

Identification of Research Priorities For Suicide Prevention In Nepal: A Delphi Study

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Abstract

Background: Suicide is a significant public health concern in Nepal and there is a need for an evidence-based suicide prevention programme to facilitate stakeholders working towards suicide prevention in Nepal. Collaborative research between stakeholders focussing on shared priorities can help to prevent and control suicide. Hence, we aimed to develop a consensus list of research priorities for suicide prevention in Nepal.

Methods: The Delphi expert consensus method was used to elicit the prioritized research questions for suicide prevention in Nepal. Participants comprised suicide prevention experts (psychologists, psychiatrists, psychiatric nurses, researchers and advocates) and people with lived experience. Three rounds of Delphi were conducted; round 1: constituted one to one interview involving open-ended questions used to generate research questions; round 2: ranking of the research questions using a 5-point Likert scale, and round 3: re-ranking of research questions in light of individual and group responses.

Results: 42 participants participated in round 1 followed by 38 in round 2 and 39 in round 3. 522 research questions were generated through round 1 which were grouped together and reduced to 33 research questions sent for ranking in round 2. Using a cut off of at least 70% of the panel ranking questions as 'very important' or 'important', 22 questions were retained. These research questions were sent for re-rating in round 3 generating a final list of prioritized research questions.

Conclusions: This is the first expert consensus study to identify the top research priorities for suicide prevention in Nepal and used experts in suicide prevention and those with lived experience. A consensus was reached regarding the research needed to improve suicide data quality, assess the burden and identify factors associated with suicide. A priority-driven approach to suicide prevention research may ensure that the research endeavour provides the most useful information for those whose day-t- day work involves trying to prevent suicide.

Introduction

Suicide is a global health challenge claiming the lives of almost 800,000 people every year, equivalent to a person dying every 40 second due to suicide [1]. Ranked as a fourth leading cause of mortality among 15–29-year-olds, 77% of the burden of suicide occurs in low- and middle-income countries (LMICs) [2]. Consisting of 11 LMICs, the World Health Organisation South- East Asia region has suicide rates that are higher than the global average (10.2 per 100,000 compared with 9.0 per 100,000) [2]. Yet, data on suicide and prevention strategies for suicide are scarce in LMICs [3]. Social stigma and taboos, religious and cultural issues, inadequate reporting systems, scarce resources to assist suicidal people in LMICs all contribute to the substantial public health challenge currently posed by suicide in these settings [4].

Nepal, like many LMICs, lacks reliable data on suicide and attempted suicide, instead relying on extrapolations from police reports [5]. Estimated suicide rates in Nepal vary widely; a 2014 scoping review projected a suicide rate of 8.6 per 100,000 population, WHO modelled age-standardized suicide rates

shows downward trend rates; 24.9 per 100,000 [6] in 2014, 9.8 per 100,000 in 2019[7]. In contrast, a five-year study of Nepal police records of suicidal deaths between 2015 and 2019 showed an increase of 33% in suicidal deaths over five years [8]. Self-harm and assault accounted for 44 of the 67 total injury deaths in two wards in Makwanpur, Nepal according to a recent community-based study [9], although a study using global burden of disease estimates demonstrated that only a small proportion (1.6%) of deaths were intentional [10].

Studies estimating the burden of suicide often comprise small hospital-based case series, using data from post-mortem reports of suicide cases [11] with limited knowledge of risk factors [5] indicating the limited scale of suicide research in Nepal [12]. Reasons for the lack of research may include the multifactorial nature of suicide [13], the sensitive nature of the topic, the associated stigma and legal implications [14] and the lack of consensus about where research efforts should be focussed [15]. Mental health experts and non-governmental organizations (NGOs) have spearheaded some suicide prevention programs, such as mental health training for primary health care workers based on the Mental Health Gap action programme, and the initiation of 24-hour suicide hotline support services [5] but all these are at the inception stage. Despite the fact that suicide is a serious public health concern in Nepal, the country lacks a national suicide prevention strategy [16]. In view of the escalating challenge of suicide in Nepal, it is imperative to identify and understand stakeholder perspectives and to identify research priorities areas in order to inform policy and practice in relation to suicide prevention [15].

Health research priority setting exercises are intended to assist researchers, funders and policy makers in effectively identifying research with the greatest potential for public health benefit [17]. Suicide prevention strategies developed with a 'one-size-fits-all' approach have been found to have limited effectiveness [18] and identifying the areas of most need and gaps will safeguard against duplicate implementation and determine immediate and feasible actions [19]. For greater relevance, a priority setting exercise designed to capture a broad range of views is essential. The Delphi methodology has been widely used to achieve group consensus through a series of "rounds" gathering information from a number of stakeholders. This approach has been successfully used for identifying mental health priorities [20, 21]; but seldom for establishing suicide prevention research priorities [15]. Coordinated efforts between experts of various sectors are needed to initiate a national suicide prevention program in Nepal comprising of designing, implementing and testing of economically feasible, evidence based and socio-culturally appropriate suicide prevention strategies [22]. With the aim of underpinning and informing this process with appropriate research, this study used a Delphi approach to identify and prioritise a research agenda relevant to suicide prevention in Nepal.

Methods

Aim

This study aimed to establish a consensus in relation to priority areas for research to facilitate suicide prevention in Nepal, using experts in the field as well as those with lived experience.

Design

The Delphi method is a multistage iterative process for reaching consensus among a defined group of individuals [21]. Studies have found this technique to be effective when evidence about a phenomenon is known to be limited or incomplete [23]. The Delphi method is based on the premise that the opinions of a group of individuals outweigh those of any individual, and so any agreement reached may be regarded a valid expert opinion [16]. The method consists of a structured process involving a series of 'Rounds' where the participants generate, prioritise and re-prioritise potential research areas using feedback from previous rounds. Responses to each round are analysed to produce a final consensus list [16]. Although up to six rounds of Delphi have been known, it is becoming frequently more common for two to three rounds to be the maximum application, depending on the individual study [24]. This study employed a three-round Delphi method, comprising an initial round to generate a 'long list' of topics, a ranking evaluation in the second round, and a re-ranking in the third round.

Participants

There are no universally agreed criteria for the selection of experts for a Delphi study [25]. However, when setting research priorities for health conditions, there is a recognised need to include clinicians, researchers, patients and significant others who have experienced the condition of interest. The inclusion of such a diverse group of stakeholder promotes wide-ranging ownership of the research priorities [26]. Hence, this study recruited participants into four panels: academic researchers, practice-based experts, patients and advocates. Purposive and snowball sampling were used to recruit the participants. Including the participants with knowledge and interest in the topic helped to ensure content validity of the study [27]. The detailed eligibility criteria for the participants are given below (Table 1).

Table 1
Eligibility Criteria for the participants

Participant group	Eligibility to be a participant
Academic researchers	Lead author or co-author in at least one article related to suicide and suicide prevention in Nepal published after 2010, living in Nepal or outside Nepal
Practice based experts (psychiatrists, psychiatric nurses or psychologists)	At least 6 months experience in field relevant to suicide prevention in Nepal and are currently living in Nepal
Patient experts (Survivors of suicide attempts, their care givers or family members)	People living in Nepal who had attempted suicide, at least 6 months previously, were under follow up by the psychiatric department of Kathmandu Medical College and were considered clinically stable, or, their care givers or family members
Advocates	At least 6 months experience in working in non-governmental or governmental organization for suicide prevention in Nepal and are currently living in Nepal

Recruitment Process

We identified potential participants through the following routes. For academic scholars, the corresponding authors of scientific publications reporting suicide in Nepal since 2010 were identified. Practice based experts included psychiatrists, psychologists, and psychiatric nurses who were approached after contacting the Departments of Psychiatry of several medical institutions. Information about the study was provided to potential participants, who were also invited to ask questions. Practice based experts who agreed to take part in the study was asked if any of their colleagues and peers should also be invited to participate (i.e., snowball-sampling). To identify advocates, we approached organizations working towards suicide prevention. Interested participants were asked about other similar organizations working in Nepal. To recruit patient experts and their families to the study, we worked closely with the psychiatric department of Kathmandu Medical College (KMC) to identify and approach patients who have previously attempted suicide and were currently attending the out-patient department. Only patients who were deemed clinically stable and potentially suitable for inclusion in the research by the clinical team were approached. Only patients and their families who had attempted suicide at least 6 months prior were contacted to reduce the risk of distress.

For patients and family members, face to face meetings were set up after the patient's scheduled follow up in the out-patient department of KMC. There, letters of invitation along with an information sheet were provided. The information sheet informed the potential participants of the purpose of the study, likely number of rounds, confirmation that participation was voluntary in addition to providing assurances of confidentiality and the opportunity to withdraw at any time. A convenient time and date for the Round 1 interview was scheduled for patients and family members who wished to take part in the study. Potential participants from other expert groups were contacted in accordance with their own preferences. An invitation to participate and additional information about the study were communicated either by phone or online. Potential participants who did not respond and those who declined to participate took no further part in the study. Before commencing with Round 1 interview written consent was obtained from participants, joining face to face, and verbal consent taken from those participating by phone or online.

Data Collection and Analysis

Round 1

In round 1 of the study, the participants were given a choice about how they wanted to participate (face to face, online or telephone interview). During each interview, a researcher (EJ) read out the questionnaire and the participants' responses were audio recorded with permission (Annex 1: Questionnaire). Open ended questions were used to encourage participants to express their views on topics, themes or questions they believed to be priorities for research based on their experience and knowledge [28]. The interviews lasted 15-30 minutes and data collection for all rounds took place between December 2020 and February 2021. Demographic data on age, gender and years of experience in the field were collated for all the participants. All interviews were conducted solely by an experienced qualitative researcher.

Professional participants and advocates were asked about their views on the status of suicide and its risk factors in Nepal, together with aspects of suicide prevention that were working well or were less effective. Participants were asked whether there was any more evidence required to better understand suicide prevention and to articulate up to 10 areas of further enquiry that would help improve suicide prevention. Patients and family members were asked for their views about what could be done by doctors, researchers and at individual, community, or national level to reduce or prevent suicide. To limit the risk of distress in patients, questions were limited to a focus on how best to support people who are considering harming themselves. At no stage were patients asked about their own suicide attempt or the contributory factors. Suicide attempted survivors, or their family members' interviews, were conducted in the hospital out-patients' department where clinical support was readily available if required. We had a distress protocol in place, albeit it was not required in our study, in which the interview would be paused if someone became distressed during the interview. Then patient participants or their carers would be offered the choice of either continuing with the conversation, stopping and resuming at another time, or pausing and opting out of the study. To avoid the transmission of Covid-19, safety precautions were taken during face-to-face contacts; arranging to meet outside or in a well-ventilated room, social distancing, no physical contact, wearing of masks and regular handwashing.

One qualitative researcher (EJ) with experience in data collection, transcription and translation listened to the audio recordings several times, noting all mentions of research priorities and gaps in the current evidence-base on a MS Excel spreadsheet. In order to ensure reliable data analysis, two other researchers (SB and JM) examined data extraction and research questions of early interviews and provided input, after which a 'long list' of research questions was produced. For the process of reducing the long list to shorter list of research questions, the research team worked together to group similar responses together, eliminate duplication and synthesized a single research question representing the focus of each group.

Round 2

Round 2 data collection was conducted online rather than face to face due to the Covid-19 pandemic. All the participants who completed Round 1 were invited to complete subsequent rounds. In Round 2, participants were asked to rate each item on the list generated from Round 1, on a scale of 1 to 5. The response choices for each question were: Very low/no importance (1), low importance (2), Moderate importance (3), Important (4), Very important (5). For academics, practice-based experts and advocates, this process was completed via an online survey using Qualtrics software. Each participant received a link to the research questions by email, together with an explanation of the process so far and instructions on how to complete the survey online. Participants were asked to complete the survey within two weeks. A reminder email and a phone follow-up were put in place after one week if no response had been received. The rating exercise for patient / caregiver participants was conducted via telephone with the researcher entering the participant responses into the Qualtrics survey.

The data generated from Qualtrics was exported into a MS Excel sheet for data analysis. Questions that received 70% or more of the participants' votes as either 'important' or 'very important' were identified for

Round 3. Although a universally agreed proportion does not exist for the Delphi [16], a cut off of 70% agreement has been used in several other Delphi studies [29–31].

Round 3

Round 3 data collection was also conducted online. In this final Round, participants were asked to participate in a Qualtrics survey online to re-rank the reduced list of prioritized research resulting from Round 2. Each participant was sent a summary of the results of the previous round, listing research questions that had reached the threshold for retention, along with their individual responses and a summary of group responses from Round 2. All participants were informed that they could change the rankings they gave in the previous round when re-rating each research question in Round 3. This informs the group members of the current status of their collective opinion and helps them to consider items that participants may have previously missed or thought unimportant [16]. This helped to increase concurrent validity while completing successive rounds of the questionnaire [16]. Once the surveys were completed, summary ranks for each question were determined on the basis of the numbers of participants rating each question as 'important' or 'very important'.

Ethical Considerations

This study including the consent protocol was approved by Nepal Health Research Council (Reference number: 698/1342) and ratified by the Research Ethics Committee of the Faculty of Health and Applied Sciences at the University of the West of England, Bristol (Reference number: HAS.20.12.058). The study was performed in accordance with the Declaration of Helsinki.

Results

Expert panel information

Out of 50 invited experts, 42 participants completed Round 1 (response percentage 84.0%). Out of 42 participants, 38 of them participated in Round 2 (retention rate=90.4%) while 39 participants completed round 3 with higher retention rate (92.8%). The sociodemographic characteristics of all the participants are shown in Table2. The participants were aged 22-62 years (Mean± SD= 39.4±7.8, median= 38). There were eight psychiatrists, five psychologists, four psychiatric nurses, eleven researchers, seven advocates and seven patients or their family members. Almost all the participants were from Nepal (n=41), one academic researcher lived in United States. The participants had 1-33 years of experience in working in suicide prevention in Nepal.

Table 2
 Characteristics of participants (n=42)

Item	Category	N	%
Gender	Men	30	71.4
	Women	12	28.6
Age	Range	22-62	
	Mean± SD	39.4±7.8	
Area of expertise	Psychiatrists	8	19
	Psychologists	5	12
	Psychiatric nurses	4	9.5
	Researchers	11	26.1
	Advocates	7	16.7
	Suicide attempt survivors/family members	7	16.7

Research Questions

The 42 one-to-one interviews generated a 'long-list' of 522 research questions at the end of Round 1. In order to achieve a manageable number of items for Round 2 [32], 52 research questions not answerable through research were removed, 215 duplicate research statements removed and the remaining 255 research questions were then grouped together based on their similarity. For each cluster of remaining topics, a representative research question was agreed by the research team, reducing the list to 33 research questions at the end of Round 1. This process involved all members of the research team. These questions were sent to the participants for ranking in Round 2. At the cut-off point of 70%, 22 research questions were ranked by the participants as either 'important' or 'very important'. These remaining research questions were sent to the participants for re-ranking in Round 3, together with information about their responses in Round 2. Figure 1 shows the Delphi process. The final list of research questions after ranking in round 3 is shown in Table 3.

Table 3
Research questions rated as 'important' and 'very important'

Questions	Percentage of participants rating the question 'important' or 'very important' (%)
How can we improve the current underreporting of suicide data in Nepal?	97%
What is the magnitude of the problem (completed suicides and attempted suicides) by geography, age, gender, and caste?	95%
What are the underlying risk and protective factors (social, cultural, and economic) that contribute to suicide?	95%
What are the enabling and impeding factors influencing the help-seeking behaviour of people experiencing suicidal thoughts?	95%
What is the status and need for resources (human, equipment, and funding) at health facilities, police stations, and hotlines to manage patients who have suicidal ideation or have attempted suicide?	95%
What kind of activities should be planned for suicide prevention in Nepal at the various levels of government (Federal system)?	95%
Which groups of people are more vulnerable to committing suicide in Nepal?	92%
How can suicidal screening be strengthened in primary care settings, what tools should be used, and who should be screened?	92%
What are the needs of families and carers who are trying to support someone who is at risk of suicide or committed suicide?	90%
What is the status of psychiatric services (assessment, referral) in district hospitals for suicide attempt patients and what proportion of suicide attempt patients receive psychiatric services?	90%
How can suicide attempt survivors and their family members be supported to advocate to reduce suicidal attempts and to improve awareness?	90%
What are the pathways to care among people who have attempted suicide?	87%
What kind of suicide prevention programme needs to be implemented for adolescents and children?	87%
What are the effective suicide prevention interventions in low- and middle-income countries (systematic review)?	85%
What are the support needs of suicide attempt survivors and their family members? (For example, safe space for disclosure, psychological support etc)	85%

Questions	Percentage of participants rating the question 'important' or 'very important' (%)
What are the community's (adolescents', parents') and stakeholders' (police, health workers, key government officials') perceptions and attitudes toward suicide and those who commit suicide?	82%
What are the lived experiences and mental health needs of suicide attempt survivors?	82%
How do we improve compliance and engagement in healthcare follow up among people who have attempted suicide?	82%
What should be included in a culturally appropriate community intervention to prevent suicide, and how should it be implemented?	82%
What is the status of pesticide sales and purchase monitoring in Nepal, and how can it help prevent suicide?	82%
What are the outcomes and rehabilitation need of people who have tried to commit suicide?	77%
How can telepsychiatry be used to help people having suicidal ideation?	62%

Discussion

This study is the first to assess perceptions of stakeholders on the research priorities needed to inform and support suicide prevention in Nepal. This study has highlighted that research in this field is at a very early stage and hence, baseline studies to measure ways to improve the quality of suicide data, assess the burden of suicide, factors associated with it, status of suicide response system and support needs of patients and their family members are deemed necessary.

The development of a comprehensive patient data collection system, such as real-time surveillance, death record linkage, and patient registries is proposed as the first step in this process, which have the potential to facilitate later steps in a research infrastructure designed to test various interventions efficiently [33]. In Nepal, as well as many South Asian countries, there is a lack of a comprehensive vital registration system [34]. National level suicide data are not systematically collected, and suicide mortality data are not reported by the WHO, but rather, are estimated [2, 22, 35, 36]. As suicide data are 'owned' by the police force in Nepal, there will need to be coordination and communication between the law enforcement and health systems in order to produce accurate estimates of suicide data [35]. Study participants were clear that putting robust systems in place to capture quality data is the fundamental challenge which needs to be addressed in Nepal. Future studies can focus on projects such as developing and piloting comprehensive surveillance systems for recording suicide and attempted suicides, and utilizing data from community surveillance systems, hospital and police records.

In the absence of accurate data on suicide in Nepal, our study experts expressed the need for a high quality nationally representative research programme on suicide and its causes. This resonates with studies from more developed countries that have called for studies of suicide prevention intervention in large samples, marginal groups and outpatients as research priorities to enhance patient safety [37]. In an Australian study reporting stakeholder's views on future suicide prevention research, expert participants ranked evaluation studies assessing the efficacy of interventions, policies and programs most highly, followed by epidemiological studies of suicidal individual risk and protective factors [38]. In the current study, participants ranked the relative importance of research assessing risk factors (such as, previous suicidal attempt, family history of suicide etc.,) and protective factors (such as people's capacity for resilience, hope and optimism) for suicide third on the final priority list. This implies that stakeholders in Nepal believed that knowing the national representative estimates of suicide rates in various groups and factors associated with it was an essential pre-requisite to developing and evaluating the most effective interventions.

A significant proportion of people who complete, attempt or consider suicide do not seek help from family members and health care facilities [38]. There may be many reasons for this, including beliefs about ineffective care, shame felt by the suicidal individuals and their family members [39] and stigma against suicide and mental health issues appear to prevent people from using the limited resources available [5]. Studies have suggested that research is needed to clarify age and gender differences and the cultural and familial context of suicide bereavement, together with help seeking behaviours [40]. Consistent with these findings, participants in our study emphasised exploring the barriers and enablers for help seeking among people considering suicide and their family members. Evidence on factors contributing to help seeking among these vulnerable group will guide the development of suicide prevention programs.

Examining the responses of the health and community service systems is an essential element of suicide prevention, as an ill-equipped health system will be unable to assess and manage people with suicidal thoughts or behaviours effectively [38]. Several components of healthcare provision such as trained human resource, timely referral, universal screening of suicidal individual etc., have been found to be associated with reduced suicide ideation and to mitigate suicide deaths [33]. Despite the Ministry of Health in Nepal having had a mental health policy since 1997, including a vision to integrate mental health services into general health services and a Multisectoral Action Plan for the Prevention of Non-Communicable Diseases (2014-2020) that included mental health, progress has been slow. The mental health Gap Action Programme (mhGAP), promoting community-based mental health programmes, has been shown to reduce suicidal tendencies and encouraged establishment of suicide hotlines in limited parts of the country [5, 22]. However, the wider impact of this programme is yet to be determined [5]. Thus, studies assessing the status of such interventions and identification of the need for additional resources (human, equipment, and funding) at health facilities and police stations, appear warranted.

Those bereaved by suicide, whether family members or friends and colleagues, may experience a lasting impact of loss on their social life and on their physical and mental health [41]. Published literature highlights significant areas of need regarding interventions to be conducted after a suicide, including; a)

what interventions work (for groups, individuals, online, outreach, etc.), b) for whom should they be developed (e.g. children, adolescents, older adults, workplace, prison, and other populations), and c) what outcomes should be measured (e.g., stigma, mental health, suicidality etc.) [40]. These recommendations were consistent with the findings of this study, with participants endorsing the need for research questions assessing the support needs of family members and ways to promote the implementations of appropriate interventions.

Limitations and strengths

To the best of our knowledge, this is the first Delphi study to collate research priorities for suicide prevention in Nepal. A key strength is that we included a wide range of stakeholders with different perspectives, including those with subjective expertise (patients and family members) and professional expertise (researchers, clinicians, advocates). This is in line with literature proposing that better quality and more broadly generalisable decisions are achieved through the process of achieving consensus in heterogenous group [21]. Validity is also affected by the response rate [16] and retention rate, which in this study were very high. Employing face to face interviews where possible [16] and a quick turnaround time between questionnaires might have helped reduce attrition.

Limitations of the study include that expert who took part were not asked about their awareness of existing research in the area. Therefore, experts, particularly service users could have recommended research that had already been covered. Due to the Covid-19 pandemic, rounds 2 and 3 were conducted online rather than through group discussions which may have been preferable to encourage discussion and debate. However, our approach did provide participants with anonymity and confidentiality, which may have encouraged participation and engagement, and prevented dominance by influential individuals or group pressure that may otherwise have occurred [24].

Implications and recommendations

The findings from this study will help researchers, healthcare professionals, and policymakers prioritise funding strategies relating to suicide prevention. More importantly, studies that delve into the outcomes associated with exploring ways to improve suicide reporting, as well as assessing the burden and factors associated with suicide have much to offer in increasing the understanding of this area.

Conclusion

To date, suicide has had little attention as a public health problem in Nepal. Despite a growing number of studies, this is the first expert consensus study to identify the top research priorities that should be addressed in future research so as to prevent and control suicides in Nepal. The study reports the views of people who are experts in the field of mental health & suicide and suicide survivors, offering an important contribution to efforts to improve suicide prevention in Nepal. A priority driven approach to research on suicide prevention has the potential to result in an evidence-base to offer authoritative guidance to those who devote their working lives to suicide prevention.

Declarations

Ethics approval and consent to participate

This study including the consent protocol was approved by Nepal Health Research Council (NHRC) (Reference number: 698/1342) and ratified by the Research Ethics Committee of the Faculty of Health and Applied Sciences at the University of the West of England, Bristol (Reference number: HAS.20.12.058). Before commencing with Round 1 interview written consent was obtained from participants joining face to face, and verbal consent taken from those participating by phone or online. The study was performed in accordance with the Declaration of Helsinki.

Consent for publication

Not applicable

Availability of data and materials

The data sets used and analysed in this study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

All authors contributed to the design of the study. EJ prepared the study protocol and conducted the Delphi study. All the authors gathered regularly to give feedback and make improvements on each round. EJ wrote the first draft of the manuscript with input from JM, SB, SKJ. All authors contributed to and approved the final manuscript.

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Annex

Annex 1: Questionnaire is not available with this version

Figures

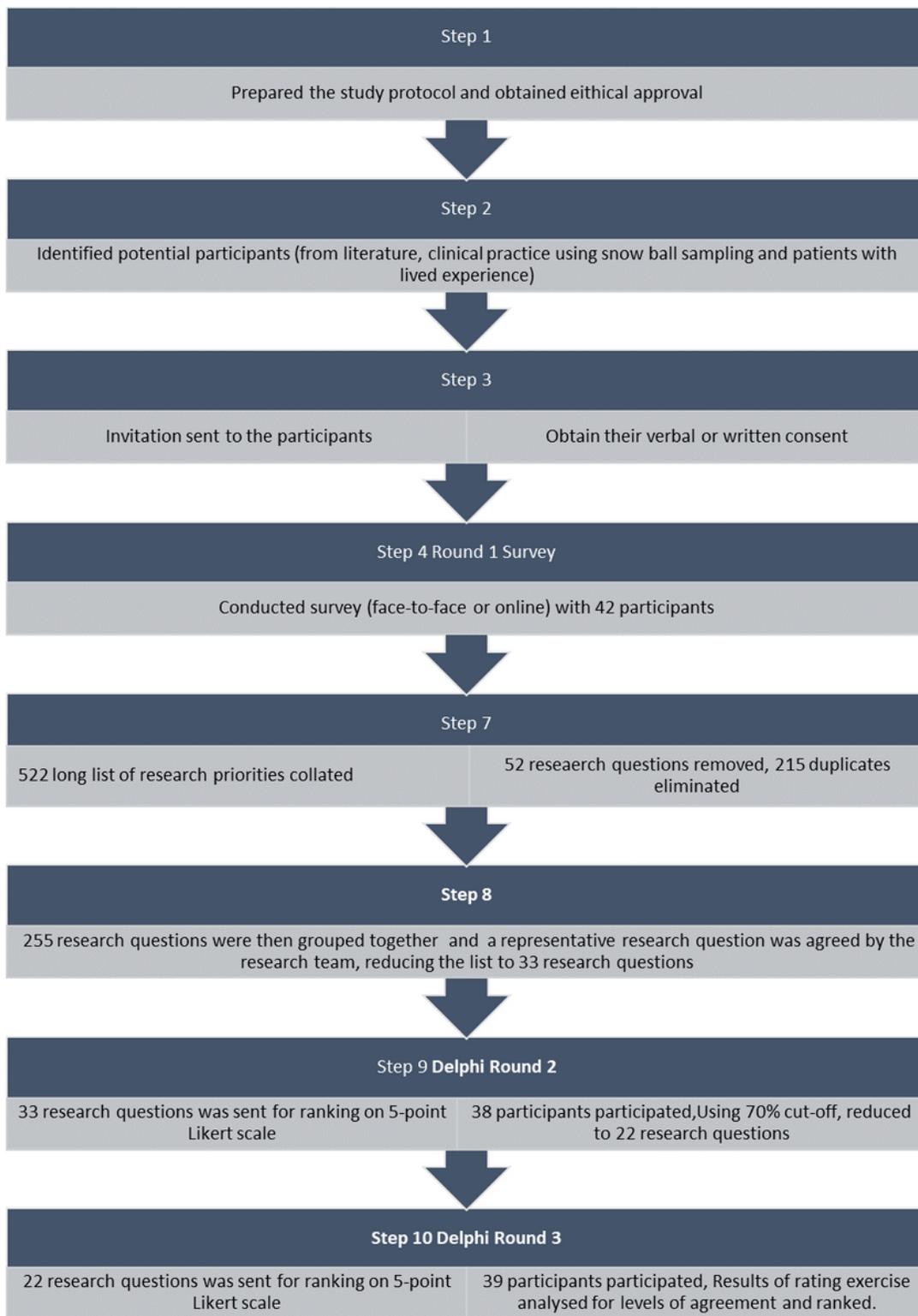


Figure 1

Delphi process