

# W Mental health of displaced and refugee children resettled in low-income and middle-income countries: risk and protective factors

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Children and adolescents who are forcibly displaced represent almost half the world's internally displaced and refugee populations. We undertook a two-part systematic search and review of the evidence-base for individual, family, community, and societal risk and protective factors for the mental health outcomes of children and adolescents. Here we review data for displacement to low-income and middle-income settings. We draw together the main findings from reports to identify important issues and establish recommendations for future work. We draw attention to exposure to violence as a well established risk factor for poor mental health. We note the paucity of research into predictor variables other than those in the individual domain and the neglect of other variables for the assessment of causal associations, including potential mediators and moderators identifiable in longitudinal work. We conclude with research and policy recommendations to guide the development and assessment of effective interventions.

## Introduction

Increasingly large numbers of children and adolescents have been forced to migrate across the world for reasons ranging from armed conflict and persecution to economic pressures and natural disasters. This migration raises important questions about how best to support child development in the context of transitions that have the potential to threaten or enhance a child or adolescent's wellbeing. Refugee and internally displaced children are a highly diverse group because of the range of experiences associated with premigration conflict and postmigration resettlement stressors; however, they have in common their exposure to organised violence and threats arising from religious, cultural, and political differences, or territorial disputes.<sup>1,2</sup>

Globally, an estimated 18 million children are forcibly displaced as a result of conflict—a third are refugees or asylum seekers who have migrated across international borders, whereas two-thirds are internally displaced within their country of origin.<sup>3</sup> Most people who are forcibly

displaced remain within or near the country from which they fled, typically living in camps until the situation at home improves, allowing their return. Only about 0.5 million children every year seek asylum in high-income countries.<sup>4</sup> The term asylum seeker refers to those awaiting an immigration decision about their refugee status; by contrast, a refugee has usually been granted permission to resettle permanently in a new country. In studies in low-income and middle-income countries, displaced children are mainly referred to as refugees, although asylum seekers might also be included in some of the studies, depending on the country's legal processes. Despite low-income and middle-income countries taking in most of the world's refugees,<sup>4,5</sup> research has focused on those who have resettled in high-income countries. For example, only 2% of adult refugees in a meta-analysis<sup>6</sup> in which mental health was assessed were drawn from groups resettled in Africa, where a quarter of the world's refugee population lived at that time.<sup>7</sup>

The mental health of children who have been forcibly displaced is of particular concern because of their experiences of insecurity at a formative stage of child development. The combined weight of socioeconomic adversity and exposure to violence in their countries of origin, followed by migration and finally resettlement into a new context, exposes them to several and cumulative risks to their physical, emotional, and social development. Risk factors affecting children's mental health can be conceptualised as personal, social, and environmental factors that might adversely affect psychological and emotional development.<sup>8</sup> Protective factors are associated with positive outcomes in the context of adversity, encompassing attributes of individuals' social relationships and environments.<sup>9,10</sup>

There has been much interest in the notion of resilience,<sup>8,11</sup> described by Rutter<sup>12</sup> as the process of overcoming rather than succumbing to the effects of exposure to risks during an individual's life. Resilience is not a fixed and immutable trait that is present or absent,

## 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" or "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 were study population, publication date, data about risk and protective factors, and sample size. There were no language restrictions.

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but rather a process that develops responsively in the face of adverse challenges.<sup>12</sup> Thus, children who encounter high-risk situations might show resilience because they draw on sufficient protective factors to buffer them against adversity. For forcibly displaced children, there is a compelling need to review risk and protective factors for mental health identified by the evidence that is emerging in this domain, because this evidence will provide the basis for more effective interventions to support the healthy development of these children. The intervention guidelines most commonly used by agencies working in emergency settings with displaced populations are the Inter-Agency Standing Committee (IASC) Guidelines for Mental Health and Psychosocial Support in Emergency Settings.<sup>13</sup> According to these guidelines “good programming specifically includes the provision of relevant supports to the people at greatest risk, who need to be identified for each specific crisis”<sup>13</sup> and that the vulnerabilities and strengths of at-risk communities should be understood. Displaced children are identified as a high-risk group.

We undertook a two-part systematic review of the evidence for mental health outcomes and risk and protective factors in children who were forcibly displaced in low-income and middle-income settings, and high-income settings. Here, we review displacement and present study findings for refugee and internally displaced children in low-income and middle-income settings as defined by their current World Bank classification<sup>14</sup> and, in the case of the occupied Palestinian territory, UN Development Programme classification.<sup>4</sup> Table 1 shows 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. We focus on risk and protective factors in relation to mental health outcomes in children to alert professionals to individuals and groups most likely to need intervention, and to clarify which modifiable factors can be targeted by policies in the health, social, and immigration sectors. Refugees resettled in low-income and middle-income settings often encounter quite different major challenges from those resettled in high-income settings: those in low-income and middle-income settings might be exposed to ongoing threats to their security and welfare, whereas those in high-income settings have to cope with a different social milieu and often complex asylum processes.<sup>6</sup>

### Challenges for children forcibly displaced

Children who are forcibly displaced have the challenge of adjusting to adverse events in the past while forging important emotional, social, and intellectual developmental trajectories in a new setting.<sup>43</sup> Eisenbruch<sup>44</sup> described how refugee children go through the double disruption to developmental and cultural continuity, and undergo dual processes of personal and cultural bereavement. They are burdened with challenges that

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We included studies of risk and protective factors for psychological, emotional, or behavioural disorders, with a minimal sample size of 50 participants, and studies with 25 participants or more if a predictor variable was assessed for which there was minimum evidence from larger studies. Studies with participants 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. The occupied Palestinian territory was included under middle-income countries according to its UN Development Programme classification, and countries of the former Yugoslavia were assigned their current economic classification. Studies with mixed samples, including some non-forcibly displaced children, were not included in the main findings section unless the results were stratified to clarify which findings related to the forcibly-displaced population. A systematic review of qualitative studies was beyond the scope of this Review because most of these did not meet sample-size inclusion criteria.

5296 potentially relevant reports were identified through the database searches, of which 1581 were duplicates. 737 summaries were reviewed and 257 full-text papers were obtained. Our final sample consisted of 27 studies from low-income and middle-income countries, with 5765 children and adolescents (two studies used identical samples). They included forcibly displaced children from Afghanistan, Bhutan, Bosnia, Cambodia, Democratic Republic of Congo, Kosovo, El Salvador, Eritrea, Guatemala, Iraq, Namibia, occupied Palestinian territory, Sudan, and Tibet, who were either internally displaced or resettled in Costa Rica, Honduras, India, Nepal, Nicaragua, Pakistan, Thailand, Turkey, and Uganda. 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.

include altered family dynamics,<sup>45</sup> such as assuming the role of carer for younger siblings or psychologically and physically injured parents.<sup>46</sup> Children who resettle across international borders often combine these tasks while managing a new language, education system, and culture, typically in difficult economic and legal circumstances.<sup>47</sup>

Refugees might arrive in huge numbers to low-income and middle-income host countries<sup>48</sup> that are often struggling to maintain political stability, with simmering inter-ethnic conflicts, poorly developed infrastructure, and fragile health systems.<sup>30,48,49</sup> Some countries lack the legal structures or capacity to grant refugee status. Thus, many refugees who simply walked across a non-demarcated border artificially separating traditional tribal lands<sup>48</sup> might spend the rest of their lives in a state of uncertainty, with no opportunity to gain formal state recognition. These difficulties can be inherited by their children, second-generation refugees, who can remain stateless and struggle to obtain education, health care, or formal employment.<sup>50</sup>

Forcibly displaced populations in low-income and middle-income countries are often accommodated in mass camp settings, where basic essentials might not be

	Study site	Study population	Number	Age* (years)	Domain assessed	Measurements
Ahmad et al, <sup>15</sup> 2000	Iraqi Kurdistan	Internally displaced children	45	7–17	Individual and community	HTQ, authors' own PTSS for children, PTSD-RI
Allwood et al, <sup>16</sup> 2002	Bosnia	Non-displaced and displaced children in Bosnia	447 displaced (plus 344 non-displaced)	6–16 (mean 11)	Displacement and individual	PTSD-RI, IES, TRF, CDI, war experience questionnaire
Dapo et al, <sup>17</sup> 2000	Bosnia	Internally displaced and non-displaced children	289 displaced (plus 169 non-displaced)	10–16 (mean 13)	Individual	YSR, IES, DSRS
Dybdahl et al, <sup>18</sup> 2001	Bosnia	Internally displaced Bosnian children	87 mother-child dyads	5–6 years	Individual and family	Authors' own scales of functioning and psychological problems; adapted BDSRS
Farwell et al, <sup>19</sup> 2003	Eritrea	Eritrean refugees who returned from Sudan and non-refugee Eritreans	97	13–20 (mean 17)	Society	HTQ
Giacaman et al, <sup>20</sup> 2007	West Bank	Children living in various settings including refugee camps	3415, of which 6% in refugee camps	Grades 10 and 11 (98.5% aged 15–18)	Individual and society	HBSC, GTEC, authors' own scales of emotional and somatic symptoms, and exposure to trauma and violence
Goldstein et al, <sup>21</sup> 1997	Bosnia	IDP camps in wartime Bosnia	308	6–12	Individual and society	Bosnian WTQ, Sead Picture Survey Tool to assess symptom frequency, DSM-IV based algorithm for PTSD
Hasanovic et al, <sup>22</sup> 2005	Bosnia	IDPs within Bosnia, and Bosnian refugee adolescents repatriated from Croatia	239 (120 repatriated and 119 internally displaced)	11–20 (mean 15)	Individual, family, community, and society	HTQ (Bosnia and Hercegovina version), a DSM-IV-based PTSD scale, a feeling severity scale for PTSD symptoms
Izutsu et al, <sup>23</sup> 2005	Four refugee camps in Pakistan	Afghan refugees in four camps	100	4–14	Society	Locally developed self-report questionnaire
Karacic et al, <sup>24</sup> 2000†	Bosnia	Returned Bosnian refugees compared with children who never left	204 returned refugees (plus 203 non-displaced)	10–15	Individual and society	War-related trauma exposure scale, Barath's children's questionnaire
Khamis et al, <sup>25</sup> 2000‡	West Bank (schools)	Palestinian children (refugee and non-refugee children)	112 refugee camp residents (plus 888 non-camp residents)	12–16	Society	Locally developed scales
Khamis et al, <sup>26</sup> 2005‡	West Bank (schools)	Palestinian children (refugee and non-refugee children)	112 refugee camp residents (plus 888 non-camp residents)	12–16	Society	Structured clinical interview against PTSD criteria in DSM-IV
Loughry et al, <sup>27</sup> 2001	Vietnam	Vietnamese UASC 3–4 years after repatriation from refugee camps in southeast Asia compared with Vietnamese children who never left	238 former UASC (plus 217 non-refugees)	10–22 (mean 18)	Society	YSR, Cowen Perceived Self-Efficacy Scale, a social support and exposure to trauma scale
McCallin et al, <sup>28</sup> 1988	Costa Rica, Honduras, Nicaragua	Refugee children from El Salvador, resettled in Nicaragua and Costa Rica; and refugee children from Nicaragua, resettled in Honduras and Costa Rica	90	7–12	Individual and society	Locally developed parent and teacher's assessment schedules measuring stress-related behaviours
Mels et al, <sup>29</sup> 2010	Democratic Republic of Congo	Community sample of IDPs, returned former IDPs, and non-displaced peers	217 IDPs, 496 returnees (plus 106 non-displaced peers)	13–21 (mean 15)	Individual, family, and society	Adapted IES-revised, adapted Hopkins Symptom Checklist-37 for Adolescents, Adolescent Complex Emergency Exposure and Daily Stressors scales
Miller et al, <sup>30</sup> 1996	Mexico (refugee camps)	Refugee Guatemalan Mayan children who left as infants or toddlers, or were born in refugee camps	58	7–16 (mean 11)	Family	Behavioural problem checklists completed by mothers, semistructured interviews with a subset, adapted CBCL, adapted women's health questionnaire
Mollica et al, <sup>31</sup> 1997	Thailand	Cambodian refugees in camps	182	12–13	Individual	CBCL, YSR (Cambodian versions)

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	Study site	Study population	Number	Age* (years)	Domain assessed	Measurements
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Morgos <sup>32</sup> 2007	Sudan	IDP children in camps in southern Darfur	331	6–17 (mean 12)	Individual	Child PTSD-RI, CDI, expanded grief inventory
Osmanovic et al, <sup>33</sup> 2000†	Bosnia	Returned refugee Bosnian children compared with children who never left	204 returned refugees (plus 203 non-displaced)	10–15	Society	WTQ, a psychosomatic scale
Paardekooper et al, <sup>34</sup> 1999	Uganda	Sudanese refugee children from refugee camps and settlements; controls were local Ugandan children from similar background without war exposure	316 refugees (plus 80 non-refugees)	7–12	Community	Adapted HTQ, daily stressors inventory, adapted KidCope, mental health assessment, a social support measure, and an adapted WHO questionnaire for children
Servan-Schreiber et al, <sup>35</sup> 1998	India	Unaccompanied Tibetan refugee children	61	8–17	Individual	Clinical interview
Shisana et al, <sup>36</sup> 1985	Intentionally not identified country in sub-Saharan Africa	Namibian refugees	56	12–23 (mean 17)	Individual and community	Authors' own social support scale, BDI
Sujoldzic et al, <sup>37</sup> 2006	Bosnia, Croatia, and Austria	Refugee or IDP adolescents born in Bosnia resettled in three contexts, compared with non-displaced Bosnians	359 internally displaced Bosnians (plus 424 non-displaced Bosnians; other groups included in analysis of high-income countries <sup>38</sup> )	15–18 (mean 17)	Displacement, 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
Thabet et al, <sup>39</sup> 1998	Gaza Strip	School children living in different settings, including camps; 62% of area inhabitants were refugees	237	9–13 (mean 11)	Society	RCMAS, Rutter teachers' scale
Thabet et al, <sup>40</sup> 2004	Gaza Strip (refugee camps)	Palestinian refugee children	403	9–15	Individual and society	GTEC, Child PTSD-RI, Short MFQ
Van Ommeren et al, <sup>41</sup> 2001	Nepal	Bhutanese refugee adolescents in a camp affected by an epidemic of medically unexplained illness	68 cases, 66 controls (all refugees)	12–22 (mean 16)	Individual and family	CIDI, HTQ, Social Provisions Scale, Somatoform Dissociation Questionnaire; assessment of traditional beliefs
Yurtbay et al, <sup>42</sup> 2003	Turkey	Kosovan Albanian refugee children	250 refugees (plus 118 local children)	Two age groups: 9–12 and 15–19	Individual	State-Trait Anxiety Inventory, BDI, CDI, semistructured questionnaire
<p>HTQ=Harvard Trauma Questionnaire. PTSS=Post-Traumatic Symptom Scale. PTSD-RI=Post-Traumatic Stress Disorder Reaction Index. IES=Impact of Event Scale. TRF=Teacher's Report Form (Child Behaviour Checklist). CDI=Children's Depression Inventory. YSR=Youth Self-Report (Child Behaviour Checklist). DSR=Depression Self-Rating Scale. BDRS=Birleson Depression Self-Rating Scale. HBSC=Health Behaviour in School-aged Children. GTEC=Gaza Traumatic Event Checklist. IDP=internally displaced person. WTQ=War Trauma Questionnaire. DSM-IV=fourth edition of the Diagnostic and Statistical Manual of Mental Disorders. PTSD=post-traumatic stress disorder. UASC=unaccompanied asylum-seeking children. CBCL=Child Behaviour Checklist. BDI=Beck Depression Inventory. SES=Rosenberg's Self-Esteem Scale. FAS=Family Affluence Scale. RCMAS=Revised Children's Manifest Anxiety Scale. MFQ=Mood and Feelings Questionnaire. CIDI=Composite International Diagnostic Interview. *Mean ages have been rounded to the nearest whole number. †Identical samples used in these studies. ‡Identical samples used in these studies.</p>						

Table 1: Summary of studies

available, and disease and malnutrition are rife.<sup>51,52</sup> These differences can be keenly felt by children—eg, Sudanese children in Ugandan refugee camps reported substantially more concerns about lack of food, school materials, sanitation, and health care than did local Ugandan children.<sup>34</sup> The arrival of refugees can threaten the availability of scarce local food and water resources,<sup>49</sup> leading to tensions<sup>19</sup> that exacerbate political instability in the host region.<sup>48</sup> Thus, child refugees report harassment, sexual abuse, and physical violence from local people and authorities in host countries.<sup>19,48,53</sup> Camps can be extremely

unsafe places;<sup>51</sup> rape is not uncommon, being reported by both boys and girls in Darfur<sup>32</sup> and Chad.<sup>54</sup>

A possible advantage of the informal border crossing and camp formation in some low-income and middle-income countries is that it might allow a community to be transplanted into a new setting with some of the basic social structures in place.<sup>55</sup> Internally displaced children generally have fewer major changes in sociocultural environments, and do not have to endure immigration processes, but in the long term can suffer profoundly if political instability persists in their new environment<sup>56</sup>

Summary

Exposure to violence

Ahmad et al, <sup>15</sup> 2000	Duration of the child's captivity was predictive of the scores for post-traumatic stress disorder
Allwood et al, <sup>16</sup> 2002	Children who had all three adverse exposures—ie, violence, deprivation, and relocation—had higher scores for post-traumatic stress disorder than did those who had two or fewer of these exposures
Dybdahl et al, <sup>18</sup> 2001	Violence-exposed, relocated children had worse self-reported depression and teacher-reported delinquent behaviours, symptoms of anxiety and depression, and problems with attention
Giacaman et al, <sup>20</sup> 2007	Total scores for problems were not different between children who had different numbers of traumatic events, but anxiety, sadness, and withdrawal subscales did show differences
Goldstein et al, <sup>21</sup> 1997	Substantial association was noted between psychosomatic symptoms and exposure to humiliation
McCallin et al, <sup>28</sup> 1988	Children with increased psychosomatic problems had witnessed a family member's death, injury, or torture
Mels et al, <sup>29</sup> 2010	House search was the only specific event linked to high stress scores
Mollica et al, <sup>31</sup> 1997	Greater traumatic exposure was associated with higher symptoms of post-traumatic stress disorder
Morgos et al, <sup>32</sup> 2007	Interaction effects were noted for traumatic exposure and daily stressors for internalising and externalising symptoms, and cumulative trauma and displacement status with externalising symptoms
Sujoldzic et al, <sup>37</sup> 2006	Cumulative trauma had a dose-effect relation with scores on the parent Child Behaviour Checklist and the Anxious or Depressed and Attention Problem subscales of the Child Behaviour Checklist and Youth Self-Report, but did not affect social functioning or health status
Thabet et al, <sup>40</sup> 2004	Strongest predictors of symptoms of post-traumatic stress disorder were abduction, hiding for protection, rape, being forced to kill or hurt relatives, and seeing someone burned alive
Van Ommeren et al, <sup>41</sup> 2001	Total number of war experiences correlated with total depression score, and strongest predictors of depression were rape, witnessing rape, death of parents, being forced to fight, and having to hide for protection
	Recent peer and life-time adult violence exposure was associated with increase in psychosomatic symptoms, anxiety, and depression
	Number of traumatic events was predictive of high scores on the Mood and Feelings Questionnaire and Child Post-Traumatic Stress Disorder Reaction Index
	High number of traumatic events was predictive of caseness

Physical, psychological, or developmental disorders

Van Ommeren et al, <sup>41</sup> 2001	Personal or family history of psychiatric disorder was not more common in cases than in controls
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Time since displacement

Servan-Schreiber et al, <sup>35</sup> 1998	No effect was noted
Shisana et al, <sup>36</sup> 1985	Length of time in exile correlated with depression only when social support was controlled for

Age

Goldstein et al, <sup>21</sup> 1997	Older children had most symptoms
Hasanovic et al, <sup>22</sup> 2005	Children younger than 16 years had less anxiety, depression, and somatic complaints than did those older than 16 years
Mels et al, <sup>29</sup> 2010	Younger adolescents had slightly higher scores for post-traumatic stress disorder
Morgos et al, <sup>32</sup> 2007	No difference was noted between children aged 6–12 years and those aged 13–17 years in rates of post-traumatic stress disorder or depression
Servan-Schreiber et al, <sup>35</sup> 1998	No difference was noted in post-traumatic stress disorder by age, but more depression was noted in children older than 13 years
Yurtbay et al, <sup>42</sup> 2003	No difference was noted in anxiety scores; but youngest children (aged 9–10 years) showed lowest depression scores

Sex

Dapo et al, <sup>17</sup> 2000	Girls had higher internalising scores, with more somatic problems, anxiety, and depression, whereas boys had higher externalising scores
Dybdahl et al, <sup>18</sup> 2001	Girls rated higher than did boys on a scale of psychological problems, but not for other measurements
Hasanovic et al, <sup>22</sup> 2005	Repatriated boys younger than 16 years had more post-traumatic stress disorder than did girls. Girls aged 16–20 years in both internally displaced and repatriated groups had higher severity of traumatic experiences, but were not more likely to have post-traumatic stress disorder than were boys
Karacic et al, <sup>24</sup> 2000	Boys scored higher for behavioural disorders than did girls
McCallin et al, <sup>28</sup> 1988	No difference was noted between sexes on parent or teacher questionnaires of stress-related behaviours
Mels et al, <sup>29</sup> 2010	Girls were more likely to report internalising symptoms when they were exposed to higher amounts of daily stressors; boys showed more externalising symptoms with cumulative trauma exposure
Morgos et al, <sup>32</sup> 2007	No difference was noted for post-traumatic symptoms except for very severe where girls were over-represented; girls had higher depression scores than did boys
Servan-Schreiber et al, <sup>35</sup> 1998	No differences were noted in post-traumatic stress disorder by sex, but girls were more likely to be depressed
Sujoldzic et al, <sup>37</sup> 2006	Girls had more depression and anxiety than did boys
Van Ommeren et al, <sup>41</sup> 2001	Female sex was a predictor of caseness
Yurtbay et al, <sup>42</sup> 2003	No difference was noted between sexes in anxiety or depression scores

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

and might ultimately have more disruptions than might children who emigrate. In a systematic study of school children (aged 11–16 years) in Afghanistan, more than 80% had been displaced because of conflict or economic circumstances, and 45% had been displaced at least three

times.<sup>57</sup> 9% of children rated forced displacement as their most distressing lifetime event.

Children who are not accompanied by an adult carer are especially vulnerable. Some end up living on the streets,<sup>58</sup> whereas others are exploited and abused, having to resort

to prostitution or other forms of labour to survive.<sup>50,58</sup> Although concern about the mental health needs of unaccompanied children seeking asylum has prompted an upsurge in research in high-income settings,<sup>59–61</sup> little is known about unaccompanied children in low-income and middle-income countries.

### Prevalence of mental health disorders

Five main problems beset research into the mental health of children who are internally displaced or are refugees (panel). For these reasons assessment of prevalence rates of mental health disorders in forcibly displaced populations has been difficult. The results of most reports show higher prevalence estimates of psychological problems in refugees than in the local populations, particularly with respect to anxiety, depression, and post-traumatic stress disorder.<sup>75,76</sup> Estimates of prevalence, however, range from being similar to those in host populations<sup>77</sup> to being substantially raised and affecting almost all displaced children.<sup>21</sup> We provide only a brief overview of prevalence studies because overviews are available elsewhere.<sup>6,78,79</sup>

Investigators of studies with medium to large sample sizes have concluded that forcibly displaced children in low-income and middle-income settings have high rates of psychiatric disorders. Thus 75% of 331 displaced children in camps for internally displaced people in southern Darfur met diagnostic criteria for post-traumatic stress disorder, and 38% had depression.<sup>32</sup> The rates of post-traumatic symptoms, behavioural problems, and depressive symptoms were significantly higher in 193 Sudanese refugees in Uganda than in local children.<sup>34</sup> High prevalence rates have also been shown in large studies in high-income settings—eg, in a Canadian study of 203 children, 21% of refugees had psychiatric diagnoses compared with 11% of local adolescents.<sup>75</sup> In two large studies of unaccompanied adolescents, symptoms of severe psychological distress were reported in about 50% of adolescents.<sup>80,81</sup>

In a systematic review of the prevalence of mental disorders in refugees, five studies were identified of post-traumatic stress disorder in unselected populations of refugee children. 11% of children in these studies had this disorder.<sup>78</sup> No studies of depression in refugee children met the inclusion criteria. A meta-analysis of refugees and internally displaced individuals, which included data for 22 221 child and adult refugees, showed that child refugees seemed to have better psychological outcomes than did adult refugees.<sup>6</sup> The results of a systematic review of 181 studies of adults who had experienced conflict and displacement showed a weighted prevalence of more than 30% for both depression and post-traumatic stress disorder.<sup>79</sup> This finding is a cause for concern for the wellbeing of refugee children as well as adults, because parental mental ill-health is a risk factor for psychiatric disorder and other adverse outcomes in children.<sup>14,57,82</sup>

In this Review, we shift the focus of attention to the risk and protective factors that affect mental health rather than a simple assessment of the prevalence rates of disorders. This shift is crucial to establish which subgroups of children are likely to have substantial risks to their healthy development. Identification of effective ways to mitigate childhood vulnerabilities and strengthen positive attributes is also essential to foster psychosocial resilience, and will enable the effective targeting of interventions, especially in resource-poor settings.

### Conceptual framework

Our conceptual framework (figure) draws on the ecological model developed by Bronfenbrenner,<sup>83</sup> which is widely used in child development. This model depicts a child's experience by use of concentric circles, placing the child at the centre of the effects of different factors. Here, we focus on individual, family, community, and societal influences (figure). Generally, in previous studies of refugees, a different model has been used that distinguishes between premigration, perimigration, and postmigration variables. Overlap exists between these two conceptual models, and some factors operate at several levels. Bridging these two ways of representing children's experiences is likely to enable clinicians and policy makers to judge when and how best to target their interventions. Such a framework enables us specifically to address the third aim of the WHO's Commission on Social Determinants of Health, to measure and assess the effect of action (the other two aims are to improve daily living conditions, and deal with the inequitable distribution of power, money, and resources).<sup>84</sup> The commission offers a policy-explicit framework to address health inequities by focusing on the societal, economic, and political programmatic factors that unquestionably affect health, but are outside the usual remit of health-care sectors.

### Effects of displacement

Studies in which internally displaced children are compared with non-displaced children in host locations are helpful for appraisal of the additional effect that displacement might have on children exposed to conflict. Non-displaced and internally displaced children exposed to conflict might have more adverse events with longer conflict exposure than do children who are refugees and later repatriated.<sup>22</sup> Displaced children might have more psychological problems than do non-relocated peers, despite some shared conflict exposure. Internally displaced children relocated to Sarajevo, Bosnia, who had directly witnessed or experienced violence were at higher risk than were displaced children who had no direct exposure to violence. However, these displaced children with no direct violence exposure were more withdrawn than were children who had not been relocated.<sup>16</sup> Displaced Bosnian adolescents in another study had higher depression, but not anxiety scores, than did their non-displaced Bosnian peers.<sup>37</sup>

Summary	
<b>Family composition and bereavement</b>	
Ahmad et al, <sup>15</sup> 2000	Being reunited with a father who had been absent for most of the adverse experiences was not associated with a lower prevalence of post-traumatic stress disorder in children, nor was family composition (living with one, both, or neither parent)
Dybdahl et al, <sup>18</sup> 2001	Scores on the checklist of psychological problems did not differ between children whose fathers were dead or alive
Hasanovic et al, <sup>22</sup> 2005	Internally displaced children who had lost their fathers had higher scores for post-traumatic stress disorder than did peers with both parents, but the scores for repatriated children were not affected by paternal loss
Mels et al, <sup>29</sup> 2010	Children whose fathers had died had fewer externalising behaviours than did children whose fathers were alive
Van Ommeren et al, <sup>41</sup> 2001	Early loss (including loss of a parent and family separation before age 13 years) and recent deaths of relatives were predictors of caseness
<b>Family functioning and parental health</b>	
Ahmad et al, <sup>15</sup> 2000	Carer post-traumatic stress disorder was not an independent predictor of post-traumatic stress disorder in the child
Mels et al, <sup>29</sup> 2010	Internally displaced and returned adolescents were more likely than were non-displaced adolescents to report family quarrels; internally displaced adolescents were more likely than were returned and non-displaced adolescents to report being rejected by their nuclear family
Miller et al, <sup>30</sup> 1996	Poor maternal physical and mental health was associated with depression in girls, but not aggression in either sex
Sujoldzic et al, <sup>37</sup> 2006	Poor family connectedness was associated with depression
<b>Household socioeconomic circumstances</b>	
Sujoldzic et al, <sup>37</sup> 2006	Low socioeconomic status was associated with depression
Van Ommeren et al, <sup>41</sup> 2001	Family income was not different between cases and controls
<b>Social support and community integration</b>	
Hasanovic et al, <sup>22</sup> 2005	Continuation of education was associated with lower anxiety levels than was being out of education; meeting new friends was protective against depressive symptoms; and problems in communication with friends, relatives, and neighbours were associated with anxiety
Paardekooper et al, <sup>24</sup> 1999	Refugee children had poorer psychological functioning, more daily stressors, and were less satisfied with their social support network than were Ugandan children
Shisana et al, <sup>36</sup> 1985	Greater social support was associated with lower levels of depression
Sujoldzic et al, <sup>37</sup> 2006	Poor attachment to the neighbourhood was associated with depression; perceived discrimination was associated with poor psychological functioning; poor school connectedness was associated with depression, anxiety, and somatic stress
<b>Social, economic, and cultural context</b>	
Sujoldzic et al, <sup>37</sup> 2006	Internally displaced Bosnian adolescents had higher rates of depression than did those living as refugees in Croatia and Austria
McCallin et al, <sup>28</sup> 1988	Refugee children located within neighbouring countries had different stress levels depending on the country of settlement
<b>Ideological and religious context</b>	
Sujoldzic et al, <sup>37</sup> 2006	Religious commitment was protective against depression and anxiety
<b>Premigration residence</b>	
Goldstein et al, <sup>21</sup> 1997	Children internally displaced from Sarajevo, Bosnia, had more symptoms, but also more exposure to trauma than did children who were internally displaced from other parts of Bosnia
<b>Resettlement location</b>	
Dybdahl et al, <sup>18</sup> 2001	Children in privately rented accommodation were rated as having more positive characteristics than were children in refugee centres
Giacaman et al, <sup>20</sup> 2007	Prevalence of depressive symptoms was higher in children living in refugee camps than in those living in other settings
Izutsu et al, <sup>23</sup> 2005	Most recently established camps had the highest rates of psychological disorders
Khamis et al, <sup>25</sup> 2000	Children in refugee camps were more likely to suffer parental psychological maltreatment than were children living in other settings
Khamis et al, <sup>26</sup> 2005	Children in refugee camps were more likely to have post-traumatic stress disorder than were children living in other settings
McCallin et al, <sup>28</sup> 1988	Children living in a refugee camp had higher amounts of stress than did those in other resettlement locations
Thabet et al, <sup>29</sup> 1998	Children from refugee camps and inner cities (which had high concentrations of refugees) were more likely to have anxiety disorders than were children from other areas
Thabet et al, <sup>40</sup> 2004	Exposure to traumatic events differed in four different camps
<b>Repatriation</b>	
Farwell et al, <sup>19</sup> 2003	No difference was noted in total symptom scores between repatriated and non-refugee Eritrean children
Hasanovic et al, <sup>22</sup> 2005	Displaced children had experienced more traumatic events than did repatriated adolescents. Returnees had less anxiety, depression, somatic symptoms, and severe post-traumatic stress disorder (though the same prevalence) than did internally displaced adolescents
Karacic et al, <sup>24</sup> 2000	Repatriated children showed fewer behavioural disorders in early adolescence than did those who had never left
Loughry et al, <sup>27</sup> 2001	No difference was noted in total Youth Self-Report scores, but repatriated refugee children had lower externalising scores than did non-refugee children
Osmanovic et al, <sup>33</sup> 2000	Repatriated refugee children had fewer adverse events and psychosomatic reactions than did non-displaced peers (same sample as Karacic and colleagues <sup>24</sup> )

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

Internally displaced eastern Congolese adolescents had been exposed to more potentially traumatic events than were the residentially stable groups (non-displaced or returned adolescents), and suffered more daily stressors, notably rejection by and quarrels with their nuclear family, and insufficient food and medical care.<sup>29</sup> Although

internally displaced adolescents had higher scores for internalisation and post-traumatic stress disorder, these effects indicated different exposures to potentially traumatic events and daily stressors, and not the effect of their displacement status. This status did, however, show an interaction effect with cumulative exposure to potentially traumatic events in relation to increased externalising symptoms. Similarly, in a study of internally displaced children in Turkey, although children who were internally displaced had poorer mental health than did non-displaced children, internal displacement per se accounted for very little of the difference; however, the participants were displaced for various reasons besides political unrest so the general applicability of the findings of this study is not known.<sup>85</sup>

## Individual factors

### Exposure to violence

Exposure to violence is the factor with the strongest evidence base for the risk of subsequent psychological disturbances. Many displaced children have been exposed to several distressing events. The range of violent and potentially traumatic events is extensive, not only within the country of origin but also during migration and resettlement; however, in most studies, the cumulative exposure to violence is reported, rather than assessment of the associations between different types of violence and mental health problems or the subjective dimensions of event recall. The degree of direct exposure to threat,<sup>16,21,32</sup> cumulative number of adverse events,<sup>29,31,32,40</sup> and duration of exposure<sup>15</sup> all consistently increased the odds of mental health symptoms. Risks are increased not only by actual and threatened violence to an individual, but also by witnessing violence to others.<sup>15,21</sup> The type of event matters: those that directly imperil or disrupt the integrity of the individual, family, or home are particularly consequential. Specific events such as a house search,<sup>28</sup> witnessing a family member's death, injury, or torture,<sup>21</sup> abduction, hiding for protection, rape, being forced to harm relatives,<sup>32</sup> and the duration of captivity<sup>15</sup> were all factors associated with increased psychological difficulties. In a study of Palestinian children, emotional and psychosomatic symptoms were associated with humiliation.<sup>20</sup> The effects of postmigration violence were investigated in only one study,<sup>37</sup> in which recent violence from peers was reported to be associated with psychosomatic symptoms, anxiety, and depression.

### Physical, psychological, or developmental disorders

Children who have a history of physical, psychological, or developmental disorders have been excluded from most studies, either deliberately<sup>15</sup> or unintentionally, owing to the use of samples of convenience.<sup>21</sup> Although this exclusion is understandable because of small sample sizes, evidence from non-refugee populations in low-income and middle-income countries suggests that children with a history of such disorders are at increased risk of later

### Panel: Barriers to research

- Much of the research into the risk and protective factors focuses on the victims of isolated catastrophic events rather than the victims of organised violence, which often goes hand-in-hand with prolonged economic adversity and social marginalisation<sup>48</sup>
- Research has tended to focus on post-traumatic stress disorder, rather than the investigation of the full range of psychological distress and functional impairment that might arise in children<sup>62,63</sup>
- Appropriateness and diagnostic validity of methods used have been questioned<sup>64-67</sup>
- Research is fraught with complex ethical and practical difficulties,<sup>6,68-72</sup> and often undertaken in dangerous conflict zones<sup>31,51,73</sup>
- Securing appropriate representative samples is difficult; individuals who are forcibly displaced often relocate, or are difficult to identify, especially where they have illegal or migrant worker status<sup>74</sup>

psychological difficulties. The role of these factors in the development of mental health problems affecting refugees has hardly been investigated. Surprisingly, no effect of a pre-existing disorder on the development of medically unexplained symptoms among Bhutanese refugees was shown in the only study in which the role of the factors was investigated.<sup>41</sup>

### Time since displacement

The association of time since migration with mental health has been investigated in a few studies. Results from a study of Namibian refugees showed that depression increased with time if social support was lacking.<sup>36</sup> Rates of post-traumatic stress disorder and depression did not differ greatly by time in exile in another study.<sup>35</sup> The effect of time in exile is likely to be moderated by the negative or positive attributes of the context in which time is spent.

### Age and sex

Currently, a small amount of evidence suggests that individuals exposed to forced displacement when younger than 12 years generally have better outcomes than do older children, particularly for depression. This finding, however, needs to be assessed in terms of effect size compared with the general age-related increase in rates of depression and anxiety from childhood to adolescence in the general population.<sup>86</sup> Additionally, older children in many cultures are expected to take on adults' responsibilities,<sup>87</sup> particularly when the family is disrupted,<sup>19,32</sup> and tend to be exposed to more adverse events.<sup>16,40</sup> Of the three studies identified, depression was more prevalent in older children in two studies.<sup>32,35,42</sup> The evidence for post-traumatic stress disorder, however, was equivocal as to whether younger age is a protective,<sup>22</sup>



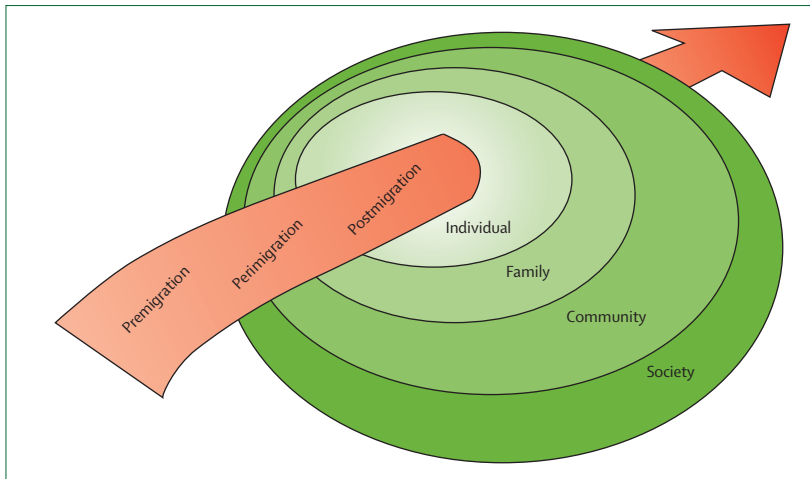


Figure: A conceptual framework to understand the ecological and chronological determinants of mental health in forcibly displaced children

neutral,<sup>32,35</sup> or risk factor;<sup>29</sup> and the results of the only study specifically about anxiety showed no age effects.<sup>42</sup> Notably, the results of a large study of risk factors for post-traumatic stress disorder among adults in post-conflict Algeria, Cambodia, Ethiopia, and occupied Palestinian territory indicated that those who had experienced conflict-related trauma before the age of 12 years were not at increased risk of having post-traumatic stress disorder in adulthood, unlike those who were exposed after the age of 12 years,<sup>88</sup> which is consistent with other evidence for age-related effects.

The findings for differences between sexes, especially with respect to emotional disorders, are mostly in keeping with the patterns in the general population, with emotional disorders more prevalent in girls.<sup>89</sup> Exposure to conflict and resettlement stressors can vary by sex—eg, boys and girls have different likelihoods of being exposed to events such as gender-based violence, or being recruited as child soldiers, and there are differences in family and societal responses to distress in boys and girls.<sup>22,29,40,90–94</sup> With the notable exception of one large study,<sup>42</sup> findings show that depression is more prevalent in girls than in boys.<sup>17,32,35,37</sup> As expected, boys are more vulnerable to externalising disorders, especially with cumulative exposure to potentially traumatic events.<sup>17,24,29</sup> Post-traumatic stress disorder does not show clear sex-related differences.<sup>22,32,35</sup> Age and sex might interact, but such an interaction has yet to be investigated in detail.<sup>22</sup>

### Family factors

#### Family composition and bereavement

The protective effects of family depend on the integrity of social relationships within households.<sup>95</sup> On the one hand, loss of family at a young age (defined as family separation or parental death) and recent bereavement were both more likely in adolescent Bhutanese refugees

with a medically unexplained illness than in the control group.<sup>41</sup> On the other hand, paternal death was not associated with poor functioning in internally displaced Bosnian children,<sup>18</sup> and Congolese refugees whose fathers had died had fewer externalising behaviours than did their peers whose fathers were alive.<sup>29</sup> Central American refugee children living in nuclear families had better psychological functioning than did those living in large households,<sup>28</sup> but no association was noted between family composition and post-traumatic stress disorder in internally displaced Kurdish children.<sup>15</sup>

#### Family functioning and parental health

Little is known about the effect of family functioning or parental health on children who are refugees or have been internally displaced. Family quarrels were more prevalent among internally displaced and returned Congolese adolescents than among non-displaced peers, and internally displaced adolescents more frequently reported being rejected by the nuclear family.<sup>29</sup> Family connectedness (a combined measure of family support, participation in the family, and clear boundaries and expectations) was associated with reduced rates of depression, but had no effect on anxiety in a study of internally displaced Bosnian adolescents.<sup>37</sup> Parenting styles in refugee families before and after migration are potentially important but have not been assessed.<sup>96</sup> Emerging evidence from conflict-affected settings such as the occupied Palestinian territory, Afghanistan, and Sri Lanka, though not obtained exclusively from the study of displaced populations, shows the complex interplay between organised violence and family violence, including child and intimate-partner abuse,<sup>97–100</sup> and intrafamilial violence has been reported to be increased in refugee camps and other postconflict settings.<sup>37,99</sup> Parental wellbeing has also received minimum attention, yet it might be particularly challenged in low-income and middle-income settings, where parents often struggle to meet basic survival needs. The results of a large study of adults in refugee camps showed that half the sample had serious psychological problems,<sup>51</sup> with interventions often not available,<sup>101,102</sup> and suicidal thoughts were common among mothers in the camps.<sup>103</sup> In second-generation and first-generation Guatemalan refugee children, depressive symptoms in girls were closely linked to maternal wellbeing,<sup>30</sup> but post-traumatic stress disorder in carers did not independently predict post-traumatic stress disorder in Kurdish Iraqi children—the association seemed to be mediated through shared experience rather than changes in the quality of care.<sup>15</sup> Although fairly little research has been done on child–carer mental health associations in low-income and middle-income countries, evidence from war-affected and non-refugee populations indicates this type of interaction is likely to be a central factor in children's psychological health.<sup>57,104</sup>

### Household socioeconomic circumstances

Typically the worse the household socioeconomic circumstances, the greater the risks of psychological disturbance.<sup>105</sup> Increased affluence was protective against depression in one study.<sup>37</sup> Congolese adolescents who were internally displaced were more likely to report insufficient food and medical care than were their returned or non-displaced peers, and daily hassles, which included socioeconomic deprivation, had a particularly negative effect on girls.<sup>29</sup>

### Community factors

#### Social support and community integration

Research of community and societal predictors is only nascent. Community social support might be an important moderator, the effect of which can be very difficult to assess accurately.<sup>106</sup> Refugee children identify having less social support than do their non-refugee local peers.<sup>34</sup> Good social support ameliorated the effect of prolonged exile on depression in Namibian refugee adolescents.<sup>36</sup> Increased connections with the school and neighbourhood were associated with a reduction in internalising difficulties.<sup>22,37</sup> However, whether the sense of community in these studies arose from within the refugee population, host community, or a combination of these was not clear. This distinction is important because it would determine whether interventions might be best directed at preservation of a strong identity and structure within the refugee community, or whether maximum integration with the host community helps to achieve good mental health outcomes.

### Societal factors

#### Social, economic, and cultural contexts

Refugees in low-income and middle-income settings often come from neighbouring regions,<sup>49</sup> with often few differences in culture, religion, and language between refugee and host populations.<sup>48,107</sup> Evidence suggests, however, that adaptation to apparently similar settings is not necessarily easy,<sup>22</sup> and refugees themselves draw attention to cultural dissimilarity in settings that western researchers judge to be similar on the basis of religion and language.<sup>28</sup> Thus, internally displaced Bosnian adolescents were more likely to be depressed than were those exiled to neighbouring high-income countries,<sup>37</sup> including Croatia with apparent similarities of culture and language and Austria with greater dissimilarity of culture, language, and religion. Refugee children from Central America relocated to neighbouring countries had different degrees of psychological distress depending on the country of settlement.<sup>28</sup> The socioeconomic disadvantage and instability of internal displacement might sometimes outweigh the advantages of cultural and linguistic continuity, and a change across rural and urban settings can also create substantial challenges, but, so far, these have not been assessed.

### Ideological and religious contexts

The protective effect of belief systems against mental health disorders is difficult to assess meaningfully and reliably, and hence little evidence exists to support such an effect. The degree of personal religious commitment was quantified in one study as a composite of scales that assessed the frequency of involvement with religious community activities and the subjective sense of religious devotion; this commitment was associated with a reduction in anxiety and depression in internally displaced Bosnian adolescents.<sup>37</sup> However, even measurement of an individual's religious commitment needs to take account of a complex interplay between family and contextual factors, which is difficult to achieve in quantitative assessments.

In a study of unaccompanied Tibetan refugees in India, the individuals felt that participating in their nation's struggle and strong Buddhist beliefs safeguarded them against mental health difficulties; these reports were not assessed quantitatively.<sup>35</sup> Evidence from conflict-affected countries, such as Bosnia and occupied Palestinian territory, indicates that the meaning attributed by young people to their experiences of military conflict, and their engagement in searching for social and moral coherence, can affect susceptibility to subsequent mental health difficulties.<sup>108–110</sup>

#### Premigration residence

Internally displaced Bosnians from the capital city had more psychological symptoms than did those from rural areas,<sup>21</sup> but they had also been exposed to more adverse events. Generally, children who reside in socioeconomically disadvantaged urban areas in high-income countries are at increased risk of psychological disorders,<sup>111</sup> but in the case of internally displaced children, further research is needed to establish whether urbanisation or life events have increased their risk.

#### Resettlement location

The consequences for children living in settings such as refugee camps have received little attention, but current evidence shows that living in camps raises the risk of psychological disturbance. Central American refugee children living in camps in Honduras, rather than other forms of accommodation in neighbouring countries, showed much higher psychological distress, but the study design did not allow assessment of whether this difference related to camp residency or other country-specific factors.<sup>28</sup> The prevalence of psychological symptoms in Afghan refugee children was substantially different between four camps in Pakistan.<sup>23</sup> Those in the newest camps (usually first-generation refugees with direct adverse experiences) had more psychological difficulties than did those in the older, more established refugee camps. In a study of Palestinian camps, exposure to potentially traumatic

events greatly differed between different camp settings.<sup>40</sup> Bosnian children in private, rented accommodation were rated as showing more positive characteristics than were those in refugee settlements.<sup>18</sup>

Palestinian children living in refugee camps were more likely than were those living in other settings to be psychologically maltreated by their parents.<sup>25</sup> In Palestinian studies, higher rates of anxiety disorders<sup>39,40</sup> and depressive states<sup>20</sup> have been reported among children in refugee camps or refugee-predominant districts than in other settings.

### Repatriation

Although few studies of repatriated refugees have been undertaken, they are important, because of an increase in forced repatriation of failed asylum seekers from low-income, middle-income, and high-income settings, including Malaysia, Thailand, China, and Uganda, in the past decade.<sup>112,113</sup> The small amount of evidence that is available so far suggests that the outcome for refugees returning from abroad is similar to, or better than, those who had never migrated,<sup>22,24,27,33</sup> but in none of the identified studies were refugees who were repatriated from a specific host country directly compared with those granted permanent resettlement in that host country. Voluntary versus involuntary repatriation, and repatriation to the home country versus resettlement, are important distinctions that have not been investigated. The results of a study of repatriated Vietnamese unaccompanied children and young adults (aged 10–22 years) showed no differences from non-displaced peers in perceived self-efficacy and social support 3–4 years after repatriation.<sup>27</sup> Repatriated Bosnian refugee children had experienced fewer total adverse events and fewer psychosomatic symptoms<sup>33</sup> and behavioural problems in early adolescence<sup>24</sup> than did children who had remained in Bosnia during the war. Returned refugee adolescents had suffered fewer potentially traumatic events, and fewer continued daily stressors than did adolescents who were still internally

displaced in the Democratic Republic of Congo. They were similar to non-displaced peers with respect to daily stressors, with the exception of having more family quarrels.<sup>29</sup> Returnees showed more symptoms of externalisation, internalisation, and post-traumatic stress disorder than did non-displaced peers, but fewer symptoms than did internally displaced adolescents. With the exception of externalising symptoms, these differences were attributable to differences in exposure to potentially traumatic events and daily stressors rather than displacement status. However, Eritrean adolescents had equally high rates of symptoms of post-traumatic stress disorder whether they had returned as refugees from Sudan or had never left.<sup>19</sup> Both these groups of Eritrean children had been exposed to war at a very young age, and those who had been in Sudan had continued to be exposed to different stressors, including harassment and violence.

### Conclusions and recommendations

Less evidence is available for low-income and middle-income countries compared with high-income settings, but a pattern of risk and protective factors exists (table 4). Factors affecting the individual, being easy to assess, have been the most studied.

Mental health problems do not result from a single cause, but from complex causal chains.<sup>115</sup> Understanding how different factors interact requires careful attention. Two types of risk and protective factors are especially important. Mediators are active components in causal pathways—eg, an individual's direct exposure to acts of violence, whereas moderators modify the strength or direction of the relation between variables—eg, age, sex, and parental wellbeing.<sup>116</sup> Existing research shows that good-quality social support is associated with lower levels of psychological disturbance during prolonged exile, but whether and how social support mediates or moderates the effects of stressors has not been studied in depth.<sup>117</sup> One way of testing potential mediators and moderators is through intervention studies. Examples of such work

	Domain assessed	Number of studies*	Total number of children†	Risk or protective factor
Exposure to premigration violence	Individual	12 <sup>15,16,18,20,21,28,29,31,32,37,40,41</sup>	7382	Risk
Female sex	Individual	7 <sup>17,18,29,32,35,37,41</sup>	2667	Risk (for internalising or emotional problems, but not post-traumatic stress disorder)
Settlement in refugee camp	Societal	4 <sup>20,26,28,29</sup>	4742	Risk
Male sex	Individual	3 <sup>17,24,29</sup>	1678	Risk (for externalising or behavioural problems)
Repatriation‡	Societal	3 <sup>22,24,27</sup>	1101	Protective
Internal displacement (within country of origin)	Societal	2 <sup>16,37</sup>	1574	Risk

Only factors that were validated in at least two studies, resulting in the same direction of effect, were included in the table, an approach used elsewhere<sup>114</sup> to provide an indication of the consistency and strength of findings with predictor variables. \*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. ‡Refers to individuals who sought asylum in a different country and then returned to their country of origin, and were compared with those who had remained in their country of origin, who typically had longer exposure to conflict than did those who had migrated.

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

include psychosocial interventions for children affected by political violence in northern Uganda and Indonesia.<sup>117,118</sup>

Which risk factors are most important in terms of adverse outcomes has been much debated—particularly, whether direct exposure to military conflict has received disproportionate attention relative to everyday suffering caused by social and material stressors in the wake of war, engendered by poverty, malnutrition, illness, displacement, loss of social networks, material support, and stressful family environments.<sup>119</sup> For example, in a study in Afghanistan, with mostly internally displaced children, exposure to violence was strongly predictive of the likely symptoms of psychiatric disorders, but children reported traumatic exposures to violence in the family and community, and not just military acts of violence.<sup>57</sup> Prospectively, family violence remained a key predictor of child mental health, even in the context of continued militarised conflict.<sup>120</sup> Similarly, in a Palestinian study,<sup>97</sup> family violence was a stronger predictor of psychological symptoms in children than was exposure to political violence, which accounted for a fairly small effect on mental health outcomes. Miller and Rasmussen<sup>119</sup> developed a useful model to understand inter-relationships between the domains that can be used to guide the development of interventions.

Most studies are restricted to assessment of cross-sectional bivariate or multivariate associations between potentially adverse experiences and mental health disorders. One important next step is to move from cross-sectional epidemiological research of risk factors to prospective assessment of the effectiveness of different types of interventions. Systematic reviews of observational epidemiological studies should inform the development of culturally relevant and evidence-based interventions. The evidence so far would suggest that different types of childhood adversities, such as those that are a consequence of the exposure to domestic, structural, and collective violence in conflict settings, have different effects on mental health outcomes. This difference would underscore the need for the provision of different types of interventions supported across social, economic, and health care sectors, with specialised psychological services working alongside structural and family-based interventions to address a range of child mental health problems.<sup>120–122</sup>

Assessment of risk and protective factors is often based on the results of studies of non-displaced conflict-affected children, or studies of refugees in high-income settings. Important questions remain unanswered, particularly with respect to modifiable family, societal, perimigration, and postmigration factors. Failure to apply longitudinal rather than cross-sectional approaches to the study of the mental health of forcibly displaced children in low-income and middle-income settings is a major limitation in the identification of the factors that most affect wellbeing at different stages of children's experiences. There is a paucity of studies of

the perimigration dangers and location changes that refugees endure during flight and migration journeys.<sup>30,35</sup>

There is a lack of large studies of how children's attributions of meaning in relation to their experiences of forced displacement might affect their psychological outcomes. However, the results of some studies have shown how children make sense of events, build hope, and gain a sense of coherence.<sup>109,123,124</sup> The risks associated with specific types of potentially traumatic events have been assessed in few studies, despite cumulative traumatic exposure being the variable with the strongest evidence for association with mental health difficulties. Overall, small sample sizes and suboptimum research designs have restricted our capacity to elucidate the pathways of risk and resilience in the presence of substantial adversity. Additionally, the use of non-standard measures of psychometric outcomes, socioeconomic variables, and other contextual factors restricts the cross-applicability of some reports. On the one hand, the general use of psychometric scales corresponding to internationally recognised diagnostic criteria, without due consideration to local variations in symptom presentation and conceptualisation, leads to research with unproven validity and reliability. On the other hand, the use of scales that are entirely locally developed greatly restricts the extent to which findings from a specific setting can inform approaches in other contexts.

The effects of adverse events, where these arise on a fairly stable and predictable background versus a background of longstanding social and political unrest, on the development of forcibly displaced children is not known. Moreover, children with pre-existing psychological, physical, or learning difficulties are potentially highly vulnerable groups that are often sidelined in research, despite an increasing awareness of the specific needs of adults with pre-existing mental health problems.<sup>13</sup> No studies were identified of the effects of alternative carers. The effect of changes in the structure and functioning of displaced families and displaced communities on children's psychological wellbeing is still not clear from quantitative studies, despite parental loss and separation being common experiences. The influence of a child's appraisal of events, and the effect of providing information about past events, have not been investigated in this population. For example, school and peer relationships were the focus of only one study,<sup>37</sup> despite their importance not only for a child's current wellbeing, but their long-term successful development.

Generally, quantitative studies are not accompanied by sufficient contextual detail to enable helpful elucidation of the potential cross-comparability of findings. The effect of family and household composition can depend on the norms for household composition in which children have grown up—eg, for children raised in nuclear families, living in large, extended households during resettlement could be stressful, and vice versa. Cultural and

infrastructure gaps between the country of origin and host society are poorly understood, but potentially important factors that affect children's adaptation. Understanding the experiences of refugee children in the context of refugee camps is crucial—in sub-Saharan Africa, seven in ten refugees live in camps, and globally, one in three live in refugee camps,<sup>5</sup> yet the effects of living in camps on mental health have been assessed in few studies other than in the Palestinian context.

Resources for health and social care are especially restricted in low-income and middle-income settings, and the careful elucidation of risk and protective factors not only helps to develop effective intervention strategies,<sup>13</sup> but also enables the efficient targeting of scarce resources to children who are in most need. Thus, policy directed towards an increase in research in all the aspects discussed in this Review remains essential. The key policies identified in the Review by Fazel and colleagues<sup>38</sup> support the Inter-Agency Standing Committee's guidelines,<sup>13</sup> which specifically recommend the enhancement of community self-help and social support, helping the provision of appropriate cultural, spiritual, and religious healing practices, and support, particularly for young children (0–8 years) and their carers. Jordans and colleagues have proposed a model of a multilayered psychosocial care system,<sup>125</sup> components of which have been tested in war-affected low-income and middle-income countries with encouraging results.<sup>118</sup> They advocate complementary approaches to provide mental health and psychosocial care to children, and to address the clinical needs of individuals and the general needs for community revitalisation.<sup>126</sup> Such care packages are likely to reach more people, reduce stigma, and be sustainable if integrated into existing community and government systems.<sup>13</sup>

Encouragingly, some child-specific interventions for internally displaced children in low-income and middle-income settings have been assessed,<sup>106,117</sup> and show the potential for locally informed group interventions to reduce symptoms of post-traumatic stress disorder<sup>106</sup> and depression,<sup>117</sup> using a range of psychotherapeutic and educational strategies.<sup>127</sup> However, so far, the kinds of family and community interventions suggested above have not been assessed; these are clearly needed. An integrated approach should be used for the assessment of the population; interventions must provide for basic physical needs such as food, shelter, and safety, and support education and the development of community structures and activities that promote mental health.<sup>127</sup> One of the important issues for low-income and middle-income countries is the question of funding to support these interventions. Since so many of the world's forcibly displaced individuals are living in poorly resourced countries, high-income countries, with the help of international agencies, need to take responsibility and contribute towards the funding for the development and evaluation of these interventions. This cooperation has become urgent because so many high-income countries

have increasingly restrictive policies about asylum immigration, leaving low-income and middle-income countries to cope with large numbers of displaced people.

The lack of focused studies partly indicates the practical and funding difficulties affecting research in low-income and middle-income settings, alongside the inherent difficulty in planning and completing studies in rapidly developing humanitarian situations. For the researchers to have successfully completed these existing studies already represents a formidable task. The information available is not extensive enough to offer firm evidence about the full range of risk and protective factors, with respect to the family, community, and societal factors that intersect with individual-level exposures, especially how they interplay over time. Nonetheless, the international community must make the best use of available research findings to identify future research and action priorities to bolster the healthy psychological development of some of the world's most vulnerable children.

#### Contributors

All the authors were involved in the conceptualisation and the design of the Review. RVR undertook the literature searches. RVR and MF selected the studies. RVR gathered the information from the studies. RVR and MF compiled the tables. RVR, MF, LJ, CP-B, and AS wrote the Review. All authors have read and approved the final version of the Review.

#### Conflicts of interest

We declare that we have no conflicts of interest.

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