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Prevalence and factors associated with suicide among medical professionals in low/middle-income countries: a systematic review protocol

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ABSTRACT

Introduction A number of studies in low/middle-income countries (LMICs) have reported varying prevalence of suicide among medical professionals with low rates. This may be because of the methods used in suicide assessment and the stigma associated with it. For this study, the prevalence of suicidal ideation, attempt and completed suicide, as well as the factors associated with suicidality and methods used during suicidal acts, will be documented.

Methods and analysis Studies published in peer-reviewed journals in which the prevalence and factors associated with suicidal ideation, attempt and completion among medical professionals in LMICs will be included. The Cochrane Library (CENTRAL), PsychINFO, PubMed and Embase will be systematically searched. We will search for all the papers available in the databases up to March 31 2019. Methodological quality of the articles will be assessed using the quality in prognostic studies tool. The risk of bias of the articles will be assessed using Cochrane risk of bias assessment tool for non-randomised studies. In the event of no statistical heterogeneity, a meta-analysis of the findings will be conducted.

Ethics and dissemination Ethical permission will not be required since this work does not involve the use of participant data that can be used to identify individuals. Findings from this study will be available for clinicians and other medical professionals, scientists and policy makers. On request, a data set of the study can be provided.

Trial registration number CRD42018095990.

Strengths and limitations of this study

- Including studies from different settings will strengthen the results and conclusions.
- There is a dearth of literature about burden of suicide among healthcare professionals.
- The research team has relevant expertise to successfully conduct this review.
- There is likely to be statistical heterogeneity, making the meta-analysis difficult.

BACKGROUND

In comparison to non-medical professionals, the prevalence of suicide has been reported to be much higher among medical professionals,[1–4] in part due to occupational stress, medical knowledge and easy access to some medications with potential lethal outcomes in overdose.[5 6] Despite the fact that medical professionals provide care for other members of the population who are at risk of suicide, they are not immune to suicidal tendencies themselves, and tend to struggle with the same challenges.[7–9] Moreover, studies show that medical professionals have a tendency to deny their own mental health problems, and report less suicidal ideation compared with members of the non-medical professions.[10 11] Suicide and mental ill health in general continue to be a huge challenge to healthcare professionals.[8 12] Furthermore, medical professionals who are contemplating suicide are less likely to be helpful to patients under their care, and may be preoccupied and unable to provide, placing the lives of those under their care at risk.[13 14] A number of predisposing/risk factors for suicide have been documented among medical professionals[3 7 15 16] but there is little information about these factors in low/middle-income countries (LMICs).

Despite the fact that 70% of the global suicide burden is reported in LMICs, there is little research about the prevalence and factors associated with suicide, specifically among medical professionals.[17] Highlighting the prevalence and factors associated with suicide among medical professionals will help in establishing specific interventions to reduce risk. The results from this systematic review can be used by policy makers to design appropriate measures to address suicidality among medical professionals which may include improvement of work environments and less stressful work schedules, as well as

setting up help lines and specialist individualised services for medical professionals. The main objective of this systematic review is to determine the prevalence and factors associated with suicidal ideation, suicidal attempt and completed suicide among medical professionals in LMICs. The medical professionals under consideration include medical doctors, dentists, clinical officers, pharmacists, nurses and midwives. Clinical officers are mid-level medical practitioners allowed in some developing countries to assess patients and prescribe medications. In some other countries, they are referred to as medical assistants. They are equivalent to physician or medical assistants.

Objectives

- Determine the overall prevalence and factors associated with suicidal ideation, suicidal attempt and completed suicide among medical professionals in LMICs.
- To document the tools/methods used to assess suicidal ideation, suicidal attempt and completed suicide among medical professionals in LMICs.

METHODS AND ANALYSIS

This systematic review will be conducted and reported in accordance to the guidance for preferred reporting items for systematic reviews and meta-analysis.

Types of studies

We will conduct a systematic review of observational studies (cohort, cross-sectional and case control) that documented the prevalence and factors associated with completed suicide, suicide attempt and suicidal ideation among medical professionals in LMICs.

Patient and public involvement

This protocol is for a systematic review. Patients and the public have not been involved in the design of the study. No data that can be used to identify individual participants involved in the primary studies will be included since this is not a systematic review of studies using individual participant data.

Eligibility criteria

We will include peer-reviewed journal articles that have documented the prevalence and factors associated with suicidal ideation, suicidal attempt and completed suicide among medical professionals in LMICs. We will exclude qualitative study designs, since they are unlikely to document prevalence of suicide. We will explore the references of systematic reviews that have documented similar findings. Some of the studies may not assess for suicidal intent but we will still include them in this study. However, this will be a potential limitation/weakness to this study.

Study settings

The systematic review will include studies conducted in LMICs as defined by the World Bank gross domestic product ranking in July 2013.

Participants

Participants will include medical professionals: medical doctors, dentists, clinical officers, clinical (medical assistants), pharmacists, nurses and midwives.

Types of interventions

The review will include articles and observational studies (cohort, cross-sectional and case control) that have documented the prevalence of suicidal ideation, suicidal attempt and completed suicide among medical professionals living in LMICs.

Comparators

The comparison groups will be medical professionals without completed suicide, suicidal ideation and suicidal attempt.

Types of outcome measures

The outcomes of interest in this review will be suicidal ideation, suicidal attempt and completed suicide among medical professionals living in LMICs.

Search methods for identification of studies

A search strategy will be carried out by the research team using the following electronic databases and search engines from inception, using the same search strategy with alterations as appropriate for each database: the Cochrane Library, PsychINFO, PubMed and Embase. We will also hand search the references of the included studies where necessary. We will search for all the papers available in the databases up to 31 March 2019.

SEARCH STRING

We will search the databases using the following key terms, together with their synonyms and Medical subject headings (MeSH) terms: suicide, suicidal attempt, suicidal ideation, suicidal behaviour, LMICs, physicians, doctors, nurses, midwives and dentists (See online supplementary appendix A). We will not restrict the search by language. We will use the current filters for LMICs based on the World Bank listing available at: https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups

Data collection and analysis

This will be done in two stages as follows:

- The titles and abstracts of all identified studies will be screened by an information scientist (librarian, member of the research team) and full text articles will then be downloaded into EndNote reference manager for further screening.
- Screening of the downloaded articles will be done by three independent reviewers (a neurophysiologist, expert in Spanish language; a psychiatrist, fluent in French language; a psychiatrist, systematic review specialist). A content expert (PI) will be the arbitrator, in case of disagreement about which study to include or exclude.

Quality assessment

Data will be entered in RevMan V.5.1.2 software for analysis of findings. The assessment of the methodological quality of the articles will be done using quality in prognostic studies tool. The risk of bias (RoB) of the articles will be assessed using Cochrane RoB assessment tool for non-randomised studies. In addition, the GRADE will be utilised to establish strength of recommendations and level of confidence in the results of meta-analyses reported in the different studies.

Data synthesis

Qualitative synthesis

We will record essential features of each study: date, geographical location, study setting (urban/rural), number of participants, age, socio-demographics, sample size, response rate, study design, prevalence of completed suicide, attempted suicide, suicidal ideation and associated factors. We will export the data to STATA V.13.1 for analysis.

Meta-analysis

Statistical tests for heterogeneity will be used to assess the degree of variability in the prevalence measures between the included studies. Random-effects models will be employed. The prevalence, ORs and CIs of individual studies will be presented in forest plots and we will generate a summary prevalence and CIs. There will also be sensitivity and sub-group analyses to determine the influence of selected independent variables on the effect size. The independent variables in sub-group analyses will include: study designs (cross-sectional studies, case control studies and cohort studies), region(s) where the studies were conducted, gender, age groups and professions. Should we find statistically significant heterogeneity (defined as I^2>25), then we will summarise the studies as a narrative review. Publication bias will be assessed using funnel plots.

Assessment of heterogeneity

It is possible that there will be significant variations in study results due to differences in the study settings, assessment tools, designs and RoB in different studies. Statistical heterogeneity between study results will be examined using the χ^2 test of homogeneity (with significance defined at the α-level of 10%), and quantify any statistical heterogeneity between study results using the I^2 statistic.

Relevant expertise

The team consists of a content expert Dr G Z Rukundo, a psychiatrist with PhD in suicidology and a search strategist Dr Alison Annet Kinengyere, an information scientist/librarian. Dr Helen Byakwaga who is an expert in meta-analysis will do lead the meta-analysis. The research team has experts in Spanish and French languages. The team will receive support in the methods of conducting reviews from Dickens Akena, a psychiatrist and systematic review specialist based at the African Centre for Systematic Reviews and Knowledge Translation at the Makerere University College of Health Sciences, Kampala, Uganda.

DISCUSSION

This protocol describes a systematic review of observational studies reporting completed suicide, suicide attempt and suicidal attempt among medical professionals in LMICs. According to our knowledge, no previous systematic review specifically addressed this topic. We will summarise the methods used and results of observational studies specifically looking at the prevalence and associated factors for completed suicide and suicidal behaviour in LMICs. We anticipate facing a challenge of varying methodologies and the use of terms with different meanings. We also anticipate the challenge of stigma and under-reporting of suicide-related deaths or morbidity. In addition, studies may have been conducted in a variety of specific study populations with few studies looking at the general population of that country. We also may not be aware of or have access to any relevant unpublished studies in the region. We will also discuss the healthcare implications of the systematic review for the prevention of suicide among medical professionals. We anticipate that once this review is complete and published; our findings will be of interest to clinicians and other healthcare professionals, scientists, employers and policy makers. Hopefully employers and policy makers can use the findings so they can plan appropriate policies to address associated factors for suicide among medical professionals, for example promotion of personal health and reduction of burnout.

Study strengths and limitations

Study strengths: We will include studies conducted in different settings and in many languages. This will strengthen the results and conclusions.

Study limitations: There is likely to be heterogeneity of study designs, assessment tools and settings in the included studies since they will be from different parts of the world.

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Contributors All authors have significantly contributed to the writing of this protocol. In addition, they will have the roles described here below. Content expert: GZR, psychiatrist with a PhD in suicidology. Search strategist, AK will do the screening by title and also write part of the methods section and the PRISMA flow chart. Data abstraction and extraction and entry: MB, neurophysiologist and AMB, a psychiatrist. DA, a psychiatrist and systematic review specialist based at the African Centre for Systematic Reviews and Knowledge Translation. DA participated in the writing and revision of the protocol. He will participate in literature, analysis and data interpretation. HB, an expert in meta-analysis will lead the assessment for heterogeneity and meta-analysis.

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