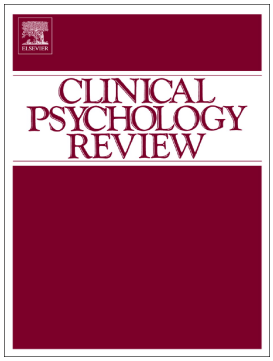

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A systematic review of socio-ecological factors contributing to risk and protection of the mental health of refugee children and adolescents

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Abstract

In the past decade, millions of children and adolescents have been forced to flee from protracted or newly erupted violent conflicts. Forcibly displaced children are particularly vulnerable for developing mental health problems. However, a timely and systematic review of the current evidence is lacking. We conducted a systematic review of factors contributing to the mental health of refugee children across different socio-ecological levels (individual, family, community, sociocultural). We systematically searched the databases Medline, PsycINFO, Web of Science, and Cochrane for English studies published in peer-reviewed journals between August 2010 and May 2020. Of the 2413 identified studies, 63 were included in the analyses. Only 24 studies were considered to be of high quality. Pre-migration individual (risk: exposure to war-related trauma, female gender) and post-migration family factors (risk: parental mental health problems and impaired parenting, protective: family cohesion) currently have the best evidence base. Post-migration community (protective: school connectedness, support by peers) and sociocultural factors (risk: discrimination and acculturative stress, protective: integrative acculturation) have gained some support in high-income settings. Prevention and intervention approaches should integrate factors across different socio-ecological levels. More longitudinal studies and research in low- and middle-income countries are needed to advance our knowledge on causal mechanisms behind factors contributing to refugee youth`s mental health.

Keywords: refugee children, mental health, risk, resilience, ecological

According to the latest report of the United Nation High Commissioner for Refugees (UNHCR), the global number of people forcibly displaced by persecution, conflict and organized violence has increased from 43.3 million in 2009 up to 70.8 million in 2018 (UNHCR, 2019). This population consists of 25.9 million refugees, who fled across national borders, 41.3 million internally displaced people (IDP) and 3.5 million asylum seekers (UNHCR, 2019). Within the past decade, a number of new conflicts have erupted, e.g. civil wars in Syria and South Sudan as well as the Rohingya crisis, while protracted crises such as in Afghanistan, Somalia, and the Democratic Republic of Congo continue to displace millions of people. About 85% of all refugees flee to neighboring countries, which are often low- and middle-income countries (LMIC) (UNHCR, 2019). In fact, the four countries hosting the largest numbers of refugees in 2018 were Turkey, Pakistan, Uganda and Sudan (UNHCR, 2019). This means that only a small number of refugees embark on the often long journey to high-income countries (HIC), e.g. Europe, North America, and Australia. In the European Union, the highest numbers of refugees, mostly from Syria, Afghanistan and Iraq, arrived in 2015 and 2016 with about 1.3 million asylum applications in each year (Eurostat, 2020).

Children and adolescents below 18 years of age make up about half of the worldwide refugee population (UNHCR, 2019). They have to face the atrocities of conflict-related violence and the numerous hardships of flight and resettlements during crucial phases of their physical, emotional, social and cognitive development. This makes youth particularly vulnerable to mental health problems following war, uprooting and flight (Reed, Fazel, Jones, Panter-Brick, & Stein, 2012). Accordingly, prevalence rates of up to 53% for posttraumatic stress disorder (PTSD), up to 33% for depression and up to 32% for anxiety disorders have been reported for young refugees resettled in European countries (Kien et al., 2019). A systematic review focusing on refugee youth living in refugee camps reports similar peak rates for depression and anxiety, and rates for PTSD of up to 87%, yet there was large variation in prevalence rates of mental health problems across studies (Vossoughi, Jackson,

Gusler, & Stone, 2018). Although the prevalence of mental health problems is high in refugee children and adolescents, it is important to note that a substantial number of refugee children does not develop mental health problems and is able to adjust to the new living situation. This finding has stimulated research on the notion of resilience in war-affected children, which refers to good developmental outcomes despite exposure to significant adversity (Luthar, Cicchetti, & Becker, 2001). The identification of factors that contribute to risk and resilience in displaced children provides the foundation for any effort to support these children`s healthy development (Fazel, Reed, Panter-Brick, & Stein, 2012).

From a socio-ecological perspective (Bronfenbrenner, 1979), child development is viewed as a dynamic process arising from complex interactions between different levels of the social ecology (e. g. individual, family, school, community, society). Such a framework has been applied to conceptualize not only the stressful experiences that refugee children face, but also the protective resources they may draw on (Betancourt & Khan, 2008; Elbedour, ten Bensel, & Bastien, 1993; Reed et al., 2012). Factors contributing to risk and protection can further be classified according to their temporal occurrence within the refugee experience, i.e. pre-, peri, and post-migration (Lustig et al., 2004). In their home countries, youth are often exposed to severe interpersonal violence. During their flight, they may experience detention, deprivation of food or separation from their guardians. In the host country, refugee children continue to face many challenges, in part depending on where they resettle. While the conditions in HIC may ensure safety from external harm and provide basic necessities, youth may struggle to cope in an often completely different society and culture. They have to learn a new language, may face discrimination by peers or encounter bureaucratic obstacles related to school and their asylum process. In LMIC, refugee children often resettle in large refugee camps with high levels of violence, bad sanitary conditions, lack of food and material resources and overcrowded housing. Independent of the specific setting, all these daily post-migration stressors represent a significant risk for refugees` mental health and wellbeing over

and above pre-migration traumatic experiences (Li, Liddell, & Nickerson, 2016; Miller & Rasmussen, 2010).

The most comprehensive systematic reviews of factors contributing torefugee children`s mental health to date have been conducted by Fazel and colleagues (2012) for children in HIC and by Reed and colleagues (2012) for children in LMIC. Both reviews included studies that had been published before July 2010. Since then research has advanced and various studies focusing on refugee children's mental health and factors that influence psychological outcomes have been published. However, a comprehensive systematic review that synthesizes and evaluates the essential results and implications of these studies is lacking. Several systematic and narrative reviews have been recently published, but these mostly focused on specific subpopulations, e.g. Syrian or unaccompanied refugee children (Mitra & Hodes, 2019; Mohwinkel, Nowak, Kasper, & Ramm, 2018; Yaylaci, 2018), particular mental health outcomes, e.g. PTSD and depression (El Baba & Colucci, 2018; Reavell & Fazil, 2017; Tam, Houlihan, & Melendez-Torres, 2017), or specific factors, e.g. placement type (O'Higgins, Ott, & Shea, 2018) or acculturative stressors (d'Abreu, Castro-Olivo, & Ura, 2019). Other reviews adopted a broader focus (Eruyar, Huemer, & Vostanis, 2018; Hodes & Vostanis, 2018), yet did not apply systematic methods including rigorous selection criteria or evaluate the quality of included studies. In this systematic review, we systematically investigate the factors contributing to risk and protection of the mental health of refugee children and adolescents from a socio-ecological perspective.

Methods

Study selection

The electronic databases Medline, PsycINFO, Web of Science, and Cochrane were systematically searched for studies in English that were published in peer-reviewed journals between August 2010 and May 2020. The following search terms were used: ("asylum

seeker" or "refugee" or "displaced person" or "migrant") and ("child" or "adolescent" or "young" or "minor" or "teenage" or "youth") and ("psychiatr*" or "psycholog*" or "psychosocial" or "mental" or "wellbeing" or "adaptation" or "adjustment" or "emotion" or "behaviour" or "behavior" or "trauma" or "traumatic" or "PTSD" or "posttraumatic stress" or "internalizing" or "externalizing" or "anxiety" or "depression") and ("resilience" or "protective factor" or "modifying factor" or "recovery" or "outcome" or "risk factor" or "vulnerability factor"). Moreover, reference lists of previous related reviews and key studies were manually reviewed to identify additional studies. Studies were selected based on the following inclusion and exclusion criteria, all of which had to be fulfilled:

Criterion A: The study investigated the mental health of refugee or internally displaced children in HIC or LMIC. Studies about other topics than refugee mental health, e.g. politics, general health care, physical health, or child maltreatment, were excluded.

Criterion B: The mean age of study participants was 18 years or younger. Studies with older refugees were excluded.

Criterion C: The study had a cross-sectional or longitudinal design and presented quantitative data with a minimum sample size of 50 participants. Qualitative studies were not eligible for inclusion. Similarly, other kinds of empirical studies, e.g. intervention or validation studies, and scientific works, e.g. reviews or commentaries, were excluded.

Criterion D: The study assessed factors contributing to refugee children`s mental health. Studies reporting only prevalence rates of mental health problems without investigating potential factors of influence were excluded.

Criterion E: The majority of participants were directly exposed to war and flight. Studies with children whose parents were refugees and who were born in the host country, and studies with non-refugee samples such as immigrants or non-displaced children in conflict zones were excluded.

Criterion F: The study applied a statistical analysis that theoretically allowed for the control of potentially confounding factors, e.g. age, gender and time since displacement, on refugee children`s mental health, e. g. (M)ANCOVA, regression analysis or structural equation modeling. However, studies were not required to actually control for potentially confounding variables. Studies using only bivariate correlational analyses or simple group comparisons to draw inferences about contributing factors were excluded.

After the removal of duplicates, the titles and abstracts of the remaining articles were screened for eligibility according to these criteria in a hierarchical manner from criteria A to E. Most studies were excluded for several reasons, but were attributed to the category of the highest unmet criterion. Figure 1 graphically displays the study selection process.

The large variability and lack of consistency across studies in terms of research designs, study samples, relationships and outcomes assessed, all of which have been shown to be influential confounds in research on refugee children`s mental health (Fazel et al., 2012; Kien et al., 2019; Vossoughi et al., 2018), precluded a meta-analysis of the data. However, as we aimed to provide a comprehensive overview of the recent developments in research on refugee children`s mental health, we adopted a broad focus and did not pose limits on certain factors, samples or outcomes. Therefore, we opted for a detailed narrative synthesis of the included studies.

Quality appraisal

We used the Systematic Assessment of Quality in Observational Research (SAQOR) system to evaluate the quality of the studies to be included in the systematic review. SAQOR was developed to assess the quality of observational studies in the field of psychiatry within six domains: sample, control/comparison group, quality of exposure/outcome measures, follow-up, distorting influences and reporting domains (Ross et al., 2011). Each domain is further broken down into sub-criteria, for instance the ‘sample’ domain includes the criteria representativeness of the population, clearly stated source of sample, explicitly stated

sampling method, sample size/power calculation and inclusion/exclusion criteria. The presence of each criterion is rated as 'yes' (satisfied), 'no' (not satisfied), 'unclear' or 'not applicable'. The entire domain is evaluated as 'adequate` if a minimum of 3 out of 5 criteria are fulfilled or otherwise as 'inadequate'. A final quality level (high, moderate, low) is determined based on the assessments of the six domains.

To increase the flexibility and sensitivity of the rating system with regard to the specific type of study, we adapted SAQOR according to its use by Betancourt and colleagues (2013) in their systematic review on the psychosocial adjustment and mental health in former child soldiers: the 'control/comparison group' domain was only considered for those studies that actually included such a group and the 'follow-up' domain was only required for longitudinal studies. Given certain methodological and practical challenges inherent to research with conflict-affected populations in often unstable settings we considered the criterion 'representativeness' within the sample domain met if a randomized sample was chosen from a base population across multiple sources (i.e. refugee camps, schools). Following Betancourt et al. (2013), the quality of longitudinal studies was rated 'high' if at least four out of five (without comparison group) or five out of six domains (with comparison group) were rated as adequate; for observational studies, at least three out of four (without comparison group) and four out of five (with comparison group) adequate domains were required for a rating of 'high' quality. 'Moderate' quality was assigned to longitudinal studies with 2 (without comparison group) or 3 adequate domains (with comparison group) and to observational studies with two adequate domains. Longitudinal studies rated inadequate in four or more domains and observational studies rated inadequate in three or more domains were considered 'low' quality. Two of the authors independently conducted the quality ratings.

Results

Characteristics of the included studies

Out of the 63 selected studies, 41 were conducted in HIC and 22 were conducted in LMIC according to the World Bank classification (World Bank, 2019). The refugee children came from 53 different countries: Africa (21 countries), Asia (17), Middle and South America (10) and Eastern Europe (5). The most frequent countries of origin were Syria, Iraq, Afghanistan, Iran, Burma, Somalia, South Sudan, and Eritrea. In total, 15 studies included unaccompanied refugee minors (URM). The majority of studies had a cross-sectional one-group design, 7 cross-sectional studies included a comparison group and 12 studies had a longitudinal one-group design. Table 1 shows a detailed description of the included studies.

Results of quality appraisal

Of the 63 studies, 13 were rated as 'low' quality, 26 as 'moderate' quality, and 24 as 'high' quality. The two independent raters agreed in the overall rating of 42 studies and resolved disagreements in the other 21 studies through discussions. Studies deemed 'low' quality were retained in the systematic review in order to provide a comprehensive and unbiased view of the evidence base. The results of the quality appraisal are displayed in detail in Tables A1-A3 in the appendix.

Study findings

The findings are structured according to the different levels of the socio-ecological framework (individual, family, community, society and culture), similar to previous systematic reviews (Fazel et al., 2012; Reed et al., 2012) The findings of the individual studies are displayed in Table B in the appendix.

Individual level

Exposure to trauma. About half of the studies (n = 31) investigated the association between pre-migration exposure to war-related traumatic events and children`s mental health. Cumulative exposure to traumatic events was related to higher levels of mental health problems, including PTSD, depression, anxiety, and externalizing problems in most studies (e. g. Bronstein, Montgomery, & Dobrowolski, 2012; Jensen, Skar, Andersson, & Birkeland,

2019; Lincoln, Lazarevic, White, & Ellis, 2016; Müller, Büter, Rosner, & Unterhitzenberger, 2019; Vervliet, Meyer Demott, et al., 2014). A few studies looked at singular traumatic events and found that particularly those involving severe interpersonal violence (Nasıroğlu et al., 2018; Sapmaz et al., 2017) and family members as victims (Ceri & Nasiroglu, 2018; Gormez et al., 2018) were associated with worse mental health outcomes. Studies that did not report a consistent association between traumatic exposure and psychopathology often indexed trauma exposure by single items or trauma types (Beiser & Hou, 2016; Flink et al., 2013; Nasiroglu & Ceri, 2016; Oppedal & Idsoe, 2012). Longitudinal studies with CRM indicated that pre-migration trauma continued to impact their mental health years after arrival in the host country (Jensen et al., 2019; Keles, Friborg, Idsøe, Sirin, & Oppedal, 2016b; Vervliet, Lammertyn, Broekaert, & Derluyn, 2014). The role of post-migration trauma has only been assessed in two studies: Trauma exposure after arrival was not associated with mental health problems in one study (Jensen et al., 2019), whereas an increase in stressful life events after arrival predicted an increase in PTSD symptoms in another study (Jensen, Skårdalsmo, & Fjermestad, 2014). However, as the authors of the latter study note, events classified as occurring after arrival may have included pre-migration events that were not recalled or reported before.

Physical, psychological or developmental disorders. There has been scant investigation of the impact of pre-existing health and developmental conditions on refugee children`s mental health. In a study with Syrian refugee children, the effect of war exposure on PTSD was strongest for highly sensitive children with low levels of childhood adversities, whereas sensitivity did not moderate the effect of war on PTSD for children with high childhood adversities (Karam et al., 2019). Variants of the monoamine oxidase A (MAOA) gene in Syrian boys were associated with decreases in psychosocial distress over time (Clukay et al., 2019). This link was most pronounced in children with either low trauma exposure or high resilience. Children`s poorer physical health as rated by parents was related to more emotional

and behavioral problems (Lau et al., 2018), while children with a positive history of a psychiatric disorder were more likely to receive a psychiatric diagnosis than children with a negative history (Sapmaz et al., 2017). Longitudinal studies suggest that refugee minors` depressive symptoms represent a risk factor for the development of later PTSD symptoms (Müller, Gossmann, et al., 2019; Smid, Lensvelt-Mulders, Knipscheer, Gersons, & Kleber, 2011).

Time since displacement. Evidence on the association between length of stay in the host country and mental health is inconsistent. Seven studies, six of which were conducted in HIC, found that longer duration of time spent in the host country was related to lower levels of mental health problems and higher well-being (Correa-Velez, Gifford, & Barnett, 2010; Goosen, Stronks, & Kunst, 2014; Khamis, 2019; Lincoln et al., 2016; Müller, Gossmann, et al., 2019; Oppedal & Idsoe, 2012, 2015). A recent longitudinal study reported an amelioration of PTSD, depression and anxiety symptoms from baseline to follow-up assessment 1 year later (Müller, Gossmann, et al., 2019). Other longitudinal studies with URM provide evidence for a chronic trajectory of mental health problems (Jakobsen, DeMott, Wentzel-Larsen, & Heir, 2017; Jensen et al., 2019, 2014; Keles et al., 2016b; Vervliet, Lammertyn, et al., 2014). Two studies conducted in refugee camps suggest that an increased length of stay in camp settings was associated with exacerbated mental health problems (Braun-Lewensohn & Al-Sayed, 2018; Nasıroğlu et al., 2018).

Age and gender. The findings regarding age are inconsistent. The evidence is largely based on studies with older children and adolescents above 11 years of age and there is very limited information on young and middle childhood. In studies including adolescents until the age of 18, youth aged 16 and older had higher levels of internalizing problems (Braun-Lewensohn & Al-Sayed, 2018; Meyer, Yu, Hermosilla, & Stark, 2017; Smid et al., 2011). Older URM were also more likely to develop late-onset PTSD (Smid et al., 2011), probably due to their higher exposure to traumatic experiences, an association also found in a number of other studies

(Eruyar, Maltby, & Vostanis, 2018; Müller, Büter, et al., 2019; Oppedal & Idsoe, 2015). In a sample of refugee youth ranging from 13 to 27 years of age (mean 18.9), older age was related directly to fewer conduct problems, but indirectly to more depressive symptoms through less host culture competence and more outgroup hassles (Oppedal & Idsoe, 2012). Children who arrived in the Netherlands at an older age, i.e., between 4 and 11 or between 12 and 17 rather than in the first three years of life, had an increased risk of mental distress as recorded by asylum health services (Goosen et al., 2014). A study with repatriated adolescents between 11 and 18 years found that, for children who had a residence permit in the host country, peer problems decreased with age, whereas the opposite was true for children without a residence permit in the host country (Zevulun, Post, Zijlstra, Kalverboer, & Knorth, 2018). Notwithstanding, other studies with predominantly adolescents samples found that older age was a protective factor for internalizing problems (Ahmad, Smetana, & Klimstra, 2015; Lau et al., 2018; Park, Lee, & Jeon, 2017) and a substantial number of studies did not find associations between youth`s age and mental health outcomes (Betancourt, Salhi, et al., 2012; Buchanan, Abu-Rayya, Kashima, Paxton, & Sam, 2018; Giordano, Cipolla, Ragnoli, & Bruno, 2019; Jensen et al., 2019; Tozer, Khawaja, & Schweitzer, 2018; Vervliet, Meyer Demott, et al., 2014).

The evidence for gender differences yields a more consistent picture. Eleven studies found that girls were at a higher risk of internalizing problems than boys (e. g. Ahmad et al., 2015; Betancourt, Salhi, et al., 2012; Ceri & Nasiroglu, 2018; Keles et al., 2016b; Meyer, Steinhaus, Bangirana, Onyango-Mangen, & Stark, 2017; Oppedal & Idsoe, 2015). Girls were also more likely to have higher levels of PTSD symptoms in a number of studies (Beni Yonis et al., 2019; Braun-Lewensohn & Al-Sayed, 2018; Elklit, Ostergard Kjaer, Lasgaard, & Palic, 2012; Jensen et al., 2019). Six studies found no differences between girls and boys regarding PTSD (Giordano et al., 2019; Karam et al., 2019; Khamis, 2019) and other mental health problems (Lau et al., 2018; Samara, El Asam, Khadaroo, & Hammuda, 2019; Tozer et al.,

2018). One study found male gender to be associated with a higher PTSD risk (Gormez et al., 2018). Three studies corroborate evidence that boys are at an increased risk for externalizing problems (Ceri & Nasiroglu, 2018; Eruyar, Maltby, & Vostanis, 2020; Oppedal & Idsoe, 2012). There is also some evidence for an interaction of age and gender. In pre-pubertal children, boys had a higher risk for mental health problems than girls, whereas in adolescents, girls were at a higher risk (Goosen et al., 2014; Wiegersma, Stellinga-Boelen, & Reijneveld, 2011). In a study with Syrian children in a Turkish camp, gender differences in depression were observed only in children 13 or older, which was attributable to significantly lower levels of depression in older compared to younger boys (Oppedal, Özer, & Şirin, 2018).

Education and academic performance. A longer period of schooling was associated with fewer PTSD symptoms (Müller, Büter, et al., 2019) and fewer self- and parent-rated emotional and behavioral problems (Wiegersma, Stellinga-Boelen, & Reijneveld, 2011). A higher educational level of South Sudanese adolescents in a Ugandan camp was associated with fewer anxiety symptoms (Meyer, Yu, et al., 2017). Minors reporting 3 or fewer years of education were significantly more likely to develop late-onset PTSD in a longitudinal study (Smid et al., 2011). Two Australian studies found that better self-perceived (Correa-Velez et al., 2010) and parent-reported school performance (Lau et al., 2018) were linked to higher psychological wellbeing and fewer emotional and behavioral problems respectively. In an Australian study (Tozer et al., 2018), fewer years of schooling prior to arrival was associated with higher levels of depression in bivariate, but not multivariate, analysis and in a longitudinal study education level did not predict PTSD symptoms and other mental health problems (Jensen et al., 2014).

Personal resources. Mental health and well-being are likely to be influenced by the way refugee children cope in the aftermath of war and flight. A study with Syrian children who resettled in Jordan and Lebanon found that coping through acquiring social support and trying to think differently about events was associated with fewer PTSD symptoms (Khamis, 2019),

while a higher use of the emotion regulation strategy of cognitive reappraisal differentiated North Korean youth with consistently low levels of depressive symptom from those whose depressive symptoms deteriorated over a one year period (Park, Kim, Lee, & Jun, 2019). However, greater use of problem-focused coping strategies was related to PTSD in Bosnian adolescents who were waiting for their asylum decisions (Elklit et al., 2012), which suggests that engaging too much with problems and circumstances that cannot be actively changed may increase youth`s psychological symptoms. On the other hand, avoiding the engagement with problems and distressing emotions through behavioral and cognitive efforts has also been found to be associated with the presence of PTSD (Elklit et al., 2012; Khamis, 2019) and higher levels of depressive symptoms (Lee, Lee, Jun, & Park, 2020; Park et al., 2019). However, the association between avoidant coping and PTSD disappeared when controlling for the avoidance symptoms related to PTSD in one study (McGregor, Melvin, & Newman, 2015). Children`s appraisals of their life circumstances and their future appear to be important as well. A higher sense of coherence, a personal resource reflecting individuals` ability to cope with and make meaning of adverse events, was associated with lower levels of PTSD symptoms, internalizing and externalizing problems (Braun-Lewensohn & Al-Sayed, 2018). In the same study, higher hopeful expectations for the future were related to children`s fewer externalizing problems, whereas future-oriented wishes were not linked to mental health outcomes. Youth experiencing more control over their life also reported higher levels of psychological and physical well-being (Correa-Velez et al., 2010). Other more practical personal resources, such as physical activity (Lau et al., 2018) as well as instrumental and social competence (Beiser & Hou, 2016) were not associated with adolescents` emotional and behavioral problems.

A number of studies investigated the role of protective personal resources using different conceptualizations of resilience. Lower resilience conceptualized as an individual`s perceived ability to bounce back from stress was related to higher levels of depression in

North-Korean youth in two cross-sectional (Kim, Cho, & Kim, 2015; Park et al., 2017) and one longitudinal study (Park et al., 2019) and influenced whether a longer stay as an asylum seeker was associated with more or fewer emotional problems (Sleijpen, van der Aa, Mooren, Laban, & Kleber, 2019). Higher levels of resilience viewed as a set of interpersonal and intrapersonal strengths were related to higher levels of well-being (Khawaja, Ibrahim, & Schweitzer, 2017; Tozer et al., 2018), while resilience assessed as protective factors on different socioecological levels predicted reductions in Syrian children`s psychosocial stress over time (Clukay et al., 2019).

Family level

Family composition. Youth who were separated from immediate family members had higher levels of PTSD symptoms than youth who stayed in Australia with all their immediate family members (McGregor et al., 2015). Both previous and current separation from the nuclear family was associated with a diagnosis of PTSD (Mace, Mulheron, Jones, & Cherian, 2014). Children in an US detention center who had been separated from their mothers had higher levels of mother-rated emotional and behavioral problems compared to children who had not been separated from their mothers (MacLean et al., 2019). Having left one parent behind in the country of origin was associated with more self- and teacher-reported emotional and behavioral problems in a Dutch study (Wiegersma et al., 2011). The only study comparing unaccompanied and accompanied youth found that being unaccompanied was associated with a higher exposure to traumatic events and with more externalizing problems (Müller, Büter, et al., 2019). Although the integrity of the whole family unit appears to be crucial, other findings indicate that the presence of at least one biological parent is already protective (Correa-Velez et al., 2010; Lau et al., 2018; Meyer, Steinhaus, et al., 2017).

Evidence regarding the role of parental loss is inconsistent. In two studies in LMIC, adolescents who had lost one or both parents were more likely to have PTSD (Beni Yonis et al., 2019) and higher levels of internalizing problems (Meyer, Yu, et al., 2017). In a study

with URM shortly after their arrival in Belgium and Norway, the death of one or both parents was not associated with mental health outcomes (Vervliet, Meyer Demott, et al., 2014). Household size did not seem to be associated with mental health problems in two studies (Beni Yonis et al., 2019; Meyer, Yu, et al., 2017), but a smaller family size was associated with more parent- and teacher-rated emotional and behavioral problems of adolescents resettled in the Netherlands (Wiegersma et al., 2011).

Family functioning and parental mental health. A more positive, i.e. warm and stable, family climate was associated with lower levels of anxiety for Palestinian adolescents living in refugee camps in Jordan (Ahmad et al., 2015). Higher connectedness, i.e. perceived understanding, care and respect, by the family predicted lower levels of internalizing problems in displaced Chechen youth, particularly in boys (Betancourt, Salhi, et al., 2012). A family environment that encouraged the direct expression of emotions was related to a decreased risk for PTSD in Syrian children (Khamis, 2019).

Supporting evidence for the role of refugee parents` wellbeing for their children`s mental health has been found by 10 studies in both HIC and LMIC (e. g. Beiser & Hou, 2016; Bryant et al., 2018; Meyer, Steinhaus, et al., 2017; Sim, Bowes, & Gardner, 2018). For instance, higher caregiver distress was prospectively associated with higher levels of internalizing and externalizing problems in Eritrean adolescents living in a camp in Ethiopia (Betancourt, Yudron, Wheaton, & Smith-Fawzi, 2012). In a study with Syrian parent-child dyads living in Turkey, parental psychopathology was not related to children`s PTSD symptoms, but to higher levels of parent- and child-reported emotional and parent-reported behavioral problems (Eruyar, Maltby, et al., 2018). Poorer caregiver mental health and lower family functioning were associated with more internalizing and externalizing problems in young displaced Colombian children, but not in non-displaced children (Flink et al., 2013). While these studies focused on parent-child dyads and mostly mothers, a study with Syrian families who resettled in the USA found only mothers`, but not fathers` psychopathology to

be associated with children`s anxiety symptoms (Javanbakht, Rosenberg, Haddad, & Arfken, 2018).

Two studies investigating a potential mechanism underlying these associations suggested that parents` own exposure to war trauma and post-migration stressors were associated with higher levels of parental mental health problems, which in turn were related to more negative parenting behaviors (e. g. harsh parenting), which in turn negatively impacted their children`s mental health (Bryant et al., 2018; Sim et al., 2018). In further support of this, children and adolescents` self-reported experiences of maltreatment by parents were associated with higher levels of mental health problems including PTSD (Karam et al., 2019), depression (Lee et al., 2020; Meyer, Steinhaus, et al., 2017; Meyer, Yu, et al., 2017), anxiety (Meyer, Steinhaus, et al., 2017; Meyer, Yu, et al., 2017) and attention deficit hyperactivity disorders symptoms (Lee et al., 2020). An insecure attachment to mothers and fathers as perceived by Syrian children was related to higher levels of PTSD symptoms, general mental health and conduct problems (Eruyar et al., 2020), whereas a positive mother-child relationship was related to lower levels of anxiety for Palestinian adolescents living in camps (Ahmad et al., 2015). Parenting styles perceived as negative, i.e. low in emotional warmth and support, harsh, rejecting and controlling, were associated with higher levels of internalizing and externalizing problems (Eruyar et al., 2020; Lau et al., 2018; Smetana & Ahmad, 2018). In contrast, positive, i.e. supportive and emotionally warm parenting was linked to lower levels of emotional and behavioral problems (Lau et al., 2018; Smetana & Ahmad, 2018; Zevulun et al., 2018).

Household assets and parental education. While no study has systematically assessed preflight socioeconomic status (SES), findings suggested that post-migration SES could be particularly relevant in very poor settings: in an Ethiopian camp, the possession of valuable household assets, i.e. a radio and cattle, was associated with lower levels of adolescents` internalizing problems (Betancourt, Yudron, et al., 2012). In a study in an Ugandan camp,

higher SES conceptualized as lower household hunger, caregiver employment status and number of valuable household assets was related to lower levels of adolescents` depression (Meyer, Steinhaus, et al., 2017). In resource-poor settings, such as refugee camps, low SES may also be an indirect risk factor for children`s wellbeing as it increases their risk to be engaged in child labor, which was associated with higher levels of depression (Meyer, Yu, Rieders, & Stark, 2020). Fathers` current unemployment was associated with an increased risk of a psychiatric disorder in refugee children living in a Turkish city (Sapmaz et al., 2017). Having a less educated father was linked to higher levels of children`s emotional problems in one study (Ceri & Nasiroglu, 2018), whereas no independent association between parents` level of education and child mental health outcomes was found in other studies (Beiser & Hou, 2016; Beni Yonis et al., 2019; Sapmaz et al., 2017).

Community level

Social support

Social support can be provided by various persons within children`s social ecology, e.g. by family members, friends, teachers or other adults within the community, and thus operates both on the micro- and exosystem. Although a number of studies investigated associations between social support and refugee children`s adjustment, they varied considerably in their conceptualization and assessment of social support. Studies that assessed social support in general and did not differentiate between sources of support produced mixed findings, with some studies reporting no independent associations with mental health problems (Elklit et al., 2012; Flink et al., 2013; Jensen et al., 2019) and others presenting links between general social support and higher wellbeing (Correa-Velez, Gifford, & McMichael, 2015; Khawaja et al., 2017) as well as lower levels of depression (Oppedal et al., 2018). One study differentiated between the type of support and found that lower psychological, but not practical support by family, friends and other people predicted North Korean youths` depression (Park et al., 2017). Some studies separately investigated the role of social support

provided by family members, peers and community members. Lower support by mentors and peers, but not by the family, increased the risk of PTSD and depression (mentors) as well as anxiety (mentors and peers) after stressful life events (Sierau, Schneider, Nesterko, & Glaesmer, 2018). In another study, social support within the family was not significantly associated with unaccompanied and accompanied minors mental health, whereas social support in the host country was related to lower levels of anxiety symptoms (Müller, Büter, et al., 2019). In a study with URM in Norway (Oppedal & Idsoe, 2015), both support from family and friends were associated with lower depression levels directly (family) and indirectly through promoted acculturation (family and friends). Connectedness with the family appeared to be more important in protecting displaced Chechen adolescents from internalizing problems than connectedness with peers and adult community members (Betancourt, Salhi, et al., 2012). Caregiver-rated ethnic and religious community support was not associated with children`s emotional and behavioral problems in an Australian study (Lau et al., 2018).

Neighborhood quality. Caregiver perceived neighborhood friendliness and safety were not associated with children`s emotional and behavioral problems in an Australian study (Lau et al., 2018). Similarly, poor neighborhood quality as perceived by refugee youth in Canada was not related to their internalizing and externalizing problems (Beiser & Hou, 2016). In refugee camps, the existence of and access to NGO`s services may benefit the livelihoods of communities and families and thus children`s adjustment. Caregiver-perceived access to health services was associated with lower levels of youth`s internalizing and externalizing program in an Ethiopian camp and for youth who were satisfied with an education program offered by an NGO, the association between caregiver distress and adolescents` mental health problems was weaker compared to those who were not satisfied (Betancourt, Yudron, et al., 2012). However, receiving aid from organizations was not associated with mental health problems in Syrian adolescents living in an European refugee camp (Braun-Lewensohn & Al-

Sayed, 2018). Housing quality was not associated with children`s psychopathology in two studies (Beni Yonis et al., 2019; Betancourt, Salhi, et al., 2012).

School and peer relationships. Schools can play a vital role for the adjustment and wellbeing of resettled refugee children and youth, as they not only provide opportunities of learning and academic progress, but also constitute the context in which a major part of socialization and acculturation processes take place. Feeling accepted and supported by teachers and fellow students at school was associated with lower levels of aggressive behavior (Beiser & Hou, 2016), emotional dysregulation (Khamis, 2019) and psychological distress (Tozer et al., 2018) and with higher levels of wellbeing (Khawaja et al., 2017; Tozer et al., 2018). On the other hand, perceived discrimination by teachers and peers was related to more emotional and behavioral problems in one study (Beiser & Hou, 2016) and being bullied by peers at school was associated with lower levels of self-esteem (Samara et al., 2019) and happiness (Correa-Velez et al., 2010). The importance of having supportive and understanding friends for children`s mental health was underlined by findings from two studies (Correa-Velez et al., 2010; Samara et al., 2019).

Society and culture

Post-migration difficulties. Higher cumulative exposure to daily hassles was associated with URMs` higher levels of PTSD symptoms, internalizing and externalizing problems as well as somatization 5 years after their arrival in Norway (Jensen et al., 2019). In a longitudinal follow-up of URM in Belgium, the number of daily stressors, particularly experiences of discrimination, increased over time and predicted PTSD symptoms, depression and anxiety 18 months after arrival, over and above the effects of pre-migration war exposure (Vervliet, Lammertyn, et al., 2014). Apart from these direct effects, two studies found cross-sectional evidence for an indirect effect of post-migration difficulties on refugee children`s mental health by increasing parental psychopathology and subsequently negative parenting behaviors (Bryant et al., 2018; Sim et al., 2018). With the exception of one study (Sim et al., 2018),

accumulated daily hardships and their relations to youth`s mental health have not been investigated in LMIC where refugees often live in camp settings with precarious living conditions such as widespread violence, poverty and bad sanitary conditions (Reed et al., 2012).

Acculturation. A number of studies from HIC investigated the role of sociocultural adaptation and its relation to refugee children`s mental health using the concept of acculturation. While its definition and assessment have stirred controversy (Oppedal & Idsoe, 2012), the studies generally supported the idea that acculturation refers to the dynamic process of psychological and behavioral change that arises from a prolonged confrontation with a new culture`s norms, customs and values (Berry, 2005). Higher levels of integration into the host society, i.e. adopting aspects of the new culture while maintaining values and practices of the original culture, were associated with lower levels of depression and anxiety (Tozer et al., 2018) as well as with higher levels of well-being (Khawaja et al., 2017; Tozer et al., 2018) in refugee youth resettled in Australia. Increased competence, i.e. knowledge and skills about interpersonal behaviors and underlying values, regarding both host and heritage culture, was related to lower levels of depression in URM in Norway (Oppedal & Idsoe, 2012, 2015). Support from family and co-ethnic friends was associated with ethnic competence, while support from Norwegian friends was related to host culture competence (Oppedal & Idsoe, 2015). A higher social status of the family within the broader Australian community (Correa-Velez et al., 2010), but also a stronger ethnic identity (Correa-Velez et al., 2015), were linked to refugee youth`s well-being and happiness respectively. While a balance between adaptation to the host and heritage culture appears to be associated with better mental health, marginalized (disengaging both from host and heritage culture) and separated (maintaining high levels of heritage culture/identity while avoiding contact with the host culture/society) acculturation styles were associated with higher levels of depression in Somali adolescents resettled in the USA (Lincoln et al., 2016).

Learning the host country`s dominant language is a crucial part of sociocultural adaptation. Poorer German language proficiency was related to higher levels of PTSD and depression symptoms (Müller, Büter, et al., 2019) and better perceived English skills were associated with higher self-esteem and school adjustment (Buchanan et al., 2018). However, two studies did not find an association between children`s proficiency in the host language and their adjustment (Correa-Velez et al., 2015; Gormez et al., 2018).

Part of the acculturation process may be exposure to a number of stressful experiences for refugee children and youth, such as conflicts with family and in group members, discrimination and ethnic identity crisis (Keles, Friborg, Idsøe, Sirin, & Oppedal, 2016a). More severe family-related acculturative hassles, such as being criticized for codes (e. g. clothes, behaviors) adopted from the host culture and having to translate for parents were associated with higher levels of PTSD symptoms and depression, particularly in youth with a marginalized acculturation style (Lincoln et al., 2016). Higher perceived discrimination was related to higher levels of depression (Oppedal & Idsoe, 2015) and lower levels of self-esteem and school adjustment (Buchanan et al., 2018) as well as lower happiness (Correa-Velez et al., 2015). Higher cumulative acculturation stress was associated with higher levels of depression in cross-sectional studies (Keles et al., 2016a; Kim et al., 2015) and with an increase in depression symptoms over time in a longitudinal study with unaccompanied minors in Norway (Keles et al., 2016b). A decrease in acculturative stressors was related to a decrease in depressive symptoms over time in the latter study. No study has investigated acculturation-related factors in LMIC.

Resettlement location. Refugee camps are one of the most common displacement settings for refugees worldwide, particularly in LMIC. However, only 9 studies were actually conducted in camp contexts and no study assessed whether children currently residing in a camp were at greater risk for mental health problems than children living in other forms of accommodation. Living in a camp (Beiser & Hou, 2016; Lau et al., 2018) and duration of stay in a camp (Elklit

et al., 2012) before coming to a HIC were not related to youth`s emotional and behavioral problems and PTSD. Living in proximity to ongoing war and/or in poorly developed regions may perpetuate children`s feelings of insecurity and helplessness. The prevalence of PTSD was higher among Syrian adolescents living in a Jordanian city close to the Syrian border with limited access to jobs, health and education compared to those living in a more distant and industrialized city (Beni Yonis et al., 2019). In a similar vein, rates of PTSD were higher among Syrian youth living in Lebanon compared to Jordan, which is probably attributable to relatively higher levels of post-migration stressors (e.g. discrimination, bad sanitary conditions, and restrictive living arrangements) in Lebanon (Khamis, 2019). However, in a study with internally displaced Chechen youth perceived insecurity in the region of resettlement was not related to internalizing problems (Betancourt, Salhi, et al., 2012). Not being satisfied with life in Turkey was associated with more conduct problems in one study with Syrian children (Ceri & Nasiroglu, 2018), but no independent association with children`s mental health was found in another study (Gormez et al., 2018). For asylum-seeking children who had returned to Kosovo and Albania, living in a rural or urban area was not related to emotional and peer problems (Sevunan et al., 2018).

Ethnic origin. African-born youth reported higher levels of well-being than youth from other regions in a Australian study (Correa-Velez et al., 2010). In another study, parents of children with African origin reported more emotional and behavioral problems for their children than children from the Middle East and Eastern Europe in a Dutch study (Wiegersma et al., 2011). In a database study of accompanied asylum seeking children in the Netherlands (Goosen et al., 2014), children from Iran had the highest and children from Iraq the lowest risk of mental distress recorded by medical services. Belonging to a visible minority (e.g. Afghan, Sri Lankan) was associated with more emotional problems reported by refugee youth resettled in Canada (Beiser & Hou, 2016). Repatriated children who belonged to the Ethnic Roma

minority faced a lower quality of child rearing environment, which was linked to more internalizing problems (Zevulun et al., 2018).

Placement type and immigration process. The comparability of findings regarding the asylum process is limited due to country-specific regulations. However, the type and quality of living arrangements as well as the outcome of the asylum decision appear to be particularly important with regard to refugee youth`s mental health and wellbeing. Studies with URM suggest that staying in settings characterized by lower supervision and support, e.g. living independently or in large-scale reception centers, is associated with higher levels of PTSD, depression and anxiety when compared to settings with more support and supervision, e.g. foster care or living groups (Bronstein et al., 2012; Jakobsen et al., 2017; Smid et al., 2011). A Norwegian longitudinal study found that URM who were assessed as 18 years or older and were subsequently placed in low-support adult reception centers had higher levels of psychological distress at follow-up assessments compared to youth who remained in high-support reception centers for youth (Jakobsen et al., 2017). However, the type of living arrangements was not associated with Afghan URMs` emotional and behavioral problems when controlling for age, pre-migration trauma and length of stay in the UK (Bronstein, Montgomery, & Ott, 2013). Post-migration detention is a form of placement that seems to be especially harmful to children's wellbeing. Both past and current mandatory detention was associated with an increased likelihood of PTSD, depression and anxiety (Mace et al., 2014) and children who were detained on a small island on their way to Australia had significantly higher levels of parent-rated emotional and behavioral problems than children living in a community setting in Australia (Zwi, Mares, Nathanson, Tay, & Silove, 2018). Evidence about the influence of changes in the living situation within the host country is inconsistent. A high annual relocation rate was associated with an increased risk for mental distress particularly in children who had experienced violence and whose mother had PTSD or depression (Goosen et al., 2014). However, the number of relocations was not related to

emotional and behavioral problems as reported by children themselves, parents, and teachers in another study (Wiegersma et al., 2011).

The time spent waiting for the asylum decision is marked by great uncertainty about the future and constant fear of deportation. Increased length of stay as an asylum seeker in the Netherlands was associated with adolescents` lower levels of life satisfaction and individual resilience (Sleijpen et al., 2019). In another study, time until determination of asylum status was not related to URMs` externalizing problems (Bronstein et al., 2013). Two longitudinal studies found that minors whose asylum applications had been rejected between assessments (compared to those who were granted asylum) had significantly higher levels of PTSD symptoms and externalizing problems (Müller, Gossmann, et al., 2019) as well as depression and anxiety symptoms (Jakobsen et al., 2017; Müller, Gossmann, et al., 2019). Asylum status was not associated with children and adolescents` mental health problems in two cross-sectional studies, which was explained by the unequal distribution by the respective variable (Bronstein et al., 2012) and the potentially higher relevance of other context variables such as maternal mental health and family size (Wiegersma et al., 2011). Having a permanent visa was related to higher levels of wellbeing in a Australian study (Tozer et al., 2018), while a stable residence permit in the host country was related to a higher-quality child rearing environment and in turn lower levels of internalizing problems in repatriated children (Zevulun et al., 2018).

Discussion

Within the past decade, an unprecedented number of people, of which many are minors, have been forced to flee their homes due to ongoing and emerging violent conflicts and wars in the world. Researchers have responded to the need to better understand which factors contribute to the mental health and well-being of vulnerable refugee youth by conducting various new studies. Table 2 summarizes the contributing factors identified by this systematic review

across different socioecological levels (individual, family, community, society/culture) and stages of the refugee experience (pre-. peri- and postmigration).

Several limitations of the recent research studies have to be taken into account when interpreting the findings: first, there is a lack of evidence on pre- and peri-migration factors, particularly on the family, community and societal level, as well as the role of experiences during flight and migration. Second, there are few studies from LMIC and particularly refugee camps. While this may be due to the ethical and practical challenges related to conducting research in these settings (Reed et al., 2012), it means that findings do not encompass the lived realities of most refugees worldwide. Third, the current evidence is largely based on cross-sectional studies without comparison groups, which preclude firm conclusions on the direction of associations between presumed factors of influence and outcomes. Fourth, the studies are very heterogeneous in the applied research designs, measures and target refugee populations, thereby making it difficult to draw unifying conclusions. For instance, some studies used instruments that were specifically created or adapted for the study context, whereas others applied established measures that were not validated for the samples` cultural background.

Notwithstanding these limitations, our synthesis of the individual findings provides useful information by strengthening the evidence base for some established factors and shedding light on hitherto underexplored factors. Our findings corroborate previous evidence establishing children`s exposure to pre-migration trauma as significant individual-level factor contributing to the risk of developing mental health problems (Fazel et al., 2012; Reed et al., 2012). This is in line with the building block effect of trauma (Neuner et al., 2004), which specifies a dose-response relation between the number of traumatic event types and the severity of PTSD and other trauma-related psychopathology. While girls have been identified at heightened risk for internalizing symptoms before (Fazel et al., 2012; Reed et al., 2012), the more recent studies also provide evidence for female gender as contributing to the risk for

PTSD. A newly found factor contributing to resilience is a longer period of pre-migration schooling, underscoring the pivotal role of education for the well-being and development of conflict-affected children (Nicolai & Triplehorn, 2003). Our review suggests several individual-level factors contributing to risk (internalizing symptoms, avoidant coping) and protection (better perceived school performance, individual resilience) in the post-migration phase. However, these are based on a small number of studies solely from HIC.

The new evidence on family-level factors strengthens the view that the family constitutes a powerful source of both risk and resilience to the mental health and wellbeing of conflict-affected children (Betancourt & Khan, 2008). In particular, a link between parents` own mental health problems and refugee children's mental health has been found across a variety of cultural and socioeconomic settings. The mechanisms underlying this intergenerational transmission of psychopathology remain to be elucidated in refugee families. This review provides preliminary evidence for the mediating role of maladaptive parenting behaviors, which goes along with research on other conflict-affected populations documenting the complex interplay between war trauma, family violence and children`s mental health problems (Catani, 2013). However, some studies show the protective nature of a cohesive and supportive family environment for refugee youth`s mental health after resettlement in the host country, which has also been found in previous reviews (Fazel et al., 2012). In line with previous reviews (El Baba & Colucci, 2018; Fazel et al., 2012), being separated from family members before and during flight constitutes a factor contributing torefugee youth`s risk . However, there is a lack of studies comparing accompanied and unaccompanied youth and investigating the role of family separations in LMIC.

Evidence on post-migration community-level and on sociocultural factors comes almost exclusively from HIC, precluding the generalizability of these findings beyond these settings. In line with previous reviews (d'Abreu et al., 2019; Fazel et al., 2012), higher exposure to acculturative stressors in the host country, in particular perceived discrimination,

was associated with worse mental health outcomes for refugee youth. In keeping with research with non-refugee immigrant youth (Abu-Rayya & Sam, 2017), an integrative acculturation style, i.e. being engaged both in the host and heritage culture, appears to be associated with refugee youth`s higher wellbeing. Even though discrimination and other acculturation stressors may be particularly salient in HIC whose culture is often quite different from the home countries of most refugees, studies from LMIC with seemingly similar cultures of refugees and host societies would be valuable. Discrimination may be also prevalent in contexts where refugee and host communities compete for scarce resources. Relatedly, the nature of daily stressors differs for refugee youth in these contexts and consist rather in a severe lack of material resources and ongoing threats to safety (Reed et al., 2012). In terms of factors contributing to protection, the review expands the evidence base for an important role of school connectedness and self-reported support by peers for refugee youth (Fazel et al., 2012). In line with specialized systematic reviews (Mitra & Hodes, 2019; O'Higgins et al., 2018), being placed in living arrangements characterized by lower support, e.g. semi-independent care or reception centers, puts URM at an increased risk for mental health problems compared to more supportive arrangements, e.g. foster care. Unsurprisingly, acceptance of asylum claims in the host country appears to be protective, marking the end of a period of uncertainty and offering a long-term perspective.

Placing the current evidence in the wider context of clinical psychological research with children and adolescents, it can be noted that the contributing factors on the family and community level such as parental mental health problems, maladaptive parenting and peer support are for the most part well in line with established evidence from non-refugee populations (Lambert, Holzer, & Hasbun, 2014; McLeod, Weisz, & Wood, 2007). On the one hand, this supports a universal perspective on refugee children`s development and well-being and emphasizes the importance of proximal socio-ecological contexts, particularly the family. On the other hand, our systematic review is the first to establish the importance of these

factors for the mental health of refugee children. In fact, they may be particularly salient in this population given the consistently higher prevalence rates of mental health problems found in adult refugees compared to the general population (Silove, Ventevogel, & Rees, 2017). Besides more or less universal factors, our review also identified a number of factors that can be considered unique for the context of refugee children and adolescents, at least those resettling in HIC, such as acculturation, discrimination, placement type (for URM) and the asylum decision. Overall, our systematic overview emphasizes the joint consideration of a range of universal and specific contributing factors across the pre-, peri- and postmigration phases and different ecological contexts in order to understand mental health risk and resilience of refugee youth.

Recommendations for future research

Future studies should aim to expand the evidence base for the factors identified by this and previous systematic reviews. This way the status of factors with inconsistent evidence should be clarified (e.g. age, time since displacement) and potentially relevant factors that have been understudied so far should be examined (e.g. refugee youth`s attribution of events, intra-familial communication, genetic and biological factors, neighborhood characteristics, ideological and religious beliefs). Most importantly, studies should strive to use longitudinal designs to elucidate causal pathways between socio-ecological factors and refugee youth`s mental health and adjustment at different stages of their experience and development. While it may be extremely difficult to track children across their flight journey, studies could include children shortly after their arrival at a camp or reception center and prospectively assess post-migration factors and mental health at multiple regular follow-ups. In doing so, it will be important to record the relevant predictor and outcome variables at each time point and model complex research designs such as cross-lagged panel and latent growth models to examine causal mechanisms of change. Among the reviewed studies, positive examples for longitudinal and rather complex designs are the high-quality study by Smid and colleagues

(2011), which combined multinomial regression and path analysis to examine the interplay of individual-level (trauma exposure, age, and internalizing symptoms) and socio-cultural (supervision) variables in shaping PTSD symptomatology over time, as well as the study by Keles et al. (2016b), which used a person-based approach to identify pre-migration (trauma exposure and gender) and post-migration (acculturative stressors) risk factors for long-term trajectories of depression symptoms among URM. The inclusion of comparison groups, for example accompanied and unaccompanied minors, repatriated and non-repatriated youth, children in refugee camps and in community settings, is also important. Ultimately, the validity and generalizability of research findings depend both on the psychometric quality and the cultural applicability of the used assessment instruments. Researchers should aim to strike a balance between using established measures that enhance comparability between studies and taking into account culture-bound mental health concepts to improve the cultural applicability of measures. Finally, more research in LMIC and particularly in refugee camps is needed to adequately represent the experience realm of the vast majority of refugee youth worldwide.

Practical implications

Factors on multiple socioecological levels contribute to risk and resilience among refugee youth. Consequently, practical efforts aiming to support this vulnerable group`s mental health should be integrated across these levels and target several factors. Existing interventions and challenges related to the delivery and implementation of mental health services for refugee youth in HIC and LMIC have been reviewed and discussed recently (Eruyar, Huemer, et al., 2018; Fazel & Betancourt, 2018; Hodes & Vostanis, 2018). At this point we briefly present what we consider direct practical implications of the contributing factors with the best current evidence base.

The pervasive impact of pre-migration war trauma calls for trauma-focused treatments such as narrative exposure therapy for children (Ruf et al., 2010) and trauma-focused cognitive behavioral therapy (Unterhitzenberger, Wintersohl, Lang, König, & Rosner, 2019).

Early screening for mental health problems and established factors contributing to mental health risk shortly after resettlement and regular follow-ups for vulnerable children could help to quickly introduce children to existing service programs and prevent the development of late-onset disorders. On a policy level, governments and international organizations should make any effort to protect children from exposure to violent conflicts and wars in the countries of origin if international agreements such as the United Nation`s Convention on the Rights of the Child shall have any meaning. On a family level, the findings further suggest parents` mental health and parenting as key targets for interventions, which need to be tailored both to the cultural background of families and to the demands of the specific setting. Moreover, fast reunification of youth with their parents and other family members needs to be prioritized by authorities and organizations. Within children`s exosystem, schools are not only important in terms of formal learning, but they are also hubs for social relationships with peers and friends. Educational authorities should consider activities and programs in the school setting that encourage social support and cohesion among peers. The post-migration challenges refugee youth and their families face in HIC may often be directly modifiable by policy makers. This includes, for example, the provision of high-support living arrangements for unaccompanied youth as well as the swift, yet careful and transparent, resolution of asylum claims. The potentially beneficial impact of an integrative acculturation style may be promoted through targeted activities on a family, school and community level, which aid refugee youth to adopt elements of the host culture and at the same time maintain bonds to their heritage culture`s traditions and values.

Limitations of review

First, owing to the marked heterogeneity of included studies in terms of the study designs, populations and measures used, we were not able to conduct a meta-analysis of the evidence. Second, we only included quantitative studies in our review. However, we emphasize that qualitative research is important to gain further insights into refugee youth`s perspectives and

to capture aspects that may be missed by quantitative approaches. Third, although our strict application of inclusion and exclusion criteria probably increased the validity of the findings, we also had to exclude studies with interesting findings.

Conclusions

Exposure to violent conflict, flight and the challenges of resettlement can adversely affect refugee youth`s mental health and well-being. However, risk and resilience is determined by a complex interplay of various factors in youth`s socioecological environment at different stages of their life experience. Although research has provided valuable insights, there is still much to learn about the conditions that shape refugee children`s adjustment. More longitudinal studies that take into account moderating and mediating factors on different contextual levels are needed. In the meantime, evidence on established factors contributing to risk (exposure to war-related violence, female gender, caregivers` mental health problems and parenting, acculturative stress and discrimination) and protection (family cohesion, school connectedness, peer support, integrative acculturation style) has to be transferred to practice by developing and evaluating interventions and by informing policy. This serves both to prevent detrimental long-term consequences to the well-being of refugee youth and to contribute to peaceful and prosperous societies characterized by diversity, solidarity and mutual respect.

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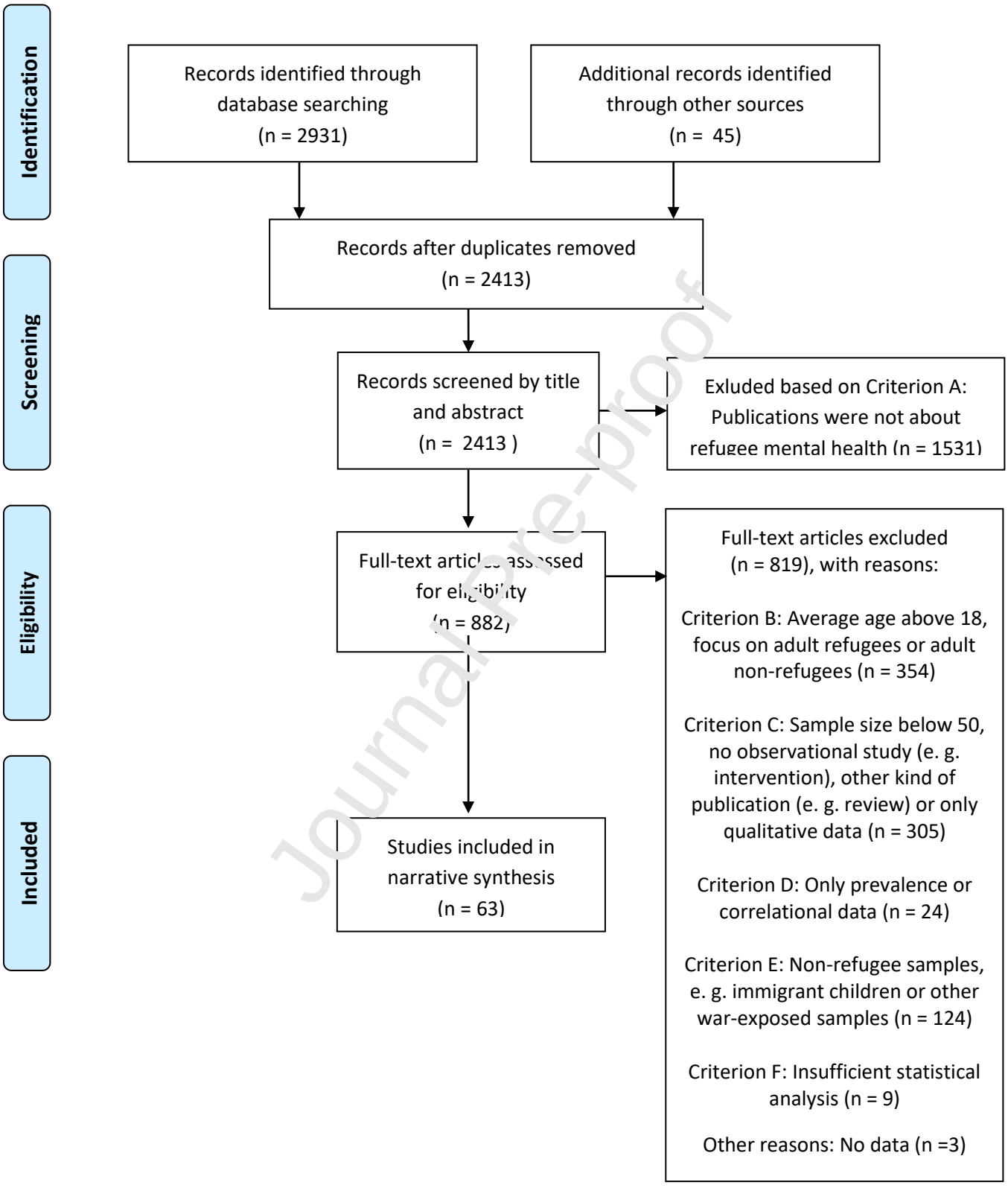

Figure 1. Flow diagram of the study selection process. Template from Moher, Liberati, Tetzlaff and Altman (2009).

Table 1: Description of included studies

Authors (year)	Study site	Study population	Age in years (mean)	Domain assessed Socioecological/Temporal	Measurements
Ahmad et al. (2015)	Jordan	491 Palestinian refugee youth in a refugee camp	14-17 (15)	Individual, family/pre- and perimigration	Adapted measures of maternal control, knowledge, solicitation, parent-child relationship and norm-breaking, family climate and secretiveness with mothers, SCARED
Beiser & Hou (2016)	Canada	152 Refugee and 326 immigrant mother-child-dyads	11-13	Individual, family, community, society/pre-, peri- and postmigration	Self-developed and adapted scales for emotional problems, aggressive behavior and other study variables
Beni Yonis et al. (2019)	Jordan	1773 Syrian refugee adolescents	12-18 (14.5)	Individual, family, society/pre- and perimigration	Culturally adapted version of CPSS
Betancourt et al. (2012)	Ethiopia	Caregiver-child dyads in a refugee camp (T1: 168 adolescents, 162 caregivers T2: 153 adolescents, 152 caregivers)	11-18	Family, community/perimigration	Adapted version of YSR and CBCL, HSCL-25, multidimensional scale of perceived social support, self-developed items
Betancourt et al. (2012)	Russia	183 Internally displaced Chechen youth	10-17 (13.6)	Individual, family, community, society/pre- and perimigration	YSR, adapted school connectedness scale, self-devised questions
Braun-Lewensohn & Al-Sayed (2018)	Unspecified refugee camp in Europe	110 Syrian refugee adolescents	12-18 (15.5)	Individual, family, community, society/pre- and perimigration	YSR, SOC, self-developed scales for other study variables
Bronstein et al. (2012) Bronstein et al. (2013)	UK	222 male Afghan URM	13-18 (16.3)	Individual, society/pre- and postmigration	SLE, RATS, categorial indicators for asylum and care status SLE, HSCL-37A
Bryant et al. (2018)	Australia	394 Refugee caregivers of 639 children	5-18 (11)	Family, society/pre-and postmigration	HTQ, PTSD-8, SDQ parent report, Postmigration Stressor Index (self-developed), warmth scale of Child Rearing Questionnaire, hostility scale of Early Chilhood Longitudinal Study of Children
Buchanan et al. (2018)	Australia	106 Refugee youth and 223 non-refugee immigrant youth	Refugees: 13-21 (16.8) Immigrants: 13-18 (15.4)	Indidvidual, society/pre- and postmigration	RSES, adapted scales for school adjustment, perceived discrimination and language proficiency
Ceri & Nasiroglu (2018)	Turkey	77 Syrian refugee minors	7 to 17 (12.1)	Individual, family/pre- and postmigration	SDQ parent-report, self-devised questions for other study variables
Clukay et al. (2019)	Jordan	Syrian refugee youth in urban centers (T1: 399. T2: 263, T3: 157)	12-18 (14.3)	Individual/premigration	TEC, PSS, Human Distress and Human Insecurity, AYMH, SDQ, CRIES-8, CYRM, genetic analysis
Correa-Velez et al. (2010) Correa-Velez, et al. (2015)	Australia	97 Refugee youth from 11 different countries (Wave 1) Wave 1: 120 Wave 5: 51	11-19 (mean 15.1) Wave 5: 18-27 (22.8)	Individual, family, community, society/pre- and postmigration	Subjective well-being measure (WHOQOL-BREF), adapted scales for other study measures, purposive-built items for subjective health and happiness, RSES

Elklit et al. (2012)	Denmark	119 Bosnian refugee youths	15-27 (18.5)	Individual, community/pre-, peri- and postmigration	HTQ, CSQ, CSS
Eruyar et al. (2018) Eruyar et al. (2020)	Turkey	263 Syrian child-parent dyads 322 Syrian refugee children	8-18 (11.6)	Individual, family/pre- and postmigration	SDQ parent- and self-report, GHQ-12, PSI, SLE, CRIES-8 CRIES-8, SDQ, Security Scale, Egna Minnen Betraffande Uppfostran for Children
Flink et al. (2012)	Colombia	Primary caretakers of 279 internally displaced and non-displaced children	2-6 (4.2)	Individual, family, community/pre- and postmigration	CBCL, GHQ-12, K-SADS-PL PTSD traumatic event checklist, general functioning scale of family assessment device (FAD), categorical indicator of social support
Giordano et al. (2019)	Italy	271 Syrian and Palestinian children in transit to Northern Europe	6-14 (10)	Individual (trauma exposure)/premigration	CWTQ, PTSRC, SDQ parent report, CYRM-28
Goosen et al. (2014)	Nether-lands	8047 accompanied asylum-seeking children	4-17	Individual, family, society/pre-, peri- and postmigration	Electronic database indicators, International Classification of Primary Care codes
Gormez et al. (2018)	Turkey	218 Syrian refugee children	9-15 (12)	Individual, society/pre- and postmigration	Self-developed tool for traumatic events, UCLA PTSD RI, SCAS, SDQ
Jakobsen et al. (2017)	Norway	Male URM from Afghanistan, Somalia, Algeria and Iran (T1: 138, T2: 101, T3: 84, T4: 69)	14-20 (15.22)	Individual, family, society/pre- and postmigration	HSCL-25, SLE, HTQ
Javanbakht et al. (2018)	USA	53 Syrian refugee families (mostly with 2 parents) with 131 children	6 to 17 (11)	Family/postmigration	UCLA-RI-DSM5, SCARED, PCL-C, HSCL-25
Jensen et al. (2014) Jensen et al. (2019)	Norway	URM (T1: 93, T2: 75) (T1: 95, T2: 78, T3: 47)	T1: 13.8 T2: 16.5 T3: 20.0	Individual, family, community, society/pre- and postmigration	HSCL-37A, CPSS, SLE, Self-developed check list for postmigration trauma, DSSYR, FSSQ
Karam et al. (2019)	Lebanon	549 Syrian refugee children and adolescents	7-17 (11.9)	Individual/premigration	UCLA PTSD-RI, self-developed war exposure checklist, ISPCAN Child Abuse Screening Tool, self-developed list of childhood adversities, Highly Sensitive Child Questionnaire
Keles et al. (2015) Keles et al. (2016)	Norway	895 URM with a permanent residence permit (T1: 918, T2: 580, T3: 229)	16 18.8 -19.17	Individual, community, society/pre- and postmigration	CES-D, YCC Hassles Battery, self-developed scales for host and heritage culture competence, self-developed premigration trauma checklist
Khamis (2019)	Lebanon, Jordan	1000 Syrian refugee children	7-18 (11.30)	Individual, family, community, society/pre- and postmigration	Trauma Exposure Scale, structured clinical interview for PTSD DSM-IV Criteria, DERS-SF, KidCope, Family Environment Scale, School Environment Scale
Khawaja et al. (2017)	Australia	221 refugee and immigrant youth (55.8% refugees)	11-18 (14.9)	Individual, community, society/postmigration	SCWBS, Acculturation and Resilience Scale, Psychological Sense of School Membership, Support Functions Scale
Kim et al. (2015)	South Korea	144 North Korean refugee youth	13-21 (18.20)	Individual, society/pre- and postmigration	HSCL-25, UCLA PTSD-RI DSM-IV, ASC, self-developed Ego Resiliency Scale
Lau et al. (2018)	Australia	426 caregivers of 694 refugee children and adolescents	5-17	Individual, family, community/pre-, peri- and postmigration	SDQ-parent and child versions, self-developed items for study variables in individual, family, school and community domains
Lee et al. (2020)	South Korea	157 North Korean refugee youth	13-26 (18.7)	Individual, family/pre- and postmigration	ACE questionnaire, ERQ, CES-D, Conners-Wells Adolescent Self-Report Scale-Short Form
Lincoln et al. (2016)	USA	135 Somali adolescent refugees	11-20 (15.4)	Individual, society/pre- and postmigration	Behavioral Acculturation Scale from LIB, Family Hassles Subscale of Acculturative Hassles Inventory, WTSS, UCLA PTSD-RI, DSRS

Mace et al. (2014)	Australia	332 Refugee children reviewed by a health service	4-17 (9.58)	Family, Society/pre- and perimigration	Revised health-screening questionnaire for new patients at the Refugee Health Service
MacLean et al. (2019)	USA	425 Immigrant children held at US detention centers and their mothers (UCLA self-report data for 150 children)	4-17 UCLA data: 13.4	Family/perimigration	SDQ parent report, UCLA
McGregor et al. (2015)	Australia	50 resettled refugee youth from 16 different countries	12-21 (16.6)	Individual, family/pre- and perimigration	CPSS, CCSC, YES-R
Meyer, Steinhaus et al. (2017) Meyer et al. (2020)	Uganda	463/470 South Sudanese caregiver-adolescent dyads in two camps	13-17 (14.6)	Individual, family, society/pre- and perimigration	IPSCAN Child Abuse Screening, SCARED, MFQ-C, HSCL-25, purposive-built questions for socioeconomic status and child labour
Meyer, Yu et al. (2017)	Rwanda, Uganda	129 Congolese and 471 South Sudanese refugee adolescents in three camps	13-17	Individual, family/pre and perimigration	SCARED, MFQ-C, SDQ
Müller, Büter et al (2019) Müller, Gossmann et al. (2019)	Germany	30 Accompanied and 68 unaccompanied refugee minors 1-year-follow-up (T2: 72)	16.3 17.3	Individual, family, society/pre-. peri- and postmigration	CATS, HSCL-37A, ERSS
Nasiroglu & Ceri (2016) Nasiroglu et al. (2018)	Turkey	55 Yazidi refugee children and their parents (46 families) 136 Yazidi refugee children	6-17 (11)	Individual, family/pre- and perimigration	K-SADSPL-T
Oppedal & Idsoe (2012) Oppedal & Idsoe (2015)	Norway	566 URM 895 URM	13-27 (18.9) 18.6	Individual, family, community, society/pre- and postmigration	Adapted scales for conduct problems, CES-D, purposive-built items for impact of war-related trauma, acculturation hassles, perceived discrimination and social support, Host and Heritage Culture Competence Scale for Adolescents
Oppedal et al. (2018)	Turkey	285 Syrian children in a refugee camp	12.7	Individual, family, community/pre- and postmigration	CDI, SLE, Social Provisions Scale
Park et al (2017)	South Korea	136 North Korean adolescent refugees	12-24 (18.5)	Individual, family, community/pre- and postmigration	CDI, AUDIT, CRIES, Aggression Questionnaire, BRS, purposive-built questions for social support
Park et al. (2019)	South Korea	North Korean adolescent refugees (T1: 174, T2 (1-year-follow-up): 108	13-26 (17.8)	Individual, family, community/pre- and postmigration	CES-D, ERQ, RSES, BRS, purposive-built questions for social support
Samara et al. (2019)	UK	149rRefugee children and 120 non-refugee British-born children	6-16	Family, community/Postmigration	Satisfaction with Life Scale, CPSS, Coopersmith Self-Esteem Inventory, Cambridge Hormones and Moods Friendship Questionnaire, Popularity Questionnaire, self-developed scale for bullying and victimization, SDQ parent (below 11) and child version, Psychosomatic and Health Questionnaire
Sapmaz et al. (2017)	Turkey	89 refugee children	5-18 (10)	Individual, family/pre- and postmigration	K-SADSPL-T, SDQ parent (over 11) and child versions
Sierau et al. (2019)	Germany	105 Male URM living in group homes	14-19 (17.3)	Individual, family, community/pre- and postmigration	MSSI, PCL-5, PHQ-9, GAD-7, SSS-8, SDQ
Sim et al. (2018)	Lebanon	291 Syrian refugee children`s	2-12 (7.4)	Family/postmigration	TEC, HESPER, PCL-C, DASS, PARQ,, Discipline Module of UNICEF`s Multiple

		mothers			Indicator Cluster Survey, SDQ
Sleijpen et al (2019)	Nether-lands	117 refugee adolescents and 138 Dutch peers	12-17 (14.3)	Individual/pre- and postmigration	CRIES, SDQ, Satisfaction with Life, Resilience Scale
Smetana & Ahmad (2018)	Jordan	277 Iraqi, 275 Syrian and 331 Palestinian refugee youth	15.01	Individual, Family/pre- and postmigration	Adapted measures of adolescents` war exposure and norm-breaking, mothers` and fathers` support, knowledge, behavioral and psychological control, harsh punishment, BSI-18
Smid et al. (2011)	Nether-lands	URM (T1: 920, T2: 582)	11-17.5	Individual, society/pre- and postmigration	HSCL-25, SLE, RATS
Tozer et al. 2018)	Australia	93 refugee students at a special English language school	12-18 (15.5)	Individual, community, society/pre- and postmigration	HSCL-25, SCWBS, PSSM, AARS, R-MATS
Vervliet et al. (2014a)	Norway, Belgium	307 URM (risk factor analysis only for the 291 males)	14-18 (16.13)	Individual, family/premigration	HSCL-37A, SLE; RATS, HTQ
Vervliet et al. (2014b)	Belgium	URM (T1: 103, T2: 79, T3: 77)	Mean 16.00 at T3	Individual, family, community, society/pre- and postmigration	HSCL-37A, SLE, RATS, DSSYR
Wiegersma, et al. (2011)	Nether-lands	297 asylum-seeking children in reception centers	4-16 (9.9)	Individual, family, society/pre-. peri- and postmigration	SDQ parent, child and teacher versions, medical files
Zevulun et al. (2017)	Kosovo, Albania	106 repatriated asylum-seeking children	11-18 (14.4)	Individual, family, community, society/postmigration	BIC-Q, SDQ child report
Zwi et al. (2018)	Australia	Asylum-seeking children in detention (48) and in community (38)	4-15 (8.4)	Society /perimigration	SDQ parent-version

Note: Studies that are based on largely the same sample are listed in one row, URM, unaccompanied refugee minors. Instruments: AARS, Adult Acculturation and Resiliency Scale; ACE, Adverse Childhood Experiences; ASC, Acculturation Stress Scale; AUDIT, Alcohol Use Disorders Identification Test; AYMH, Arabic Youth Mental Health Scale; BIC-Q, Best Interests of the Child-Questionnaire; BSI-18, Brief Symptom Inventory; CATS, Child and Adolescent Trauma Screen; CBCL, Child Behavior Checklist; CCSC, Children's Coping Strategies Checklist–Revision 1; CRIES, Children`s Revised Impact of Events Scale; CPSS, Child Posttraumatic Stress Disorder Symptom Scale; CYRM, Child and Youth Resilience Measure; CDI, Children's Depression Inventory; CES-D, Center for Epidemiologic Studies Depression Scale for adolescents; CSQ, Coping Style Questionnaire; CSS, Crisis Support Scale; CSSI-8, Children's Somatization Inventory Short form; CWTQ, Childhood War Trauma Questionnaire; DASS, Depression Anxiety and Stress Scale; DSRS, Depression Self-Rating Scale; DSSYR, Daily Stressors Scale for Young Refugees; DERS-SF, Emotion Regulation Scale Short Form; ERSS, Everyday Resources and Stressors Scale; FSSQ, Duke-UNC Functional Social Support Questionnaire; GAD-7, Generalized Anxiety Disorder Scale; GHQ-12, General Health Questionnaire 12-item; HESPER, Humanitarian Emergency Settings Perceived Needs Scale; HSCL-25/37A, Hopkins Symptom Checklist; HTQ, Harvard Trauma Questionnaire; K-SADS-PL(-T), Kiddie Schedule for Affective Disorders and Schizophrenia - Present and Lifetime Version (- Turkish); LIB, Language, Identity and Behavioral Acculturation Scale; MFQ-C, Mood and Feelings Questionnaire Child Self-Report; MSSI, Multi- Sector Social Support Inventory; PARQ, Parental Acceptance Rejection Questionnaire; PCL-5/C, PTSD Checklist (Civilian); PHQ-9, Patient Health Questionnaire; PSI, Parenting Stress Index; PSS, Perceived Stress Scale; PSSM, Psychological Sense of School Membership; PTSD-8, Post-Traumatic Stress Disorder–8 items; PTSRC, Post-Traumatic Stress Reaction Checklist – Child Version; RATS, Reactions of Adolescents to Traumatic Stress; R-MATS, Resilience Questionnaire for Middle-Adolescents in Township Schools; RSES, Rosenberg Self-Esteem Scale; SCARED, Screen for Child Anxiety Related Emotional Disorders; SCAS, Spence Children's Anxiety Scale; SCWBS, Stirling Children's Well-being Scale; SDQ, Strength and Difficulties Questionnaire; SLE, Stressful Life Events Questionnaire; SOC, Sense of Coherence Scale; SSS-8, Somatic Symptoms Scale; TEC, Traumatic Events Checklist of HTQ; UCLA-PTSD-RI, University of California at Los Angeles Posttraumatic Stress Disorder Reaction Index; WTSS, War Trauma Screening Scale; WHOQOL-BREF, World Health Organization Quality of Life-Bref, YCC, Youth, Culture and Competence Study Hassles Battery; YES-R, Youth Experience Scale for Refugees; YSR, Youth Self-Report.

Table 2: Factors contributing to risk and protection of refugee children`s mental health according to socio-ecological context and stage in the refugee phase

	Individual	Family	Community	Society/Culture
Premigration	Exposure to war-related traumatic events (risk)[22 (25)] Being female (risk for internalizing symptoms and PTSD)[14 (21)] Being male (risk for externalizing symptoms)[3 (3)] **Longer period of schooling (protective)[6]**	**Loss of a parent (risk)[2]**		
Perimigration	**Length of current stay in a refugee camp (risk)[2]**	Separation from immediate family members (risk)[4 (3)] **Socioeconomic status in a refugee camp (protective)[2]**		**Detention (risk)[2]**
Postmigration	**Depression and anxiety symptoms (risk)[2]** **Better perceived school performance (protective)[2]** **Avoidant coping strategies (risk)[4]** **Individual resilience (protective)[6]**	**Living with at least one biological parent (protective)[2]** Parental mental health problems (risk)[10 (2)] **Negative parenting behaviors (risk)[5]** **Parental abuse (risk)[4]** Family cohesion (protective)[4 (3)] **Warm parent-child relationship (protective)[3]**	Support by peers (protective)[2 (4)] **Close relationships with friends (protective)[2]** School connectedness (protective)[4 (3)] **Cumulative exposure to daily stressors (risk)[5]**	Perceived discrimination (risk)[4 (3)] **Integrative acculturation style (protective)[6]** **Exposure to acculturation stressors (risk)[4]** **Resettlement in a poor region (risk)[2]** **Low-support living arrangements (risk for unaccompanied minors)[3]** **Asylum granted in host country (protective)[4]**

Note: Only factors that were found in at least two studies are shown. Factors not included in the previous reviews by Fazel and colleagues (2012) and Reed and colleagues (2012) are highlighted in bold. The numbers indicate the number of studies that found the respective factor in the current review (without brackets) and in the reviews by Fazel and colleagues (2012) and Reed and colleagues (2012) (with brackets).

Author Disclosure Document

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Contributors
FS and TH designed the study. FS and TH conducted the literature search and study selection. FS and EK rated study quality. FS wrote the first draft of the manuscript and all authors contributed to and have approved the final manuscript.

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

Declaration of interests

☒ The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

☐The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:

Highlights

- Risk: War violence, being female, parents` distress and parenting, acculturative stress
- Protective: Family cohesion, school belonging, peer support, integrative acculturation
- Prevention and intervention should target and integrate different ecological factors
- More longitudinal and studies in low-income countries needed

Florian Scharpf is a doctoral researcher at the Department of Psychology at Bielefeld University, Germany. In his research, he focuses on the mental health of children and adolescents who have been exposed to war and violence. Currently, he investigates the risk and protective factors for the mental health of refugee children living in refugee camps, with a focus on investigating associations between family-related factors, e.g. parental mental health and parenting, and children`s adjustment.

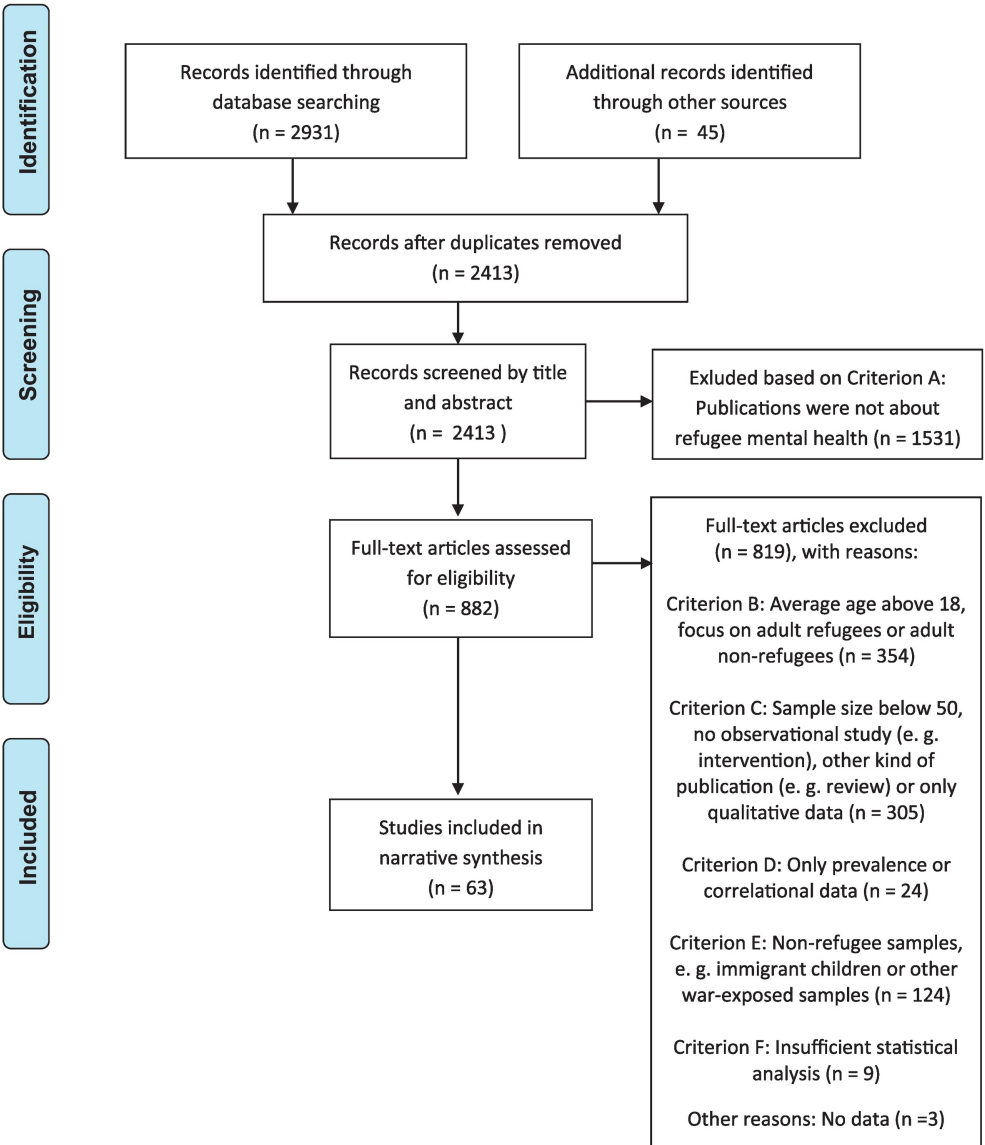
Identification
Screening
Eligibility
Included
Records identified through database searching (n = 2931)
Additional records identified through other sources (n = 45)
Records after duplicates removed (n = 2413)
Records screened by title and abstract (n = 2413)
Exluded based on Criterion A: Publications were not about refugee mental health (n = 1531)
Full-text articles assessed for eligibility (n = 882)
Full-text articles excluded (n = 819), with reasons:
Criterion B: Average age above 18, focus on adult refugees or adult non-refugees (n = 354)
Criterion C: Sample size below 50, no observational study (e. g. intervention), other kind of publication (e. g. review) or only qualitative data (n = 305)
Criterion D: Only prevalence or correlational data (n = 24)
Criterion E: Non-refugee samples, e. g. immigrant children or other war-exposed samples (n = 124)
Criterion F: Insufficient statistical analysis (n = 9)
Other reasons: No data (n =3)
Studies included in narrative synthesis (n = 63)

Figure 1