Journal of Psychiatric Research 177 (2024) 287–298

Contents lists available at ScienceDirect

Journal of Psychiatric Research

journal homepage: www.elsevier.com/locate/jpsychires

Risk of suicide and suicidal behavior in refugees. A meta-review of current systematic reviews and meta-analyses

Francesco Bevione [a], Matteo Panero [a], Giovanni Abbate-Daga [a], Giulia Cossu [b], Mauro Giovanni Carta [b], Antonio Preti [a,*]

[a] Department of Neuroscience, University of Turin, Turin, Italy
[b] Department of Medical Sciences and Public Health, University of Cagliari, Cagliari, Italy

A B S T R A C T

Background: Despite the exposure to a wide combination of risk factors, evidence concerning risk of suicide among refugees is mixed.
Aims: We aimed to establish more precise estimates of suicide and suicidal behavior in refugees and asylum seekers, investigate the role of somatic and psychiatric comorbidities, and the effectiveness of preventative interventions.
Methods: We searched PubMed/Medline, EMBASE, CINAHL, and PsycInfo without time limitations from inception until June 5, 2024. Studies were included if systematic reviews or meta-analyses reporting data on suicide or suicidal behavior in refugees or asylum seekers, or detailing the results of preventive interventions. Quality was assessed using the National Institutes of Health Quality Assessment Tool for Systematic Reviews and Meta-Analyses.
Results: Out of 49 papers, 10 systematic reviews and meta-analyses were included. Refugees showed significantly higher suicide death rates and suicidal ideation, suicide plan and suicide attempt prevalence compared to people living in the host countries. Refugees who arrived in low-income and lower-middle-income countries displayed lower suicidal ideation, but higher suicide death rates and suicide attempt prevalence compared to refugees who arrived in high-income and upper-middle-income countries. However, no review provided data regarding somatic comorbidity, psychiatric comorbidity, or the effectiveness of treatments, and evidence on specific categories of refugees is scarce.
Conclusion: Refugees have been proven to be at risk for suicide and suicidal behavior. More research is required to identify the targets and procedures of intervention.

1. Introduction

The World Health Organization (WHO) estimates that about 700,000 people take their lives every year (World Health Organization, 2021), and that every year 10–20 times more people attempt suicide (World Health Organization, 1999). The yearly prevalence of suicidal ideation and plans worldwide has been estimated to be around 2% and 0.4%, respectively, with higher frequency in women, youngsters, unemployed, people with lower education and income, and unmarried persons (Borges et al., 2010). Childhood adversities, parent psychopathology, and an active mental disorder are frequent correlates of suicidal behavior (Arsenault-Lapierre et al., 2004; Bertolote and Fleischmann, 2002; Borges et al., 2010; Pompili et al., 2022). Most psychopathologies, beyond triggering suicide ideation, amplify the impact of the risk factors for suicide by increasing the chance of stressful events (Van Heeringen, 2012), impairing the social network of the subject (Hou et al., 2022; Kleiman and Liu, 2013), reducing the likelihood of employment (Virgolino et al., 2022), affecting financial independence (Elbogen et al., 2020; Iemmi et al., 2016), or favoring the development of somatic illness via sedentary lifestyle, disordered eating, and iatrogenic metabolic side effects of drug treatment (Giménez-Palomo et al., 2022; Mather et al., 2009; but with mixed results). The access to lethal means (Ajdacic-Gross, 2008; McDowell et al., 2011), the somatic status of the subject (Ahmedani et al., 2017; Harris et al., 1994), and the social network in which the subject is ingrained are the most relevant factors determining the risk that a suicide attempt terminates with the death of the subject. An efficient social network is critical in mitigating some of the consequences of a mental disorder, as it can provide support and reduce the impact of stressful events (LaRocco et al., 1980; Ozbay et al., 2007). More specifically, stressful events are known to be related to suicidal behavior (Howarth et al., 2020; Liu and Miller, 2014), and their sudden occurrence may precipitate a suicidal crisis (Cohen et al., 2022). Social support is instrumental also in providing companionship to socially isolated people, offering surveillance in case of suicidal risk, and guaranteeing prompt rescue in case of a suicide attempt (Preti, 2011). According to the WHO, "many suicides happen impulsively in moments of crisis with a breakdown in the ability to deal with life stresses, such as financial problems, relationship break-up or chronic pain and illness" (World Health Organization, 2021). People exposed to war, conflict,

* Corresponding author. Via Cherasco 15, 10126, Torino, Italy.
E-mail address: antonio.preti@unito.it (A. Preti).

https://doi.org/10.1016/j.jpsychires.2024.07.024
Received 24 March 2024; Received in revised form 13 July 2024; Accepted 15 July 2024
Available online 22 July 2024

Abbreviations

CDC	Centers for Disease Control
WHO	World Health Organization
AUD	Alcohol use disorder
GBD	Global Burden of Diseases
UN	United Nations
UNHCR	UN High Commission for Refugees
NATO	North Atlantic Treaty Organization
PICO	Population Intervention Comparison Outcome
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
PROSPERO	International Prospective Register of Systematic Reviews
CI	Confidence Interval
CCA	Corrected Covered Area
RR	Rate Ratio
aOR	adjusted Odds Ratio
OR	Odds Ratio
WMH	World Mental Health
HIC	High-Income Countries
UMIC	Upper-Middle-Income Countries
LMIC	Lower-Middle-Income Countries
LIC	Low-Income Countries

disaster, violence, abuse or loss, and vulnerable groups who experience discrimination are especially at risk of suicidal behavior (Amiri, 2022).

1.1. Risk of suicide among refugees and asylum seekers

Since the 1951 United Nations (UN) Convention Relating to the Status of Refugees, the concept of “refugee” has been repeatedly redefined over time. The most recent extension of this concept – the 1984 Cartagena Declaration on Refugees – includes among refugees "persons who have fled their country because their lives, safety or freedom have been threatened by generalized violence, foreign aggression, internal conflicts, massive violation of human rights or other circumstances which have seriously disturbed public order" (Berganza et al., 2020). The refugee status is hampered by their need to request asylum since countries extensively vary in their asylum policies and in what rights and benefits the refugee status confers (Freier and Gauci, 2020; Maas et al., 2022). This adds further stress and uncertainty to their condition and increases their risk of suicide further.

Particularly, refugees bear a huge burden in terms of mental distress because of the often-traumatic nature of the cause of their displacement (Hoell et al., 2021; Hossain et al., 2020; Mesa-Vieira et al., 2022; Sá et al., 2022). Substance use – especially alcohol use – has been described among samples of refugees and asylum seekers as a coping strategy, and it might further increase the risk of suicide in these populations (Burnett, 2001). Furthermore, refugees and asylum seekers often suffer from ill health. Because of the conditions of their flight, they are often exposed to hepatitis viruses, tuberculosis and parasites (Burnett, 2001; Dick, 1984); malnutrition and poor hygiene and sanitation are frequent (World Health Organization, 2022), and in some cases higher rates of diabetes, hypertension, and coronary heart disease were found among refugees (Burnett, 2001; World Health Organization, 2022). An already ill refugee is then likely to suffer from a further worsening of their health because of barriers including language and cultural differences, institutional discrimination, and restricted use of health services (World Health Organization, 2022).

Finally, reduced social support is a hallmark of refugee status, as the social network of refugees is severed by displacement. Indeed, interventions aimed at improving the social ties of asylum seekers are likely to improve their mental health (Villalonga-Olives et al., 2022), and reduce barriers to healthcare access, preventing thus the spreading of diseases (Tan et al., 2021). Conversely, a defective social network is likely to increase the risk of suicide in refugees and asylum seekers (Ao et al., 2016; Hagaman et al., 2016). Social support can also mitigate the negative impact of childhood adversities on the risk of suicide (Forster et al., 2020). Childhood adversities, indeed, are a risk factor for suicide in both young people (Angelakis et al., 2020) and adults (Angelakis et al., 2019). This is especially relevant for child and adolescent refugees exposed to trauma (Jin et al., 2021).

The conditions and services the refugees find in the country of arrival are crucial in determining suicidal behavior. Postmigration difficulties, such as detention, dispersal, destitution, and denial of rights to health care or work affect mental health, and consequently suicidality. In this perspective, a possible classification of refugees is the level of income of the host country as defined by the World Bank Classification into high-income, upper-middle-income, lower-middle-income, and low-income. Low- and middle-income countries often have poor infrastructure and health care systems, besides political and economic instability. Consequently, refugees who arrive in low- and lower-middle-income countries might face ongoing material hardships and risk of violence. Refugees arriving in upper-middle-income and high-income countries might instead suffer from acculturative distress, consisting of possible offenses by residents, and cultural and linguistic barriers that hamper social support networks (Carta et al., 2005). Even though the majority (86%) of refugees arrive in low-income and lower-middle-income countries and might also be those in the worst conditions, most research is conducted in high-income countries (Vijayakumar, 2016). So far, evidence of suicide among refugees and asylum seekers is poor, especially in low-income countries (Vijayakumar, 2016). More research is required on this currently hot topic.

1.2. Aims of this systematic meta-review

Albeit refugees and asylum seekers are exposed to a combination of risk factors for suicide, the evidence concerning suicide and suicidal behavior in refugees and asylum seekers is mixed, with some studies finding an increased risk and others finding similar or even reduced rates than in comparison groups (Cogo et al., 2022; Vijayakumar and Jotheeswaran, 2010). Inconsistencies in estimates are likely to depend on differences in the sources of ascertainment and measurement, the type of investigated population, and the nature of the comparison group.

This systematic review was set up to establish more precise estimates of suicide and suicidal behavior in refugees and asylum seekers. We wanted also to investigate how and to what extent comorbid somatic diseases and mental disorders affect the risk of suicide and suicidal behavior in refugees and asylum seekers. Finally, we wanted to investigate the effectiveness of preventative interventions aimed at reducing the risk of suicide and suicidal behavior in refugees and asylum seekers. We resorted to the available evidence by summarizing existing systematic reviews and meta-analyses on the topic since they represent the top of the hierarchy of evidence (Atkins, 2004). The meta-review is an emerging tool for the critical appraisal of an issue, and it provides a systematic summary of an often broad and heterogeneous literature guaranteeing an investigation of the quality of the summarized literature as well.

We expected to survey a variety of systematic reviews and meta-analyses, often with a wide heterogeneity in terms of design, methods, and clarity of reporting. For these reasons, we kept the PICO (Population; Intervention/Exposure; Comparison and Outcomes) framework as simple as possible. The considered population was the population of refugees and asylum seekers; the exposure was displacement; thus, the control was people living in the host countries; the outcome was suicide or suicidal behavior as described in the reviewed literature. As for the preventive interventions, the considered population was the population of refugees and asylum seekers; the intervention was any intervention

aimed at reducing suicidal behavior; the control was the control as described in the reviewed literature; the outcome was any outcome related to suicidal behavior as described in the literature.

2. Methods

The reporting of this meta-review follows the indications of the most recent Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Page et al., 2021). The protocol for this meta-review, which is a systematic review of systematic reviews and meta-analyses, was registered with PROSPERO (CRD42022344549, available at https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42022344549).

2.1. Inclusion and exclusion criteria

Studies were included when they were a systematic review or a meta-analysis reporting data on suicide or suicidal behavior in refugees or asylum seekers, or detailing the results of preventive interventions aimed at reducing the risk of suicide or suicidal behavior in refugees or asylum seekers. “Internally displaced people” is a category that can be applied to people leaving their homes for reasons different from conflicts (Cohen, 2004). Also, internally displaced people remained inside the national borders in their movement (Cohen, 2004). To be as more specific, we chose not to include internally displaced people in our analysis, as to include refugees and asylum seekers according to the current definition of the class (Berganza et al., 2020). Scoping reviews and narrative reviews that were not systematic or that did not apply a standard tabular method of reporting the results were excluded.

2.2. Search methods

We searched PubMed/Medline, the Excerpta Medica Database (EMBASE), the Cumulative Index to Nursing and Allied Health Literature (CINAHL), and PsycInfo without time limitations from inception until May 15, 2022. A combination of the following key terms was used: ((“suicide”) OR (“suicidal behavior”)) AND (“refugee”). In preliminary investigations, we found that the key term "refugee" includes its plural (“refugees”) and the more related term "asylum seeker(s)". The search was limited to articles describing systematic reviews or meta-analyses. No gender, age, ethnicity, or language restriction was applied.

2.2.1. Search methods addendum

At a reviewer’s request, we repeated the search on June 5, 2024. We found no new systematic reviews or meta-analyses relevant to our purpose. We only found a protocol for a systematic review on self-harm among unaccompanied asylum seekers and refugee minors (Hedrick and Borschmann, 2023); an abstract from a conference reporting on a systematic review of mortality among migrant children and young people, with limited information on suicide in refugees (Armitage et al., 2023); and a systematic review on the impact of religiosity on suicide risk in veterans and refugees with PTSD. The latter included just one study with a mixed sample of 64 refugees with PTSD from Bangladesh, Latin America, Iraq, Iran, Lebanon, and other countries residing in Sweden, providing no useable data for our meta-review (Brandt et al., 2023).

2.3. Studies’ selection

Three authors (FB, MP, AP) inspected the list of all collected articles and cross-checked the title and abstract of each of them to establish whether they were congruent or not with the inclusion criteria. Duplicates were eliminated. Discrepancies were solved by a discussion with two independent experienced researchers (GC, MGC). Selected articles were then thoroughly re-examined for content to confirm that they were congruent with the inclusion criteria, and their references section was scanned to identify missed systematic reviews or meta-analyses. The same procedure was applied to the scanning of additional sources (Fig. 1).

2.4. Data extraction

Two evaluators (FB, MP) extracted the data as detailed in Table 1 and Table S1. Discrepancies in data extraction were solved by a discussion with two independent experienced researchers (GC, MGC).

When the systematic review or the meta-analysis included only part of its studies regarding suicide or suicidal behavior of refugees or asylum seekers, only those studies fitting our inclusion criteria were considered.

2.5. Data synthesis

Data were tabulated to offer the best global view of information grouping it according to the topic.

2.6. Quality assessment

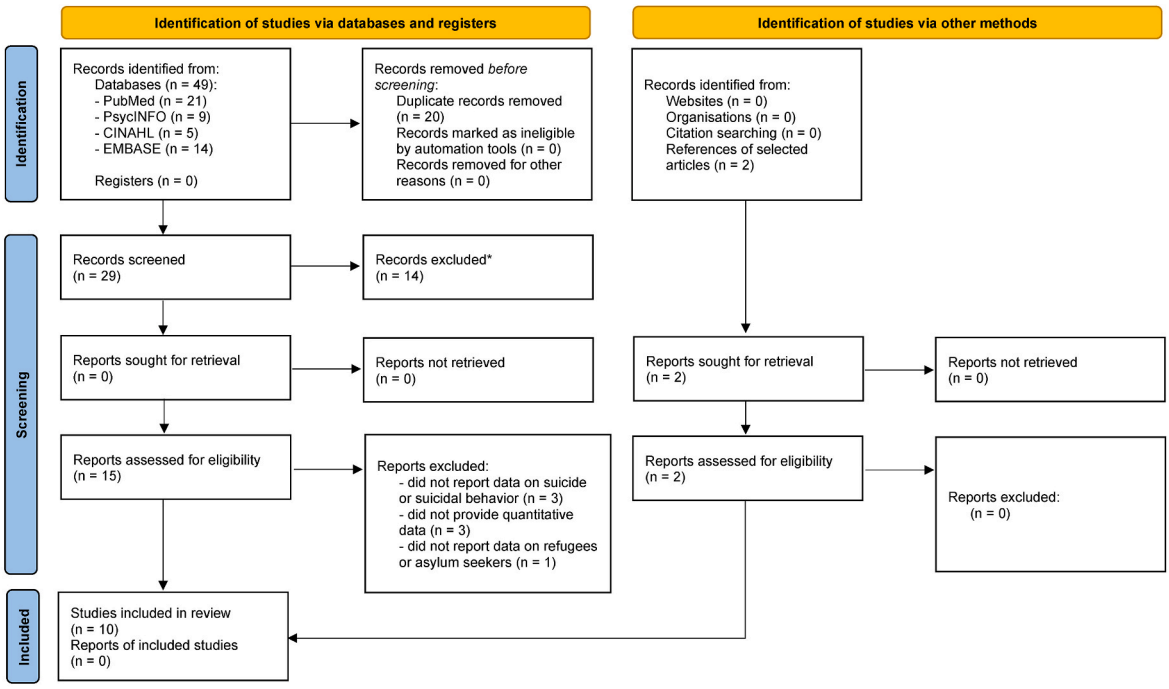
The quality of the included studies was assessed using the National Institutes of Health Quality Assessment Tool for Systematic Reviews and Meta-Analyses (https://www.nhlbi.nih.gov/health-topics/study-quality-assessment-tools) This tool uses eight areas indicative of the adequacy, completeness, and bias evaluation of the systematic review or meta-analysis (see Table S2 in the supplementary material for details). Adherence to the expected criterion was classified as "low risk of bias"; lack of adherence to the expected criterion was classified as "high risk of bias"; when it was uncertain whether the criterion was respected or not, a rating of "some concerns" was applied. As in past uses of this quality of assessment tool, the quality of included systematic reviews and meta-analyses was categorized, based on the adherence to the expected qualitative topics, as “good” (7 or 8), “fair” (4–6), or “poor” (0–3) (Firth et al., 2020).

2.7. Overlap of the primary studies across systematic reviews and meta-analyses

To measure overlap among the primary studies across the collected systematic reviews and meta-analyses, we calculated the Corrected Covered Area (CCA) as in Pieper et al. (2014) (see Table S3 for details). The matrix is available in the supplementary material, with the related calculations (Tables S3,S4,S5,S6,S7). According to Pieper et al. (2014), CCA was interpreted as such: 0%–5%: slight; 6%–10%: moderate; 11%–15%: high; >15%: very high. According to Hennessy and Johnson (2020), we carried out also an overlap analysis for each outcome considered in this meta-review.

2.8. Additional statistical analysis

To provide more refined research, we aggregated data distinguishing by the level of income of the host countries as defined by the World Bank Classification. Hence, we aggregated data of refugees coming from any type of country arriving in countries of the same level of income. In doing that, we paid particular attention to the overlap analysis in order not to consider twice the same study included in two different reviews. Subsequently, we compared data of refugees with residents living in countries of the same level of income. However, only a few studies performed a comparison with the host population. Hence, for the suicide death rate we referred to official data in the general population as detailed in the WHO archives (World Health Organization, 2019), and for suicidal ideation, plan, and attempt prevalence to the data from the World Health Organization’s (WHO) World Mental Health (WMH) Surveys conducted between 2001 and 2007 on 108,705 adults from 21 countries (Borges et al., 2010) (details in Table S8). For the same reason, we also calculated the aggregated data of refugees arrived in high-income and upper-middle-income countries, and compared them



* did not mention data on refugees or asylum seekers (n=9), did not report data on suicide or suicidal behavior (n=1), protocols for systematic reviews (n=2), narrative review, not systematic (n=1); focused only on detained refugees (n=1).

Fig. 1. PRISMA 2020 Flow diagram of the selection of the studies on refugees and asylum seekers regarding their risk of suicide.

with the calculated aggregated data of refugees arrived in low-income and lower-middle-income countries. For calculation, we used the software © 2022 MedCalc Software Ltd available at https://www.medcalc.org, calculating the Odds Ratio (OR), the 95% Confidence Interval (CI) and the p-value of the difference.

3. Results

Out of 49 systematic reviews and meta-analyses regarding suicide or suicidal behavior in refugees or asylum seekers, 10 articles were included after the exclusion of duplicates and studies unrelated to the inclusion criteria (Fig. 1 and Table S9).

The number of suitable studies covered by the reviews ranged from 1 to 44 (mean = 8.5; median = 4), and the total number of subjects from 203 to 618,869 (mean = 80,820; median = 3196). Three reviews were focused specifically on child and adolescent refugees; in the other 7, ages ranged from 10 to 88 years old. Regarding gender distribution, the female percentage ranged from a minimum of 47.5% to a maximum of 77.5%, but this datum was not provided in 4 reviews.

Four systematic reviews only carried out a quality assessment of the included studies (details in Tables S1 and S10).

3.1. Quality assessment

Study quality was judged poor in 2 studies, fair in 4, and good in 4 (details in Table S2). The lack of analysis of the quality of the studies and poor application of standardized procedures in the scanning and retrieval of the literature were the most often noted shortcomings. Most systematic reviews did not apply a meta-analysis to their data, thus, a lack of assessment of publication bias and heterogeneity was also noted (Fig. 2).

3.2. Overlap analysis

We found a 'slight' overlap (CCA: 5.5%) across the included reviews. The review by Cogo et al. (2022) was by far the most comprehensive review, including 44 of the total 57 studies considered by the 10 reviews overall (details in Table S3).

3.3. Suicide death

Four (4) reviews analyzed suicide death among refugees and asylum seekers. In Cogo et al. (2022) most of the studies were vital events registrations, and the authors expressed this datum as the suicide rate per 100,000 people per year for every study included in the review. Morina et al. (2018) included only 1 cross-sectional study and expressed this datum as a percentage of refugees who died by suicide upon the total number of refugees observed over a specified timelapse, without specifying the length of observation. Amiri (2022) and Kalt et al. (2013) expressed this datum as a rate ratio (RR) compared to the host population, separately for men and women without providing an overall value.

Overlap analyses showed that the study by Cogo et al. (2022) comprised all the studies considered in the other reviews, with a CCA of 12.1% (high).

Morina et al. (2018) (k = 1, n = 1274) reported a value of 2%, while in Cogo et al. (2022) (k = 11, n = 584,334) there emerged a suicide rate of 18.22 per 100,000 people per year.

Amiri (2022) and Kalt et al. (2013) reported the rate ratio (RR) of suicide rates compared to the host population separately for men and women, without providing an overall value. Kalt et al. (2013) (k = 1, n = 9020) included 1 pertinent study, which was amongst the 2 studies of Amiri's (2022) (k = 2, n = 38,159), both set up in high-income countries. One was a prospective cohort study (n = 56,273; 44% women) which reported a RR of 0.38 in men and 0.80 in women, and the other one was a case-control study (n = 9020; unknown gender distribution) reporting a RR of 2.00 in men and 0.73 in women. Since the RR in the overall population was not provided, nor was the gender distribution of the second study, it was not possible to aggregate data nor compare male and female refugees.

The calculated suicide rate for each level of income of the host countries was 14.78 per 100,000 refugees per year in high-income countries (k = 9, n = 552,817), 16 per 100,000 refugees per year in

Table 1
Characteristics of the included studies.

Study	Type of study	K (included studies reporting data on suicide or suicidal behavior)	n (total sample size regarding suicide or suicidal behavior)	Characteristics of the sample (gender proportion and mean age or age range)	Location	Definition of refugee	Definition of the main outcome (suicide, suicide attempt, suicide ideation)
Hansson et al. (2012)	Systematic review	1	203	Women: 51.7% Age range: 13–17	Refugees to Canada (k = 1)	Not provided	Not provided
Kalt et al. (2013)	Systematic review	1	Not provided	Not provided	Asylum seekers to Denmark (k = 1)	We defined an asylum seeker as someone who has entered a host country to seek protection under the terms of the UN High Commissioner on Refugees 1951 Convention – 1967 Protocol whose claim is awaiting preparation, submission, or adjudication. A refugee is a person whose petition for asylum has been accepted.	Not provided
Morina et al. (2018)	Systematic review	4	4447	Women: 65% Mean age: 35 years old	Refugees and internally displaced people to Sudan (k = 2), Nigeria (k = 1) and Lebanon (k = 1)	A refugee is a person who has crossed the international borders of his or her country of origin due to a "well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion," and "is unable to, or owing to such fear, is unwilling to avail himself of the protection of that country." Internally displaced people are "persons or groups of persons who have been forced or obliged to flee […] their homes […] , in particular as a result or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights […] or human-made disasters, and who have not crossed an internationally recognized state border".	Not provided
Kien et al. (2019)	Systematic review	4	1184	Women: 50% Mean age: 12.5 (<21yrs as eligibility criterium)	Child and adolescent refugees and asylum seekers to Denmark (k = 1), Slovenia (k = 1), Germany (k = 1) and Austria (k = 1)	Not provided	Not provided
Tay et al. (2019)	Systematic review	1	Not provided	Not provided	Rohingya refugees in Bangladesh (k = 1)	Not provided	Not provided
Amiri (2022)	Meta-analysis	9	11,094	Women: 77.5% Age range: 13–83	Refugees and asylum seekers to USA (k = 3), Europe (k = 3), Korea (k = 2) and Pakistan (k = 1)	Not provided	Not provided
Jin et al. (2021)	Systematic review	9	1945	Not provided	Child and adolescent refugees to USA (k = 3), Europe (k = 2), Australia (k = 2), Canada (k = 1) South Korea (k = 1)	Not provided	Not provided
Bedaso and Duko (2022)	Meta-analysis	1	386	Not provided	Bhutan refugees to USA (k = 1)	A refugee is a person who has left their home country because of the risk of serious human rights violations due to war or violence. Migrants are those who leave their country for a better job, living conditions, study or to join a family abroad. An asylum-seeker is a person who has already left their country and is seeking legal	Suicidal ideation: ever seriously thought about committing suicide

(*continued on next page*)

Table 1 (*continued*)

Study	Type of study	K (included studies reporting data on suicide or suicidal behavior)	n (total sample size regarding suicide or suicidal behavior)	Characteristics of the sample (gender proportion and mean age or age range)	Location	Definition of refugee	Definition of the main outcome (suicide, suicide attempt, suicide ideation)
						protection in another country, but who hasn't yet been legally documented as a refugee or migrant	
Cogo et al. (2022)	Systematic review	44	618,869	Women: 47.5% Age range: 10–88 years old	Refugees, asylum seekers and internally displaced people to Europe (k = 21), South Korea (k = 5), USA (k = 4), Australia (k = 4), Canada (k = 3), Palestine (k = 3), Sudan (k = 2), Thailand (k = 2), Columbia (k = 2) India (k = 1), Lebanon (k = 1), Syria (k = 1), Nigeria (k = 1), Pakistan (k = 1), Uganda (k = 1), Malaysia (k = 1)	Forcibly displaced people: people who have had to leave their homes in the context of an emergency because of a deliberate event such as conflict or war; including refugees, asylum seekers and internally displaced.	- suicidal ideation: to have thoughts or ideas about the possibility of ending one's life - suicide attempt: an attempt to die by suicide that results in survival - suicide: intentionally causing one's death
Haase et al. (2022)	Meta-analysis	11	8430	Women: 58.2% Age range: 15–88 years old	Refugees and asylum-seekers to USA (k = 3), Europe (k = 3), Thailand (k = 1), Australia (k = 1), Afghanistan (k = 1), Korea (k = 1) and Nigeria (k = 1)	A refugee is an individual who is "owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable to, or owing to such fear, is unwilling to avail himself of the protection of that country". An asylum-seeker is an individual who is seeking international protection. In countries with individualized procedures, an asylum-seeker is someone whose claim has not yet been finally decided on by the country in which he or she has submitted it. Not every asylum-seeker will ultimately be recognized as a refugee, but every refugee is initially an asylum-seeker." (UNHCR, 2016)	Not provided

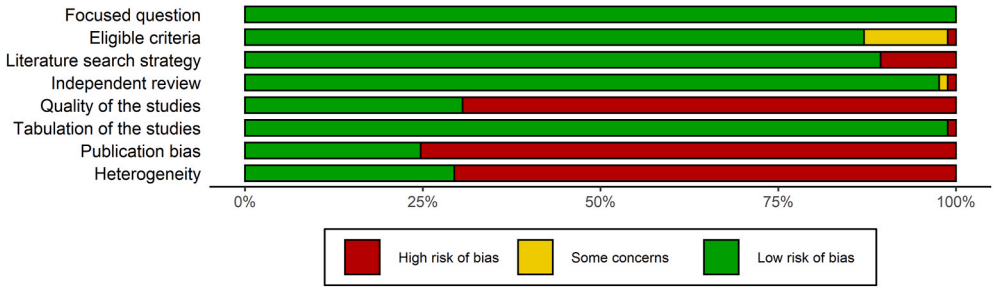


Fig. 2. Risk of bias summary plot according to the National Institutes of Health Quality Assessment Tool for Systematic Reviews and Meta-Analyses. Quality assessment of the included studies on refugees and asylum seekers regarding their risk of suicide.

upper-middle-income countries (k = 1, n = 24,323), and 290 per 100,000 refugees per year in low-income countries (k = 1, n = 7194). No studies were set in lower-middle-income countries.

The calculated aggregated data of suicide rate for refugees who arrived in high-income and upper-middle-income countries was 14.81 per 100,000 refugees per year (k = 10, n = 577,817). The calculated aggregated data for refugees who arrived in low-income and lower-middle-income countries was 290 per 100,000 refugees per year (k = 1, n = 7194).

No review analyzed suicide rates specifically in child and adolescent refugees.

3.4. Suicide attempt

Six (6) of the 10 reviews provided data on suicide attempts. Most of the studies included in the reviews were cross-sectional, and they all expressed data as a percentage of people that had attempted suicide as against the total of people registered. However, no review specified the span of time considered in questioning suicide attempts. In some cases it was reported for single studies, ranging from 1 week to 1 year, but often this information was lacking.

Overlap analysis produced a CCA value of 10.0% (moderate).

The highest values of suicide attempt rates were reported by Hansson et al. (2012) (k = 1, n = 203) and by Morina et al. (2018) (k = 1, n = 1274) with 3.4% and 2% respectively. More moderate values were found by Cogo et al. (2022) (k = 14, n = 212,384) with 0.83%, Amiri (2022) (k = 2, n = 552) with 0.36%, Haase et al. (2022) (k = 4, n = 4797) with 0.57%, and Kien et al. (2019) (k = 1, n = 780) with 0.9%.

The calculated prevalence of suicidal attempt for each level of income of the host countries was 0.81% for refugees who arrived in high-income countries (k = 11, n = 209,406), 7.78% for refugees who arrived in upper-middle-income countries (k = 2, n = 386), 0.63% for refugees who arrived in lower-middle-income countries (k = 1, n = 1755), and 2.00% for refugees who arrived in low-income countries (k = 1, n = 1274).

The calculated aggregated data of suicide attempt prevalence for refugees who arrived in high-income and upper-middle-income countries was 0.82% (k = 13, n = 209,792). The calculated aggregated data for refugees who arrived in low-income and lower-middle-income countries was 1.21% (k = 2, n = 3029).

Hansson et al. (2012) and Kien et al. (2019) focused specifically on child and adolescent refugees, both comprising 1 study set in high-income countries. Since the 2 studies did not correspond, we could aggregate their values obtaining a weighted average of 1.42% (n = 983).

Only in Hansson et al. (2012) the data were specifically divided for male and female refugees separately, with a percentage of the suicide attempt of 1.0% in males and 5.7% in females (in the sample, 98 boys and 105 girls).

Only 1 study in one review compared this outcome with the host population. In Haase et al. (2022), one study reported 0.8% (n = 129) of suicide attempt prevalence in African refugees to South Korea compared to 0.2% (n = 1290) in South Korean nationals (high-income country).

3.5. Suicide plan

The suicide plan was assessed only by Amiri (2022). The author comprised 2 cross-sectional studies that expressed this datum as the percentage of people reporting to have had a suicide plan upon the total of people registered in the sample, not specifying the span of time considered in questioning for suicide plan.

The 2 studies were both set in high-income countries. Their aggregated data was 1.27% (k = 2, n = 552).

No review assessed suicide plan in any level of income of countries other than high-income, no review focused specifically on child and adolescent refugees, no review compared male and female refugees, and no review compared its data with the host population.

3.6. Suicidal ideation

Suicidal ideation was assessed by 7 reviews. All of them included mostly cross-sectional studies, reporting this datum as the percentage of refugees who declared suicide ideation upon the total of refugees registered. No review specified the time span considered in questioning for suicidal ideation, but in some cases it was reported for single studies, ranging from 1 week to 1 year.

Overlap analysis showed a CCA for suicidal ideation of 7.7% (moderate).

The highest values were reported by Haase et al. (2022) (k = 10, n = 4056) with 20.5%, Cogo et al. (2022) (k = 33, n = 37,019) with 14.5% and Tay et al. (2019) with 13% (k = 1, the numerousness of the study was not reported). More moderate values were derived from Amiri (2022) (k = 5, n = 1885) with 10.9% and Morina et al. (2018) (k = 2, n = 2245) with 7.60%. Finally, Kien et al. (2019) (k = 3, n = 404) and Bedaso and Duko (2022) (k = 1, n = 386) reported values of 3.84% and 3.11% respectively.

The calculated prevalence of suicidal ideation for each level of income of the host countries was 7.5% for refugees who arrived in high-income countries (k = 30, n = 16,867), 23.8% for refugees who arrived in upper-middle-income countries (k = 7, n = 14,484), 7.9% for refugees who arrived in lower-middle-income countries (k = 3, n = 2044), and 12.9% for refugees who arrived in low-income countries (k = 4, n = 5673).

The calculated aggregated data of suicidal ideation prevalence for refugees who arrived in high-income and upper-middle-income countries was 15.0% (k = 37, n = 31,351). The calculated aggregated data for refugees who arrived in low-income and lower-middle-income countries was 11.6% (k = 7, n = 7717).

Kien et al. (2019) was the only one to include studies focused selectively on child and adolescent refugees, displaying a prevalence of suicidal ideation of 3.8% (k = 3, n = 404). All the studies included in the review were set in high-income countries.

Haase et al. (2022) (k = 5, n = 1970) was the only review to distinguish between male and female refugees, reporting a higher value of suicidal ideation in men (27.7%, n = 449) compared to women (22.3%, n = 1521). As stated in the article by the authors, the slightly higher prevalence compared to the global estimate in the general population was because only a minority of the studies reported data by gender.

Only Haase et al. (2022) reported data on suicidal ideation among refugees compared with the host population. Particularly, one study carried out in a low-income country (Nigeria) reported 27.3% of suicidal ideation among refugees (n = 444) compared to 17.3% among host country's residents (n = 527).

3.7. Suicidality

Three (3) reviews referred to "suicidality", but none of them defined what they meant by this concept.

Overlap analysis showed a CCA for suicidality of 4.5% (slight).

In Jin et al. (2021) (k = 9, n = 1945) suicidality among refugees was calculated to be globally 9.67%, deriving from child and adolescent refugees arrived in high-income countries.

In the review by Amiri (2022) (k = 1, n = 60) only 1 study expressed data on suicidality (5%), and it was comprised in the review by Jin et al. (2021).

Morina et al. (2018) (k = 2, n = 2202) reported suicidality in 2 studies set in low-income countries, resulting in a global value of 6.04%.

3.8. Somatic comorbidity

Several medical disorders are related to a higher risk of suicide for many reasons. None of the 10 reviews analyzed the somatic comorbidity with suicide in refugees and asylum seekers.

3.9. Psychiatric comorbidity

Only 2 reviews reported data regarding psychiatric comorbidity. In Jin et al. (2021) (k = 4, n = 211) it emerged that 39.6% of depressed refugees displayed suicidality, while Bedaso and Duko (2022) (k = 1, n = 386) reported that the adjusted odds ratio (aOR) of being depressed among refugees in the presence of suicidal ideation was 10.6. No review expressed the prevalence of depression or any other psychiatric disease among refugees with suicidal behavior.

3.10. Effectiveness of treatment

None of the 10 reviews reported data on the effectiveness of treatments focused on suicide prevention among refugees.

3.11. Comparison between refugees and residents

Refugees who arrived in high-income countries and in low-income countries displayed a statistically significant higher suicide death rate compared to residents living in countries of the corresponding level of income as derived from the WHO archives (World Health Organization, 2019). For refugees who arrived in upper-middle-income countries the difference was not significant (Table 2).

Refugees who arrived in high-income countries, in upper-middle-income countries and in low-income countries showed a statistically significant higher suicide attempt prevalence compared to residents living in countries of the corresponding level of income as detailed by Borges et al. (2010). The difference between refugees who arrived in lower-middle-income countries and the residents was not significant.

Only data on refugees who arrived in high-income countries were available regarding suicide plan. Refugees displayed a statistically significant higher prevalence compared to the general population as detailed by Borges et al. (2010).

Refugees who arrived in countries of any level of income showed a statistically significant higher suicidal ideation prevalence compared to residents living in countries of the same level of income as detailed by Borges et al. (2010).

3.12. Comparison between specific categories of refugees

Refugees who arrived in high-income and upper-middle-income countries showed a statistically significant higher suicidal ideation prevalence, but statistically significantly lower suicide attempt prevalence and suicide death rate compared to refugees who arrived in low-income and lower-middle-income countries (Table 3).

A statistically significant higher suicidal ideation prevalence was found in male compared to female refugees, while the difference in suicide attempt prevalence was not significant.

Child and adolescent refugees compared to adult refugees showed a statistically significant lower suicidal ideation prevalence but a statistically significant higher suicide attempt prevalence.

Table 2
Comparison of data on refugees with people living in the host countries of the same level of income.

Level of Income of the Country of Arrival	Suicide death rates (OR; CI 95%; p)	Suicide attempt prevalence (OR; CI 95%; p)	Suicide plan prevalence (OR; CI 95%; p)	Suicidal ideation prevalence (OR; CI 95%; p)
High-Income Countries (HIC)	**OR: 1.29; CI 95%: 1.04 – 1.60; p = 0.011**	**OR: 2.71; CI 95%: 2.41 – 3.06; p <0.0001**	**OR: 2.13; 95% CI: 1.01 – 4.50; p =0.048**	**OR: 3.96; 95% CI: 3.68 – 4.25; p <0.0001**
Upper-Middle-Income Countries (UMIC)	OR: 1.83; CI 95%: 0.69–4.87; p = 0.114	**OR: 28.02; 95% CI: 19.00 – 41.30; p <0.0001**	*N.A.*	**OR: 15.28; 95% CI: 14.43 – 16.18; p <0.0001**
Lower-Middle-Income Countries (LMIC)	*N.A.*	OR: 1.57; 95% CI: 0.86–2.86; p = 0.141	*N.A.*	**OR: 3.67; 95% CI: 3.11 – 4.33; p <0.0001**
Low-Income Countries (LIC)	**OR: 27.11; CI 95%: 17.66 – 41.60; p <0.0001**	**OR: 4.98; 95% CI: 3.32 – 7.48; p <0.0001**	*N.A.*	**OR: 6.89; 95% CI: 6.31 – 7.53; p <0.0001**

N.A. = Not Assessed because no data available.
OR = Odds Ratio.
CI = Confidence Interval.
p = p value.

4. Discussion

Our study found that refugees who arrived in high-income countries and in low-income countries display significantly higher suicide rates compared to residents living in countries of the same level of income. For refugees who arrived in upper-middle-income countries, the difference with people living in countries of the same level of income was non-significant. However, data from this latter category must be taken cautiously as they derive from a relatively narrow body of evidence (k = 1, n = 24,323) (Fellmeth et al., 2016). Hence, the non-significance of the difference is likely due to the small numerousness of the sample rather than to the actual difference in suicide rates (16 per 100,000 among refugees who arrived in UMIC vs 9 per 100,000 among people living in UMIC).

We must always consider that refugees are as well more exposed to other causes of death, like firing, starvation, infectious diseases, and lack of prescribed life-saving drugs (Vijayakumar, 2016). The higher the mortality rate for these other causes, consequently the lower the mortality by suicide. Furthermore, there could be understandable and objective difficulties in registering as suicide the cause of death in contexts such as refugee camps. The stigma surrounding suicide common in many cultures might prompt relatives to hide the suicidal cause. Finally, a number of refugees are involved in the studies only after a long flight and it cannot be excluded that during their movement some of them might have died by suicide (Vijayakumar, 2016). This fraction would have been not registered. For these reasons, we must always consider the data reported as lower-bound estimates of the actual suicide death rates among refugees.

As regards suicidal ideation, suicide plan and suicide attempt, refugees show a significantly higher prevalence compared to people living in countries of the same level of income. The only exception is the difference in suicide attempt prevalence among refugees who arrived in lower-middle-income countries with people living in the same level of income. However, we must point out that data on suicide attempt prevalence in refugees who arrived in lower-middle-income countries was derived from a single study (k = 1, n = 1755) (Vijayakumar et al., 2017).

Refugees who arrived in high-income and upper-middle-income countries display a significantly higher suicidal ideation prevalence, but a statistically significantly lower suicide attempt prevalence and suicide death rate compared to refugees who arrived in low-income and lower-middle-income countries. We can surmise that as better the conditions refugees find in the host country, as lower the drive to suicide they might show. Conversely, more comfortable conditions might ease the expression of bad feelings such as suicidal thoughts. However, most of the evidence is derived from studies set in high-income countries, so more research is needed to confirm these findings.

Male refugees show a significantly higher suicidal ideation prevalence than female refugees, but the difference in suicide attempt prevalence is not significant. These data could be explained in light of the cultural stigma concerning suicide which might be particularly felt in women. If this, the stigma could inhibit them from expressing their feelings of suicidal ideation, which would translate into an apparently lower suicidal ideation prevalence. Remarkably, refugee women must face additional distress during the movement, such as possible physical and sexual violence, abduction, forced prostitution, and forced sale of children which might increase the risk of suicidality (Vijayakumar, 2016). Lebanese refugee women in Jordan who were victims of intimate-partner violence had more suicidal thoughts and attempts (Al-Modallal, 2012). Also, it must be considered that female people have a predominance in most anxiety and mood disorders (Narrow et al.,

Table 3
Comparison between specific categories of refugees.

Level of Income of the Country of Arrival	Suicide death rates (OR; CI 95%; p)	Suicide attempt prevalence (OR; CI 95%; p)	Suicide plan prevalence (OR; CI 95%; p)	Suicide ideation prevalence (OR; CI 95%; p)
HIC and UMIC vs. LMIC and LIC	**OR: 0.050; CI 95%: 0.031–0.081; p <0.0001**	**OR: 0.668; CI 95%: 0.482–0.928; p = .0080**	*N.A.*	**OR: 1.345; CI 95%: 1.246–1.452; p <0.0001**
Male vs. Female refugees	*N.A.*	OR: 0.170; CI 95%: 0.020–1.439; p = 0.0520	*N.A.*	**OR: 1.330; CI 95%: 1.047–1.690; p = .0098**
CAP vs. Adult refugees	*N.A.*	**OR: 1.769; CI 95%: 1.042–3.005; p = .0174**	*N.A.*	**OR: 0.476; CI 95%: 0.283–0.799; p = .0025**

N.A. = Not Assessed because no data available.
OR = Odds Ratio.
CI = Confidence Interval.
p = p value.
CAP = Child and Adolescent People.
HIC = High-income countries.
UMIC = Upper-middle-income countries.
LMIC = Lower-middle-income countries.
LIC = Low-income countries.

2007).

Finally, child and adolescent refugees display a significantly lower suicidal ideation prevalence but a significantly higher suicide attempt prevalence (Huemer et al., 2011; Ruf et al., 2010; Slodnjak et al., 2002; Staehr and Munk-Andersen, 2006; Tousignant et al., 1999). The difficulties of children in verbalizing suicidal thoughts might have a role, but more research is needed as the current evidence lies in a few studies with a modest numerousness.

Only a few studies carried out a direct comparison of the suicide and suicidal behavior outcomes among refugees with the host population. Our de novo calculated findings are partly congruent with those results. As regards suicidal ideation, one study set up in a low-income country included in Haase et al. (2022) reported a significantly higher prevalence of 27.3% among refugees (n = 444) compared to 17.3% among host country's residents (n = 527) (p < 0.0001). This is consistent with our finding of a higher suicidal ideation prevalence in refugees who arrived in low-income countries compared to people living in countries of the same level of income as derived from Borges et al. (2010). Regarding suicide attempts, one study set up in a high-income country included in Haase et al. (2022) displayed a 0.8% prevalence among refugees (n = 129) compared to a 0.2% among nationals (n = 1290) showing a non-significant difference (p = 0.148). This datum is contrasting with our evidence of a higher suicide attempt prevalence in refugees who arrived in high-income countries compared to people living in countries of the same level of income. However, the non-significance might be clearly due to the small number of people included in the study. Finally, as regards suicide rate, evidence in literature is mixed, with one prospective cohort study that reported an RR of 0.38 in men and 0.80 in women, and a case-control study reporting an RR of 2.00 in men and 0.73 in women. They were both set in a high-income country and included in Amiri (2022). These data would seem to be discordant with our finding of a higher suicide rate in refugees who arrived in high-income countries compared to people living in countries of the same level of income. Nevertheless, we must underline that actual data on suicide rate may be lowered by many factors linked to the flight, as explained above.

Study quality was poor in 2 studies, fair in 4, and good in 4 (details in Table S2). However, one of the two studies with poor quality (Jin et al., 2021) provided only data on "suicidality" not specifying the outcomes assessed. Analogously, the other (Hansson et al., 2012) included only 1 study (n = 203). Hence, we can state that they did not contribute considerably to the calculation of the aggregated suicide death rate and suicidal behavior prevalence.

4.1. What we didn't find

No review provided data regarding somatic nor psychiatric comorbidity, and no review provided data regarding the effectiveness of treatments. One qualitative systematic review reported information on treatment (Haroz et al., 2020), but it was not included in our work since it did not provide numerical values of the outcomes.

These are the greatest gaps in the literature. Indeed, knowing the role of somatic and psychiatric comorbidity in determining suicide and suicidal behavior among refugees would help intervene to potentiate the services offered to refugees facing suicidal behavior issues. Data on the effectiveness of different treatments would be important as well. In this sense, it should be taken into account that Western-centered therapies might not be effective in the treatment of the trauma-related mental disorders of refugees and asylum seekers, especially when coming from cultures very distant from those typical of Western, educated, industrialized, rich, and democratic societies. Culturally sensitive approaches, instead, which activate same-cultural community network support, should be considered (Cossu et al., 2018).

It should be noted that while we did not find any systematic reviews reporting data on comorbidity or the effectiveness of treatments aimed at reducing suicidality, single studies on these aspects may have been published, but not yet summarized in a systematic review. Foundations must increase funding for systematic reviews focused on comorbidity, treatment effectiveness, and the prevalence of suicidality among specific populations. Additionally, based on current research findings, more studies are needed on suicidality among refugees, particularly in low-income settings.

4.2. Strengths and limitations

The major strength of this meta-review is the inclusion of systematic reviews and meta-analyses from a wide set of non-overlapping scientific databases, systematic reviews and meta-analyses representing the top of the hierarchy of evidence (Atkins, 2004). Nevertheless, some limitations of our work must be acknowledged. First, refugees might have additional risk factors for suicidality than asylum seekers since their permission to live in the host country has not been recognized yet, and they must face long and arduous processes with courts and agencies. It would have been worthy to separate data based on these two categories. However, most of the studies utilized mixed samples of refugees and asylum seekers not providing the distribution of the sample. Consequently, we had to comprise them into a unique category. Second, it emerged high heterogeneity in the studies included in the reviews for

what concerns the types of the studies, the gender and age distribution, and the countries of origin of refugees. Further, there was wide variability in the quality of the reviews, and only one (Cogo et al., 2022) provided objective data (vital registration of suicide deaths). All the others were based on questions answered by refugees, with a high heterogeneity concerning the tools adopted. Third, it would have been very interesting to perform an analysis based on the level of expense the countries invest in refugees assistance, on cultural and linguistic barriers, and on the public opinion of the country's residents regarding refugees, as this frequently translates into actions. Factors linked to the characteristics of refugee populations (i.e. cultural norms, religious customs, identity and concept of self) and to experiences that precede or are linked to the flight (i.e. loss of property, malnutrition, imprisonment, torture, physical assault, rape) also would have been worthy of analysis (Bhugra and Becker, 2005; Lindert et al., 2016). Unfortunately, the current evidence in the literature did not allow us to carry out any analysis of this sort.

In conclusion, this systematic review of systematic reviews evidenced in refugees higher suicide rates, suicide attempts, and suicidal ideation compared to people living in the host countries. Notwithstanding the limitations of the present study, these findings highlight the urge for targeted mental health interventions for the refugee populations. Future research is required to identify the specific risk factors and protective measures to inform the development of effective strategies. Addressing the mental health needs of refugees is essential for humanitarian reasons, and to foster their successful integration and the well-being of host societies.

Funding

This research received no external funding.

Institutional review board statement

Not applicable.

Informed consent statement

Not applicable.

Data availability statement

Not applicable.

CRediT authorship contribution statement

Francesco Bevione: Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Matteo Panero:** Writing – review & editing, Writing – original draft, Data curation. **Giovanni Abbate-Daga:** Writing – review & editing, Writing – original draft, Validation, Supervision, Data curation. **Giulia Cossu:** Writing – review & editing, Writing – original draft, Data curation. **Mauro Giovanni Carta:** Writing – review & editing, Writing – original draft, Supervision, Data curation. **Antonio Preti:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

Declaration of competing interest

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 article.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jpsychires.2024.07.024.

References

Ahmedani, B.K., Peterson, E.L., Hu, Y., Rossom, R.C., Lynch, F., Lu, C.Y., Waitzfelder, B. E., Owen-Smith, A.A., Hubley, S., Prabhakar, D., Williams, L.K., Zeld, N., Mutter, E., Beck, A., Tolsma, D., Simon, G.E., 2017. Major physical health conditions and risk of suicide. Am. J. Prev. Med. 53, 308–315. https://doi.org/10.1016/j.amepre.2017.04.001.

Ajdacic-Gross, V., 2008. Methods of suicide: international suicide patters derived from the WHO mortality database. Bull. World Health Organ. 86, 726–732. https://doi.org/10.2471/BLT.07.043489.

Al-Modallal, H., 2012. Patterns of coping with partner violence: experiences of refugee women in Jordan. Publ. Health Nurs. 29, 403–411. https://doi.org/10.1111/j.1525-1446.2012.01018.x.

Amiri, S., 2022. Prevalence of suicide in immigrants/refugees: a systematic review and meta-analysis. Arch. Suicide Res. 26, 370–405. https://doi.org/10.1080/13811118.2020.1802379.

Angelakis, I., Austin, J.L., Gooding, P., 2020. Association of childhood maltreatment with suicide behaviors among young people. JAMA Netw. Open 3, e2012563. https://doi.org/10.1001/jamanetworkopen.2020.12563.

Angelakis, I., Gillespie, E.L., Panagioti, M., 2019. Childhood maltreatment and adult suicidality: a comprehensive systematic review with meta-analysis. Psychol. Med. 49, 1057–1078. https://doi.org/10.1017/S0033291718003823.

Ao, T., Shetty, S., Sivilli, T., Blanton, C., Ellis, H., Geltman, P.L., Cochran, J., Taylor, E., Lankau, E.W., Lopes Cardozo, B., 2016. Suicidal ideation and mental health of Bhutanese refugees in the United States. J. Immigr. Minority Health 18, 828–835. https://doi.org/10.1007/s10903-015-0325-7.

Armitage, A., Marcolin, M., Lut, I., Hardelid, P., Heys, M., 2023. 787 Mortality among migrant children and young people (CYP): results from a systematic review. In: British Association of Child and Adolescent Public Health. BMJ Publishing Group Ltd and Royal College of Paediatrics and Child Health, pp. A95–A96. https://doi.org/10.1136/archdischild-2023-rcpch.160.

Arsenault-Lapierre, G., Kim, C., Turecki, G., 2004. Psychiatric diagnoses in 3275 suicides: a meta-analysis. BMC Psychiatr. 4, 37. https://doi.org/10.1186/1471-244X-4-37.

Atkins, D., 2004. Grading quality of evidence and strength of recommendations. BMJ 328, 1490. https://doi.org/10.1136/bmj.328.7454.1490.

Bedaso, A., Duko, B., 2022. Epidemiology of depression among displaced people: a systematic review and meta-analysis. Psychiatr. Res. 311, 114493 https://doi.org/10.1016/j.psychres.2022.114493.

Berganza, I.C., Blouin, C., Freier, L.F., 2020. The spirit of Cartagena? Applying the extended refugee definition to Venezuelans in Latin America. Forced Migr. Rev. 63, 64–66.

Bertolote, J.M., Fleischmann, A., 2002. Suicide and psychiatric diagnosis: a worldwide perspective. World Psychiatr. 1, 181–185.

Bhugra, D., Becker, M.A., 2005. Migration, cultural bereavement and cultural identity. World Psychiatr. 4, 18–24.

Borges, G., Nock, M.K., Haro Abad, J.M., Hwang, I., Sampson, N.A., Alonso, J., Andrade, L.H., Angermeyer, M.C., Beautrais, A., Bromet, E., Bruffaerts, R., de Girolamo, G., Florescu, S., Gureje, O., Hu, C., Karam, E.G., Kovess-Masfety, V., Lee, S., Levinson, D., Medina-Mora, M.E., Ormel, J., Posada-Villa, J., Sagar, R., Tomov, T., Uda, H., Williams, D.R., Kessler, R.C., 2010. Twelve-month prevalence of and risk factors for suicide attempts in the World health organization World mental health surveys. J. Clin. Psychiatry 71, 1617–1628. https://doi.org/10.4088/JCP.08m04967blu.

Brandt, M.K., Sandahl, H., Carlsson, J., 2023. The impact of religion and spirituality on suicide risk in veterans and refugees with posttraumatic stress disorder. J. Nerv. Ment. Dis. 211, 65–73. https://doi.org/10.1097/NMD.0000000000001583.

Burnett, A., 2001. Asylum seekers and refugees in Britain: health needs of asylum seekers and refugees. BMJ 322, 544–547. https://doi.org/10.1136/bmj.322.7285.544.

Carta, M.G., Bernal, M., Hardoy, M.C., Haro-Abad, J.M., group, the "Report on the M.H. in E. working, 2005. Migration and mental health in Europe (the state of the mental health in Europe working group: appendix 1). Clin. Pract. Epidemiol. Ment. Health 1, 13. https://doi.org/10.1186/1745-0179-1-13.

Cogo, E., Murray, M., Villanueva, G., Hamel, C., Garner, P., Senior, S.L., Henschke, N., 2022. Suicide rates and suicidal behaviour in displaced people: a systematic review. PLoS One 17, e0263797. https://doi.org/10.1371/journal.pone.0263797.

Cohen, L.J., Mokhtar, R., Richards, J., Hernandez, M., Bloch-Elkouby, S., Galynker, I., 2022. The Narrative-Crisis Model of suicide and its prediction of near-term suicide risk. Suicide Life-Threatening Behav. 52, 231–243. https://doi.org/10.1111/sltb.12816.

Cohen, R., 2004. The Guiding Principles on Internal Displacement: an Innovation in International Standard Setting.

Cossu, G., Preti, A., Carta, M.G., 2018. Treatment of mental health problems in refugees and asylum seekers. In: Bhugra, D., Bhui, K., Wong, S.Y.S., Gilman, S.E. (Eds.), Oxford Textbook of Public Mental Health. Oxford University Press, pp. 289–304. https://doi.org/10.1093/med/9780198792994.003.0033.

Dick, B., 1984. Diseases of refugees—causes, effects and control. Trans. R. Soc. Trop. Med. Hyg. 78, 734–741. https://doi.org/10.1016/0035-9203(84)90004-X.

Elbogen, E.B., Lanier, M., Montgomery, A.E., Strickland, S., Wagner, H.R., Tsai, J., 2020. Financial strain and suicide attempts in a nationally representative sample of US adults. Am. J. Epidemiol. 189, 1266–1274. https://doi.org/10.1093/aje/kwaa146.

Fellmeth, G., Paw, M.K., Wiladphaingern, J., Charunwatthana, P., Nosten, F.H., McGready, R., 2016. Maternal suicide risk among refugees and migrants. Int. J. Gynecol. Obstet. 134, 223–224. https://doi.org/10.1016/j.ijgo.2016.02.011.

Firth, J., Solmi, M., Wootton, R.E., Vancampfort, D., Schuch, F.B., Hoare, E., Gilbody, S., Torous, J., Teasdale, S.B., Jackson, S.E., Smith, L., Eaton, M., Jacka, F.N., Veronese, N., Marx, W., Ashdown-Franks, G., Siskind, D., Sarris, J., Rosenbaum, S., Carvalho, A.F., Stubbs, B., 2020. A meta-review of "lifestyle psychiatry": the role of exercise, smoking, diet and sleep in the prevention and treatment of mental disorders. World Psychiatr. 19, 360–380. https://doi.org/10.1002/wps.20773.

Forster, M., Grigsby, T.J., Gower, A.L., Mehus, C.J., McMorris, B.J., 2020. The role of social support in the association between childhood adversity and adolescent self-injury and suicide: findings from a statewide sample of high school students. J. Youth Adolesc. 49, 1195–1208. https://doi.org/10.1007/s10964-020-01235-9.

Freier, L.F., Gauci, J.-P., 2020. Refugee rights across regions: a comparative overview of legislative good practices in Latin America and the eu. Refug. Surv. Q. 39, 321–362. https://doi.org/10.1093/rsq/hdaa011.

Giménez-Palomo, A., Gomes-da-Costa, S., Dodd, S., Pachiarotti, I., Verdolini, N., Vieta, E., Berk, M., 2022. Does metabolic syndrome or its component factors alter the course of bipolar disorder? A systematic review. Neurosci. Biobehav. Rev. 132, 142–153. https://doi.org/10.1016/j.neubiorev.2021.11.026.

Haase, E., Schönfelder, A., Nesterko, Y., Glaesmer, H., 2022. Prevalence of suicidal ideation and suicide attempts among refugees: a meta-analysis. BMC Publ. Health 22, 635. https://doi.org/10.1186/s12889-022-13029-8.

Hagaman, A.K., Sivilli, T.I., Ao, T., Blanton, C., Ellis, H., Lopes Cardozo, B., Shetty, S., 2016. An investigation into suicides among Bhutanese refugees resettled in the United States between 2008 and 2011. J. Immigr. Minority Health 18, 819–827. https://doi.org/10.1007/s10903-015-0326-6.

Hansson, E.K., Tuck, A., Lurie, S., McKenzie, K., 2012. Rates of mental illness and suicidality in immigrant, refugee, ethnocultural, and racialized groups in Canada: a review of the literature. Can. J. Psychiatr. 57, 111–121. https://doi.org/10.1177/070674371205700208.

Haroz, E.E., Decker, E., Lee, C., Bolton, P., Spiegel, P., Ventevogel, P., 2020. Evidence for suicide prevention strategies with populations in displacement: a systematic review. Intervention 18, 37–44.

Harris, E.C., Barraclough, B.M., Winslow, F., 1994. Suicide as an outcome for medical disorders. Medicine 73, 281–296. https://doi.org/10.1097/00005792-199411000-00001.

Hedrick, K., Borschmann, R., 2023. Self-harm among unaccompanied asylum seekers and refugee minors: protocol for a global systematic review of prevalence, methods and characteristics. BMJ Open 13, e069237. https://doi.org/10.1136/bmjopen-2022-069237.

Hennessy, E.A., Johnson, B.T., 2020. Examining overlap of included studies in meta-reviews: guidance for using the corrected covered area index. Res. Synth. Methods 11, 134–145. https://doi.org/10.1002/jrsm.1390.

Hoell, A., Kourmpeli, E., Salize, H.J., Heinz, A., Padberg, F., Habel, U., Kamp-Becker, I., Höhne, E., Böge, K., Bajbouj, M., 2021. Prevalence of depressive symptoms and symptoms of post-traumatic stress disorder among newly arrived refugees and asylum seekers in Germany: systematic review and meta-analysis. BJPsych Open 7, e93. https://doi.org/10.1192/bjo.2021.54.

Hossain, K.M.A., Walton, L.M., Arafat, S.M.Y., Maybee, N., Sarker, R.H., Ahmed, S., Kabir, F., 2020. Expulsion from the motherland: association between depression & health-related quality of life for ethnic Rohingya living with refugee status in Bangladesh. Clin. Pract. Epidemiol. Ment. Health 16, 46–52. https://doi.org/10.2174/1745017902016010046.

Hou, X., Wang, J., Guo, J., Zhang, X., Liu, J., Qi, L., Zhou, L., 2022. Methods and efficacy of social support interventions in preventing suicide: a systematic review and meta-analysis. Evid. Base Ment. Health 25, 29–35. https://doi.org/10.1136/ebmental-2021-300318.

Howarth, E.J., O'Connor, D.B., Panagioti, M., Hodkinson, A., Wilding, S., Johnson, J., 2020. Are stressful life events prospectively associated with increased suicidal ideation and behaviour? A systematic review and meta-analysis. J. Affect. Disord. 266, 731–742. https://doi.org/10.1016/j.jad.2020.01.171.

Huemer, J., Karnik, N., Voelkl-Kernstock, S., Granditsch, E., Plattner, B., Friedrich, M., Steiner, H., 2011. Psychopathology in African unaccompanied refugee minors in Austria. Child Psychiatr. Hum. Dev. 42, 307–319. https://doi.org/10.1007/s10578-011-0219-4.

Iemmi, V., Bantjes, J., Coast, E., Channer, K., Leone, T., McDaid, D., Palfreyman, A., Stephens, B., Lund, C., 2016. Suicide and poverty in low-income and middle-income countries: a systematic review. Lancet Psychiatr. 3, 774–783. https://doi.org/10.1016/S2215-0366(16)30066-9.

Jin, S.S., Dolan, T.M., Cloutier, A.A., Bojdani, E., DeLisi, L., 2021. Systematic review of depression and suicidality in child and adolescent (CAP) refugees. Psychiatr. Res. 302, 114025 https://doi.org/10.1016/j.psychres.2021.114025.

Kalt, A., Hossain, M., Kiss, L., Zimmerman, C., 2013. Asylum seekers, violence and health: a systematic review of research in high-income host countries. Am. J. Publ. Health 103, e30–e42. https://doi.org/10.2105/AJPH.2012.301136.

Kien, C., Sommer, I., Faustmann, A., Gibson, L., Schneider, M., Krczal, E., Jank, R., Klerings, I., Szelag, M., Kerschner, B., Brattström, P., Gartlehner, G., 2019. Prevalence of mental disorders in young refugees and asylum seekers in European Countries: a systematic review. Eur. Child Adolesc. Psychiatr. 28, 1295–1310. https://doi.org/10.1007/s00787-018-1215-z.

Kleiman, E.M., Liu, R.T., 2013. Social support as a protective factor in suicide: findings from two nationally representative samples. J. Affect. Disord. 150, 540–545. https://doi.org/10.1016/j.jad.2013.01.033.

LaRocco, J.M., House, J.S., French, J.R., 1980. Social support, occupational stress, and health. J. Health Soc. Behav. 21, 202–218.

Lindert, J., Carta, M.G., Schäfer, I., Mollica, R.F., 2016. Refugees mental health—a public mental health challenge. Eur. J. Publ. Health 26, 374–375. https://doi.org/10.1093/eurpub/ckw010.

Liu, R.T., Miller, I., 2014. Life events and suicidal ideation and behavior: a systematic review. Clin. Psychol. Rev. 34, 181–192. https://doi.org/10.1016/j.cpr.2014.01.006.

Maas, F., Münch, S., Schader, M., Schammann, H., 2022. The politics of uncertainty: producing, reinforcing, and mediating (legal) uncertainty in local refugee reception—introduction to the special issue. J. Refug. Stud. 34, 3559–3569. https://doi.org/10.1093/jrs/feab064.

Mather, A.A., Cox, B.J., Enns, M.W., Sareen, J., 2009. Associations of obesity with psychiatric disorders and suicidal behaviors in a nationally representative sample. J. Psychosom. Res. 66, 277–285. https://doi.org/10.1016/j.jpsychores.2008.09.008.

McDowell, A.K., Lineberry, T.W., Bostwick, J.M., 2011. Practical suicide-risk management for the busy primary care physician. Mayo Clin. Proc. 86, 792–800. https://doi.org/10.4065/mcp.2011.0076.

Mesa-Vieira, C., Haas, A.D., Buitrago-Garcia, D., Roa-Diaz, Z.M., Minder, B., Gamba, M., Salvador, D., Gomez, D., Lewis, M., Gonzalez-Jaramillo, W.C., Pahud de Mortanges, A., Buttia, C., Muka, T., Trujillo, N., Franco, O.H., 2022. Mental health of migrants with pre-migration exposure to armed conflict: a systematic review and meta-analysis. Lancet Public Health 7, e469–e481. https://doi.org/10.1016/S2468-2667(22)00061-5.

Morina, N., Akhtar, A., Barth, J., Schnyder, U., 2018. Psychiatric disorders in refugees and internally displaced persons after forced displacement: a systematic review. Front. Psychiatr. 9 https://doi.org/10.3389/fpsyt.2018.00433.

Narrow, W.E., First, M.B., Sirovatka, P.J., Regier, D.A. (Eds.), 2007. Age and Gender Considerations in Psychiatric Diagnosis: A Research Agenda for DSM-V., Age and Gender Considerations in Psychiatric Diagnosis: A Research Agenda for DSM-V. American Psychiatric Publishing, Inc., Arlington, VA, US.

Ozbay, F., Johnson, D.C., Dimoulas, E., Morgan, C.A., Charney, D., Southwick, S., 2007. Social support and resilience to stress: from neurobiology to clinical practice. Psychiatry 4, 35–40.

Page, M.J., McKenzie, J.E., Bossuyt, P.M., Boutron, I., Hoffmann, T.C., Mulrow, C.D., Shamseer, L., Tetzlaff, J.M., Akl, E.A., Brennan, S.E., Chou, R., Glanville, J., Grimshaw, J.M., Hróbjartsson, A., Lalu, M.M., Li, T., Loder, E.W., Mayo-Wilson, E., McDonald, S., McGuinness, L.A., Stewart, L.A., Thomas, J., Tricco, A.C., Welch, V.A., Whiting, P., Moher, D., 2021. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ n71. https://doi.org/10.1136/bmj.n71.

Pieper, D., Antoine, S.-L., Mathes, T., Neugebauer, E.A.M., Eikermann, M., 2014. Systematic review finds overlapping reviews were not mentioned in every other overview. J. Clin. Epidemiol. 67, 368–375. https://doi.org/10.1016/j.jclinepi.2013.11.007.

Pompili, M., Innamorati, M., Erbuto, D., Luciano, M., Sampogna, G., Abbate-Daga, G., Barlati, S., Carmassi, C., Castellini, G., De Fazio, P., Di Lorenzo, G., Di Nicola, M., Ferrari, S., Goracci, A., Gramaglia, C., Martinotti, G., Nanni, M.G., Pasquini, M., Pinna, F., Poloni, N., Serafini, G., Signorelli, M., Tortorella, A., Ventriglio, A., Volpe, U., Fiorillo, A., 2022. High depression symptomatology and mental pain characterize suicidal psychiatric patients. Eur. Psychiatr. 65, e54. https://doi.org/10.1192/j.eurpsy.2022.2312.

Preti, A., 2011. Animal model and neurobiology of suicide. Prog. Neuro-Psychopharmacol. Biol. Psychiatry 35, 818–830. https://doi.org/10.1016/j.pnpbp.2010.10.027.

Ruf, M., Schauer, M., Elbert, T., 2010. Prävalenz von traumatischen Stresserfahrungen und seelischen Erkrankungen bei in Deutschland lebenden Kindern von Asylbewerbern. Z. Klin. Psychol. Psychother. 39, 151–160. https://doi.org/10.1026/1616-3443/a000029.

Sá, F.H. de L., Waikamp, V., Freitas, L.H.M., Baeza, F.L.C., 2022. Mental health outcomes in Syrian refugees: a systematic review. Int. J. Soc. Psychiatr. 68, 933–953. https://doi.org/10.1177/00207640221099404.

Slodnjak, V., Kos, A., Yule, W., 2002. Depression and parasuicide in refugee and Slovenian adolescents. Crisis 23, 127–132.

Staehr, M.A., Munk-Andersen, E., 2006. [Suicide and suicidal behavior among asylum seekers in Denmark during the period 2001-2003. A retrospective study]. Ugeskr Laeger 168, 1650–1653.

Tan, S.T., Low, P.T.A., Howard, N., Yi, H., 2021. Social capital in the prevention and management of non-communicable diseases among migrants and refugees: a systematic review and meta-ethnography. BMJ Glob. Health 6, e006828. https://doi.org/10.1136/bmjgh-2021-006828.

Tay, A.K., Riley, A., Islam, R., Welton-Mitchell, C., Duchesne, B., Waters, V., Varner, A., Moussa, B., Mahmudul Alam, A.N.M., Elshazly, M.A., Silove, D., Ventevogel, P., 2019. The culture, mental health and psychosocial wellbeing of Rohingya refugees: a systematic review. Epidemiol. Psychiatr. Sci. 28, 489–494. https://doi.org/10.1017/S2045796019000192.

Tousignant, M., Habimana, E., Biron, C., Malo, C., Sidoli-LeBlanc, E., Bendris, N., 1999. The quebec adolescent refugee Project: psychopathology and family variables in a sample from 35 Nations. J. Am. Acad. Child Adolesc. Psychiatry 38, 1426–1432. https://doi.org/10.1097/00004583-199911000-00018.

Van Heeringen, K., 2012. Stress–diathesis model of suicidal behavior. In: Dwivedi, Y. (Ed.), The Neurobiological Basis of Suicide. CRC Press/Taylor & Francis, Boca Raton.

Vijayakumar, L., 2016. Suicide among refugees – a mockery of humanity. Crisis 37, 1–4. https://doi.org/10.1027/0227-5910/a000385.

Vijayakumar, L., Jotheeswaran, A.T., 2010. Suicide in refugees and asylum seekers. In: Bhugra, D., Craig, T., Bhui, K. (Eds.), Mental Health of Refugees and Asylum Seekers. Oxford University Press, New York.

Vijayakumar, L., Mohanraj, R., Kumar, S., Jeyaseelan, V., Sriram, S., Shanmugam, M., 2017. Casp – an intervention by community volunteers to reduce suicidal behaviour among refugees. Int. J. Soc. Psychiatr. 63, 589–597. https://doi.org/10.1177/0020764017723940.

Villalonga-Olives, E., Wind, T.R., Armand, A.O., Yirefu, M., Smith, R., Aldrich, D.P., 2022. Social-capital-based mental health interventions for refugees: a systematic review. Soc. Sci. Med. 301, 114787 https://doi.org/10.1016/j.socscimed.2022.114787.

Virgolino, A., Costa, J., Santos, O., Pereira, M.E., Antunes, R., Ambrósio, S., Heitor, M.J., Vaz Carneiro, A., 2022. Lost in transition: a systematic review of the association between unemployment and mental health. J. Ment. Health 31, 432–444. https://doi.org/10.1080/09638237.2021.2022615.

World Health Organization, 2022. Refugee and Migrant Health. Geneva.

World Health Organization, 2021. Suicide. Geneva.

World Health Organization, 2019. Suicide in the World: Global Health Estimates. Geneva.

World Health Organization, 1999. Figures and Facts about Suicide. Geneva.