

Original Research Article

Challenges and opportunities in mixed method data collection on mental health issues of health care workers during COVID-19 pandemic in India

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ABSTRACT

Background: The present paper describes the key challenges and opportunities of mixed method telephonic data collection for mental health research using field notes and the experiences of the investigators in a multicenter study in ten sites of India. The study was conducted in public and private hospitals to understand the mental health status, social stigma and coping strategies of different healthcare personnel during the COVID-19 pandemic in India.

Methods: Qualitative and quantitative interviews were conducted telephonically. The experiences of data collection were noted as a field notes/diary by the data collectors and principal investigators.

Results: The interviewees reported challenges such as network issues, lack of transfer of visual cues and sensitive content of data. Although the telephonic interviews present various challenges in mixed method data collection, it can be used as an alternative to face-to-face data collection using available technology.

Conclusions: It is important that the investigators are well trained keeping these challenges in mind so that their capacity is built to deal with these challenges and good quality data is obtained.

Keywords: Health care workers, COVID-19, Mental health, Mixed method, Telephonic, India

INTRODUCTION

COVID-19 is the worst pandemic of the 21st century. The pandemic struck India in March 2020 and since then it has spread across different regions of the country. The health care providers working in both public and private health care were involved in screening, testing, quarantining and isolation care to COVID-19 patients. Some of them worked in hospitals, some in quarantine facilities while some such as auxiliary nurse midwives (ANMs), accredited social health activists (ASHAs) and local healthcare volunteers worked in the community for door to door screening and sensitization of the people. This put enormous pressure on the health care system and the health care workers (HCWs) became particularly vulnerable to mental stress. Worries about the risk of infection to self and their families, adequacy of protection, long working hours, being in quarantine/isolation, and separation from families were potential contributors leading to severe psychological distress among health professionals.¹ This may include emotional exhaustion, physical distress leading to anxiety, problems of balancing family and work life and stigma at various levels among others. This could have an influence on the health care performance of the providers which is of paramount importance in the management of COVID-19. Thus, there was a recognition of the need to provide mental health support to HCWs in the frontline of the COVID-19 pandemic.

Considering these issues, it was essential to understand the mental health status, social stigma and coping strategies from the perspective of different healthcare personnel in India. Identification of suitable and healthy coping strategies would enable development of interventions that could be established as standard operating procedures to prevent negative coping methods such as absenteeism from work or substance abuse. Against this background, a cross-sectional study was planned across different country regions, to generate insights on the gaps that need to be addressed in the existing health care system and plan resilience strategies and preparedness for such outbreaks in the future. The methodology for conducting such a study in the time of COVID-19 pandemic was a challenging situation in which physical face-to-face interviews of the HCWs were not advisable; although face-to-face interview is probably the best method of data collection. However, in certain situations such as COVID-19 pandemic, use of mobile phones for survey was the second best alternative. Many studies have been conducted using telephonic method in the past few decades.²⁻⁷ Though this method has certain disadvantages, it was the only available and hence preferred option in times of travel restrictions and lockdowns during the COVID-19 pandemic. The telephonic mode of data collection during the pandemic provided an opportunity to understand the mental health and stigma faced by the HCWs during this period.

The objective of the present paper is to understand the challenges and opportunities in data collection from HCWs on mental health issues during COVID-19

pandemic. The paper describes the methodological and ethical challenges in data collection through telephonic interviews from HCWs during COVID-19 pandemic. It provides an insight into the difficulties faced while collecting information on sensitive issues such as mental health from HCWs.

METHODS

This paper is a part of multi-centric mix-method design study conducted at twelve sites across 10 states of India which explores mental health and stigma experiences of HCWs involved in the COVID-19 management. The study was conducted in 3-6 public and private hospitals from each site to understand the mental health status, social stigma and coping strategies of different healthcare personnel during the COVID-19 pandemic in India. Quantitative interviews among 900 and qualitative interviews among 111 HCWs involved in providing COVID 19 services were conducted telephonically. The quantitative component provided the proportion of subjects suffering from psychological distress, including depression, burnout, anxiety and other associated mental health. The qualitative component provided answers to the extent of social stigma, perceptions and coping mechanism of health care providers. The qualitative component explored the Balance of Work Life and Family life and individual wellbeing, coping with challenges in all domains and perceptions of the various HCWs on what they expect in terms of interventions to mitigate stigma which can be recommended for policy. The data was entered in a google form developed by the coordinating center and analyzed. At each site, qualitative interviews were also conducted among a subsample of the HCWs (Table 1). Cross sectional data was collected during September 2020 to December 2020 for this study.

The methodology of remote data collection by telephonic interviews poses many challenges as it is different from the usual method of face to face interviews or focus group discussions for a study of this nature, which is not possible in a pandemic situation. However, it also provides opportunity of data collection during pandemic times when physical or face to face interviews are not possible.

The questionnaire was made up of three parts. Part I contained information on the facility (public or private) a respondent was attached with, personal background, and job-related factors like average number of COVID patients screened per day and the average number of COVID patients under care per day. Detailed information was collected on socio-demographic and economic information, type of activities involved in COVID-19 care (quarantine, isolation, intensive care, bereavement, contact tracing, community care, screening and transport) and hydroxychloroquine prophylaxis use. Part II of the questionnaire was the general health questionnaire-5 (GHQ-5). The 12-item GHQ is a well-validated indicator of psychological distress. The GHQ-5, a shorter screening tool which has 5 questions with better discriminators for

psychological distress derived from GHQ-12, is validated on the Indian population with a sensitivity of 86%, specificity of 95.8% and misclassification rate of 8.3%.¹¹ For this study that was done telephonically and needed quick assessment of the psychological state of the respondent with minimum number of questions, GHQ-5 was an effective tool with regard to time and process. It is also available for use in public domain as compared to GHQ-12 that involves royalty for usage.

The ICMR-NIOH burnout questionnaire 12 was part III of the questionnaire. This questionnaire is a shortened and easier version developed by ICMR-National Institute of Occupational Health in Indian settings of the Maslach Burnout inventory (MBI).¹² It was freely available for use whereas the MBI inventory is copyrighted and cannot be reproduced without permission from the developers.

These are validated questionnaires. However for this paper we have used field notes of data collectors/investigators to understand challenges and opportunity in data collection through telephonic interview during the pandemic.

The study involved HCWs involved in management of COVID-19 from different settings such as urban and rural areas. HCWs from government and private hospitals involved in providing COVID services such as doctors and nurses and laboratory technicians were included in the study. Supporting staff such as sanitation workers, ambulance drivers were also included. Community health workers in both rural and urban areas were included. The list of the staff involved in management of COVID-19 i.e. screening, treatment, testing, contact tracing, prevention and control were obtained from the selected health facilities. For the quantitative survey, participants were randomly chosen from the list at different sites. The participants for the qualitative study were purposively chosen from list generated for the quantitative study. Participants not involved in COVID-19 management and no having a valid contact details (mobile number/email) were excluded from the study. The ethical approval was obtained from the central ethics committee of Indian council of medical research (reference number: CECHR 012/2020) and from each of the ten participating sites. The present paper describes the key challenges and opportunities of telephonic data collection for mental health research with the help of field notes and the experiences of the investigators in a multicenter study in ten sites across India. Being a multi-centric study, the challenges remained for the principal investigator and central ethics committee to follow similar protocols for different centers and for such a diverse population. Various coordination meetings with the site principal Investigators and other staff to build a uniform protocol was applied to address the challenge.

RESULTS

The issues identified during data collection are described in various themes as follows: difficulty in accessing the

respondents, phone related issues and challenges faced by the interviewer (Table 2).

Difficulty in accessing the respondents

In order to access the respondents, the initial contact was made to inform them about the project and getting informed consent. Several local study site collaborators were involved in this study which helped in obtaining the list of various HCWs involved in the management of COVID-19 at the respective facilities. A random sampling from the list of HCWs for first contact helped reducing bias in participant selection. However, the important challenge remained to get telephone number, email id, WhatsApp contact numbers of all the health care providers in the list, which was facilitated by the collaborators. A few participants (less than 1%) were excluded from the study as they didn't have either of these three contact details.

After obtaining the contact details, one of the major challenges faced by all centers was to contact them and share the study information through participant information sheets. Usually telephone survey has a negative impression among the general population as it is used for marketing purposes and promotional calls are made by different companies. Therefore, in many instances, the interviewers experienced that the call was dropped by the participants on first instances without listening to the subject matter. Some of the participants thought the interviewers were doing a fake call under the cover of a project.

Five out of ten centres (Kerala, Chennai, Meghalaya, Bhubaneswar, and Mumbai) approached the doctors four times on average to share the project related information whereas the nurses were approached at least twice for sharing this information. All other centres reported that they had to contact all the HCWs on an average twice/thrice for each category of HCWs. Some centres reported that some HCWs could not be contacted as their phones were switched off. In such cases the next HCWs on the list were contacted. Three of the centers (Mumbai, Noida, and Delhi) had reported difficulty in contacting the ambulance drivers since they were mostly on wheel. It was easier to contact/take appointment of the participants for qualitative interviews than quantitative interviews since rapport building was already initiated for the quantitative interviews. However, a few centers had to contact for appointments and interviews more than two times due to the heavy workload of the staff and considering the length of the qualitative interviews.

Phone related issues

The centre in Delhi reported that there were problems to contact rural participants due to network issues, which was not the case for urban participants. The center in Meghalaya had the toughest time in contacting all HCWs due to network connectivity issues and extended working

hours in COVID-19 duty due to which the participants were either tired or busy. Network issues were also reported by the centre in Kerala; some of the interviews were paused and some got postponed due to network issues. The centre in Chennai reported some issues like difficulty in hearing the voice and low quality of network depending upon the network provider. This made the situation difficult for both interviewers and interviewee as network issues increased the time duration allotted for interview.

Challenges faced by the interviewer

Informed consent

As per the study protocol, sharing of PIS was limited to online through Whatsapp, email, or telephone and getting informed consent was limited through telephone or online email. However, some local ethics committee insisted on getting written informed consent wherever it was possible through local collaborators. It was noted that response rate was better for the center obtaining the written informed consent (98%), whereas the response rate was lower for the centers (80-94%) which shared PIS and also obtained informed consent telephonically.

Timing of interviews

One of the challenges faced by almost all of the participating centers was to obtain convenient time from the health care workers for scheduling the interview. More specifically, it was very difficult to take appointments of doctors and nurses due to their hectic schedules. Timing preferred by them for interviews were either evening hours after 7-8 pm or on their duty off days or during their quarantine period. The laboratory technicians and supporting staff provided time for interviews during working hours as reported by all the centres.

Response rate and comprehension of the study participants

The response rate ranged from 80-98% at different centers. The non-response from doctors was due to fear of recording of interviews, though they were assured that the data would be kept confidential. Some of the ambulance drivers denied giving an interview in a center due to non-payment of salary and lack of personal protective equipment (PPE) kits for them. Another reason for refusal reported from one of the centres was the participants felt that "If I participate in this interview, higher officer may not like, if we express the problems faced by us during COVID care center/hospital facilities, the higher authorities may not like it".

The participant's understanding of the study background, importance and privacy protection is a key factor for obtaining responses. Almost all centres found the comprehension ability of doctors and nurses were good whereas other staff like sanitation workers and ambulance

drivers needed extended elaboration about the study in more details.

Challenges in questionnaire content

The quantitative survey constituted sections on socio-economic characteristics, GHQ-5 and burnout questionnaire. It was challenging to elicit sensitive information like marital status and income. All sites stated that they faced some problem in getting information related to income of the participants. About a tenth, 13.4% of the participants refused to provide information related to income. At one of the sites, the ambulance driver got offended when asked about the monthly income and abruptly disconnected the call. Some of the participants were not getting salary so they showed their agitation against the authorities and abruption during the interviews. At one center, a participant was annoyed when asked about the marital status.

Discriminatory experiences made it challenging to collect data on mental health issues. While there was not much challenge for all centers in collecting quantitative GHQ-5 questions, the discriminatory experience led to citing narrative stories which extended some of the interviews. In burnout questionnaire, participants from most centers faced comprehension issues across questions and found overlapping of statements.

This was addressed by the interviewers with proper training. Some of the participants broke down during their interview, which either extended the interview or interviewer had to close the interview at that time and complete it afterwards.

In qualitative interviews, different aspects like impact on work, family life, wellbeing and coping strategy during the pandemic were covered. Strategy to mitigate the pandemic in future was also covered in the qualitative interviews. At many instances the participants went beyond the interview context and shared many sensitive information. The interviewers maintained a non-judgmental tone, actively listening to them and empathizing when needed. One of the challenges faced by the interviewers was the lack of transfer of visual cues such as eye contact, facial expressions and body language during conduct of the interview.

Informing HCWs about counseling/psychological support if needed

All the participants who scored low in GHQ, were informed that they should seek counselling/psychological support. Interviewers found it challenging to inform about this to HCWs as mental health issues are often perceived as stigmatizing and hence HCWs are not keen to talk about or seek psychological support for their own mental health problems.

Opportunities in remote data collection

Although the telephonic interviews present various challenges in data collection, it presents a great alternative to face-to-face data collection using available technology. It is risk free since the interviewer and participant doesn't

come in physical contact with each other especially during pandemic times. This method is less expensive as it involves no traveling cost and also the participants could be interviewed as per their convenient time.

Table 1: List of centres selected for the study.

Implementing agency/site	District and state	Region
ICMR- National Institute for Research in Reproductive Health, Mumbai	Mumbai Maharashtra	West
ICMR- National Institute for Occupational Health, Ahmedabad	Ahmedabad , Gujarat	West
ICMR- National Institute for Pathology, New Delhi	South East Delhi	North
ICMR- National Institute for Cancer Prevention and Research, Noida	Noida, Uttar Pradesh	North
ICMR- National Institute for Research in Tribal Health, Jabalpur	Jabalpur, Madhya Pradesh	Central
ICMR-Regional Medical Research Centre, Bhubaneswar, Odisha	Khurda, Odisha	East
ICMR-National Institute for Research in Tuberculosis, Chennai	Chennai, Tamil Nadu	South
South Believers Church Medical College, Tiruvalla, Kerala	Kottayam and Wayanad, Kerala	South
South Martin Luther Christian University, Meghalaya	East Khasi Hill, Meghalaya	North-East
ICMR- Regional Medical Research Centre, Dibrugarh	Dhubri, Assam	North East

Table 2: Challenges faced as per themes and the key findings.

S. no.	Challenges faced as per themes	Key findings
1	Difficulty in accessing the respondent	
	Obtaining telephone number/ email id/ WhatsApp contact numbers of all the health providers in the list of selected hospitals	A very few participants less than 1% were excluded from the study as they didn't have either of these three contact details
	No. of call attempts to complete an interview	Doctors – approximately three to four times, nurses – twice or thrice, and ambulance drivers – difficult to contact them
2	Wrong numbers/phones switched off/not responding	Few centres reported, but it was very less. In such cases the next health workers on the list were contacted
	Phone related issues	Network issues in rural areas and North East, issues like difficulty, and difficulty in hearing the voice sometimes and low quality of network depends upon the network provider
3	Challenges faced by the interviewer	
	Timing	Timing preferred by doctors and nurses for interviews were either evening after 7-8 pm or on their duty off days or during their quarantine period. For laboratory technicians and supporting staff timings were given during working hours as reported by all the centres.
	Obtaining informed consent	Response rate was better for the center obtaining the written informed consent (98%) whereas the response rate was lower for the centers (80-94%) which shared participant information sheet and also obtained informed consent telephonically.
	Response rate and comprehension of the study participants	The response rate was good; ranged from 80-98% at different centers, almost all centres found the comprehension ability of doctors and nurses were good, and other staff like sanitation workers and ambulance drivers needed extended elaboration about the study in more details
	Challenges in questionnaire content	It was challenging to elicit sensitive information like marital status and income. Very few (13.4 %) participants refused to give information related to income
	Informing HCWs about counseling/psychological support if needed	Interviewers found it challenging to inform HCWs for seeking counseling/psychological support; as mental health issues are often perceive

DISCUSSION

Our study findings present a nationwide perspective of the challenges and opportunities in generating evidence during a pandemic on sensitive issues such as mental health among HCWs. It is of utmost importance to be aware of the challenges that the investigators might face.

The study indicates that there were challenges in accessing the respondents and obtain contact details of all the HCWs in the lists obtained from the hospitals. However, it is quite encouraging to note that less than 1% were excluded from the study as they didn't have contact details. The facilitation by the local collaborators was helpful in this aspect. The present study points to the need for building trust as in a telephonic interview there is always an element of doubt and suspicion. Introduction of the investigator to ensure that confidentiality is taken care of would help in rapport building and better responses. It is also important for the interviewer to make sure that the participant is the right person and while presenting his own identity clarifies that the participant is the one in his or her list. This needs to be done tactfully keeping the sentiments of the respondent in consideration.

There were challenges in accessing the study population as time was the biggest constraint given their work load, time schedules and network issues. Almost all the centres had to contact the HCWs a number of times for appointments and interviews due to the heavy workload of the staff. This called for sensitivity among the investigators to make sure that the respondent was not inconvenienced, that the call was in keeping with the timings and convenience of the respondent, the need for patience and perseverance considering the number of calls it took to access the participant.

The interviewers reported challenges in conducting the interviews due to telephone network issues as reported by some of the centers. This made the situation difficult for both interviewers and interviewees as network issues increased the time duration allotted for interview.

In the present study, the response rate ranged from 80-98% at different centers. This could be because of the extended training to staff and the involvement of site-principal investigators in data collection. Other studies in which telephonic interviews were conducted indicated high refusal rates. Sarantakos demonstrated that telephone interviews were associated with high refusal rates.⁸ Fowler suggested that where in-person interviews generally yielded participation rates of 70%, telephone interviews yielded response rates that were five to ten percent lower than response rates from face-to-face interviews.⁹ One of the reasons of lower response rates and uneasiness to answer sensitive topics was the lack of direct contact between the interviewer and the respondents.^{10,11} From the respondents' point of view, it is difficult to assess interviewer's credibility. This may negatively impact the respondents' perception of the researcher's willingness to

keep their responses confidential.¹² As a result, telephonic interviewing may both enable and inhibit forthcoming responses from subjects. However, in the present study, the interviewers were successful in building trust with the respondents and the respondents not only answered all the questions in quantitative interviews, but also shared their experiences; in fact, some of them vented out their emotions during the interview.

During qualitative interviews, it is important that the time of the interview is maintained, that there is consciousness of the burn out that can be experienced by the respondents or the interviewers and care is taken to see that this is addressed with a break or a change in the topic to a lighter conversation so that the monotony is prevented. Acknowledging and appreciating the work done by the HCWs in difficult times of pandemic also helps in such situations.

One of the challenges faced by the interviewers in the present study was the lack of transfer of visual cues such as eye contact, facial expressions and body language. These challenges have been mentioned in other studies as well.^{13,14}

Our study points to the challenges in the content of the data and questions that could be a barrier to participation and consent. Though it was challenging to elicit sensitive information like income, very few (13.4%) participants refused to provide information related to the same.

All the participants who scored low in GHQ were informed that they should seek counseling/psychological support. Interviewers found it challenging to inform about this to HCWs as mental health issues are often perceived as stigmatizing.

Though there are challenges in conducting telephonic interviews, this method provides opportunities especially during the pandemic times. This method is less expensive as it involves no traveling cost and also the participants could be interviewed at their convenient time. The two most obvious benefits are cost-effectiveness and time efficiency mentioned in some studies.^{8,15-17} Telephones give researchers access to varied resources and experiences without the need to endure the expense and time consumed by travel to different locales. It is possible to interview individuals who may not otherwise be available due to their location. Technological advancement also presented an opportunity to share PIS and obtain consent without any violation of data privacy. For a short survey, telephonic interviews during pandemic presents an opportunity to conduct a policy oriented study and a large number of participants can be involved within a short duration Telephone interviews in pandemics also reduce risks to the respondents and the interviewers as there is no physical presence involved. The limitation of the study is that it is based on the field notes/diary of the investigators and does not include quantitative data pertaining to challenges during the data collection.

CONCLUSION

Although the telephonic interviews present various challenges in data collection, it can be used as an alternative to face-to-face data collection using available technology. It is important for the investigators who are responsible for data collection to be well trained keeping these challenges in mind so that their capacity is built and they are better equipped to conduct the interviews effectively keeping the interests of the respondents and also to prevent their own burn out which could lead to suboptimal quality in the interviews. With the advancement in technological aspects and involvement of local researchers, the ethical and data collection challenges can be minimized.

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