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Evidence for suicide prevention strategies with populations in displacement: a systematic review

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Abstract

Little is known about effective strategies to reduce rates of suicide among refugees and other displaced populations. This review aims to synthesise and assess the evidence base for suicide prevention and response programmes in refugee settings. We conducted a systematic review from peer-reviewed literature databases (five databases) and grey literature sources of literature published prior to November 27, 2017. We identified eight records (six peer-reviewed articles and two grey literature reports) that met our inclusion criteria. None of the eight records provided conclusive evidence of effectiveness. Five records had an unclear level of evidence and three records were potentially promising or promising. Most of the studies reviewed utilised multiple synergistic strategies. The most rigorous study showed the effectiveness of Brief Intervention and Contact and Safety planning. There is limited evidence of the effectiveness of other suicide prevention strategies for these groups. Future studies should attempt to better understand the impact of suicide prevention strategies, and explicitly unpack the individual and synergistic effects of multiple-strategies on suicide-related outcomes. Evidence from this review supports the use of Brief Intervention and Contact type interventions, but more research is needed to replicate findings particularly among populations in displacement.

Keywords: displaced populations, refugee populations, suicide prevention

KEY IMPLICATIONS FOR PRACTICE

- Despite lack of evidence for displaced populations, multitiered and public health approaches to suicide seem most promising.
- Simple scalable interventions based on brief caring contacts are feasible and effective.
- Strong evaluations of suicide prevention efforts are needed to better inform practice.

INTRODUCTION

Suicide and associated behaviours (attempts; self-injurious behaviours) have a profound impact on individuals, families and communities (World Health Organization, 2014a; Posner, Oquendo, Gould, Stanley, & Davies, 2007). Globally, approximately 11.05 per 100,000 people die by suicide each year (University of Washington Institute for Health Metrics, 2017). It is the second leading cause of death for young people aged 15–29 years (World Health Organization, 2017). For every suicide, there are an estimated 20–25 additional suicide attempts representing a significant burden on health systems, families and communities, and costing billions of dollars in associated healthcare costs and lost productivity (Centers for Disease,

Control, & Prevention, 2013; Shepard, Gurewich, Lwin, Reed, & Silverman, 2016). Suicide rates vary significantly by country and region. High-income countries (HIC) have an average suicide rate of 14.12 per 100,000, while the rate for low- and middle-income countries (LMIC) is 11.09 per

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100,000 people, although why these rates differ remains unclear (University of Washington Institute for Health Metrics, 2017). As the vast majority of the world's population lives in LMIC, suicides in these countries represent 75% of suicide deaths worldwide (World Health Organization, 2014a).

Less is known about the burden of suicide and associated behaviours in refugees and populations in displacement. Given that the number of refugees and other forcibly displaced people worldwide is growing and currently stands at a record high of 70.8 million people displaced from their homes by conflict and persecution in 2016, there is an urgent need to better understand suicide and how to prevent it among those that are displaced (United Nations High Commissioner for Refugees, 2019).

Most studies of refugee populations after resettlement to HICs show higher prevalence of suicidal behaviours compared to nonrefugee populations (Ao et al., 2012, 2016; Asgary & Segar, 2011; Centers for Disease Control, 2013; Kirmayer et al., 2011; Meyerhoff, Rohan, & Fondacaro, 2018; World Health Organization, 2014b; Steel, Chey, Silove, Marnane, Bryant, & Ommeren, 2009; Wong et al., 2006), although other studies do not find higher rates, for example, in Sweden (Hollander et al., 2019; Niederkrotenthaler, Mittendorfer-Rutz, Mehlum, Qin, & Björkenstam, 2020). Less is known about populations still living in displacement. A recent study of refugees in Nigeria found higher prevalence of suicidal ideation among refugees compared to the nonrefugee population (27.3% vs. 17.3%, respectively) (Akinyemi, Atilola, & Soyannwo, 2015). A recent examination of healthcare and disease burden among refugees in Lesbos, Greece found high hospital-based treatment rates associated with suicide attempts (Hermans, Kooistra, Cannegieter, Rosendaal, Mook-Kanamori, & Nemeth, 2017). In refugee camps in Thailand, a recent report by the International Organization for Migration (IOM) indicated a significant and concerning rise in suicide rates – with suicide rates in 2015 to 2016 having increased from 2.31 deaths per 100,000 people to 36.6 deaths per 100,000 people (International Organization for Migration, 2017). In the only known review of rates across refugee and displaced populations, Vijayakumar and colleagues found suicide rates to range from 3.4% to 34% of recorded deaths (2010).

Suicide is thought to be preventable with timely and effective prevention efforts. In nonrefugee populations, effective suicide prevention strategies reduce rates of suicide and suicide-related behaviours (Fleischmann et al., 2016; Mann et al., 2005; Zalsman et al., 2016). Globally, suicide prevention programmes being implemented range from universal prevention such as broad scale media campaigns or means restriction; to selective prevention such as medication for individuals who are depressed; to indicated programmes such as ones that aim to prevent reattempt (Mann et al., 2005; Zalsman et al., 2016). A recent meta-analysis of randomised controlled trials of strategies to prevent death by suicide found the World Health Organization (WHO) Brief Intervention and Contact (BIC) programme was associated with

significantly lower odds of suicide (OR=0.20; 95% CI 0.09-0.42) (Fleischmann et al., 2008; Riblet, Shiner, Young-Xu, & Watts, 2017). Comprehensive approaches to suicide prevention, including the use of multiple synergistic strategies that address different aspects of suicide, are recommended and have also been highly successful (Suicide Prevention Resource Center, 2018; Cwik et al., 2014, 2016; Zalsman et al., 2016; Hegerl et al., 2008; Knox, Litts, Talcott, Feig, & Caine, 2003; Knox et al., 2010).

It is important to understand the context of refugee and other forcibly displaced populations when designing suicide prevention programming. Apart from challenges of low resource settings such as few mental health professionals and limited funding allocation to mental health care activities, refugees and other displaced populations face additional challenges such as 1) erosion of protective social support structures; 2) high levels of emotional distress; 3) incapacitated formal systems for health and social services, education and livelihoods; 4) loss of possessions, past social organisation, cultural connections and security during and after migration; 5) discrimination, exclusion and marginalisation; and 6) linguistic and cultural barriers (United Nations High Commissioner for Refugees, 2013, United Nations High Commissioner for Refugees, 2017; Silove, 2017).

Despite our knowledge about suicide prevention strategies in general, almost nothing is known about suicide prevention among displaced populations. The purpose of this review is to answer the following questions: 1) What suicide prevention and response programmes are currently being provided in refugee and internally displaced persons (IDP) settings or humanitarian contexts? 2) to whom are they being provided? and 3) what level of evidence exists for their effectiveness? To answer these questions, we conducted a systematic review of both peer-reviewed and grey literature.

METHODS

Search strategy

The peer review search included seven databases: PubMed, PsychInfo, Cochrane library, Global Health, Embase, Scopus and Web of Science. The search was done on November 28, 2017. There were no date limitations. We used a three-tiered search strategy whereby an initial search was done using outcome-related terms, followed by a search of programme/intervention-related terms, and this was ultimately combined with refugee/displacement-related terms (see Box 1 for full terms). For the grey literature, we searched two databases: Published International Literature on Traumatic Stress (PILOTS) and an intergovernmental organisation search engine hosted by the Government Documents Round Table (GODORT). The GODORT is a database that uses Google search technology to search the webpages of intergovernmental organisations (IGOs) and nongovernmental organisations (NGOs). There are websites for 415 IGOs and 1584 NGOs included in the search engine. For feasibility, our search was limited to the first 10 pages of results on GODORT.

BOX 1. Search strategy and selection criteria

References for this review were identified through searches of PubMed, PsychInfo, Cochrane library, Global Health, Embase, Scopus, Web of Science, Published International Literature on Traumatic Stress (PILOTS) and the Intergovernmental Organization Search Engine (GODORT). We searched for all relevant English language studies with no date limitations. We used a three-tiered search strategy, searching for outcome related terms, such as ‘suicide,’ ‘suicidal’ first, then programme/intervention related terms, such as ‘promotion,’ ‘screening’ and refugee-related terms, such as ‘refugee,’ ‘forced migrant’ (see supplemental material for full search strategy). We also searched websites of the following organisations: United Nations High Commissioner for Refugees (UNHCR), World Health Organization (WHO), Cooperative for Assistance and Relief Everywhere (CARE), Inter-Agency Standing Committee (IASC), International Medical Corps (IMC), International Committee of the Red Cross (ICRC), International Organization for Migration (IOM) and Médecins Sans Frontières (MSF). Finally, we searched the Department of Health and the National Statistics websites for the top ten refugee hosting countries (Jordan, Turkey, Pakistan, Lebanon, Iran, Ethiopia, Kenya, Uganda, Democratic Republic of Congo, Chad). We limited our time spent on each organisation and country specific website to 30 minutes (see supplemental material for grey literature search results). Articles resulting from these searches and relevant references cited in those articles were reviewed.

We also used a modified version of a recent strategy developed by Enticott, Buck and Shawyer (2018), and specifically searched the websites of humanitarian agencies and organisations. Finally, we searched the Department of Health and the National Statistics websites for the top ten refugee hosting countries. We limited our time spent on each website to 30 minutes of searching (see Supplemental Material). The grey literature search was completed between December 1, 2017, and January 2, 2018.

Inclusion/exclusion criteria

To be included in the final review, records had to meet the following criteria: 1) Include data on a primary or intermediate outcome related to suicide. Primary outcomes included death by suicide, suicide attempt or suicide ideation. Intermediate outcomes included help-seeking behaviour, identification of those at risk, means restriction, mental health outcomes (clearly specified as intermediate outcomes in the context of suicide prevention efforts), awareness and education outcomes, connections with care, points of contact; 2) evaluate or describe at least one programme, intervention, policy or strategy; 3) have a programme, intervention, policy or strategy designed for or implemented to address prevention or response to suicidal behaviours in refugee or similar populations; and 4) be published in English. Exclusion criteria were: 1) review papers (but references were screened for additional studies); 2) records that represented data on only one person (e.g. case studies); and 3) conference presentations or posters. While there are important distinctions between who is a refugee, migrant, resettled refugee and asylum seeker, we sought to keep inclusion criteria quite broad as often the same organisations respond to all these populations.

Screening and data extraction

After initial identification of potential records, titles and abstracts were screened (peer-reviewed literature only) by two authors independently. This was followed by screening of full-texts (grey literature and all peer-reviewed literature that passed abstract screening) again by two authors

independently. Following full-text screening, if articles met inclusion/exclusion criteria, data were extracted by one of the authors from each record on the following variables: study context (including region, income level and ethnicity); study design, type of data and study population demographics; intervention/programme/strategy/policy description and features; level of prevention; target outcomes and study findings; and any stated limitations of the study (Muñoz, Mrazek, & Haggerty, 1996). Any disagreements on inclusion were discussed between raters, until consensus was reached.

For each included article, we classified the level of evidence and the strength of outcomes. Level of evidence classifications were based on criteria used to consider evidence beyond clinical trials (Weiss et al., 2016). Each record received a rating of (1) *effective*, (2) *promising*, (3) *potentially promising*, (4) *unclear* or (5) *ineffective* at addressing suicide and related outcomes. Programmes were considered *effective* if there was evidence of effectiveness across at least two RCTs that have been done by more than one investigative team. Programmes classified as *promising* included programmes that showed: a) consistent positive outcomes, but the number of RCTs was limited to only one trial; or b) consistent positive outcomes, but only among RCTs done by one investigative team. Programmes classified as *potentially promising* included studies with less rigorous evaluations (e.g. control group, benchmarking, surveillance) showing consistent positive outcomes and/or programmes that were based on known effective programmes in other settings or with other populations. Programmes that a) showed inconsistency in results; or b) only included a description of the programme, but no outcomes were measured; or c) there was no control/comparison group, were designated as *unclear*. Finally, programmes that were considered *ineffective* were those for which more than two studies show null or harmful outcomes. For each article, we also rated the strength of the outcome variable. Strength of outcome was *strong* (1) if it focused on attempts or deaths, *moderate* (2) if it focused on suicide ideation or other mental health symptoms; and *weak* (3) if it only focused on knowledge or attitude outcomes.

RESULTS

Our initial search of the peer-reviewed literature identified $n = 631$ records. Five-hundred and eighty-eight of these were excluded based on review of the titles and abstracts. Percent agreement between raters for the title and abstract review was 94%. The grey literature search identified $n = 113$ records to be included in the full-text review (see Supplemental Materials: S2). A total of $n = 156$ records were included for full-text review. After full-text review, $n = 149$ records were excluded based on inclusion/exclusion criteria. An additional $n = 1$ record was added based on review of citations in other records. Percent agreement between raters for full-text inclusion was 83%. This yielded $n = 8$ records that met full inclusion/exclusion criteria and for which data was extracted [Figure 1].

Articles included in the review are listed in Table 1. Most records were related to resettled populations, with only two specifically focusing on populations still living in displacement. Three records reflected programmes implemented in low-resource contexts; while the others were implemented in high-income settings. Four out of the eight studies were classified as universal or primary prevention, two as selective/secondary prevention and two as indicated/tertiary prevention (Buck, 2015; Burger, Ferber, Luinstra-Passchier, & Ariens, 2014; Schouler-Ocak, 2014; Vijayakumar, Mohanraj, Kumar, Jeyaseelan, Sriram, & Shanmugam, 2017).

All except one record were studies that combined two or more prevention strategies, with most focused on training of health workers or other community members/gatekeepers in order to improve identification and

assistance to people at risk of suicide (Buck, 2015; Burger et al., 2014; Schouler-Ocak, 2014; Subedi et al., 2015). Another common strategy included awareness raising ($n = 3$ records) to increase help-seeking and identification (International Medical Corps, 2017; Schouler-Ocak, 2014; Subedi et al., 2015). Two articles described interventions specifically targeting individuals following a suicidal act (e.g. self-injurious behaviours, attempts) (Burger et al., 2014; Vijayakumar et al., 2017). Two other records specifically targeted a subgroup of the population that was thought to be more at risk – women of Turkish origin in Europe (Burger et al., 2014; Schouler-Ocak, 2014).

Five out of the eight records were classified as having an *unclear* level of evidence. The lack of clarity was largely attributable to an observational design or unmeasured outcomes. Aichberger et al. (2015) implemented a population-based intervention among women of Turkish origin in Berlin, to raise awareness of depression and suicide risk and was classified as *potentially promising*. The authors used an interrupted time-series design and found that the number of women of Turkish origin with recorded hospital contacts due to suicide attempts dropped significantly following implementation of the campaign. A cognitive behavioural support programme delivered by paraprofessionals to refugees from Myanmar was classified as *promising*, but outcomes only focused on knowledge and attitudes of providers (Buck, 2015).

The only record to be identified as both *promising* and with *strong* outcomes was the Contact and Safety Planning (CASP) intervention designed and evaluated by Vijayakumar (2017). The CASP intervention combined

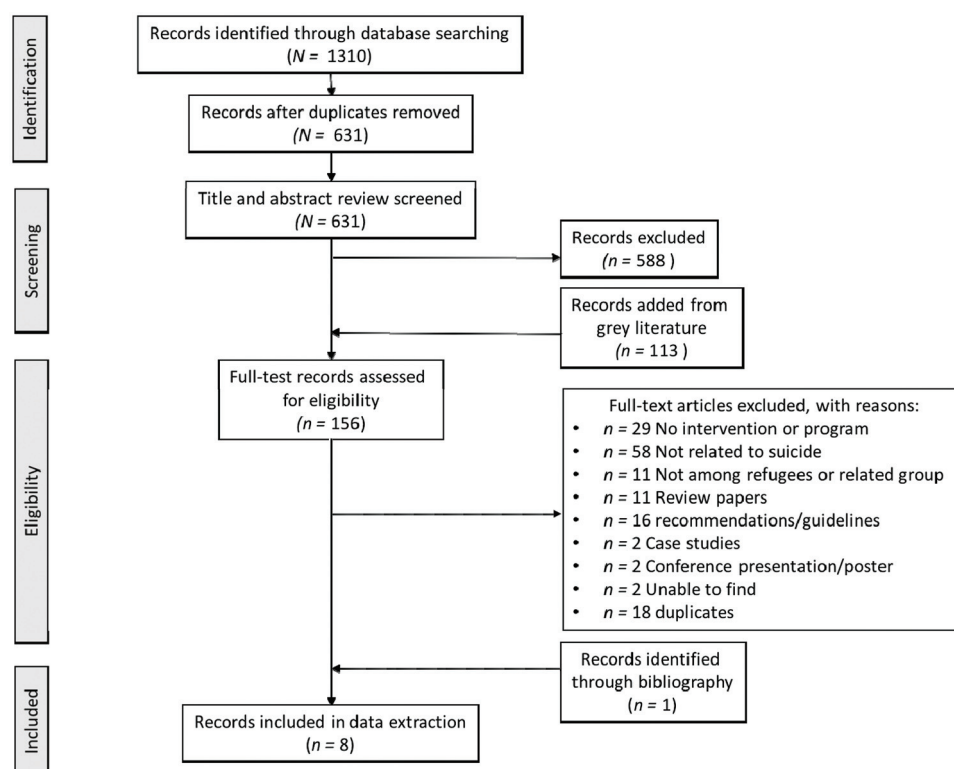


Figure 1: PRISMA flow diagram

Table 1: Summary of included records, level of evidence and strength of outcome

Reference	Study population	Clinical status	Age	Gender	Description of intervention	Study design	Level of evidence	Strength of outcome
Aichberger et al. (2015)	Immigrants	Suicide attempters	Adults and children	Females	Population-based intervention to raise awareness of depression and suicide risk	Quasi-experimental	<i>Potentially promising</i>	<i>Strong</i>
Buck (2015)	Resettled refugees	N/a community providers	Adults	Males and females	Cognitive behavioural support delivered by paraprofessionals	Experimental	<i>Promising</i>	<i>Weak</i>
Burger et al. (2014)	Immigrants		Children	Males and females	Outreach and case-management	Observational	<i>Unclear</i>	<i>Strong</i>
International Medical Corps (2017)	Natural disaster		Adults and children	Males and females	MhGAP (training and building capacity and reducing stigma of health care workers)	Observational	<i>Unclear</i>	<i>Weak</i>
Schouler-Ocak (2014)	Immigrants		Adults	Males and females	Public awareness campaign and hotline	Observational	<i>Unclear</i>	<i>Moderate</i>
Siriwardhana et al. (2013) ^a	Refugees	n/a Primary care providers	Adults	Males and females	MhGAP (training and building capacity and reducing stigma of health care workers)	Experimental	<i>Unclear/Potentially Promising^a</i>	<i>Weak</i>
Subedi et al. (2015)	Resettled refugees	n/a Community providers	Adults and children	Males and females	Training health workers and other gatekeepers in Mental Health First Aid	Observational	<i>Unclear</i>	<i>Weak</i>
Vijayakumar et al. (2017)	Refugees		Adults	Males and females	Brief intervention and contact and safety planning delivered by community volunteers	Experimental	<i>Promising</i>	<i>Strong</i>

^aProtocol paper – full results not published yet.

WHO's Brief Intervention and Contact and Safety Planning and was specifically implemented and evaluated with refugees currently living in displacement (Fleischmann et al., 2008; Stanley & Brown, 2012). Brief Intervention and Contact combines education, practical advice and long-term, follow-up contact on a regular basis (Fleischmann et al., 2008). Safety planning involves generating a document with the individual at risk that aims to support and guide him/her when experiencing thoughts of suicide. Brief Intervention and Contact is one of the only interventions shown to reduce suicide deaths (Fleischmann et al., 2008; Riblet et al., 2017); while Safety Planning has been shown to reduce suicidal behaviour and increase treatment engagement (Stanley et al., 2018). The CASP intervention was delivered by trained community volunteers who visited people twice a month to offer emotional support, assess suicide risk and fill out a safety plan card.

Researchers randomly selected one refugee camp to get the intervention and one camp to serve as a control. Prior to intervention delivery, an awareness campaign related to depression and suicide was implemented in the intervention camp. This was followed by a household survey in both the intervention and control camps. The intervention was delivered to those individuals from the household survey who indicated passive/active suicidal ideation or had a history of attempt or scored above standard cut-offs on depression and PTSD measures. Overall study results indicated statistically

significantly lower rates of suicide attempts and combined suicide attempts and deaths in the intervention camp compared to the control camp (Vijayakumar et al., 2017). While the outcomes from this study are promising, changes were small and findings have yet to be replicated.

DISCUSSION

The number of people forcibly displaced from their homes, including refugees, internally displaced persons and asylum seekers, is at its highest level worldwide since the end of World War II. People fleeing war and persecution are at heightened risk of injury, disease and psychological stress. While mental health and psychosocial support is increasingly getting attention in humanitarian agencies, the issue of suicide has received significantly less consideration. The aim of this paper was to review peer-reviewed and grey literature to identify suicide prevention and response programmes that have been implemented with refugee or similar populations. After reviewing over 732 records from peer-reviewed and grey sources, eight programmes were identified that were implemented with refugees or other displaced populations, and only two programmes with groups prior to resettlement.

Consistent with previous reviews and meta-analyses, brief follow-up with people at risk of suicide is feasible and effective in the context of displacement as well (Mann et al., 2005; Riblet et al., 2017; Zalsman et al., 2016).

Vijayakumar et al.'s study of Brief Intervention and Contact (BIC) and Safety Planning delivered by volunteers was identified as particularly promising as it used a rigorous design and included strong outcomes (2017). Identifying and following individuals at risk of suicide and trying to connect them to care is a critical strategy in prevention of suicide and should be included in suicide prevention programmes with displaced persons (Fleischmann et al., 2008; Suicide Prevention Resource Center, 2018).

Some of the programmes focused on training health care workers in evaluating suicidality and screening for depression. Two studies specifically focused on mhGAP (World Health Organization, 2015). Given WHO's promotion of mhGAP's in low- and middle-income countries, which includes screening for past and current signs or symptoms of suicidality or self-harm, it is critical to examine whether implementation of this protocol impacts suicide and self-harm rates as well. Without these types of studies, it is impossible to know whether the implementation of mhGAP will translate into reduced suicide rates.

Awareness raising was a key strategy in several interventions. While suicide awareness-raising initiatives have been shown to reduce suicide attempts and ideation, there are few RCTs showing the impact of general public awareness campaigns on suicidal behaviours (Zalsman et al., 2016). Aichberger and colleagues implemented a programme focused on increasing knowledge about depression to reduce suicide rates among Turkish women in Germany (Aichberger et al., 2015; Hegerl et al., 2008). The study's findings were positive, but the lack of a comparison group makes it impossible to determine its effectiveness. Most studies utilised multiple components. This is consistent with current best practices in suicide prevention. Use of multiple synergistic strategies that address different aspects of suicide are recommended and have been highly successful (Hegerl et al., 2018; Riblet et al., 2017). Existing research designs make it difficult to untangle which component of an intervention had which impact. Future studies could try and better understand the impact of these strategies on outcomes if possible, and explicitly unpack the individual and synergistic effects of multiple strategies on suicide-related outcomes.

This review has several key implications for policy and practice. First, suicide seems to pose a significant burden in displaced populations, but data on the nature and scope of the problem are unclear. Data on mortality and suicide-related medical care should be routinely collected among displaced populations and made available to better understand the scope of the problem and inform appropriate interventions. The latest iteration of the integrated Refugee Health Information system of UNHCR which is used in refugee camps in many LMICs now contains separate categories to register suicide attempts/self-harm and completed suicide (Ventevogel, Ryan, Kahi, & Kane, 2019). This will lead to better data on suicide-related consultation that till now were not captured (Kane, Ventevogel, Spiegel, Bass, Van Ommeren, & Tol, 2014). Second, large international organisations should advocate for further suicide prevention efforts and work

to destigmatise suicide among local policy makers and community stakeholders. And third, humanitarian agencies should consider adapting effective prevention and response programmes from other settings and work towards implementing and evaluating them with displaced populations. This would be further strengthened by use of rigorous designs when evaluating programme effectiveness and implementation on multiple levels of prevention.

Limitations

The authors may not have captured information gathered by NGOs working in forcibly displaced settings that were not posted in the public domain. All records were required to be in English, further limiting the scope of the review. Finally, due to feasibility issues, we had to limit the time spent on grey literature searches.

CONCLUSIONS

The literature on suicide and suicide prevention in forcibly displaced populations is sparse. The limited body of literature suggests the burden of suicide may be elevated in these groups. The limited evidence from this review and other reviews support the use of Brief Intervention and Contact as an effective intervention in such contexts. More research is needed to examine the impact of other intervention strategies on suicide-related behaviours in these populations. Consistent with best practices, future studies should continue to use multiple strategies, but should be designed to better evaluate their individual and combined impact on suicide-related behaviours.

Authors' contributions

EH generated the search strategy, reviewed articles, extracted data and wrote the first draft of the manuscript; ED reviewed articles, extracted data and edited manuscript; CL edited and refined manuscript; PB edited and refined manuscript; PS edited and refined manuscript; PV edited and refined manuscript. All authors have read and approved of this submission.

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Conflicts of interest

There are no conflicts of interest.

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