BMJ Open

Suicidal behaviours and moderator support in online health communities: Protocol for a scoping review

Journal:	*BMJ Open*
Manuscript ID	bmjopen-2019-034162
Article Type:	Protocol
Date Submitted by the Author:	08-Sep-2019
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Keywords:	Suicide & self-harm < PSYCHIATRY, online community, health professional, online community moderator, suicidal ideation, suicidal behaviours

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Suicidal behaviours and moderator support in online health communities: Protocol for a scoping review

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Word Count 2438

Keywords: online health community, health professional, online community moderator, suicide, suicidal ideation, suicidal behaviours

ABSTRACT

Introduction Suicidal ideation and suicidal behaviours are common yet complex mental health presentations that can pose significant challenges for health professionals. The inability to accurately predict the individuals who may move from experiencing suicidal ideation and associated behaviours to completing suicide presents one such challenge. This can make it difficult to provide interventions and support to those most in need. Online health communities are one possible source of support for individuals who experience suicidal ideation and behaviours. These communities are becoming an increasing popular way of accessing support, often with lifesaving consequences. Within online communities, support is offered by various individuals including, in some instances, health professionals from various backgrounds who work as online health community moderators. Given the growth of online communities and the increasing number of health professionals working as moderators, this scoping review seeks to map the literature that has focused on health professionals working as online community moderators, who interact with members experiencing suicidal ideation and behaviours. Mapping the existing literature offers benefits to both research and practice by identifying gaps in the research, and providing a beginning knowledge base of current practice, to inform the training and development of health professionals working as community moderators.

Methods and analysis This scoping review will follow the methodological framework of Arksey and O'Malley, later adapted by Levac et al. To ensure appropriate rigour, this protocol uses the 20-item Preferred Reporting Items for Systematic Reviews and Meta-Analysis and extension for Scoping Reviews (PRISMA-ScR). Literature will be identified using a search strategy that has been developed in consultation with a specialist research librarian at the University where the researchers are employed. Ten multidisciplinary databases will be independently searched by two researchers, and both will screen for inclusion, and undertake the data extraction. The first author will perform a quality assessment of the articles that are selected for inclusion. A second researcher will complete a random audit of 20% of the included articles to assess for quality and suitability in answering the research questions. The first author will complete the analysis and synthesis of the data. A numerical and narrative synthesis of the included studies will be provided.

Ethics and dissemination The scoping review has been deemed as being exempt from ethical review as no data will be collected from human participants. The results of the scoping review may be published in a peer-reviewed journal, thesis, presented at relevant conferences, and shared with relevant knowledge users.

ARTICLE SUMMARY

Strengths and limitations

- To our knowledge, this scoping review will be the first to review and summarise research that has focused on health professionals working as online community moderators who support individuals experiencing a suicidal crisis and will provide a baseline for future research.

- Strengths of this study include the use of an established scoping review methodology, a rigorous search strategy developed in consultation with a specialist research librarian, a systematic study selection carried out by two researchers, and a quality assessment of included literature.
- While the scoping review will focus on peer reviewed articles, findings will be limited to articles that are written in English (or translated into English).

INTRODUCTION

Suicide is a global phenomenon and significant public health concern. Close to 800,000 people die by suicide each year, with many more attempting suicide.[1] Given that a previous suicide attempt is the strongest predictor of suicide, understanding how health professionals support individuals experiencing a suicidal crisis can have lifesaving consequences.[2] Due to the social stigma surrounding suicide and a lack of suitable support services, many individuals experiencing a suicidal crisis are unable or unwilling to access potentially lifesaving face-to-face professional support.[3] For these individuals, online health communities can offer an easily accessible alternative source of support.[4]

Online health communities are internet-based platforms that have become increasingly popular due to their ability to facilitate the sharing of information, advice, and support.[5] These communities are largely focused on the facilitation of peer support. Peer support refers to people's natural tendency to seek support and advice from informal social sources in their immediate environment.[6] A central tenant of peer support is the commonality of experience between the peers engaged in the supportive interactions. Peer support differs from professional support in that the interactions between peers are voluntary, flexible, and informal.[7]

Online health communities can follow different models of support, with one such example being forums that exclusively offer peer interactions without moderation from either peers or professionals. Alternatively, there are forums where peers within the online community fulfil the roles and functions of moderators. A further example are peer support forums that are overseen by professional moderators. Professional moderators can hold a formal tertiary level qualification or have completed inhouse moderator training. Professional moderators undertake administrative functions such as editing content and guiding members with the features and functions of the forum but also provide professional support to members in crisis when necessary.[5]

Atanasova *et al*.[5] argue that although online health communities are increasingly becoming the focus of health research, the research has typically been investigated from the perspective of the users and not from the perspective of moderators who are health professionals. This is despite online health communities providing a new way for health professionals and clients (online community members) to interact with one another.[8] What is emerging from the research is the absence of a focus on moderators, whether it be peer or professional. Instead the focus has been on the user. The increasing use of online health communities as a means of gaining professional support makes it crucial for health providers and researchers to gain a better understanding of moderator practices in these spaces.[9] This is due to the traditional face-to-face communication practices of health professionals requiring adaptation in the online environment,[10] as communication in these spaces is asynchronous, and devoid of non-verbal cues such as body language and movement, details of dress, and nuances of the voice. An understanding of how health professionals who are moderators offer support to those experiencing suicidal ideation and behaviours, allows health care providers to further capitalise on the opportunities for positive and potentially lifesaving support that is afforded by such online communities.[11]

The findings from this review will provide a synthesis of the research that has been focused on professional moderators who work with members experiencing suicidal ideation or suicidal behaviours. Currently there is no systematic review of the literature regarding professional moderators, and therefore there is no clear understanding of what research has been completed, what research needs to be undertaken, and where the research needs to focus in the future. The finding of this review will offer implications to practice in that it will provide an evidence base on which organisations can train online moderators.

METHODS

This review will follow the six-stage scoping review methodological framework proposed by Arksey and O'Malley[12] which has been further developed by Levac *et al*.[13] The six stages are: (1) identifying the research question; (2) identifying the relevant literature; (3) study selection; (4) charting the data (5) collating, summarising and reporting the data, and (6) consultation with knowledge users of online community forums.

Patient and Public Involvement

Patients and the public were not involved in the writing of this scoping review protocol.

Stage 1: Identifying the research questions

The aim of this scoping review is to identify what is empirically known about health professionals working as online health community moderators. It is intended that the findings from this review will inform further studies into the work of online community moderators, in order to achieve a greater understanding of the challenges and complexities of the role, especially when supporting members experiencing suicidal ideation and behaviours. It is anticipated that the findings of this review may be used to inform and enhance the

recruitment and training of online community moderators that can lead to improved service delivery to members of online forums.

To assist in the creation of the study research questions, the broad Population-Concept-Context (PCC) mnemonic by the Joanna Briggs Institute was adopted as a suitable alternative to the PICO (Population, Comparator and Outcome) mnemonic for systematic reviews.[14]

Population

There is one population associated with this research study; the online health forum moderators. In the context of this study a moderator is a qualified health care professional who is employed to oversee the content and interactions of an online health community, intervening, and interacting with members where necessary to ensure their safety. As scoping reviews are an iterative process, the definition of professional moderator and what it means to be qualified may become more clearly defined as a result of the search.

Concept

Identifying what is known about health professionals working as moderators in online forums where members freely post about suicidal ideation, suicidal behaviours, self-harm, and NSSI (non-suicidal self-injury).

Context

No geographical limitations will be placed on the literature. This is due to suicide and associated behaviours being a global health issue. Furthermore, while the head office of a community forum may be physically located in one country, it is not uncommon for membership access to be available to individuals in other countries, thus making some online community forums international support providers.

To meet these aims the review will be guided by the following questions:

(1) What do we know from the existing literature about online mental health moderators who work with suicidal community members?

(2) What methodologies have been used to gain this knowledge?

(3) What are the limitations of the research?

(4) What are the research gaps?

Stage 2: Identifying relevant studies

The search strategy was iteratively developed in consultation with a specialist research librarian at the University where the researchers are employed. To ensure a comprehensive search of the health sciences literature the following electronic databases will be searched:

- CINAHL with full text, PsychINFO, PsychArticles, Psychology and Behavioral Sciences Collection, Academic Search Ultimate, Health Source: Nursing/Academic Edition and Sociology Source Ultimate. All of these are located within EBSCOhost.
- ScienceDirect
- Medline
- SAGE Journals
- Taylor and Francis Online.

The search strategy will include subject headings, keywords and related terms for the concepts of suicide, moderator or facilitator, online community, online health forum or online forum. The search terms for suicidal behaviours include 'suicide, 'self-harm' and non-suicidal self-injury (NSSI). Self-harm and NSSI will be included in the search terms as often the behaviours associated with self-harm and NSSI are classified as suicidal ideation and behaviours, or the deliberate desire to end one's life. For this reason the inclusion of the terms self-harm and NSSI will ensure adequate coverage of the literature. A detailed search strategy can be found in Table 1.

The search will be limited to English articles or those translated into English. A date restriction will be articles published from 1990 to the day of the search. The initial search results will be collated in the reference management program EndNote (Version 9), where duplicates will be removed at the first stage of review. The search will be independently undertaken by two reviewers, who will seek to resolve discrepancies collaboratively and where this is not possible, a third reviewer adjudicate to ensure agreement is achieved.

Table 1 Search Strings and Limiters for each of the Selected Databases

Database	Search Strings	Limiters
CINAHL with full text, PsychINFO, PsychArticles, Psychology and Behavioral Sciences Collection, Academic Search Ultimate, Health Source: Nursing/Academic Edition and Sociology Source Ultimate	("online community" OR "online health community" OR "online forum") AND moderator OR facilitator AND suicid* OR self harm OR NSSI	Timeframe: From 1990 Language: English
ScienceDirect	("online community" OR "online health community" OR "online forum") AND (moderator OR facilitator) AND ("suicidal ideation" OR suicide OR "self harm" OR NSSI)	Timeframe: From 1990 Language: English

Medline (Web of Science)	(“online community” OR “online health community” OR “online forum”) AND moderator AND suicid* OR "self harm"OR NSSI	Timeframe: From 1990 Language: English
SAGE Journals	“online community” OR “online health community” OR “online forum” AND moderator OR facilitator AND suicid* OR “self harm” OR NSSI	Timeframe: From 1990 Language: English
Taylor and Frances Online	“online community” OR “online health community” OR “online forum"~4 AND moderator OR facilitator AND suicid* OR “self harm” OR NSSI	Timeframe: From 1990 Language: English

Stage 3: Study Selection

All articles will be independently screened for eligibility, beginning with a title and abstract review, followed by a full-text review. The reference lists of the articles selected for inclusion at the full-text review stage, will also be searched to identify any further potential sources. The two reviewers who will undertake the initial literature search will also complete the two subsequent levels of screening.

In order to be included in the review studies must meet the following criteria:

(1) published from 1990 when computer-mediated support first appears in the literature,

(2) peer-reviewed to ensure credible and high-quality studies are included,

(3) articles written in or translated into English (due to a lack of resource for translating articles), with articles that are not written or translated into English excluded at the beginning,

(4) participants included in the studies must be qualified health care professionals who work as moderators where community members can post freely about suicidal ideation, suicidal behaviours, self-harm, or NSSI. The qualifications of the professionals would be indicated in the article by listing the professions of the moderators or stating that they are qualified. The definition of qualified health care professional is very broad and will include any qualified individual, including professions such as counselling, psychology, social work, and mental health nursing.

(5) online health forums where members can post freely about suicidal ideation or associated behaviours, self-harm, or NSSI.

Exclusion criteria include studies focused on peer or volunteer moderators.

At the end of each review round, the articles selected for review will be compared between the reviewers, with any discrepancies resolved by the two reviewers, or a third reviewer if consensus cannot be not achieved.

Stage 4: Data extraction or 'charting the data'

The data extraction framework presented in Figure 1 will be developed by the research team to confirm study relevance and to extract study characteristics. The extracted data will include bibliographic information (such as author, year, and location) and study characteristics (aim, design, methodology, participant characteristics, online community description, outcome measures, key findings, conclusions, and quality). This form will be reviewed by the research team and pretested before use to ensure the form is capturing the required information. As recommended by Levac *et al*,[13] the data extraction form may be

continually refined in accordance with the nature and extent of the data, as the reviewers become more familiar with the data during the data collection process. Consultation on any proposed changes to the extraction form will occur between the two reviewers undertaking the data extraction, with all changes requiring consensus. The data extraction process will be audited for quality and accuracy by sending a random selection (20% of the final article number) of extraction article information to an independent reviewer. Any identified issues will be resolved by consensus and a third reviewer with adjudicate if consensus cannot be reached. The process of extraction and sorting will occur in Microsoft Excel, using the data items in the data extraction framework (see Figure 1). This will allow for comparison of key items across studies.

As scoping reviews aim to map the existing literature and not to produce a critically synthesised answer to a particular question, a risk of basis assessment is not required for this study.[15] Assessments of research quality are not typically required by scoping reviews, however, as this scoping review seeks to identify the limitations within the existing moderator literature, an assessment of the quality of the included articles will be performed.[13] The first author will independently assess the quality of the included articles. The quality assessment process will be audited for accuracy by sending a random selection (20% of the final article number) of article quality assessment information to an independent reviewer. Any issues that arise will be resolved by consensus and where consensus cannot be achieved, a third reviewer will adjudicate to ensure agreement is achieved. JBI critical tool checklists will be adapted and used for the quality assessment process. Studies that meet more than 80% of the critical appraisal criteria will be judged to have good methodological quality. Studies that are assessed to have between 50% and 80% of the critical appraisal criteria will be deemed to have moderate methodological quality, and studies achieving less than 50% of the critical appraisal criteria will be judged to have poor methodological quality.

Results of the quality assessment undertaken for each included article will be recorded in the data extraction form. It is important to note that unlike systematic literature reviews, studies will not be excluded from this review due to quality assessment outcomes.

Stage 5: Collating, summarising and reporting the results

The PRISMA-SCR[16] checklist for reporting scoping reviews will be used to guide the reporting of the results of this review. It is proposed that the review will combine quantitative and qualitative syntheses to provide an overview of the findings. In order to provide an overview of the breadth of the literature, a PRISMA flow chart presented in Figure 2 will be used to report the number of articles present at each stage. A tabular synthesis of the study methodologies, distribution of the studies (geographically), type of online community forums, and the characterises of moderators will also be included. A qualitative narrative synthesis will be included and will discuss the limitations of the reviewed studies and identified research gaps.

Stage 6: Consultation

Arksey and O'Malley[12] suggested that the consultation stage is optional, however Levac *et al*,[13] posited that this stage is imperative to ensuring the methodological rigour of scoping reviews. As part of the consultation process, stakeholders who are subject matter experts will be given the opportunity to become involved in this research by reviewing the preliminary findings, in order to offer their expert perspectives on the findings, make suggestions, and offer higher level meanings. The research questions and outcome measures were informed by the experiences of the first author who is an online community moderator. For the purpose of this review the stakeholders selected for consultation will be the service managers of online health communities who are knowledge users.

ETHICS AND DISSEMINATION

To our knowledge, this is the first scoping review to synthesis what is known about health professionals working as online community moderators, in the context of supporting members who are experiencing suicidal ideation and behaviours. This review will identify gaps in the knowledge and research, while also helping to inform best practice and contribute to the advancement of research and practice on this subject. This scoping review was exempt from ethics review as no data is being collected from human participants (see page 7 and sections 5.1.22 and 5.1.23 of the Australian National Statement on Ethical Conduct in Human Research). The results of the scoping review may be published in a peer-reviewed journal, a thesis, presented at relevant conferences, and shared with relevant knowledge users.

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Author Statement

The design and development of this study was led by AP, who also drafted the protocol. ALM, CdP, JdP, and DP provided guidance to the study conceptualisation and protocol development. All authors have revised all drafts of this manuscript and give approval for the publishing of this protocol manuscript.

Acknowledgements

None declared

Data statement

Not applicable

Funding statement

The primary author is the recipient of the University of Southern Queensland Research Training Programme Stipend Scholarship.

Conflicts of interests statement

None declared

Transparency statement

The lead author AP affirms that the manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as originally planned have been explained.

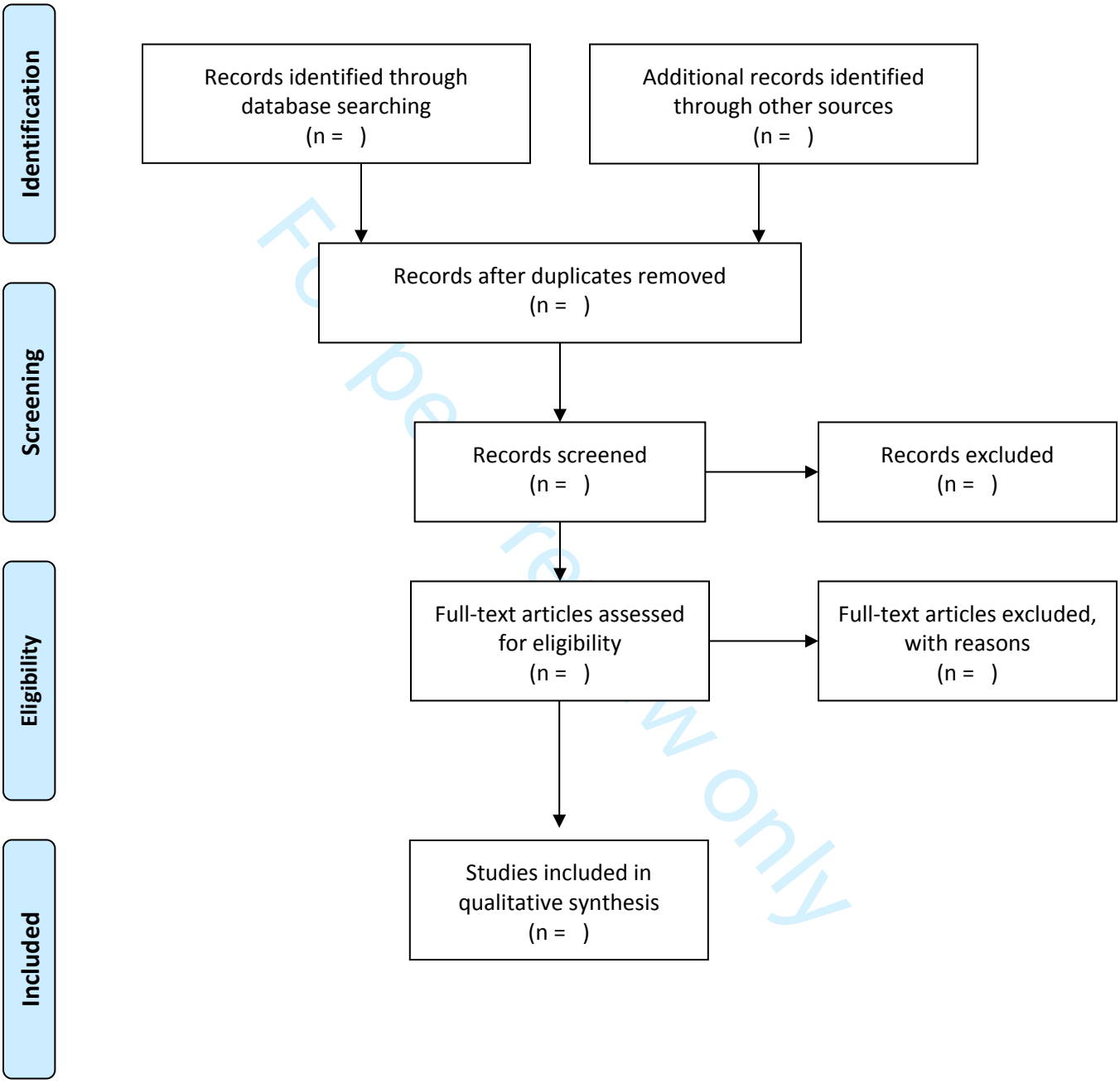
Word count: 2438

Figure 1

Figure 1 Data Extraction Form
Scoping Review Details
Scoping Review title:
Review objective/s:
Review question/s:
Inclusion/Exclusion Criteria
Population
Concept
Context
Types of Study
Study Details and Characteristics
Study citation details (e.g. author/s, date, title, journal, volume, issue, pages)
Country
Context
Participants (details e.g. age/sex and number)
Details/Results extracted from study (in relation to the concept of the scoping review)
Quality Assessment Comments

Adapted from: Joanna Briggs Institute. Joanna Briggs Institute Reviewer's Manual. [Internet]. https://wiki.joannabriggs.org/display/MANUAL/11.3.7.3+Data+extraction. Date accessed July 1, 2019

Figure 2 PRISMA Flow Chart



Adapted from: Moher D, Liberati A, Tetzlaff J, et al. Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 2009;6(7):e1000097. https://doi.org/10.1371/journal.pmed.1000100.

Reporting checklist for protocol of a systematic review.

Based on the PRISMA-P guidelines.

Instructions to authors

Complete this checklist by entering the page numbers from your manuscript where readers will find each of the items listed below.

Your article may not currently address all the items on the checklist. Please modify your text to include the missing information. If you are certain that an item does not apply, please write "n/a" and provide a short explanation.

Upload your completed checklist as an extra file when you submit to a journal.

In your methods section, say that you used the PRISMA-Preporting guidelines, and cite them as:

Moher D, Shamseer L, Clarke M, Ghersi D, Liberati A, Petticrew M, Shekelle P, Stewart LA. Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P) 2015 statement. Syst Rev. 2015;4(1):1.

		Reporting Item	Page Number
Title			
Identification	#1a	Identify the report as a protocol of a systematic review	1
Update	#1b	If the protocol is for an update of a previous systematic review, identify as such	n/a
Registration			
	#2	If registered, provide the name of the registry (such as PROSPERO) and registration number	n/a
Authors			
Contact	#3a	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author	1
Contribution	#3b	Describe contributions of protocol authors and identify the guarantor of the review	16
Amendments			

	#4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	n/a
Support			
Sources	#5a	Indicate sources of financial or other support for the review	16
Sponsor	#5b	Provide name for the review funder and / or sponsor	n/a
Role of sponsor or funder	#5c	Describe roles of funder(s), sponsor(s), and / or institution(s), if any, in developing the protocol	n/a
Introduction			
Rationale	#6	Describe the rationale for the review in the context of what is already known	3
Objectives	#7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	7
Methods			
Eligibility criteria	#8	Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review	11
Information sources	#9	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage	8
Search strategy	#10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	9
Study records - data management	#11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	12
Study records - selection process	#11b	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)	10
Study records - data collection process	#11c	Describe planned method of extracting data from reports (such as piloting forms, done independently, in duplicate), any processes for	12

		obtaining and confirming data from investigators	
Data items	#12	List and define all variables for which data will be sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications	8
Outcomes and prioritization	#13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	7
Risk of bias in individual studies	#14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	n/a
Data synthesis	#15a	Describe criteria under which study data will be quantitatively synthesised	13
Data synthesis	#15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data and methods of combining data from studies, including any planned exploration of consistency (such as I2, Kendall's τ)	13
Data synthesis	#15c	Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression)	n/a
Data synthesis	#15d	If quantitative synthesis is not appropriate, describe the type of summary planned	13
Meta-bias(es)	#16	Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies)	n/a
Confidence in cumulative evidence	#17	Describe how the strength of the body of evidence will be assessed (such as GRADE)	n/a

BMJ Open

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Journal:	*BMJ Open*
Manuscript ID	bmjopen-2019-034162.R1
Article Type:	Protocol
Date Submitted by the Author:	09-Nov-2019
Complete List of Authors:	Perry, Amanda; University of Southern Queensland, School of Psychology and Counselling Lamont-Mills, Andrea; University of Southern Queensland, School of Psychology and Counselling du Plessis, Carol; University of Southern Queensland, School of Psychology and Counselling du Preez, Jan; University of Southern Queensland, School of Psychology and Counselling Pyle, Denise; University of Southern Queensland, School of Psychology and Counselling
Primary Subject Heading:	Mental health
Secondary Subject Heading:	Communication
Keywords:	Suicide & self-harm < PSYCHIATRY, online community, health professional, online community moderator, suicidal ideation, suicidal behaviours

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Suicidal behaviours and moderator support in online health communities: Protocol for a scoping review

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Word Count 3,621

Keywords: online health community, health professional, online community moderator, suicide, suicidal ideation, suicidal behaviours

ABSTRACT

Introduction Suicidal ideation and suicidal behaviours are common yet complex mental health presentations that can pose significant challenges for health professionals. The inability to accurately predict the individuals who may move from experiencing suicidal ideation and associated behaviours, to completing suicide, presents one such challenge. This can make it difficult to provide interventions and support to those most in need. Online health communities are one possible source of support for individuals who experience suicidal ideation and behaviours. These communities are becoming an increasingly popular way of accessing support, often with lifesaving consequences. Within online communities, support is offered by various individuals including, in some instances, health professionals from various backgrounds, who work as online health community moderators. Given the growth of online communities and the increasing number of health professionals working as moderators, this scoping review seeks to map the literature that has focused on health professionals working as online community moderators, who interact with members experiencing suicidal ideation and behaviours. Mapping the existing literature offers benefits to both research and practice by identifying gaps in the research and providing a beginning knowledge base of current practice that can inform the training and development of health professionals working as community moderators.

Methods and analysis This scoping review will follow the methodological framework of Arksey and O'Malley, later adapted by Levac et al. To ensure appropriate rigour, this protocol uses the 20-item Preferred Reporting Items for Systematic Reviews and Meta-Analysis and extension for Scoping Reviews (PRISMA-ScR). Literature will be identified using a search strategy developed in consultation with a specialist research librarian at the University where the researchers are employed. Ten multidisciplinary databases will be independently searched by two researchers, and both researchers will screen for inclusion, and undertake the data extraction. The first author will perform a quality assessment of the articles that are selected for inclusion. A second researcher will complete a random audit of 20% of the included articles to assess for quality and suitability in answering the research questions. The first author will complete the analysis and synthesis of the data. A numerical and narrative synthesis of the included studies will be provided.

Ethics and dissemination The scoping review has been deemed as being exempt from ethical review as no data will be collected from human participants. The results of the scoping review may be published in a peer-reviewed journal, thesis, presented at relevant conferences, and shared with relevant knowledge users.

ARTICLE SUMMARY

Strengths and limitations

- To our knowledge, this scoping review will be the first to review and summarise research that has focused on health professionals working as online community moderators who support individuals experiencing suicidal behaviours (suicidal ideation, suicidal behaviours and suicide attempt). It will thus provide a baseline for future research.

- Strengths of this study include the use of an established scoping review methodology, a rigorous search strategy developed in consultation with a specialist research librarian, a systematic study selection carried out by two researchers, and a quality assessment of included literature.
- The scoping review will focus on peer reviewed articles and findings will be limited to articles that are written in English (or translated into English).

INTRODUCTION

Suicidal behaviours are a significant cause of death and disability worldwide, with close to 800,000 people dying by suicide every year.[1] Despite a growing awareness of the need for suicide prevention, the number of deaths by suicide continues to increase.[1] It is important to note that whilst there are publicly available suicide statistics, no figures are collected for suicidal behaviours including suicide attempts. For this reason it is estimated that the number people who are impacted by suicidal behaviours is far greater than the 800,000 recorded suicides.[1] Advances in technology have impacted on suicidal behaviours, in that individuals with internet capability can access a range of support and content that can positively and negatively influence suicidal ideation and suicidal behaviours.[2] For example, access to online support forums are likely to help keep individuals safe as they can connect to peer or professional support in times of need, conversely, individuals can also access content that may promote suicidal behaviours.[3]

Online health communities are internet-based platforms that have become increasingly popular due to their ability to facilitate the sharing of information, advice, and support, which can be especially important for individuals who are experiencing suicidal behaviours and therefore may be at risk of serious harm or death.[3] There is a lack of research that specifically measures the effectiveness of online support health communities. However, the effectiveness

and usefulness of these forums for members can be inferred from the growing membership in these forums as well as member retention within these communities[3]

When considering how to intervene and prevent suicide it is important to distinguish between the separate, but interconnected, constructs of suicidal ideation, suicidal behaviours or attempts, and suicide. Suicidal ideation consists of thoughts about how to kill oneself, which can range from fleeting thoughts, to extensive considerations, and detailed plans.[4] Suicidal behaviours and suicide attempts are deliberate and consciously self-destructive where the intent is to kill oneself,[5] and suicide is when intentional death occurs.[1] Most individuals who experience suicidal ideation do not act on the thoughts or carry them through to their conclusion.[2] Therefore, whilst suicidal ideation can place an individual at risk for engaging in suicidal behaviours, suicidal ideation in isolation is not necessarily a high-risk marker for a future suicide attempt.

According to Klonsky and May's[5] Three Step Theory of Suicide (3ST), connectedness plays a critical role in whether an individual moves from ideation toward suicidal behaviours, including a suicide attempt. The first step toward movement begins with psychological or emotional pain and a sense of hopelessness.[5] If an individual who is experiencing suicidal thoughts has hope that their situation may improve, and that the pain can be diminished, the individual is likely to work towards reducing the pain they feel, rather than consider attempting suicide.[5] An individual who experiences psychological pain combined with a sense of hopelessness, is more likely to experience suicidal ideation and be more at risk of moving toward an attempt.[5]

The second step toward a suicide attempt occurs when pain exceeds connectedness.[5] Connectedness refers to the connection with other people, interests, roles, projects, or a sense of meaning that gives one's life purpose. When an individual experiences pain and hopelessness and considers suicide, they are believed to be experiencing moderate suicidal

ideation. This does not mean the individual is moving toward suicide, provided their sense of connectedness remains greater than their pain.[5] However, when their pain overwhelms any sense of connectedness, suicidal ideation is likely to become stronger, and may result in the individual actively considering ending their life, or being on the move toward suicide.[5]

The third step reflects the progression from ideation to attempt and requires individuals to have the capacity to make an attempt on their own life, by overcoming the natural human instinct of fearing death.[5] An individual is more likely to attempt suicide when they have overcome their fear of death, and they experience a sense of pain and hopelessness that overwhelms any sense of connectedness.[5] It is at this point that an individual may move toward an attempt.

Individuals struggling with suicidal ideation and suicidal behaviours are traditionally seen by health professionals working in face-to-face settings. Whilst professionals are well positioned to provide support, barriers such as social stigma[6] and negative perceptions regarding suicide, can prevent individuals from accessing and engaging in support.[5] It is acknowledged that not all individuals who seek in-person support receive it, for reasons such as not meeting set assessment criteria, a shortage of resources, and wait list times. A lack of suitable support services, particularly for those in rural settings, combined with other barriers such as privacy concerns, time requirements, financial costs, distance, and transport required to access support, are further reasons why individuals may not be willing or able to engage with in-person psychological support.[2] For individuals unable or unwilling to engage with face to face support, online health communities offer an easily accessible alternative source of support.[7,8]

Online health communities typically include a large element of peer support, where members use their previous experiences and resulting insights to offer support. Peer support refers to people's natural tendency to seek support and advice from informal social sources in

their immediate environment.[9] A central tenet of peer support is the commonality of experience between the peers engaged in the supportive interactions. Peer support differs from professional support in that the interactions between peers are voluntary, flexible, and informal.[10]

Online health communities can follow different models of support, with one such example being forums that exclusively offer peer interactions without moderation from either peers or professionals. Alternatively, there are forums where peers within the online community fulfil the roles and functions of moderators. In addition, some peer support forums are overseen by professional moderators who either hold formal tertiary level qualifications or have completed in-house moderator training. Professional moderators can undertake administrative functions such as editing content, and guiding members with the features and functions of the forum, as well as providing professional support to members who may be at risk of engaging in suicidal behaviours.[7]

Atanasova *et al*.[7] argue that although online health communities are increasingly becoming the focus of health research, this research has typically focused on forum users and not on forum moderators, whether these are professional or peer moderators. This is despite online health communities providing a new way for health professionals and clients (online community members) to interact with one another.[11] The increasing use of online health communities as a means of gaining professional support[12] makes it crucial for health providers and researchers to gain a better understanding of moderator practices in these spaces.[13] This is due to the traditional face-to-face communication practices of health professionals requiring adaptation in the online environment,[14] as communication in these spaces is asynchronous, and devoid of non-verbal cues such as body language and movement, details of dress, and nuances of the voice. Understanding how health professionals who are moderators offer support to those experiencing suicidal ideation or engaging in suicidal

behaviours (including a suicide attempt) is important, given the 24-hour availability, and relatively instant nature of moderator support, that can reduce risk to life. Furthermore, the ability of moderators to reach and support a larger number of vulnerable individuals, when compared to individual face-to-face health professionals, makes understanding what constitutes effective moderation practices essential in replicating these practices across online communities. Moderator support is also important as it can be the first professional interaction an individual may have with regard to their mental health. This is significant as the quality of the interaction may influence whether an individual then reaches out for support in their immediate setting. Understanding how moderators interpret, make sense of, and then respond to members at risk allows health care professionals to further capitalise on the opportunities for positive and potentially lifesaving support that are offered by online communities.[3]

The findings from this review will provide a synthesis of the research that has focused on professional moderators who work with members experiencing suicidal ideation, suicidal behaviours, or engaging in a suicide attempt. Currently there is no systematic review of the literature regarding professional moderators, and therefore there is no clear understanding of what research has been completed, what research needs to be undertaken, and where the research needs to focus in the future. The finding of this review will offer implications for practice in that it will provide an evidence base on which organisations can train online moderators.

METHODS

This review will follow the six-stage scoping review methodological framework proposed by Arksey and O'Malley[15] which has been further developed by Levac *et al*.[16] The six stages are: (1) identifying the research question; (2) identifying the relevant literature; (3) study

selection; (4) charting the data; (5) collating, summarising, and reporting the data; and (6) consultation with knowledge users of online community forums.

Patient and Public Involvement

Patients and the public were not involved in the writing of this scoping review protocol.

Stage 1: Identifying the research questions

The aim of this scoping review is to identify what is empirically known about health professionals working as online health community moderators. It is intended that the findings from this review will inform further studies into the work of online community moderators, in order to achieve a greater understanding of the challenges and complexities of the role, especially when supporting members experiencing suicidal ideation and behaviours. It is anticipated that the findings of this review may be used to inform and enhance the recruitment and training of online community moderators, which can lead to improved service delivery to members of online forums.

To assist in the creation of the study research questions, the broad Population-Concept-Context (PCC) mnemonic by the Joanna Briggs Institute was adopted as a suitable alternative to the PICO (Population, Comparator and Outcome) mnemonic for systematic reviews.[17]

Population

There is one population associated with this research study; online health forum moderators. In the context of this study a moderator is a qualified health care professional who is employed to oversee the content and interactions of an online health community. This moderator will intervene in the forum and interact with members where necessary to ensure their safety. As scoping reviews are an iterative process, the definition of professional

moderator and what it means to be qualified may become more clearly defined as a result of the search.

Concept

Identifying what is known about health professionals working as moderators in online forums where members freely post about suicidal ideation, suicidal behaviours, self-harm, and NSSI (non-suicidal self-injury).

Context

No geographical limitations will be placed on the literature. This is due to suicide and associated behaviours being a global health issue. Furthermore, while the head office of a community forum may be physically located in one country, it is not uncommon for membership access to be available to individuals in other countries, thus making some online community forums international support providers.

To meet these aims the review will be guided by the following questions:

(1) What do we know from the existing literature about online mental health moderators who work with suicidal community members?

(2) What methodologies have been used to gain this knowledge?

(3) What are the limitations of the research?

(4) What are the research gaps?

Stage 2: Identifying relevant studies

The search strategy was iteratively developed in consultation with a specialist research librarian at the University where the researchers are employed. To ensure a comprehensive search of the health sciences literature the following electronic databases will be searched:

- CINAHL with full text, PsycINFO, PsycArticles, Psychology and Behavioral Sciences Collection, Academic Search Ultimate, Health Source: Nursing/Academic Edition and Sociology Source Ultimate. All of these are located within EBSCOhost.
- ScienceDirect
- Medline
- SAGE Journals
- Taylor and Francis Online.

The search strategy will include subject headings, keywords and related terms for the concepts of suicide (including suicidal ideation, suicidal behaviours, and suicide attempts), moderator or facilitator, online community, online health forum or online forum. The search terms for suicidal ideation, behaviours and attempt include 'suicide, 'self-harm' and non-suicidal self-injury (NSSI). Self-harm and NSSI will be included in the search terms as often the behaviours associated with self-harm and NSSI are classified as suicidal ideation and behaviours, or the deliberate desire to end one's life. For this reason the inclusion of the terms self-harm and NSSI will ensure adequate coverage of the literature. In the pilot testing of the search strategy it was determined that the term 'suicd*' would capture all suicide-related literature, including articles that discuss suicidal ideation, suicidal behaviours, and suicide attempts. A detailed search strategy can be found in Table 1.

The search will be limited to English articles or those translated into English. A date restriction will be articles published from 1990 to the day of the search. The initial search results will be collated in the reference management program EndNote (Version 9), where duplicates will be removed at the first stage of review. The search will be independently undertaken by two reviewers, who will seek to resolve discrepancies collaboratively. Where this is not possible, a third reviewer will adjudicate to ensure agreement is achieved.

Table 1 Search strings and limiters for each of the selected databases

Database	Search Strings	Limiters
CINAHL with full text, PsycINFO, PsycArticles, Psychology and Behavioral Sciences Collection, Academic Search Ultimate, Health Source: Nursing/Academic Edition and Sociology Source Ultimate	("online community" OR "online health community" OR "online forum") AND moderator OR facilitator AND suicid* OR self harm OR NSSI	Timeframe: From 1990 Language: English
ScienceDirect	("online community" OR "online health community" OR "online forum") AND (moderator OR facilitator) AND ("suicidal ideation" OR suicide OR "self harm" OR NSSI)	Timeframe: From 1990 Language: English
Medline (Web of Science)	("online community" OR "online health community" OR "online forum") AND moderator AND suicid* OR "self harm"OR NSSI	Timeframe: From 1990 Language: English
SAGE Journals	"online community" OR "online health	Timeframe: From

	community" OR "online forum" AND moderator OR facilitator AND suicid* OR "self harm" OR NSSI	1990 Language: English
Taylor and Frances Online	"online community" OR "online health community" OR "online forum"~4 AND moderator OR facilitator AND suicid* OR "self harm" OR NSSI	Timeframe: From 1990 Language: English

Stage 3: Study Selection

All articles will be independently screened for eligibility, beginning with a title and abstract review, followed by a full-text review. The reference lists of the articles selected for inclusion at the full-text review stage will also be searched to identify any further potential sources. The two reviewers who will undertake the initial literature search will also complete the two subsequent levels of screening.

In order to be included in the review studies must meet the following criteria:

(1) published from 1990 when computer-mediated support first appears in the literature,

(2) peer-reviewed to ensure only credible and high-quality studies are included,

(3) written in or translated into English (due to a lack of resources for translating articles), with articles that are not written or translated into English excluded at the beginning,

(4) focused on online health forums where members can post freely about suicidal ideation, suicidal behaviours, previous suicide attempts, self-harm, or NSSI.

(5) participants included in the studies must be qualified health care professionals who work as moderators. The qualifications of the professionals would be indicated in the article by

listing the professions of the moderators or stating that they are qualified. The definition of qualified health care professional is very broad and will include any qualified individual, including professions such as counselling, psychology, social work, and mental health nursing.

Exclusion criteria include studies focused on peer or volunteer moderators. It is possible that a professional moderator may hold a dual identity as a professional moderator and a peer, in that they are qualified professionals who have similar personal experiences or mental health concerns as the members of the community that they are overseeing. In instances where a professional moderator also identifies as a peer, their formal and professional role as a moderator will be prioritised over the peer identity.

At the end of each review round, the articles selected for review will be compared by the reviewers. Any discrepancies will be resolved by the two reviewers, or by a third reviewer if consensus cannot be not achieved.

Stage 4: Data extraction or 'charting the data'

The data extraction framework presented in Figure 1 will be developed by the research team to confirm study relevance and to extract study characteristics. The extracted data will include bibliographic information (such as author, year, and location) and study characteristics (aim, design, methodology, participant characteristics, online community description, outcome measures, key findings, conclusions, and quality). This form will be reviewed by the research team and pretested before use to ensure that the required information is being captured. As recommended by Levac *et al*,[16] the data extraction form will be continually refined in accordance with the nature and extent of the data, as the reviewers become more familiar with the data during the data collection process. Consultation on any proposed changes to the extraction form will occur between the two

reviewers undertaking the data extraction, with all changes requiring consensus. The data extraction process will be audited for quality and accuracy by sending a random selection (20% of the final article number) of extraction article information to an independent reviewer. Any identified issues will be resolved by consensus and a third reviewer will adjudicate if consensus cannot be reached. The process of extraction and sorting will occur in Microsoft Excel, using the data items in the data extraction framework (see Figure 1). This will allow for comparison of key items across studies.

As scoping reviews aim to map the existing literature and not to produce a critically synthesised answer to a particular question, a risk of bias assessment is not required for this study.[18] Assessments of research quality are not typically required by scoping reviews, however, as this scoping review seeks to identify the limitations within the existing moderator literature, an assessment of the quality of the included articles will be performed.[15] The first author will independently assess the quality of the included articles. The quality assessment process will be audited for accuracy by sending a random selection (20% of the final article number) of article quality assessment information to an independent reviewer. Any issues that arise will be resolved by consensus and where consensus cannot be achieved, a third reviewer will adjudicate to ensure agreement is achieved. The JBI Appraisal Checklist for Systematic Reviews and Research Syntheses[19] will be adapted and used for the quality assessment process. The appraisal checklist provides reviewers with a process of critique or appraisal of the research evidence, through the assessment of the methodological quality of a study. When appraising a study reviewers are looking to assess how the possibility of bias has been addressed.[19] Some examples of the criteria that are used to assess the quality of a study include whether the review question is clearly and explicitly stated and if the inclusion criteria were appropriate for the review question.[19] Studies that meet more than 80% of the critical appraisal criteria will be judged to have good

methodological quality. Studies that are assessed to have between 50% and 80% of the critical appraisal criteria will be deemed to have moderate methodological quality, and studies achieving less than 50% of the critical appraisal criteria will be judged to have poor methodological quality. Results of the quality assessment undertaken for each included article will be recorded in the data extraction form. It is important to note that unlike systematic literature reviews, studies will not be excluded from this review due to quality assessment outcomes.

Stage 5: Collating, summarising and reporting the results

The PRISMA-SCR[20] checklist for reporting scoping reviews will be used to guide the reporting of the results of this review. It is proposed that the review will combine quantitative and qualitative syntheses to provide an overview of the findings. In order to provide an overview of the breadth of the literature a PRISMA flow chart, presented in Figure 2, will be used to report the number of articles present at each stage. A tabular synthesis of the study methodologies, distribution of the studies (geographically), type of online community forums, and the characterises of moderators will also be included. A qualitative narrative synthesis will be included and will discuss the limitations of the reviewed studies and identified research gaps.

Stage 6: Consultation

Arksey and O'Malley[15] suggest that the consultation stage is optional, however Levac *et al*,[16] posit that this stage is imperative to ensuring the methodological rigour of scoping reviews. As part of the consultation process, stakeholders who are subject matter experts will be given the opportunity to become involved in this research by reviewing the preliminary findings, in order to offer their expert perspectives on the findings, make suggestions, and offer higher level meanings. For the purpose of this review the stakeholders selected for consultation will be the Service Managers of three separate online health community forums.

The stakeholders will be contacted via email and invited to review the preliminary findings and share their feedback either via email, or a video conferencing meeting. The research questions and outcome measures were informed by the experiences of the first author who is an online community moderator.

LIMTATIONS OF THE PROPOSED REVIEW

Whilst the search terms and the included databases have been developed to capture all relevant studies, it is noted that the lack of systematic reviews on this topic indicates that there are limited studies that have focused on the substantive area. It is possible that this scoping review may be limited by the small number of studies that are identified and included. This limitation may be mitigated in part by the flexibility of the scoping review design itself. Scoping reviews can be utilised with a range of data pool sizes and have been proposed as an appropriate design when there is limited data on a topic.[15] Some literature may also be missed by excluding studies that have not been peer reviewed.

ETHICS AND DISSEMINATION

To our knowledge, this is the first scoping review to synthesise what is known about health professionals working as online community moderators, in the context of supporting members who are experiencing suicidal ideation and behaviours. This review will identify gaps in the knowledge and research, while also helping to inform best practice and contribute to the advancement of research and practice on this subject. This scoping review was exempt from ethics review as no data is being collected from human participants (see page 7 and sections 5.1.22 and 5.1.23 of the Australian National Statement on Ethical Conduct in Human Research). The results of the scoping review may be published in a peer-reviewed

journal, a thesis, presented at relevant conferences, and shared with relevant knowledge users.

Contributorship statement

The design and development of this study was led by AP, who also drafted the protocol. ALM, CdP, JdP, and DP provided guidance to the study conceptualisation and protocol development. All authors have revised all drafts of this manuscript and give approval for the publishing of this protocol manuscript.

Competing interests

None declared

Funding

The primary author is the recipient of the University of Southern Queensland Research Training Program Stipend Scholarship.

Data sharing statement

Not applicable

Transparency statement

The lead author AP affirms that the manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as originally planned have been explained.

Acknowledgements

The authors gratefully acknowledge the helpful comments of the peer reviewers.

Figure legend/caption

Figure 1: Data extraction framework

Figure 2: Overview of identified literature

Table 1: Search strings and limiters for each of the selected databases

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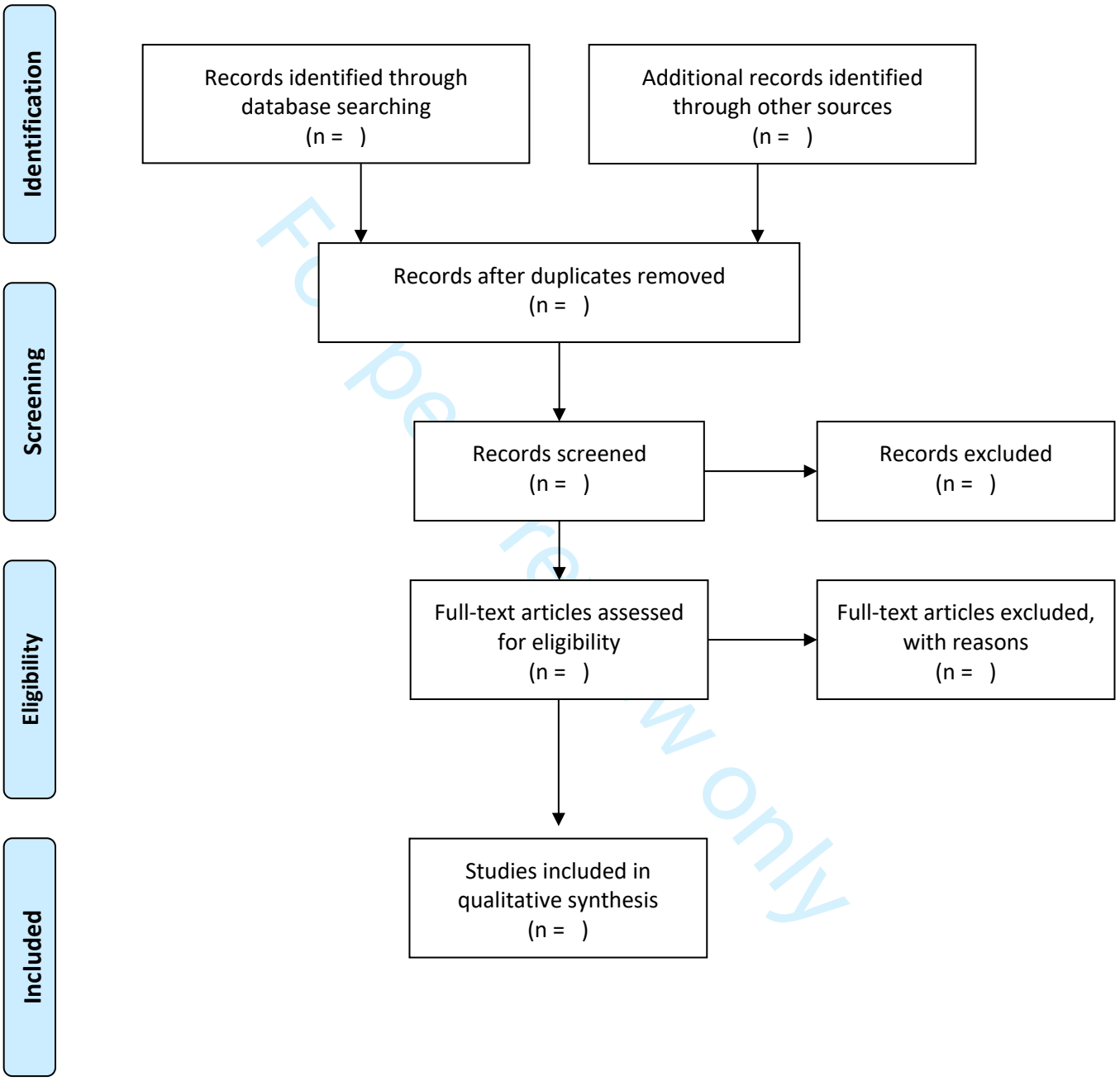
Word count: 3,621

Figure 1

Figure 1 Data Extraction Form
Scoping Review Details
Scoping Review title:
Review objective/s:
Review question/s:
Inclusion/Exclusion Criteria
Population
Concept
Context
Types of Study
Study Details and Characteristics
Study citation details (e.g. author/s, date, title, journal, volume, issue, pages)
Country
Context
Participants (details e.g. age/sex and number)
Details/Results extracted from study (in relation to the concept of the scoping review)
Quality Assessment Comments

Adapted from: Joanna Briggs Institute. Joanna Briggs Institute Reviewer's Manual. [Internet]. https://wiki.joannabriggs.org/display/MANUAL/11.3.7.3+Data+extraction. Date accessed July 1, 2019

Figure 2 PRISMA Flow Chart



Adapted from: Moher D, Liberati A, Tetzlaff J, et al. Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 2009;6(7):e1000097. https://doi.org/10.1371/journal.pmed.1000100.

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Based on the PRISMA-P guidelines.

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Complete this checklist by entering the page numbers from your manuscript where readers will find each of the items listed below.

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		Reporting Item	Page Number
Title			
Identification	#1a	Identify the report as a protocol of a systematic review	1
Update	#1b	If the protocol is for an update of a previous systematic review, identify as such	n/a
Registration			
	#2	If registered, provide the name of the registry (such as PROSPERO) and registration number	n/a
Authors			
Contact	#3a	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author	1
Contribution	#3b	Describe contributions of protocol authors and identify the guarantor of the review	16
Amendments			

	#4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	n/a
Support			
Sources	#5a	Indicate sources of financial or other support for the review	16
Sponsor	#5b	Provide name for the review funder and / or sponsor	n/a
Role of sponsor or funder	#5c	Describe roles of funder(s), sponsor(s), and / or institution(s), if any, in developing the protocol	n/a
Introduction			
Rationale	#6	Describe the rationale for the review in the context of what is already known	3
Objectives	#7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	7
Methods			
Eligibility criteria	#8	Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review	11
Information sources	#9	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage	8
Search strategy	#10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	9
Study records - data management	#11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	12
Study records - selection process	#11b	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)	10
Study records - data collection process	#11c	Describe planned method of extracting data from reports (such as piloting forms, done independently, in duplicate), any processes for	12

		obtaining and confirming data from investigators	
Data items	#12	List and define all variables for which data will be sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications	8
Outcomes and prioritization	#13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	7
Risk of bias in individual studies	#14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	n/a
Data synthesis	#15a	Describe criteria under which study data will be quantitatively synthesised	13
Data synthesis	#15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data and methods of combining data from studies, including any planned exploration of consistency (such as I2, Kendall's τ)	13
Data synthesis	#15c	Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression)	n/a
Data synthesis	#15d	If quantitative synthesis is not appropriate, describe the type of summary planned	13
Meta-bias(es)	#16	Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies)	n/a
Confidence in cumulative evidence	#17	Describe how the strength of the body of evidence will be assessed (such as GRADE)	n/a

BMJ Open

Suicidal behaviours and moderator support in online health communities: Protocol for a scoping review

Journal:	*BMJ Open*
Manuscript ID	bmjopen-2019-034162.R2
Article Type:	Protocol
Date Submitted by the Author:	29-Nov-2019
Complete List of Authors:	Perry, Amanda; University of Southern Queensland, School of Psychology and Counselling Lamont-Mills, Andrea; University of Southern Queensland, School of Psychology and Counselling du Plessis, Carol; University of Southern Queensland, School of Psychology and Counselling du Preez, Jan; University of Southern Queensland, School of Psychology and Counselling Pyle, Denise; University of Southern Queensland, School of Psychology and Counselling
Primary Subject Heading:	Mental health
Secondary Subject Heading:	Communication
Keywords:	Suicide & self-harm < PSYCHIATRY, online community, health professional, online community moderator, suicidal ideation, suicidal behaviours

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Suicidal behaviours and moderator support in online health communities: Protocol for a scoping review

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Word Count 3,649

Keywords: online health community, health professional, online community moderator, suicide, suicidal ideation, suicidal behaviours

ABSTRACT

Introduction Suicidal ideation and suicidal behaviours are common yet complex mental health presentations that can pose significant challenges for health professionals. The inability to accurately predict the individuals who may move from experiencing suicidal ideation and associated behaviours, to completing suicide, presents one such challenge. This can make it difficult to provide interventions and support to those most in need. Online health communities are one possible source of support for individuals who experience suicidal ideation and behaviours. These communities are becoming an increasingly popular way of accessing support, often with lifesaving consequences. Within online communities, support is offered by various individuals including, in some instances, health professionals from various backgrounds, who work as online health community moderators. Given the growth of online communities and the increasing number of health professionals working as moderators, this scoping review seeks to map the literature that has focused on health professionals working as online community moderators, who interact with members experiencing suicidal ideation and behaviours. Mapping the existing literature offers benefits to both research and practice by identifying gaps in the research and providing a beginning knowledge base of current practice that can inform the training and development of health professionals working as community moderators.

Methods and analysis This scoping review will follow the methodological framework of Arksey and O'Malley, later adapted by Levac et al. To ensure appropriate rigour, this protocol uses the 20-item Preferred Reporting Items for Systematic Reviews and Meta-Analysis and extension for Scoping Reviews (PRISMA-ScR). Literature will be identified using a search strategy developed in consultation with a specialist research librarian at the University where the researchers are employed. Ten multidisciplinary databases will be independently searched by two researchers, and both researchers will screen for inclusion, and undertake the data extraction. The first author will perform a quality assessment of the articles that are selected for inclusion. A second researcher will complete a random audit of 20% of the included articles to assess for quality and suitability in answering the research questions. The first author will complete the analysis and synthesis of the data. A numerical and narrative synthesis of the included studies will be provided.

Ethics and dissemination The scoping review has been deemed as being exempt from ethical review as no data will be collected from human participants. The results of the scoping review may be published in a peer-reviewed journal, thesis, presented at relevant conferences, and shared with relevant knowledge users.

ARTICLE SUMMARY

Strengths and limitations

- To our knowledge, this scoping review will be the first to review and summarise research that has focused on health professionals working as online community moderators who support individuals experiencing suicidal behaviours (suicidal ideation, suicidal behaviours and suicide attempt). It will thus provide a baseline for future research.

- Strengths of this study include the use of an established scoping review methodology, a rigorous search strategy developed in consultation with a specialist research librarian, a systematic study selection carried out by two researchers, and a quality assessment of included literature.
- The scoping review will focus on peer reviewed articles and findings will be limited to articles that are written in English (or translated into English).

INTRODUCTION

Suicidal behaviours are a significant cause of death and disability worldwide, with close to 800,000 people dying by suicide every year.[1] Despite a growing awareness of the need for suicide prevention, the number of deaths by suicide continues to increase.[1] Whilst there are publicly available statistics for death by suicide, the same cannot be said for attempted suicides. This gap is likely to be the result of under reporting, as unless medical attention is required, many suicide attempts may not be reported to health professionals. Despite a lack of data regarding suicide attempts, it is believed that suicide is attempted more times than it is completed.[1] For this reason it is estimated that the number people who are impacted by suicidal behaviours is far greater than the 800,000 recorded suicides.[1] Advances in technology have impacted on suicidal behaviours, in that individuals with internet capability can access a range of support and content that can positively and negatively influence suicidal ideation and suicidal behaviours.[2] For example, access to online support forums are likely to help keep individuals safe as they can connect to peer or professional support in times of need, conversely, individuals can also access content that may promote suicidal behaviours.[3]

Online health communities are internet-based platforms that have become increasingly popular due to their ability to facilitate the sharing of information, advice, and support, which can be especially important for individuals who are experiencing suicidal behaviours and

therefore may be at risk of serious harm or death.[3] There is a lack of research that specifically measures the effectiveness of online support health communities. However, the effectiveness and usefulness of these forums for members can be inferred from the growing membership in these forums as well as member retention within these communities.[3]

When considering how to intervene and prevent suicide it is important to distinguish between the separate, but interconnected, constructs of suicidal ideation, suicidal behaviours or attempts, and suicide. Suicidal ideation consists of thoughts about how to kill oneself, which can range from fleeting thoughts, to extensive considerations, and detailed plans.[4] Suicidal behaviours and suicide attempts are deliberate and consciously self-destructive where the intent is to kill oneself,[5] and suicide is when intentional death occurs.[1] Most individuals who experience suicidal ideation do not act on the thoughts or carry them through to their conclusion.[2] Therefore, whilst suicidal ideation can place an individual at risk for engaging in suicidal behaviours, suicidal ideation in isolation is not necessarily a high-risk marker for a future suicide attempt.

According to Klonsky and May's[5] Three Step Theory of Suicide (3ST), connectedness plays a critical role in whether an individual moves from ideation toward suicidal behaviours, including a suicide attempt. The first step toward movement begins with psychological or emotional pain and a sense of hopelessness.[5] If an individual who is experiencing suicidal thoughts has hope that their situation may improve, and that the pain can be diminished, the individual is likely to work towards reducing the pain they feel, rather than consider attempting suicide.[5] An individual who experiences psychological pain combined with a sense of hopelessness, is more likely to experience suicidal ideation and be more at risk of moving toward an attempt.[5]

The second step toward a suicide attempt occurs when pain exceeds connectedness.[5] Connectedness refers to the connection with other people, interests, roles, projects, or a sense

of meaning that gives one's life purpose. When an individual experiences pain and hopelessness and considers suicide, they are believed to be experiencing moderate suicidal ideation. This does not mean the individual is moving toward suicide, provided their sense of connectedness remains greater than their pain.[5] However, when their pain overwhelms any sense of connectedness, suicidal ideation is likely to become stronger, and may result in the individual actively considering ending their life, or being on the move toward suicide.[5]

The third step reflects the progression from ideation to attempt and requires individuals to have the capacity to make an attempt on their own life, by overcoming the natural human instinct of fearing death.[5] An individual is more likely to attempt suicide when they have overcome their fear of death, and they experience a sense of pain and hopelessness that overwhelms any sense of connectedness.[5] It is at this point that an individual may move toward an attempt.

Individuals struggling with suicidal ideation and suicidal behaviours are traditionally seen by health professionals working in face-to-face settings. Whilst professionals are well positioned to provide support, barriers such as social stigma[6] and negative perceptions regarding suicide, can prevent individuals from accessing and engaging in support.[5] It is acknowledged that not all individuals who seek in-person support receive it, for reasons such as not meeting set assessment criteria, a shortage of resources, and wait list times. A lack of suitable support services, particularly for those in rural settings, combined with other barriers such as privacy concerns, time requirements, financial costs, distance, and transport required to access support, are further reasons why individuals may not be willing or able to engage with in-person psychological support.[2] For individuals unable or unwilling to engage with face to face support, online health communities offer an easily accessible alternative source of support.[7,8]

Online health communities typically include a large element of peer support, where members use their previous experiences and resulting insights to offer support. Peer support refers to people's natural tendency to seek support and advice from informal social sources in their immediate environment.[9] A central tenet of peer support is the commonality of experience between the peers engaged in the supportive interactions. Peer support differs from professional support in that the interactions between peers are voluntary, flexible, and informal.[10]

Online health communities can follow different models of support, with one such example being forums that exclusively offer peer interactions without moderation from either peers or professionals. Alternatively, there are forums where peers within the online community fulfil the roles and functions of moderators. In addition, some peer support forums are overseen by professional moderators who either hold formal tertiary level qualifications or have completed in-house moderator training. Professional moderators can undertake administrative functions such as editing content, and guiding members with the features and functions of the forum, as well as providing professional support to members who may be at risk of engaging in suicidal behaviours.[7]

Atanasova *et al*.[7] argue that although online health communities are increasingly becoming the focus of health research, this research has typically focused on forum users and not on forum moderators, whether these are professional or peer moderators. This is despite online health communities providing a new way for health professionals and clients (online community members) to interact with one another.[11] The increasing use of online health communities as a means of gaining professional support[12] makes it crucial for health providers and researchers to gain a better understanding of moderator practices in these spaces.[13] This is due to the traditional face-to-face communication practices of health professionals requiring adaptation in the online environment,[14] as communication in these

spaces is asynchronous, and devoid of non-verbal cues such as body language and movement, details of dress, and nuances of the voice. Understanding how health professionals who are moderators offer support to those experiencing suicidal ideation or engaging in suicidal behaviours (including a suicide attempt) is important, given the 24-hour availability, and relatively instant nature of moderator support, that can reduce risk to life. Furthermore, the ability of moderators to reach and support a larger number of vulnerable individuals, when compared to individual face-to-face health professionals, makes understanding what constitutes effective moderation practices essential in replicating these practices across online communities. Moderator support is also important as it can be the first professional interaction an individual may have with regard to their mental health. This is significant as the quality of the interaction may influence whether an individual then reaches out for support in their immediate setting. Understanding how moderators interpret, make sense of, and then respond to members at risk allows health care professionals to further capitalise on the opportunities for positive and potentially lifesaving support that are offered by online communities.[3]

The findings from this review will provide a synthesis of the research that has focused on professional moderators who work with members experiencing suicidal ideation, suicidal behaviours, or engaging in a suicide attempt. Currently there is no systematic review of the literature regarding professional moderators, and therefore there is no clear understanding of what research has been completed, what research needs to be undertaken, and where the research needs to focus in the future. The finding of this review will offer implications for practice in that it will provide an evidence base on which organisations can train online moderators.

METHODS

This review will follow the six-stage scoping review methodological framework proposed by Arksey and O'Malley[15] which has been further developed by Levac *et al*.[16] The six stages are: (1) identifying the research question; (2) identifying the relevant literature; (3) study selection; (4) charting the data; (5) collating, summarising, and reporting the data; and (6) consultation with knowledge users of online community forums.

Patient and Public Involvement

Patients and the public were not involved in the writing of this scoping review protocol.

Stage 1: Identifying the research questions

The aim of this scoping review is to identify what is empirically known about health professionals working as online health community moderators. It is intended that the findings from this review will inform further studies into the work of online community moderators, in order to achieve a greater understanding of the challenges and complexities of the role, especially when supporting members experiencing suicidal ideation and behaviours. It is anticipated that the findings of this review may be used to inform and enhance the recruitment and training of online community moderators, which can lead to improved service delivery to members of online forums.

To assist in the creation of the study research questions, the broad Population-Concept-Context (PCC) mnemonic by the Joanna Briggs Institute was adopted as a suitable alternative to the PICO (Population, Comparator and Outcome) mnemonic for systematic reviews.[17]

Population

There is one population associated with this research study; online health forum moderators. In the context of this study a moderator is a qualified health care professional who is

employed to oversee the content and interactions of an online health community. This moderator will intervene in the forum and interact with members where necessary to ensure their safety. As scoping reviews are an iterative process, the definition of professional moderator and what it means to be qualified may become more clearly defined as a result of the search.

Concept

Identifying what is known about health professionals working as moderators in online forums where members freely post about suicidal ideation, suicidal behaviours, self-harm, and NSSI (non-suicidal self-injury).

Context

No geographical limitations will be placed on the literature. This is due to suicide and associated behaviours being a global health issue. Furthermore, while the head office of a community forum may be physically located in one country, it is not uncommon for membership access to be available to individuals in other countries, thus making some online community forums international support providers.

To meet these aims the review will be guided by the following questions:

(1) What do we know from the existing literature about online mental health moderators who work with suicidal community members?

(2) What methodologies have been used to gain this knowledge?

(3) What are the limitations of the research?

(4) What are the research gaps?

Stage 2: Identifying relevant studies

The search strategy was iteratively developed in consultation with a specialist research librarian at the University where the researchers are employed. To ensure a comprehensive search of the health sciences literature the following electronic databases will be searched:

- CINAHL with full text, PsycINFO, PsycArticles, Psychology and Behavioral Sciences Collection, Academic Search Ultimate, Health Source: Nursing/Academic Edition and Sociology Source Ultimate. All of these are located within EBSCOhost.
- ScienceDirect.
- Medline.
- SAGE Journals.
- Taylor and Francis Online.

The search strategy will include subject headings, keywords and related terms for the concepts of suicide (including suicidal ideation, suicidal behaviours, and suicide attempts), moderator or facilitator, online community, online health forum or online forum. The search terms for suicidal ideation, behaviours and attempt include 'suicide, 'self-harm' and non-suicidal self-injury (NSSI). Self-harm and NSSI will be included in the search terms as often the behaviours associated with self-harm and NSSI are classified as suicidal ideation and behaviours, or the deliberate desire to end one's life. For this reason the inclusion of the terms self-harm and NSSI will ensure adequate coverage of the literature. In the pilot testing of the search strategy it was determined that the term 'suicd*' would capture all suicide-related literature, including articles that discuss suicidal ideation, suicidal behaviours, and suicide attempts. A detailed search strategy can be found in Table 1.

The search will be limited to English articles or those translated into English. A date restriction will be articles published from 1990 to the day of the search. The initial search results will be collated in the reference management program EndNote (Version 9), where duplicates will be removed at the first stage of review. The search will be independently

undertaken by two reviewers, who will seek to resolve discrepancies collaboratively. Where this is not possible, a third reviewer will adjudicate to ensure agreement is achieved.

Table 1 Search strings and limiters for each of the selected databases

Database	Search Strings	Limiters
CINAHL with full text, PsycINFO, PsycArticles, Psychology and Behavioral Sciences Collection, Academic Search Ultimate, Health Source: Nursing/Academic Edition and Sociology Source Ultimate	("online community" OR "online health community" OR "online forum") AND moderator OR facilitator AND suicid* OR self harm OR NSSI	Timeframe: From 1990 Language: English
ScienceDirect	("online community" OR "online health community" OR "online forum") AND (moderator OR facilitator) AND ("suicidal ideation" OR suicide OR "self harm" OR NSSI)	Timeframe: From 1990 Language: English
Medline (Web of Science)	("online community" OR "online health community" OR "online forum") AND moderator AND suicid* OR "self	Timeframe: From 1990

	harm"OR NSSI	Language: English
SAGE Journals	"online community" OR "online health community" OR "online forum" AND moderator OR facilitator AND suicid* OR "self harm" OR NSSI	Timeframe: From 1990 Language: English
Taylor and Frances Online	"online community" OR "online health community" OR "online forum"~4 AND moderator OR facilitator AND suicid* OR "self harm" OR NSSI	Timeframe: From 1990 Language: English

Stage 3: Study Selection

All articles will be independently screened for eligibility, beginning with a title and abstract review, followed by a full-text review. The reference lists of the articles selected for inclusion at the full-text review stage will also be searched to identify any further potential sources. The two reviewers who will undertake the initial literature search will also complete the two subsequent levels of screening.

In order to be included in the review studies must meet the following criteria:

(1) published from 1990 when computer-mediated support first appears in the literature,

(2) peer-reviewed to ensure only credible and high-quality studies are included,

(3) written in or translated into English (due to a lack of resources for translating articles), with articles that are not written or translated into English excluded at the beginning,

(4) focused on online health forums where members can post freely about suicidal ideation, suicidal behaviours, previous suicide attempts, self-harm, or NSSI.

(5) participants included in the studies must be qualified health care professionals who work as moderators. The qualifications of the professionals would be indicated in the article by listing the professions of the moderators or stating that they are qualified. The definition of qualified health care professional is very broad and will include any qualified individual, including professions such as counselling, psychology, social work, and mental health nursing.

Exclusion criteria include studies focused on peer or volunteer moderators. It is possible that a professional moderator may hold a dual identity as a professional moderator and a peer, in that they are qualified professionals who have similar personal experiences or mental health concerns as the members of the community that they are overseeing. In instances where a professional moderator also identifies as a peer, their formal and professional role as a moderator will be prioritised over the peer identity.

At the end of each review round, the articles selected for review will be compared by the reviewers. Any discrepancies will be resolved by the two reviewers, or by a third reviewer if consensus cannot be not achieved.

Stage 4: Data extraction or 'charting the data'

The data extraction framework presented in Figure 1 will be developed by the research team to confirm study relevance and to extract study characteristics. The extracted data will include bibliographic information (such as author, year, and location) and study characteristics (aim, design, methodology, participant characteristics, online community description, outcome measures, key findings, conclusions, and quality). This form will be reviewed by the research team and pretested before use to ensure that the required information is being captured. As recommended by Levac *et al*,[16] the data extraction form will be continually refined in accordance with the nature and extent of the data, as the

reviewers become more familiar with the data during the data collection process. Consultation on any proposed changes to the extraction form will occur between the two reviewers undertaking the data extraction, with all changes requiring consensus. The data extraction process will be audited for quality and accuracy by sending a random selection (20% of the final article number) of extraction article information to an independent reviewer. Any identified issues will be resolved by consensus and a third reviewer will adjudicate if consensus cannot be reached. The process of extraction and sorting will occur in Microsoft Excel, using the data items in the data extraction framework (see Figure 1). This will allow for comparison of key items across studies.

As scoping reviews aim to map the existing literature and not to produce a critically synthesised answer to a particular question, a risk of bias assessment is not required for this study.[18] Assessments of research quality are not typically required by scoping reviews, however, as this scoping review seeks to identify the limitations within the existing moderator literature, an assessment of the quality of the included articles will be performed.[15] The first author will independently assess the quality of the included articles. The quality assessment process will be audited for accuracy by sending a random selection (20% of the final article number) of article quality assessment information to an independent reviewer. Any issues that arise will be resolved by consensus and where consensus cannot be achieved, a third reviewer will adjudicate to ensure agreement is achieved. The JBI Appraisal Checklist for Systematic Reviews and Research Syntheses[19] will be adapted and used for the quality assessment process. The appraisal checklist provides reviewers with a process of critique or appraisal of the research evidence, through the assessment of the methodological quality of a study. When appraising a study reviewers are looking to assess how the possibility of bias has been addressed.[19] Some examples of the criteria that are used to assess the quality of a study include whether the review question is clearly and explicitly

stated and if the inclusion criteria were appropriate for the review question.[19] Studies that meet more than 80% of the critical appraisal criteria will be judged to have good methodological quality. Studies that are assessed to have between 50% and 80% of the critical appraisal criteria will be deemed to have moderate methodological quality, and studies achieving less than 50% of the critical appraisal criteria will be judged to have poor methodological quality. Results of the quality assessment undertaken for each included article will be recorded in the data extraction form. It is important to note that unlike systematic literature reviews, studies will not be excluded from this review due to quality assessment outcomes.

Stage 5: Collating, summarising and reporting the results

The PRISMA-SCR[20] checklist for reporting scoping reviews will be used to guide the reporting of the results of this review. It is proposed that the review will combine quantitative and qualitative syntheses to provide an overview of the findings. In order to provide an overview of the breadth of the literature a PRISMA flow chart, presented in Figure 2, will be used to report the number of articles present at each stage. A tabular synthesis of the study methodologies, distribution of the studies (geographically), type of online community forums, and the characterises of moderators will also be included. A qualitative narrative synthesis will be included and will discuss the limitations of the reviewed studies and identified research gaps.

Stage 6: Consultation

Arksey and O'Malley[15] suggest that the consultation stage is optional, however Levac *et al*,[16] posit that this stage is imperative to ensuring the methodological rigour of scoping reviews. As part of the consultation process, stakeholders who are subject matter experts will be given the opportunity to become involved in this research by reviewing the preliminary findings, in order to offer their expert perspectives on the findings, make suggestions, and

offer higher level meanings. For the purpose of this review the stakeholders selected for consultation will be the Service Managers of three separate online health community forums. The stakeholders will be contacted via email and invited to review the preliminary findings and share their feedback either via email, or a video conferencing meeting. The research questions and outcome measures were informed by the experiences of the first author who is an online community moderator.

LIMITATIONS OF THE PROPOSED REVIEW

Whilst the search terms and the included databases have been developed to capture all relevant studies, it is noted that the lack of systematic reviews on this topic indicates that there are limited studies that have focused on the substantive area. It is possible that this scoping review may be limited by the small number of studies that are identified and included. This limitation may be mitigated in part by the flexibility of the scoping review design itself. Scoping reviews can be utilised with a range of data pool sizes and have been proposed as an appropriate design when there is limited data on a topic.[15] Some literature may also be missed by excluding studies that have not been peer reviewed.

ETHICS AND DISSEMINATION

To our knowledge, this is the first scoping review to synthesise what is known about health professionals working as online community moderators, in the context of supporting members who are experiencing suicidal ideation and behaviours. This review will identify gaps in the knowledge and research, while also helping to inform best practice and contribute to the advancement of research and practice on this subject. This scoping review was exempt from ethics review as no data is being collected from human participants (see page 7 and sections 5.1.22 and 5.1.23 of the Australian National Statement on Ethical Conduct in

Human Research). The results of the scoping review may be published in a peer-reviewed journal, a thesis, presented at relevant conferences, and shared with relevant knowledge users.

Contributorship statement

The design and development of this study was led by AP, who also drafted the protocol. ALM, CdP, JdP, and DP provided guidance to the study conceptualisation and protocol development. All authors have revised all drafts of this manuscript and give approval for the publishing of this protocol manuscript.

Competing interests

None declared

Funding

The primary author is the recipient of the University of Southern Queensland Research Training Program Stipend Scholarship.

Data sharing statement

Not applicable

Transparency statement

The lead author AP affirms that the manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as originally planned have been explained.

Acknowledgements

The authors gratefully acknowledge the helpful comments of the peer reviewers.

Figure legend/caption

Figure 1: Data extraction framework

Figure 2: Overview of identified literature

Table 1: Search strings and limiters for each of the selected databases

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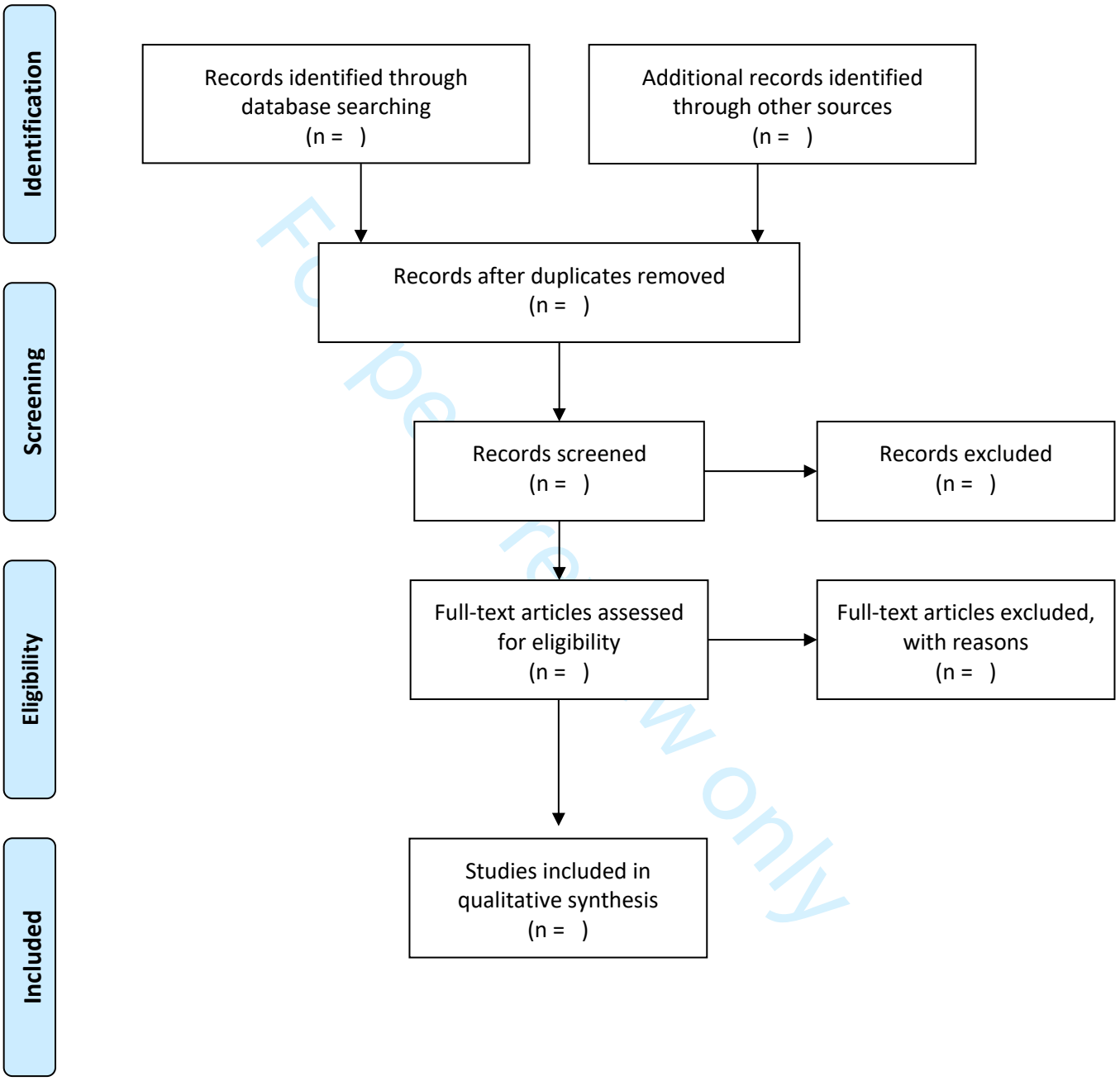
Word count: 3,649

Figure 1

Figure 1 Data Extraction Form
Scoping Review Details
Scoping Review title:
Review objective/s:
Review question/s:
Inclusion/Exclusion Criteria
Population
Concept
Context
Types of Study
Study Details and Characteristics
Study citation details (e.g. author/s, date, title, journal, volume, issue, pages)
Country
Context
Participants (details e.g. age/sex and number)
Details/Results extracted from study (in relation to the concept of the scoping review)
Quality Assessment Comments

Adapted from: Joanna Briggs Institute. Joanna Briggs Institute Reviewer's Manual. [Internet]. https://wiki.joannabriggs.org/display/MANUAL/11.3.7.3+Data+extraction. Date accessed July 1, 2019

Figure 2 PRISMA Flow Chart



Adapted from: Moher D, Liberati A, Tetzlaff J, et al. Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 2009;6(7):e1000097. https://doi.org/10.1371/journal.pmed.1000100.

Reporting checklist for protocol of a systematic review.

Based on the PRISMA-P guidelines.

Instructions to authors

Complete this checklist by entering the page numbers from your manuscript where readers will find each of the items listed below.

Your article may not currently address all the items on the checklist. Please modify your text to include the missing information. If you are certain that an item does not apply, please write "n/a" and provide a short explanation.

Upload your completed checklist as an extra file when you submit to a journal.

In your methods section, say that you used the PRISMA-Preporting guidelines, and cite them as:

Moher D, Shamseer L, Clarke M, Ghersi D, Liberati A, Petticrew M, Shekelle P, Stewart LA. Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P) 2015 statement. Syst Rev. 2015;4(1):1.

		Reporting Item	Page Number
Title			
Identification	#1a	Identify the report as a protocol of a systematic review	1
Update	#1b	If the protocol is for an update of a previous systematic review, identify as such	n/a
Registration			
	#2	If registered, provide the name of the registry (such as PROSPERO) and registration number	n/a
Authors			
Contact	#3a	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author	1
Contribution	#3b	Describe contributions of protocol authors and identify the guarantor of the review	16
Amendments			

	#4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	n/a
Support			
Sources	#5a	Indicate sources of financial or other support for the review	16
Sponsor	#5b	Provide name for the review funder and / or sponsor	n/a
Role of sponsor or funder	#5c	Describe roles of funder(s), sponsor(s), and / or institution(s), if any, in developing the protocol	n/a
Introduction			
Rationale	#6	Describe the rationale for the review in the context of what is already known	3
Objectives	#7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	7
Methods			
Eligibility criteria	#8	Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review	11
Information sources	#9	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage	8
Search strategy	#10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	9
Study records - data management	#11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	12
Study records - selection process	#11b	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)	10
Study records - data collection process	#11c	Describe planned method of extracting data from reports (such as piloting forms, done independently, in duplicate), any processes for	12

		obtaining and confirming data from investigators	
Data items	#12	List and define all variables for which data will be sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications	8
Outcomes and prioritization	#13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	7
Risk of bias in individual studies	#14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	n/a
Data synthesis	#15a	Describe criteria under which study data will be quantitatively synthesised	13
Data synthesis	#15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data and methods of combining data from studies, including any planned exploration of consistency (such as I2, Kendall's τ)	13
Data synthesis	#15c	Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression)	n/a
Data synthesis	#15d	If quantitative synthesis is not appropriate, describe the type of summary planned	13
Meta-bias(es)	#16	Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies)	n/a
Confidence in cumulative evidence	#17	Describe how the strength of the body of evidence will be assessed (such as GRADE)	n/a

BMJ Open

Suicidal behaviours and moderator support in online health communities: Protocol for a scoping review

Journal:	*BMJ Open*
Manuscript ID	bmjopen-2019-034162.R3
Article Type:	Protocol
Date Submitted by the Author:	19-Dec-2019
Complete List of Authors:	Perry, Amanda; University of Southern Queensland, School of Psychology and Counselling Lamont-Mills, Andrea; University of Southern Queensland, School of Psychology and Counselling du Plessis, Carol; University of Southern Queensland, School of Psychology and Counselling du Preez, Jan; University of Southern Queensland, School of Psychology and Counselling Pyle, Denise; University of Southern Queensland, School of Psychology and Counselling
Primary Subject Heading:	Mental health
Secondary Subject Heading:	Communication
Keywords:	Suicide & self-harm < PSYCHIATRY, online community, health professional, online community moderator, suicidal ideation, suicidal behaviours

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Suicidal behaviours and moderator support in online health communities: Protocol for a scoping review

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Word Count 3,634

Keywords: online health community, health professional, online community moderator, suicide, suicidal ideation, suicidal behaviours

ABSTRACT

Introduction Suicidal ideation and suicidal behaviours are common yet complex mental health presentations that can pose significant challenges for health professionals. The inability to accurately predict the individuals who may move from experiencing suicidal ideation and associated behaviours, to completing suicide, presents one such challenge. This can make it difficult to provide interventions and support to those most in need. Online health communities are one possible source of support for individuals who experience suicidal ideation and behaviours. These communities are becoming an increasingly popular way of accessing support, often with lifesaving consequences. Within online communities, support is offered by various individuals including, in some instances, health professionals from various backgrounds, who work as online health community moderators. Given the growth of online communities and the increasing number of health professionals working as moderators, this scoping review seeks to map the literature that has focused on health professionals working as online community moderators, who interact with members experiencing suicidal ideation and behaviours. Mapping the existing literature offers benefits to both research and practice by identifying gaps in the research and providing a beginning knowledge base of current practice that can inform the training and development of health professionals working as community moderators.

Methods and analysis This scoping review will follow the methodological framework of Arksey and O'Malley, later adapted by Levac et al. To ensure appropriate rigour, this protocol uses the 20-item Preferred Reporting Items for Systematic Reviews and Meta-Analysis and extension for Scoping Reviews (PRISMA-ScR). Literature will be identified using a search strategy developed in consultation with a specialist research librarian at the University where the researchers are employed. Ten multidisciplinary databases will be independently searched by two researchers, and both researchers will screen for inclusion, and undertake the data extraction. The first author will perform a quality assessment of the articles that are selected for inclusion. A second researcher will complete a random audit of 20% of the included articles to assess for quality and suitability in answering the research questions. The first author will complete the analysis and synthesis of the data. A numerical and narrative synthesis of the included studies will be provided.

Ethics and dissemination The scoping review has been deemed as being exempt from ethical review as no data will be collected from human participants. The results of the scoping review may be published in a peer-reviewed journal, thesis, presented at relevant conferences, and shared with relevant knowledge users.

ARTICLE SUMMARY

Strengths and limitations

- To our knowledge, this scoping review will be the first to review and summarise research that has focused on health professionals working as online community moderators who support individuals experiencing suicidal behaviours (suicidal ideation, suicidal behaviours and suicide attempt). It will thus provide a baseline for future research.

- Strengths of this study include the use of an established scoping review methodology, a rigorous search strategy developed in consultation with a specialist research librarian, a systematic study selection carried out by two researchers, and a quality assessment of included literature.
- The scoping review will focus on peer reviewed articles and findings will be limited to articles that are written in English (or translated into English).

INTRODUCTION

Suicidal behaviours are a significant cause of death and disability worldwide, with close to 800,000 people dying by suicide every year.[1] Despite a growing awareness of the need for suicide prevention, suicide remains a serious public health concern.[1] Whilst there are publicly available statistics for completed suicides, the same cannot be said where suicide is attempted but not completed, as many suicide attempts are not reported to health professionals. Despite this lack of data it is estimated the more people attempt suicide than the number of people who complete suicide[1]. For this reason it is estimated that the number people who are impacted by suicidal behaviours is far greater than the 800,000 recorded suicides.[1] Advances in technology have impacted on suicidal behaviours, in that individuals with internet capability can access a range of support and content that can positively and negatively influence suicidal ideation and suicidal behaviours.[2] For example, access to online support forums are likely to help keep individuals safe as they can connect to peer or professional support in times of need, conversely, individuals can also access content that may promote suicidal behaviours.[3]

Online health communities are internet-based platforms that have become increasingly popular due to their ability to facilitate the sharing of information, advice, and support, which can be especially important for individuals who are experiencing suicidal behaviours and therefore may be at risk of serious harm or death.[3] There is a lack of research that specifically

measures the effectiveness of online support health communities. However, the effectiveness and usefulness of these forums for members can be inferred from the growing membership in these forums as well as member retention within these communities[3]

When considering how to intervene and prevent suicide it is important to distinguish between the separate, but interconnected, constructs of suicidal ideation, suicidal behaviours or attempts, and suicide. Suicidal ideation consists of thoughts about how to kill oneself, which can range from fleeting thoughts, to extensive considerations, and detailed plans.[4] Suicidal behaviours and suicide attempts are deliberate and consciously self-destructive where the intent is to kill oneself,[5] and suicide is when intentional death occurs.[1] Most individuals who experience suicidal ideation do not act on the thoughts or carry them through to their conclusion.[2] Therefore, whilst suicidal ideation can place an individual at risk for engaging in suicidal behaviours, suicidal ideation in isolation is not necessarily a high-risk marker for a future suicide attempt.

According to Klonsky and May's[5] Three Step Theory of Suicide (3ST), connectedness plays a critical role in whether an individual moves from ideation toward suicidal behaviours, including a suicide attempt. The first step toward movement begins with psychological or emotional pain and a sense of hopelessness.[5] If an individual who is experiencing suicidal thoughts has hope that their situation may improve, and that the pain can be diminished, the individual is likely to work towards reducing the pain they feel, rather than consider attempting suicide.[5] An individual who experiences psychological pain combined with a sense of hopelessness, is more likely to experience suicidal ideation and be more at risk of moving toward an attempt.[5]

The second step toward a suicide attempt occurs when pain exceeds connectedness.[5] Connectedness refers to the connection with other people, interests, roles, projects, or a sense of meaning that gives one's life purpose. When an individual experiences pain and

hopelessness and considers suicide, they are believed to be experiencing moderate suicidal ideation. This does not mean the individual is moving toward suicide, provided their sense of connectedness remains greater than their pain.[5] However, when their pain overwhelms any sense of connectedness, suicidal ideation is likely to become stronger, and may result in the individual actively considering ending their life, or being on the move toward suicide.[5]

The third step reflects the progression from ideation to attempt and requires individuals to have the capacity to make an attempt on their own life, by overcoming the natural human instinct of fearing death.[5] An individual is more likely to attempt suicide when they have overcome their fear of death, and they experience a sense of pain and hopelessness that overwhelms any sense of connectedness.[5] It is at this point that an individual may move toward an attempt.

Individuals struggling with suicidal ideation and suicidal behaviours are traditionally seen by health professionals working in face-to-face settings. Whilst professionals are well positioned to provide support, barriers such as social stigma[6] and negative perceptions regarding suicide, can prevent individuals from accessing and engaging in support.[5] It is acknowledged that not all individuals who seek in-person support receive it, for reasons such as not meeting set assessment criteria, a shortage of resources, and wait list times. A lack of suitable support services, particularly for those in rural settings, combined with other barriers such as privacy concerns, time requirements, financial costs, distance, and transport required to access support, are further reasons why individuals may not be willing or able to engage with in-person psychological support.[2] For individuals unable or unwilling to engage with face to face support, online health communities offer an easily accessible alternative source of support.[7,8]

Online health communities typically include a large element of peer support, where members use their previous experiences and resulting insights to offer support. Peer support

refers to people's natural tendency to seek support and advice from informal social sources in their immediate environment.[9] A central tenet of peer support is the commonality of experience between the peers engaged in the supportive interactions. Peer support differs from professional support in that the interactions between peers are voluntary, flexible, and informal.[10]

Online health communities can follow different models of support, with one such example being forums that exclusively offer peer interactions without moderation from either peers or professionals. Alternatively, there are forums where peers within the online community fulfil the roles and functions of moderators. In addition, some peer support forums are overseen by professional moderators who either hold formal tertiary level qualifications or have completed in-house moderator training. Professional moderators can undertake administrative functions such as editing content, and guiding members with the features and functions of the forum, as well as providing professional support to members who may be at risk of engaging in suicidal behaviours.[7]

Atanasova *et al*.[7] argue that although online health communities are increasingly becoming the focus of health research, this research has typically focused on forum users and not on forum moderators, whether these are professional or peer moderators. This is despite online health communities providing a new way for health professionals and clients (online community members) to interact with one another.[11] The increasing use of online health communities as a means of gaining professional support[12] makes it crucial for health providers and researchers to gain a better understanding of moderator practices in these spaces.[13] This is due to the traditional face-to-face communication practices of health professionals requiring adaptation in the online environment,[14] as communication in these spaces is asynchronous, and devoid of non-verbal cues such as body language and movement, details of dress, and nuances of the voice. Understanding how health professionals who are

moderators offer support to those experiencing suicidal ideation or engaging in suicidal behaviours (including a suicide attempt) is important, given the 24-hour availability, and relatively instant nature of moderator support, that can reduce risk to life. Furthermore, the ability of moderators to reach and support a larger number of vulnerable individuals, when compared to individual face-to-face health professionals, makes understanding what constitutes effective moderation practices essential in replicating these practices across online communities. Moderator support is also important as it can be the first professional interaction an individual may have with regard to their mental health. This is significant as the quality of the interaction may influence whether an individual then reaches out for support in their immediate setting. Understanding how moderators interpret, make sense of, and then respond to members at risk allows health care professionals to further capitalise on the opportunities for positive and potentially lifesaving support that are offered by online communities.[3]

The findings from this review will provide a synthesis of the research that has focused on professional moderators who work with members experiencing suicidal ideation, suicidal behaviours, or engaging in a suicide attempt. Currently there is no systematic review of the literature regarding professional moderators, and therefore there is no clear understanding of what research has been completed, what research needs to be undertaken, and where the research needs to focus in the future. The finding of this review will offer implications for practice in that it will provide an evidence base on which organisations can train online moderators.

METHODS

This review will follow the six-stage scoping review methodological framework proposed by Arksey and O'Malley[15] which has been further developed by Levac *et al*.[16] The six stages

are: (1) identifying the research question; (2) identifying the relevant literature; (3) study selection; (4) charting the data; (5) collating, summarising, and reporting the data; and (6) consultation with knowledge users of online community forums.

Patient and Public Involvement

Patients and the public were not involved in the writing of this scoping review protocol.

Stage 1: Identifying the research questions

The aim of this scoping review is to identify what is empirically known about health professionals working as online health community moderators. It is intended that the findings from this review will inform further studies into the work of online community moderators, in order to achieve a greater understanding of the challenges and complexities of the role, especially when supporting members experiencing suicidal ideation and behaviours. It is anticipated that the findings of this review may be used to inform and enhance the recruitment and training of online community moderators, which can lead to improved service delivery to members of online forums.

To assist in the creation of the study research questions, the broad Population-Concept-Context (PCC) mnemonic by the Joanna Briggs Institute was adopted as a suitable alternative to the PICO (Population, Comparator and Outcome) mnemonic for systematic reviews.[17]

Population

There is one population associated with this research study; online health forum moderators. In the context of this study a moderator is a qualified health care professional who is employed to oversee the content and interactions of an online health community. This moderator will intervene in the forum and interact with members where necessary to ensure

their safety. As scoping reviews are an iterative process, the definition of professional moderator and what it means to be qualified may become more clearly defined as a result of the search.

Concept

Identifying what is known about health professionals working as moderators in online forums where members freely post about suicidal ideation, suicidal behaviours, self-harm, and NSSI (non-suicidal self-injury).

Context

No geographical limitations will be placed on the literature. This is due to suicide and associated behaviours being a global health issue. Furthermore, while the head office of a community forum may be physically located in one country, it is not uncommon for membership access to be available to individuals in other countries, thus making some online community forums international support providers.

To meet these aims the review will be guided by the following questions:

(1) What do we know from the existing literature about online mental health moderators who work with suicidal community members?

(2) What methodologies have been used to gain this knowledge?

(3) What are the limitations of the research?

(4) What are the research gaps?

Stage 2: Identifying relevant studies

The search strategy was iteratively developed in consultation with a specialist research librarian at the University where the researchers are employed. To ensure a comprehensive search of the health sciences literature the following electronic databases will be searched:

- CINAHL with full text, PsycINFO, PsycArticles, Psychology and Behavioral Sciences Collection, Academic Search Ultimate, Health Source: Nursing/Academic Edition and Sociology Source Ultimate. All of these are located within EBSCOhost.
- ScienceDirect.
- Medline.
- SAGE Journals.
- Taylor and Francis Online.

The search strategy will include subject headings, keywords and related terms for the concepts of suicide (including suicidal ideation, suicidal behaviours, and suicide attempts), moderator or facilitator, online community, online health forum or online forum. The search terms for suicidal ideation, behaviours and attempt include 'suicide, 'self-harm' and non-suicidal self-injury (NSSI). Self-harm and NSSI will be included in the search terms as often the behaviours associated with self-harm and NSSI are classified as suicidal ideation and behaviours, or the deliberate desire to end one's life. For this reason the inclusion of the terms self-harm and NSSI will ensure adequate coverage of the literature. In the pilot testing of the search strategy it was determined that the term 'suicd*' would capture all suicide-related literature, including articles that discuss suicidal ideation, suicidal behaviours, and suicide attempts. A detailed search strategy can be found in Table 1.

The search will be limited to English articles or those translated into English. A date restriction will be articles published from 1990 to the day of the search. The initial search results will be collated in the reference management program EndNote (Version 9), where duplicates will be removed at the first stage of review. The search will be independently undertaken by two reviewers, who will seek to resolve discrepancies collaboratively. Where this is not possible, a third reviewer will adjudicate to ensure agreement is achieved.

Table 1 Search strings and limiters for each of the selected databases

Database	Search Strings	Limiters
CINAHL with full text, PsycINFO, PsycArticles, Psychology and Behavioral Sciences Collection, Academic Search Ultimate, Health Source: Nursing/Academic Edition and Sociology Source Ultimate	("online community" OR "online health community" OR "online forum") AND moderator OR facilitator AND suicid* OR self harm OR NSSI	Timeframe: From 1990 Language: English
ScienceDirect	("online community" OR "online health community" OR "online forum") AND (moderator OR facilitator) AND ("suicidal ideation" OR suicide OR "self harm" OR NSSI)	Timeframe: From 1990 Language: English
Medline (Web of Science)	("online community" OR "online health community" OR "online forum") AND moderator AND suicid* OR "self harm"OR NSSI	Timeframe: From 1990 Language: English
SAGE Journals	"online community" OR "online health	Timeframe: From

	community" OR "online forum" AND moderator OR facilitator AND suicid* OR "self harm" OR NSSI	1990 Language: English
Taylor and Frances Online	"online community" OR "online health community" OR "online forum"~4 AND moderator OR facilitator AND suicid* OR "self harm" OR NSSI	Timeframe: From 1990 Language: English

Stage 3: Study Selection

All articles will be independently screened for eligibility, beginning with a title and abstract review, followed by a full-text review. The reference lists of the articles selected for inclusion at the full-text review stage will also be searched to identify any further potential sources. The two reviewers who will undertake the initial literature search will also complete the two subsequent levels of screening.

In order to be included in the review studies must meet the following criteria:

(1) published from 1990 when computer-mediated support first appears in the literature,

(2) peer-reviewed to ensure only credible and high-quality studies are included,

(3) written in or translated into English (due to a lack of resources for translating articles), with articles that are not written or translated into English excluded at the beginning,

(4) focused on online health forums where members can post freely about suicidal ideation, suicidal behaviours, previous suicide attempts, self-harm, or NSSI.

(5) participants included in the studies must be qualified health care professionals who work as moderators. The qualifications of the professionals would be indicated in the article by

listing the professions of the moderators or stating that they are qualified. The definition of qualified health care professional is very broad and will include any qualified individual, including professions such as counselling, psychology, social work, and mental health nursing.

Exclusion criteria include studies focused on peer or volunteer moderators. It is possible that a professional moderator may hold a dual identity as a professional moderator and a peer, in that they are qualified professionals who have similar personal experiences or mental health concerns as the members of the community that they are overseeing. In instances where a professional moderator also identifies as a peer, their formal and professional role as a moderator will be prioritised over the peer identity.

At the end of each review round, the articles selected for review will be compared by the reviewers. Any discrepancies will be resolved by the two reviewers, or by a third reviewer if consensus cannot be not achieved.

Stage 4: Data extraction or 'charting the data'

The data extraction framework presented in Figure 1 will be developed by the research team to confirm study relevance and to extract study characteristics. The extracted data will include bibliographic information (such as author, year, and location) and study characteristics (aim, design, methodology, participant characteristics, online community description, outcome measures, key findings, conclusions, and quality). This form will be reviewed by the research team and pretested before use to ensure that the required information is being captured. As recommended by Levac *et al*,[16] the data extraction form will be continually refined in accordance with the nature and extent of the data, as the reviewers become more familiar with the data during the data collection process. Consultation on any proposed changes to the extraction form will occur between the two

reviewers undertaking the data extraction, with all changes requiring consensus. The data extraction process will be audited for quality and accuracy by sending a random selection (20% of the final article number) of extraction article information to an independent reviewer. Any identified issues will be resolved by consensus and a third reviewer will adjudicate if consensus cannot be reached. The process of extraction and sorting will occur in Microsoft Excel, using the data items in the data extraction framework (see Figure 1). This will allow for comparison of key items across studies.

As scoping reviews aim to map the existing literature and not to produce a critically synthesised answer to a particular question, a risk of bias assessment is not required for this study.[18] Assessments of research quality are not typically required by scoping reviews, however, as this scoping review seeks to identify the limitations within the existing moderator literature, an assessment of the quality of the included articles will be performed.[15] The first author will independently assess the quality of the included articles. The quality assessment process will be audited for accuracy by sending a random selection (20% of the final article number) of article quality assessment information to an independent reviewer. Any issues that arise will be resolved by consensus and where consensus cannot be achieved, a third reviewer will adjudicate to ensure agreement is achieved. The JBI Appraisal Checklist for Systematic Reviews and Research Syntheses[19] will be adapted and used for the quality assessment process. The appraisal checklist provides reviewers with a process of critique or appraisal of the research evidence, through the assessment of the methodological quality of a study. When appraising a study reviewers are looking to assess how the possibility of bias has been addressed.[19] Some examples of the criteria that are used to assess the quality of a study include whether the review question is clearly and explicitly stated and if the inclusion criteria were appropriate for the review question.[19] Studies that meet more than 80% of the critical appraisal criteria will be judged to have good

methodological quality. Studies that are assessed to have between 50% and 80% of the critical appraisal criteria will be deemed to have moderate methodological quality, and studies achieving less than 50% of the critical appraisal criteria will be judged to have poor methodological quality. Results of the quality assessment undertaken for each included article will be recorded in the data extraction form. It is important to note that unlike systematic literature reviews, studies will not be excluded from this review due to quality assessment outcomes.

Stage 5: Collating, summarising and reporting the results

The PRISMA-SCR[20] checklist for reporting scoping reviews will be used to guide the reporting of the results of this review. It is proposed that the review will combine quantitative and qualitative syntheses to provide an overview of the findings. In order to provide an overview of the breadth of the literature a PRISMA flow chart, presented in Figure 2, will be used to report the number of articles present at each stage. A tabular synthesis of the study methodologies, distribution of the studies (geographically), type of online community forums, and the characterises of moderators will also be included. A qualitative narrative synthesis will be included and will discuss the limitations of the reviewed studies and identified research gaps.

Stage 6: Consultation

Arksey and O'Malley[15] suggest that the consultation stage is optional, however Levac *et al*,[16] posit that this stage is imperative to ensuring the methodological rigour of scoping reviews. As part of the consultation process, stakeholders who are subject matter experts will be given the opportunity to become involved in this research by reviewing the preliminary findings, in order to offer their expert perspectives on the findings, make suggestions, and offer higher level meanings. For the purpose of this review the stakeholders selected for consultation will be the Service Managers of three separate online health community forums.

The stakeholders will be contacted via email and invited to review the preliminary findings and share their feedback either via email, or a video conferencing meeting. The research questions and outcome measures were informed by the experiences of the first author who is an online community moderator.

LIMITATIONS OF THE PROPOSED REVIEW

Whilst the search terms and the included databases have been developed to capture all relevant studies, it is noted that the lack of systematic reviews on this topic indicates that there are limited studies that have focused on the substantive area. It is possible that this scoping review may be limited by the small number of studies that are identified and included. This limitation may be mitigated in part by the flexibility of the scoping review design itself. Scoping reviews can be utilised with a range of data pool sizes and have been proposed as an appropriate design when there is limited data on a topic.[15] Some literature may also be missed by excluding studies that have not been peer reviewed.

ETHICS AND DISSEMINATION

To our knowledge, this is the first scoping review to synthesise what is known about health professionals working as online community moderators, in the context of supporting members who are experiencing suicidal ideation and behaviours. This review will identify gaps in the knowledge and research, while also helping to inform best practice and contribute to the advancement of research and practice on this subject. This scoping review was exempt from ethics review as no data is being collected from human participants (see page 7 and sections 5.1.22 and 5.1.23 of the Australian National Statement on Ethical Conduct in Human Research). The results of the scoping review may be published in a peer-reviewed

journal, a thesis, presented at relevant conferences, and shared with relevant knowledge users.

Contributorship statement

The design and development of this study was led by AP, who also drafted the protocol. ALM, CdP, JdP, and DP provided guidance to the study conceptualisation and protocol development. All authors have revised all drafts of this manuscript and give approval for the publishing of this protocol manuscript.

Competing interests

None declared

Funding

The primary author is the recipient of the University of Southern Queensland Research Training Program Stipend Scholarship.

Data sharing statement

Not applicable

Transparency statement

The lead author AP affirms that the manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as originally planned have been explained.

Acknowledgements

The authors gratefully acknowledge the helpful comments of the peer reviewers.

Figure legend/caption

Figure 1: Data Extraction Framework

Figure 2: PRISMA Flow Chart

Table 1: Search strings and limiters for each of the selected databases

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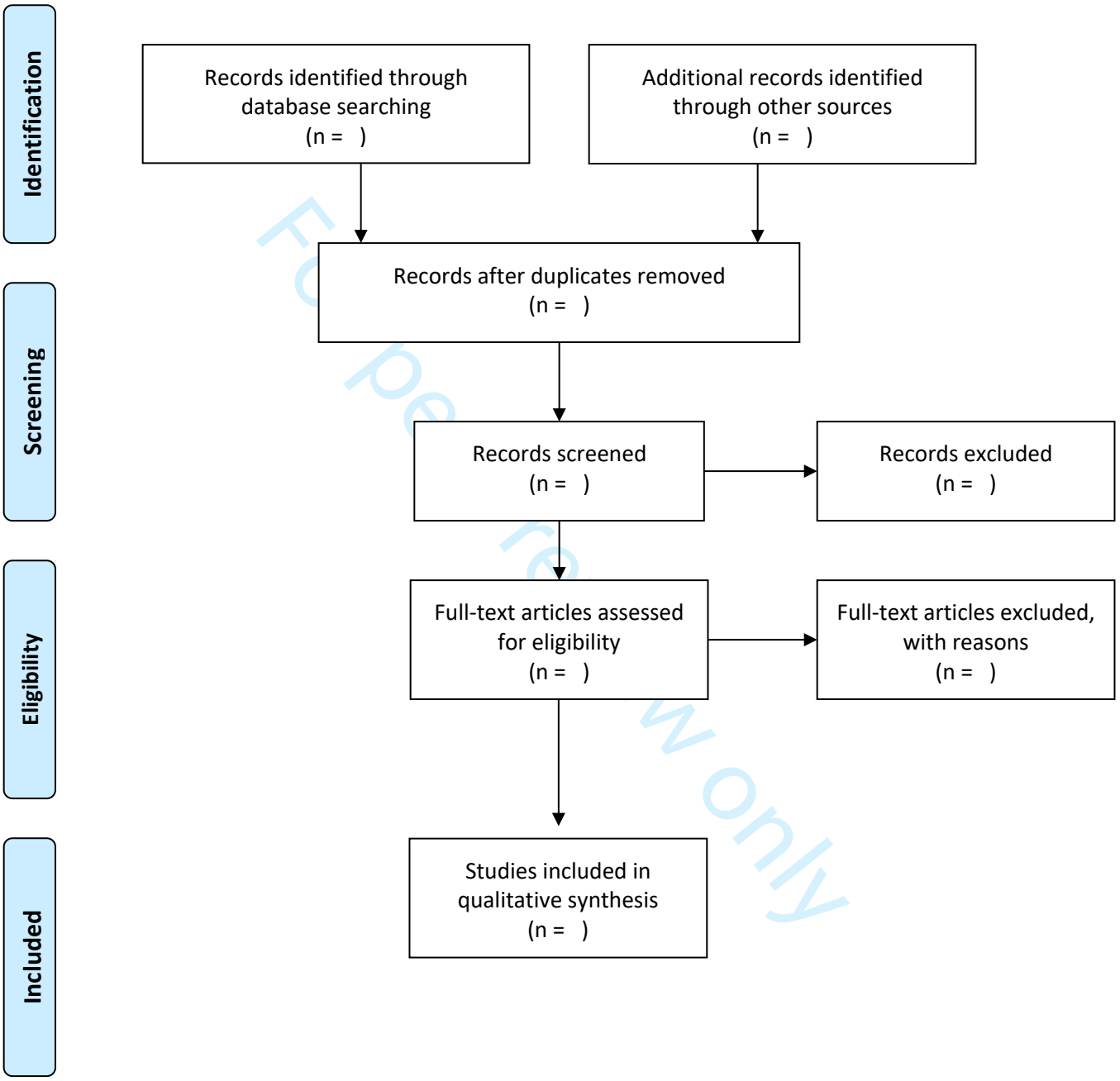
Word count: 3,621

Figure 1

Figure 1 Data Extraction Framework
Scoping Review Details
Scoping Review title:
Review objective/s:
Review question/s:
Inclusion/Exclusion Criteria
Population
Concept
Context
Types of Study
Study Details and Characteristics
Study citation details (e.g. author/s, date, title, journal, volume, issue, pages)
Country
Context
Participants (details e.g. age/sex and number)
Details/Results extracted from study (in relation to the concept of the scoping review)
Quality Assessment Comments

Adapted from: Joanna Briggs Institute. Joanna Briggs Institute Reviewer's Manual. [Internet]. https://wiki.joannabriggs.org/display/MANUAL/11.3.7.3+Data+extraction. Date accessed July 1, 2019

Figure 2 PRISMA Flow Chart



Adapted from: Moher D, Liberati A, Tetzlaff J, et al. Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 2009;6(7):e1000097. https://doi.org/10.1371/journal.pmed.1000100.

Reporting checklist for protocol of a systematic review.

Based on the PRISMA-P guidelines.

Instructions to authors

Complete this checklist by entering the page numbers from your manuscript where readers will find each of the items listed below.

Your article may not currently address all the items on the checklist. Please modify your text to include the missing information. If you are certain that an item does not apply, please write "n/a" and provide a short explanation.

Upload your completed checklist as an extra file when you submit to a journal.

In your methods section, say that you used the PRISMA-Preporting guidelines, and cite them as:

Moher D, Shamseer L, Clarke M, Ghersi D, Liberati A, Petticrew M, Shekelle P, Stewart LA. Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P) 2015 statement. Syst Rev. 2015;4(1):1.

		Reporting Item	Page Number
Title			
Identification	#1a	Identify the report as a protocol of a systematic review	1
Update	#1b	If the protocol is for an update of a previous systematic review, identify as such	n/a
Registration			
	#2	If registered, provide the name of the registry (such as PROSPERO) and registration number	n/a
Authors			
Contact	#3a	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author	1
Contribution	#3b	Describe contributions of protocol authors and identify the guarantor of the review	16
Amendments			

	#4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	n/a
Support			
Sources	#5a	Indicate sources of financial or other support for the review	16
Sponsor	#5b	Provide name for the review funder and / or sponsor	n/a
Role of sponsor or funder	#5c	Describe roles of funder(s), sponsor(s), and / or institution(s), if any, in developing the protocol	n/a
Introduction			
Rationale	#6	Describe the rationale for the review in the context of what is already known	3
Objectives	#7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	7
Methods			
Eligibility criteria	#8	Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review	11
Information sources	#9	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage	8
Search strategy	#10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	9
Study records - data management	#11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	12
Study records - selection process	#11b	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)	10
Study records - data collection process	#11c	Describe planned method of extracting data from reports (such as piloting forms, done independently, in duplicate), any processes for	12

		obtaining and confirming data from investigators	
Data items	#12	List and define all variables for which data will be sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications	8
Outcomes and prioritization	#13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	7
Risk of bias in individual studies	#14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	n/a
Data synthesis	#15a	Describe criteria under which study data will be quantitatively synthesised	13
Data synthesis	#15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data and methods of combining data from studies, including any planned exploration of consistency (such as I2, Kendall's τ)	13
Data synthesis	#15c	Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression)	n/a
Data synthesis	#15d	If quantitative synthesis is not appropriate, describe the type of summary planned	13
Meta-bias(es)	#16	Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies)	n/a
Confidence in cumulative evidence	#17	Describe how the strength of the body of evidence will be assessed (such as GRADE)	n/a