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National suicide management guidelines with family as an interv'ention and suicide mortality rates: a systematic review protocol

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ABSTRACT

Introduction Suicidal behaviour remains a major public health challenge worldwide. Several countries have developed national suicide guidelines aimed at raising awareness of and preventing deaths by suicide. One of the interventions often mentioned in these national guidelines is the involvement of family members as a protective factor in suicide prevention. However, the level or type of family involvement required to reduce suicidal behaviour is not well understood. Thus, in this systematic review, we seek to determine the effectiveness of family-based interventions as a suicide prevention tool, by comparing suicide mortality rates between countries whose national suicide prevention guidelines include family-based interventions and those whose do not.

Methods and analysis MEDLINE, EMBASE, PsycINFO, Web of Science and WHO MiNDbank databases as well as grey literature such as National Guideline Clearinghouse will be searched. National guidelines for suicide prevention published within the last 20 years (between 1999 and 2019) will be included. Results will be analysed using thematic and qualitative analyses.

Ethics and dissemination The findings of the study will help improve the efficacy of national suicide prevention strategies. Findings will be disseminated using easily accessible summary reports and resources to primary end users.

PROSPERO registration number This protocol has been registered on PROSPERO (CRD42019130195).

Strengths and limitations of this study

- This will be the first systematic review exploring the impact of family-based interventions on national suicide mortality rates.
- The study will explore countries from all over the world, and not be limited to guidelines written in English; thus, helping to increase the applicability of the findings.
- There may be a limited number of countries with published national suicide guidelines, thus restricting the scope and applicability of the findings.
- The degree to which individual practitioners adhere to national suicide prevention guidelines is unknown. Thus, any relationship between national guidelines and suicide mortality rates may not be attributable to the guidelines themselves.

BACKGROUND AND RATIONALE

Suicidal behaviour remains a public health challenge with rates of death by suicide rising in countries such as the USA.[1] There are several suicide intervention efforts that exist, but the quantity of these interventions does not compensate for the lack of evidence of their efficacy.[2] To optimise the use of limited national resources, it is vital to determine which components of suicide interventions are effective in reducing rates of death by suicide.[2]

National suicide guidelines are interventions published with the intention of raising awareness of and preventing deaths by suicide. However, there is limited evidence on the effectiveness and applicability of these guidelines on the individuals in each country. A review exploring the relevance of national depression management guidelines found that there were significant limitations in the applicability of these guidelines to general practice.[3] Thus, it is important to consider the efficacy of the interventions included in national documents to determine whether resources are being directed towards interventions that are likely to be successful.

National suicide guidelines mention a variety of interventions depending on the country, one of which is the involvement of family members in the management of suicidal behaviour. Family can act as a protective factor as well as a stressor in managing suicidal behaviour.[4 5] Families that lack definitive goals or have consistent familial conflict

are seen to have children with increased level of suicide risk.[5] In particular, when comparing adolescents who have attempted suicide with those who have not, attempters report more conflict in their family and less parental involvement and family support.[6 7] A similar trend is seen in older individuals, where those living with family had a lower suicide risk.[8] Whereas, families who have children that are satisfied with levels of familial support and parental involvement tend to have lower levels of adolescent suicide risk behaviour.[5 9] In particular, the protective role offered by a positive family dynamic may be a stronger protective factor than peer or school relations for adolescents.[10] One way that family involvement may reduce suicide risk is through help-seeking behaviour; a positive parent–child relationship is associated with more informal help-seeking for suicidal ideation and behaviour, which may result in fewer completed suicides.[11] Family-based interventions have shown utility in addressing child/teen suicide risk, with home-based family psychoeducation interventions resulting in improved parent–child communication about mental health and suicide.[12] A similar trend can be expected in non-adolescent populations as well. However, it is difficult to discern the specific level and type of familial involvement that contributes to lower risk of suicidal behaviour.[4]

To address these challenges and help guide future recommendations on family involvement in suicide prevention, we seek to identify national suicide prevention guidelines which include family-based interventions versus guidelines that do not include family-based interventions, and compare their respective national rates of deaths by suicide. It is important to note that the implementation of the guidelines may also have an impact on the outcome. Furthermore, suicide is a highly complex outcome that is influenced by numerous other biological, psychosocial and economic factors within each country. Notwithstanding these limitations, the study findings will help to identify missed opportunities to include family interventions as recommendations for suicide prevention, which justifies a systematic search for evidence, as future work may include an examination of the implementation of such recommendations.

OBJECTIVES

Study question: In countries with National Suicide Guidelines published within the last 20 years, is the inclusion of either informing the family of the risk, or of family-based interventions associated with a reduction in the mortality rate due to suicide?

P: National suicide guidelines.

I: Family involvement.

C: Lack of inclusion of family members in managing suicidal behaviour/no mention of informing or including family as partners in management.

O: Mortality rate due to suicide.

T: Last 20 years.

The review aims to do the following:

1. Assess if the inclusion of families in the national guidelines' recommendations on managing suicidal behaviour is associated with reduction in the rate of death by suicide.
2. Provide recommendations based on the review results of family-based interventions to manage suicide risk.

METHODS

Study eligibility

This review will include guidelines published within the last 20 years. Research studies that have been conducted on published guidelines will not be included. Guidelines included in this article must propose suicide prevention strategies at the national level, and not at the state or provincial levels. In the case where multiple guidelines are found for a single country, the most recent guideline will be selected for data extraction and analysis. Guidelines will not be limited to those in English, as non-English guidelines will be translated by speakers of the respective language. Countries without guidelines will not be included in this review. Family interventions will not act as an inclusion criterion for this review as we aim to extract data from guidelines that may or may not have family interventions listed.

Information sources and search strategy

An experienced librarian will be consulted when designing and implementing the search strategy. A broad search strategy will be employed to include necessary keyword fields. No language constraints will be included in the search strategy. We will search the following databases: PubMed/MEDLINE, EMBASE, PyscINFO, Web of Science. Guidelines will be identified using a comprehensive search strategy modified for each database and will include search terms relevant to suicide, consensus development and guidelines (table 1). Databases will be searched for guidelines published within the last 20 years. We will also search through suicide prevention documents included on WHO MiNDbank, a database which has compiled stand-alone national suicide prevention documents for 41 countries.[13] A search of grey literature will be conducted as well. Databases such as National Guideline Clearinghouse will be searched to account for national guidelines which are not peer reviewed. Our search will include databases that contain published guidelines which are not limited to high-income countries, as seen in the availability of a suicide prevention guideline from Guyana which is easily accessible on the WHO MiNDbank.[14] As the goal of this review is to identify national guidelines and examine differences in the inclusion of family interventions and respective national suicide rates, we will not be searching for primary research studies as they are more commonly focused on a primary question or a hypothesis.

Outcomes and prioritisation

The primary outcome of this review is to assess if the inclusion of family or family-based interventions in

Table 1 Search strategy for extraction of relevant studies

Database	Search strategy
MEDLINE	1. suicide/ or suicidal ideation/ or suicide, attempted/ 2. suicid*.mp. 3. parasuicid*.mp. 4. 1 or 2 or 3 5. exp guideline/ 6. guideline*.mp. 7. exp. Guidelines as Topic/ 8. exp. consensus development conferences as topic/ 9. exp. consensus development conference/ 10. consensus development conference*.mp. 11. consensus statement*.mp. 12. guideline.pt. 13. 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 14. 4 and 13 15. limit 14 to yr="1999-Current"
EMBASE	1. suicide/ or suicidal ideation/ or suicide, attempted/ 2. suicid*.mp. 3. parasuicid*.mp. 4. 1 or 2 or 3 5. guideline*.mp. 6. exp. Guidelines as Topic/ 7. exp. consensus development conferences as topic/ 8. exp. consensus development conference/ 9. consensus development conference*.mp. 10. consensus statement*.mp. 11. guideline.pt. 12. 5 or 6 or 7 or 8 or 9 or 10 or 11 13. 4 and 12 14. limit 13 to yr="1999-Current"
PsychINFO	1. suicide/ or suicidal ideation/ or suicide, attempted/ 2. suicid*.mp. 3. parasuicid*.mp. 4. 1 or 2 or 3 5. guideline*.mp. 6. consensus development conference*.mp. 7. consensus statement*.mp. 8. guideline.pt. 9. exp Treatment Guidelines/ 10. 5 or 6 or 7 or 8 or 9 11. 4 and 10 12. limit 11 to yr="1999-Current"
Web of Science	1. TS = (suicide/ or suicidal ideation/ or suicide, attempted/) 2. TS = (suicid*) 3. TS = (parasuicid*) 4. #1 OR #2 OR #3 5. TS = (guideline*) 6. TS = (consensus development conference) 7. TS = (consensus statement) 8. #7 OR #6 OR #5 9. #8 AND #4 Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC Timespan=1999–2019

national suicide guidelines reduces the rate of death by suicide. The rate of death by suicide for each country will be determined by crude suicide rates, which have been compiled by WHO in 2016.[15] This value will be qualitatively compared and summarised for both national guidelines that include family-based interventions and for those that do not. This review aims to produce results that will help provide recommendations on family-based interventions to manage suicide risk. The outcome of completed suicide is mortality, thus, we

will accept any minimal difference to constitute a meaningful difference.

Study records and data items

Two pairs of reviewers will independently screen guidelines for inclusion in this review and conduct data extraction on the agreed on guidelines. Agreement will be assessed by the report of the kappa statistic in our results. Any disagreements will be resolved by discussion to consensus or by a consultation with a third party. Systematic review methods will be employed using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses or equivalent guide for reporting review of guidelines.[16]

All of the studies and references will be managed and organised through the online software program, Zotero. Full-text data extraction forms will be constructed to include the following information: author; year of publication; country; target population; national suicide rate; definition of suicide rate; recommendation of family involvement; recommendation of interventions related to social support; measures of implementation of the interventions; data on the uptake of the interventions by each country; mention of guidance on how to recognise treatment failure; mention of guidance on actions to take if treatment failure occurs; rationale for including family involvement; 2016 crude national death by suicide rates by sex. The data extraction form will be tested by two pairs of independent reviewers to determine feasibility in this review.

Confidence in cumulative evidence

Quality of guidelines will be assessed using the Appraisal of Guidelines for Research & Evalutation II (AGREE II) tool. The AGREE II tool is composed of 23 items organised into 6 domains: scope and purpose, stakeholder involvement, rigour of development, clarity of presentation, applicability and editorial independence.[17] Grading of Recommendations Assessment, Development and Evaluation (GRADE) for guidelines will be used to evaluate the quality and strength of the guidelines included in this review. GRADE scores guidelines are based on risk of bias, publication bias, consistency, directness and precision.[18]

Data synthesis

The rate of death by suicide for each country will be determined by suicide rates mentioned in the national suicide guidelines and crude suicide rates, where applicable. The suicide rates will be qualitatively compared and summarised for national guidelines, both with and without family-based interventions. A qualitative summary of family-based interventions mentioned in guidelines will also be included. Appropriate quantitative measures to explore correlations between suicide rates and the inclusion of family-based interventions in the national guidelines will be determined after data abstraction and will be dependent on the data acquired.

Risk of bias in individual studies and meta-biases

The review will be examining national guidelines and not research articles. Thus, individual risk of bias or meta-biases are not applicable.

ETHICS AND DISSEMINATION

This study has planned and integrated a knowledge translation component. The primary end-users of this information are clinicians, researchers, patients who have exhibited suicidal behaviour, and governments. The goal is to broadly disseminate the synthesised information to improve the interventions included in national suicide guidelines. We will collaborate primarily with relevant organisations and clinics to disseminate the findings of this review by releasing summary reports and creating resources that allow the primary end-users to access the information easily. We plan to share the results of our study through educational workshops for government policy-makers. We will also disseminate the information to the scientific community via peer-reviewed publications and conference presentations.

Data management

Data sharing is not applicable to this review, as no datasets will be generated or analysed.

Amendments

This protocol does not represent an amendment of a previously completed or published protocol. Any amendments to the review protocol will be tracked and dated.

Patient and public involvement

This research is to be completed without patient involvement. Patients will not be invited to comment on the study design, will not be consulted to develop patient relevant outcomes or interpret the results, and are not invited to contribute to the writing or editing of this document for readability or accuracy.

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Contributors BP designed the study, wrote the protocol. DS provided assistance in writing the background and rationale. MIK, FB, MH, TT and JW provided support in the study records and data items. NK requested conduct of the study. NK, LT and ZS provided expertise in study design, methodology and statistical methods. All authors approved the final manuscript.

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Competing interests None declared.

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REFERENCES

1 Rockett IRH, Lilly CL, Jia H, *et al*. Self-Injury mortality in the United States in the early 21st century: a comparison with proximally ranked diseases. *JAMA Psychiatry* 2016;73:1072–81.
2 Mann JJ, Apter A, Bertolote J, *et al*. Suicide prevention strategies: a systematic review. *JAMA* 2005;294:2064–74.
3 Hegarty K, Gunn J, Blashki G, *et al*. How could depression guidelines be made more relevant and applicable to primary care? A quantitative and qualitative review of national guidelines. *Br J Gen Pract* 2009;59:e149–56.
4 Randell BP, Wang W-L, Herting JR, *et al*. Family factors predicting categories of suicide risk. *J Child Fam Stud* 2006;15:247–62.
5 Sharaf AY, Thompson EA, Walsh E. Protective effects of self-esteem and family support on suicide risk behaviors among at-risk adolescents. *J Child Adolesc Psychiatr Nurs* 2009;22:160–8.
6 Flouri E, Buchanan A. The protective role of parental involvement in adolescent suicide. *Crisis* 2002;23:17–22.
7 Kerr DCR, Preuss LJ, King CA. Suicidal adolescents' social support from family and Peers: gender-specific associations with psychopathology. *J Abnorm Child Psychol* 2006;34:99–110.
8 Fässberg MM, van Orden KA, Duberstein P, *et al*. A systematic review of social factors and suicidal behavior in older adulthood. *Int J Environ Res Public Health* 2012;9:722–45.
9 Borowsky IW, Ireland M, Resnick MD. Adolescent suicide attempts: risks and protectors. *Pediatrics* 2001;107:485–93.
10 Kidd S, Henrich CC, Brookmeyer KA, *et al*. The social context of adolescent suicide attempts: interactive effects of parent, peer, and school social relations. *Suicide Life Threat Behav* 2006;36:386–95.
11 Michelmore L, Hindley P. Help-Seeking for suicidal thoughts and self-harm in young people: a systematic review. *Suicide Life Threat Behav* 2012;42:507–24.
12 Hooven C. Parents-CARE: a suicide prevention program for parents of at-risk youth. *J Child Adolesc Psychiatr Nurs* 2013;26:85–95.
13 WHO MiNDbank. Suicide prevention, 2019. Available: https://www.mindbank.info/collection/topic/suicide_prevention_ [Accessed 19 Mar 2019].
14 WHO MiNDbank. Suicide prevention, 2019. Available: https://www.mindbank.info/item/6321 [Accessed 2 Feb 2019].
15 GHO. By category | Suicide rate estimates, crude - Estimates by country, 2016. Available: http://apps.who.int/gho/data/view.main.MHSUICIDEv?lang=en [Accessed 19 Mar 2019].
16 Moher D, Shamseer L, Clarke M, *et al*. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Syst Rev* 2015;4:1.
17 Brouwers MC, Kho ME, Browman GP, *et al*. Agree II: advancing Guideline development, reporting and evaluation in health care. *Can Med Assoc J* 2010;182:E839–42.
18 Schünemann H, Brożek J, Guyatt G, *et al*. Grade Handbook for grading quality of evidence and strength of recommendations 2013.