is needed (panel 1). First, we need to improve our understanding of children in particular groups who have, thus far, received little attention. Second, longitudinal study designs are needed to understand the processes and pathways involved in mental health outcomes, including elucidation of mediating and moderating variables.[95] Third, we need to have an improved understanding of the family, community, and societal contexts in which refugee children live. Fourth, we need to develop interventions that are then assessed according to internationally agreed guidelines.

Consideration should also be given to the long-term outcomes. Evidence suggests that complex comorbidities of post-traumatic stress disorder and other disorders are not uncommon in adult survivors of childhood forced displacement.[96,97] Furthermore, evidence suggests that the next generation is also affected;[98] even children born to refugee parents after migration are at increased risk of psychotic disorders compared with the native population,[99] whereas second-generation labour immigrants

are not. Such complexities of the intergenerational aspects of coping with adverse experiences and social disadvantage are poorly understood in the context of refugee families. Limitations of the work so far include the assessment of a narrow set of predictor variables, particularly those that focus on individual exposures, heterogeneous research designs in studies, and, in many cases, the lack of effect sizes, which restrict our ability to draw definitive conclusions. Panel 2 summarises some policy recommendations.

Prompt, but fair and thorough, investigation and resolution of refugee status is essential to enable individuals with a genuine claim to settle rapidly in the host country. Frequent moves, delays, and prolonged bureaucratic processes have negative effects on children's mental health. Equitable and prompt access to services for physical and psychological health, and access to good housing and schooling are central to adaptation and positive mental health. A means of livelihood for families is not only important for adequate nutrition and wellbeing, but allows families to integrate into the new society. Unaccompanied children are especially vulnerable, and need specific support to ensure they can benefit from long-term stability of residence and social environment. Prolonged uncertainty about asylum status endangers their mental health. Since mental health problems originating in childhood and adolescence are often longlasting, high-income countries must implement immigration, health-care, and social policies that support family units and keep deleterious consequences for child health and development to a minimum.

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