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RESEARCH ARTICLE

Assessing Data Quality in Survey with Healthcare Providers on COVID-19 and the Measures for Improving

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Abstract:

Background: Social surveys have also been transformed with the advancements in research methods. However, only through appropriate methods, proper planning and procedures the data quality can be ensured.

Aim: The aim of the current research is to present the measures taken up in doing survey with healthcare providers of primary health care facilities during the time of COVID-19 and to assess the data quality.

Method: The survey was conducted with all 280 medical and paramedical staff in 24 primary healthcare centers of government to understand the preparedness of primary health care facilities in terms of providing a safe working environment to healthcare providers and to prevent the spread of infection while discharging duties during COVID-19. The study used mix mode of data collection by administering telephonic and self-administered questionnaire. It is a descriptive study based on review of secondary literature and the different measures adopted in the survey to ensure data quality.

Result: The variation found in responses to questions related to training, personal fears, challenges and coping mechanism was low, when asked differently in telephonic and self-administered questionnaire. It shows that the measures taken in conducting survey through mix mode of data collection at the time of COVID-19 were effective in overcoming the data quality challenges of COVID-19 to conduct face-to-face study and maintaining data quality of the survey.

Conclusion: It can be concluded that proper planning, preparations and precautions were effective in ascertaining the data quality.

Keywords: Survey, COVID-19, Self-administered, Telephonic, Questionnaire, Data quality.

Introduction

Social surveys are one of the recognized modes to collect data on knowledge, attitude, choices and behavioural practices. However, any survey is viewed from the process perspective [1] and the quality perspective [2] because methods and procedures have a role to prevent and correct problems which can affect survey data quality [3]. Elaborating further, the process part deals with the types of social research techniques chosen and implemented for data collection whereas the quality dimension corresponds to how effectively the processes are completed to generate a quality data. Any social research depends upon the willingness of people to respond to the questionnaires [4] and also 100% response is rarely achieved even if time and resources are not a constraint [5]. Technology has made data collection, cleaning and analysis easier but the actual tone of data quality is determined by the mental makeup of the respondent at the time of giving response.

Just getting consent of the respondent can only ensure physical, not the mental participation of the respondent until unless a connection is not developed between the respondent and the interviewer. In conventional methods of social research this 'connect' is part of rapport building which can be attempted easily at the time of face to face interaction for data collection. The face to face interaction also provides an opportunity to validate information with the facts of the surrounding settings where the interview is going on and by reading the body language, facial expressions and other non-verbal social expressions of the respondent [6]. The question can be reframed for better understanding and to get the best response. In certain ambiguous situations while in person interviewing, the interview can be put on hold and can be extended beyond usual required time to complete it. So the data quality can be improved by taking onsite corrective measures in a personal interview method, unlike in case of self-administered questionnaires where respondents establish direct connection with the issue of the survey and the questions alone.

In the phase of COVID-19 epidemic the value of web-based surveys is proving their utility like never before. The advancements in digital technology have presented heterogeneous mediums and platforms for data collection and novel ways to overcome barriers in reaching out to the respondents like time, distance, social categories and mood of the respondent. Surveys through telephone and web-based devices like mobile, smartphones, tablets and computers have presented new means to interact with the respondent but effectiveness is still being evaluated. However, in absence of any strict rule for the choice of survey strategy [7] the selection of research technique for data collection depends upon the purpose of research, type of questions to be explored [7], human settings, easiness of the respondent to respond and the type of information desired.

Several studies on the impact of COVID-19 on human lives [8,9,10] have been carried out to renew the knowledge each day because the epidemic has posed serious challenges from local to global level, from knowledge to practices, from behavior to rituals, and from personal to societal level. The HCPs (Healthcare Providers) is also one of the communities which is deeply affected, irrespective of primary, secondary and tertiary level healthcare facilities. According to IMA

(Indian Medical Association) in India 748 doctors had died due to the disease during the first wave of COVID-19 [11]. HCPs in primary healthcare facilities constitute the first line of action and interaction with anyone coming for preventive, promotive and curative healthcare. Life of HCPs is at great risk due to COVID-19. In this context, a survey was carried out with HCPs to understand the preparedness of health facilities in terms of providing a safe working environment to HCPs and to prevent the spread of infection while discharging duties in COVID-19.

Methods

Aim

The aim of the current research paper is to present the data quality measures taken up while doing survey with healthcare providers (HCPs) of primary health care facilities during the time of COVID-19 and to assess data quality.

Objectives of the survey with healthcare providers on COVID-19

To understand the knowledge and participation of Primary Health Centres (PHC) staff in COVID-19 activities and their perceptions about personal risk, family and community. To assess the individual and facility level preparedness to support COVID-19 programs. To understand the mental, social and physiological challenges being faced by healthcare workers during the COVID-19 pandemic.

Research questions

The paper is conceptualized and developed on the basis of three key research questions: (1) How ensuring data quality was a challenge in study with HCPs at the time of COVID-19? (2) What were the measures taken in COVID-19 survey with HCPs to maintain data quality? (3) How the measures taken to maintain data quality can be validated by using two different tools of data collection?

Research design

It was a descriptive study design where different methods and tools employed for conducting the survey with HCPs of primary healthcare facilities during COVID-19 were analyzed to understand that how helpful they were in maintaining data quality in the survey. The study has also used the findings of systematic secondary review of literature.

Settings

The survey was carried out at 24 government primary healthcare centers, (seven Urban and 17 rural) spread over 13 districts of Rajasthan state, India. These facilities were being managed by the LEHS (Lords Education & Health Society – a non-governmental organization) under their flagship program WISH (Wadhwani Initiative for Sustainable Healthcare). The study was planned and executed during the COVID-19 lock down period.

Respondents and exclusion criteria

The study was conducted with 280 medical and paramedical staff of selected primary health facilities. The respondents with whom tools were piloted were excluded in the main survey. The respondents include, medical officers in-charge, pharmacist, Lady Health Visitor (LHV), Staff Nurse (SN), ANM (Auxiliary Nurse Midwife), Lab Technician (LT) and Multipurpose worker (MPW). Out total 280 respondents, 272 respondents fully participated in the study, with response rate of 97.1 per cent. The data was collected during April to May 2020.

Tools for data collection

The data collection tools were developed in two parts. Part A was self-administered questionnaire (SAQ) and part B was telephonic interview questionnaire (TIQ). The self-administered questionnaire cover information related to demographic characteristics, personal health, participation in COVID work, perceived risks and the coping mechanism. It also collected information on facility level measures and the challenges being faced in performing duties. Part B of the survey was based on telephonic interview to collect information about awareness and exposure of staff to COVID-19 related risks, the type of support they were getting and challenges being faced at health facilities and impact of COVID-19 on their life. To assess the validity and reliability of the tools ALPHA test was conducted on both part A (SAQ) and part B (TIQ) tools. The overall scale reliability coefficient is 0.7689 for SAQ and 0.6686 for TIQ. Similarly, to assess the individual consistency of the tools the scale reliability coefficient of SAQ was 0.8152 and 0.8152 for TIQ.

Ethical considerations

The ethical approval for the study was obtained from Sigma Institutional Review Board (IRB). The study protocol and consenting process was reviewed by IRB ethical board to ensure that all ethical compliances were duly followed. In the consenting process the respondent was informed and assured about confidentiality and privacy of the information shared. Also, it was clearly mentioned in the virtual (google) consent form that participation in the survey is voluntary and respondent is free to withdraw from the interview at any time during the interview process.

Data collection

The data was collected using Google Forms, which is a survey administration application. There was (a) google form for Consent, (b) google form Part A - Self Administered by respondents, and (c) google form Part B - Telephonic interview through investigators. All interviewers were trained using virtual meeting platforms such as Microsoft teams and Zoom. The google consent form link was shared with respondents on their Whatsapp or email IDs, giving choices and considering convenience of the respondents on mode of digital platform for participating in the survey. Since the facilities were managed through public private partnership - the study respondents were LEHS staff and their official contact numbers as well as email IDs were available with human resource department of the organization. The same contact numbers were used to send the

consent and tool/questionnaire, seeking their consent for participation in survey and to interview them.

Data analysis

The data collected in google form was downloaded and analyzed in STATA version 15.1. The quantitative data is analyzed by using simple frequency, mean and percentage. Pearson correlation is done to observe the association between 'participation and cooperation by respondents' in SAQ and TIQ.

Results

Background characteristics of respondents

Total 272 healthcare providers were interviewed, which comprised 22 medical officers (8.09%) and 250 paramedical staff with 91.9%. Paramedical staff majorly include ANMs (38.6%) followed by Staff nurse (19.5%). Background characteristics in table 1 of the respondents shows that 57.4% were female, more than three-fourth were married and about 55% were under 30 years of age. The mean age of respondents was 30.1 years.

Table-1: Background characteristics of staff at facility

Background characteristics	N	%
Age (yrs.)		
20-24	42	15.4
25-30	136	50.0
31-35	57	21.0
35+	37	13.6
Sex		
Male	116	42.7
Female	156	57.4
Marital Status		
Married	207	76.1
Unmarried	58	21.3
Separated/divorce/other	7	2.6
Designation		
Medical officers in-charge	22	8.1
Pharmacist	22	8.1
Lady Health Visitor	16	5.9
Staff Nurse	53	19.5
ANM	105	38.6
Lab Technician	20	7.4
Multipurpose worker	34	12.5
Total (N)	272	

Measures to improve data quality

The untiring service to mankind by HCPs is giving them social stigma, psychological stress, and fears of personal infection which can be transmitted to their families and patients they are treating. It is important to explore issues affecting HCPs to design any future interventions for their support because longer the time elapsed between the event being investigated and the actual interview, the greater the chances of inaccuracy of the data [12]. Though the survey was designed on short notice, data quality was not compromised. However, data quality can be affected due to the fear of non-response, classified as unit nonresponse (due to inaccessibility, volitional refusal, or inability to respond) and item nonresponse (when surveys are partially completed and returned) [13] because during COVID-19 there are other challenges as well emerged due to social distancing and the profession of HCPs. There can be internal and external factors as well which can affect data quality during COVID-19. Therefore, various measures were taken to ensure the data quality of COVID-19 survey with HCPs, which are discussed as under:

Mix mode of data collection

Using two different tools, self-administered questionnaire and telephonic interview questionnaire, for data collection helped to reduce length of the questionnaire as well as time taken to complete the survey. The data collection guidelines were also developed at two levels. One for the survey team who interviewed with TIQ and another for respondents to fill the SAQ. A provision of connecting with core team was also inbuilt process, in cases where respondents had any query or need clarification regarding the survey, questionnaires or any other related issues.

The list of staff was procured from the human resource department of the organization to get the basic information like name, working station (facility of posting), designation, sex, age, mobile numbers. Based on that, the consent form was shared with the respondents. After receiving the consent, the google link of SAQ was shared. After receiving the filled SAQ the respondent was approached to know the convenient time to call for respondent to interview with TIQ.

Pilot testing

The tools were pre-tested for consistency, sequencing of questions, repetition, skip pattern, framing of questions and completeness of information. The pilot tool was filled with five respondents, who were excluded in the main survey.

Consent of the respondent

Consent form comprising information on the objective of survey, respondents' confidentiality, rights of respondent and potential risks of disclosure [14] is a key requirement to adopt a completely transparent and ethical approach in collecting data through conducting social surveys. Valuing the time of HCPs, the consent form in the study was kept short with information required to develop a better understanding of the respondent about survey and minimizing the survey time burden [15]. At the time of telephonic interview as well, it was reconfirmed that consent form was read, understood and filled by the respondent.

Timeliness

Completion of survey within a stipulated time is important because real-world information may change over time [16] can make the findings obsolete for any use. COVID-19 is currently a burning issue and the learning elicited from the study can be useful if it was timely completed. However, the 'timing' factor has multiple meanings. Timing of surveys on a particular issue, time required to get the appropriate data, time to approach respondents to finish an interview and time to complete the survey were factored differently in overall execution of the study.

Timing of survey

HCPs were engaged in providing services for COVID-19 prevention and management since March 2020. By the time the survey was conducted in May 2020, the HCPs were already exposed to personal and professional level COVID-19 challenges. Thus it could be assumed that the time to undertake a survey was strategically appropriate to get the responses based more on real experience.

Time required to get the appropriate data

The time required to conduct interview [17] is an important factor. Telephonic interviews complete in 30 to 60 minutes and self-administered questionnaires in 10 to 20 minutes [18,19]. Getting that minimum time for quality data collection was challenging in HCPs study because due to long working hours the HCPs were left with little time to take care of even their daily routine activities. So, bifurcating the tool really helped to complete the Telephonic interview within an average time of 37 minutes.

Scheduling time to call respondent

Calling the respondents during duty hours was not feasible since respondent HCPs were occupied with other critical tasks of delivery services such as community surveillance etc. due to which there was high probability of refusing to participate in telephonic interviews. There were high chances that some respondents might have felt irritated and give inappropriate responses to questions. All that could affect data quality as well as delay in completing the survey. To avoid any such awkward situation, the timing for telephonic interviews was kept during post duty hours. About 62% of interviews were done in off duty hours of HCPs. Only those interviews were conducted in duty hours where the respondents permitted interviewers to call.

Ensuring completeness

Completeness is important in sample design [20], response rate [21], labeling of variables [22] and existence of non-null values assigned to specific data elements [16]. In the survey, the complete coverage of respondents was ensured through follow up with the respondents via mobile calling and WhatsApp messaging. Responses were made compulsory, where skips were not used. Questions were designed such that respondents could easily comprehend and respond.

Ensuring data integrity

Data integrity, refers to the accuracy of data [23] which was ensured by giving training to the research team on data collection skills. Whether the same respondent is interviewed twice [21] was ensured by creating a unique identifier for each respondent and filtering out the duplicate one, if any. All data was received on google spreadsheet and nobody, except the program developer and Research Lead, had access to it. Emailing the interview questionnaire using the internet has helped to overcome geographical barriers that hindered face-to-face interviews [17] but the chances of interviewing fake respondents cannot be ruled out. One-in-five international surveys indicating a high likelihood of fabricated data [24] pose a serious data quality risk. Therefore, the WhatsApp video call with some randomly chosen respondents was done to eliminate the risk of interviewing fake respondents.

Minimizing the biasness

Bias can occur at any stage of research, including study design, data collection, and the process of data analysis [25]. Several types of bias are identified in research studies [26, 27] but largely they are categorized as information bias and selection bias [28]. In the COVID survey we tried to reduce biases due to interviewer, respondent and loss to follow up, nonresponse (participation bias), recall and social desirability through various measures like questionnaire, language of questions and training on probing, shared as under.

Questionnaire design

Questionnaire related bias like ambiguous question, complex questions, short question, double barreled questions, framing, technical jargon, formatting [27] and size [29] and sensitivity [30] in language were addressed at the time of developing the questionnaire. The questions in both parts of the questionnaires were categorized as per the types given in table-2. Questions selected in TIQ helped respondents to recall their knowledge acquired from any source or through experience and the challenges being faced and support received to work in COVID-19. These are the areas where biases can be due to exaggerated data. For example, working in a number of activities in COVID-19 prevention and management to show engagements and facing all sorts of challenges.

Table-2: Categorization of questions in self-administered & telephonic questionnaire

Questions classification	Self-administered	Telephonic	Total
Background information	12	4	16
Require Probing	0	7	6
Knowledge based	0	3	3
Personal experiences/ Perception	9	10	19
Fact based	7	28	35

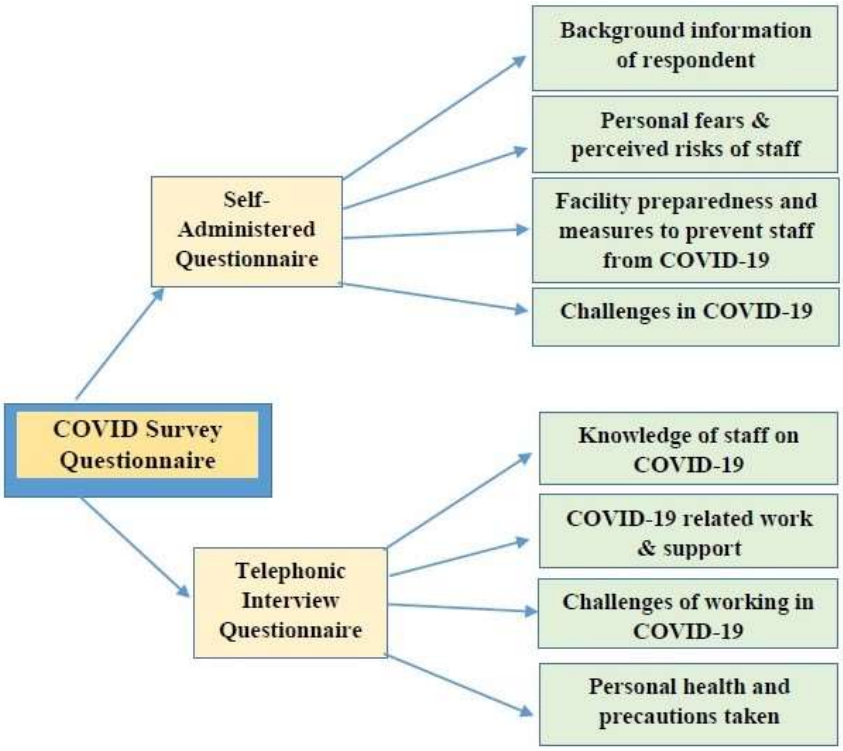

Figure 1: Domains covered in the questionnaires designed for the survey

Respondents in telephonic interviews are supposed to be less cooperative, despite the fact that the telephonic interviews completed more quickly than the face-to-face interviews [31]. Therefore, the selection and sequencing of the questions was carefully looked at in both self-administered questionnaire and telephonic interview questionnaire during pretesting. Almost all sorts of expected responses were pre-coded. Majority of the questions were multiple responses. Response to personal and knowledge-based questions, constitute about 63% part of questionnaires, where chances of intentionally filing incorrect information were too less. The low proportion (17%) of questions, which require probing, reduces the chances of biases due to interviewer's and respondent's self-interpretation of questions. Nonresponse due to variation in knowledge about the issue was reduced by keeping the questions on the issues which all cadres of HCPs were experiencing so that all could participate.

The perception is influenced by environmental factors and it gets changed at different points of time on the same issue. Perception based questions monitor the changing situations over time [32] and questions related to personal experience were 54%. Responses of perception and personal experience-based questions, kept to understand the mental health and coping mechanism of HCPs during COVID-19 pandemic, can contradict due to self-denial in the former and over thoughtfulness in the later.

Language

The questionnaire was developed in English and translated in Hindi language with wordings more like in general parlance to allow no space of biases due to language modification by the interviewer [12] which can affect the validity and reliability of the information. Language is very crucial in case of self-administered questionnaire, where the responses entirely depend upon how the question is interpreted by the respondent. Therefore, the questions were formulated with lot

of clarity, giving negligible scope of self-modification at the time of probing. Moreover, in the TIQ the efforts were made by investigators in confirming that the respondents have understood the questions clearly – thus putting up a question (when in doubt whether respondent is clear of what is required) and then asking the respondent to explain what information is required.

Training

Interviewer training is important for collecting high quality data [33]. The interviewer may influence response behavior through probing [34]. Attentive listening and meaningful probing and questioning [12] of the researchers was improved through training to reduce non response and recall bias. The data collection team was trained for being unbiased in recording the response.

Measuring data quality

So far, the paper has discussed different measures in the survey to ensure data quality. But how these measures resulted into good quality data is tested by analyzing variations of some questions, asked differently on the similar issues in SAQ and TIQ. The questions to measure this aspect are identified from different domains, like training, personal fears to work in COVID-19 prevention and management, coping mechanisms, effect of COVID-19 on general life and COVID-19 protection and prevention supplies in facilities. The responses are compared in terms of frequency of responses received in SAQ and TIQ.

Training

Table 3 shows that in SAQ 66% of the respondents chose the option of conducting training as one of the responses to prepare HCPs to work in COVID-19 pandemic situations. A similar question, again in SAQ, 64% respondents admitted that they received training on COVID-19 prevention and control in the last 3-4 months. The marginal variation in both the responses indicate high quality of data. Also, those who attended training were less than those who have accepted it as a measure which means that all those who have attended training recognized it as one of the coping measures adopted at primary health centre (PHC) level.

Table-3: Measuring data quality through question on issue of training on COVID-19

Questionnaire	Question	Option chosen	Response (%)
SAQ	What are the measures adopted at your PHC so that health workers to cope with COVID-19 pandemic	Conducted training of the staff	66.0 (179)
SAQ	Have you received any training on COVID-19 in last 3-4 months	Yes	64.0 (173)

Perception

The question on fear of community resistance was framed differently in both the questionnaires with the purpose to cross validate the information. In general, the cases of HCPs facing community resistance toward testing were happening in different parts of the country, including the state of Rajasthan. Such cases were

creating a fear to visit the community. The issue in SAQ was enquired based on perception while in TIQ it was asked as a challenge. The response in SAQ and TIQ differ only by around 5 per cent (refer table 4).

Table-4: Perception on personal fear to work on prevention and treatment of COVID-19

Questionnaire	Question	Option chosen	Response (%)
SAQ	What are your fears to work in COVID-19	Fear of facing resistance from the community	32.4 (88)
TIQ	According to you what are the challenges you have been facing in discharging your duties during the COVID-19 crisis	Fear of Misbehave/ attack/abusive words by community (Always + Sometimes)	37.1 (101)

Coping mechanism

Coping mechanism against any challenge can be internal (precaution taken at personal level) and external (precaution for you taken by someone else). Table 5 shows that in SAQ the HCPs were probed about sharing of tasks to manage the increased workload while in TIQ the probing was done to understand their work load. While the former was a way to understand the truth about mentioning the support by others, the latter was about sharing personal workloads even after accepting the team work. About 66% in TIQ mentioned high workload as a challenge, which means that 44% were not seeing high workload as a challenge because they were able to get support from their team, which is very near to the response of SAQ, where 41.5% were admitting about the sharing of tasks among staff in SAQ.

Table-5: Sharing of work load among the facility staff during COVID-19

Questionnaire	Question	Option chosen	Response (%)
SAQ	What are the measures adopted at your PHC for health workers to cope with COVID-19 pandemic	Shared the tasks among the staff	41.5 (113)
TIQ	According to you what are the challenges you have been facing in discharging your duties during the COVID-19 crisis	High workload (Always + Sometimes)	65.8 (179)

Rating the participation and cooperation in survey

At the end of SAQ the respondent was asked to rate the participation in the survey on Likert scale 1 to 5, where rating of '1' corresponded to lowest and '5' meant highest level of satisfaction. In TIQ the interviewer had to rate the cooperation of respondents at the same scale. The analysis of two sets of data in table 6 shows 95% correlation, which is another evidence of data quality in the study.

Table-6: Analysis of participation and cooperation by respondents in TIQ and SAQ

Rating of participation and cooperation (1 for lowest & 5 for highest)	Telephonic Interview (%)	Self-administered Questionnaire (%)
1	2.6 (7)	0.7 (2)
2	1.8 (5)	0.7 (2)
3	6.3 (17)	8.1 (22)
4	16.9 (46)	29.4 (80)
5	68.0 (185)	57.0 (155)
Missing	4.4 (12)	4.0 (11)
Total (N)	272	

Discussion

All surveys are unique in their objectives, target respondents, methodology, size and amount of budget. But in none of the surveys the data quality can be compromised. Social surveys have also been transformed with the advancements in research methods. The technological advancements have provided options to meet the shortage of resources like time, money, trained manpower and improved management of survey activities but establishing the data quality needs some extra planning, preparations and precautions. Given the practical benefits associated with internet-based surveys in general and web surveys in particular [35], data quality depends upon the designing of survey methodology appropriate to the time, desire for information and skillful utilization of available resources.

In the COVID-19 survey with HCPs, the interviewing through mailed questionnaire and face to face at respondent's location were entirely two different scenarios to bring different levels of comfort for respondent as well as interviewer. This mix mode of data collection could be a first time experience of the respondents. The freedom to spend time in filling SAQ provide opportunity to the respondents in sharing unbiased responses. Regular follow up and reminders to respondents by investigators to complete the survey had definitely displayed sincerity of the survey and encourage respondent to share the response based on their experiences and knowledge. Studies show that respondents with more positive attitudes follow the questionnaire instruction more closely in a mail survey [36,37,38], which looks true in this survey where the filled SAQ was timely received from almost all the respondents. Though there was no time frame to fill the questionnaire but the criterion to participate in TIQ only after submission of SAQ could be a compelling factor for the respondents to submit response on time. A good response level of SAQ shows that there might be curiosity among the respondents to complete TIQ as well.

Telephonic interviews have a drawback that they disconnect the interviewer from observing the original settings around the respondent, compromise rapport [39] with the respondent and don't allow on spot observation based validation of data reported by the respondent. For example, how social distance is maintained at PHC? How to get assured about the non-presence of anybody around the respondent, who could influence the response. Such challenges in COVID-19 survey it was partly achieved through WhatsApp calling, which was a new learning to monitor data quality through virtual presence. Such use of technology is still a new experience for many researchers and the respondents, which will take time to improve further.

Receiving high response rate in the COVID-survey with HCPs was also an evidence of the good participation. However, studies reveal that surveys of the general population are less likely to be returned than surveys of special subgroups [40]. The reason can be the relevance of such surveys, language, size and content suiting that particular subgroup, which may increase the comfort and interest of participation. The length may be important in the population from which we expect a low response rate [41]. However, in other studies length of the questionnaire don't find much effect but the quality and content of the questionnaire have some effect [42]. Such issues were appropriately considered in the survey by keeping questions specific to the situation with which HCPs were passing through and with which they could easily correlate themselves. The questions of the SAQ respondents stimulated the HCPs to disclose their personal fears, works in COVID-19, effect of COVID-19 on their life and the support they were getting. The length of the survey can be controlled if questions can easily prompt the response and respondent need not to manipulate the response.

The sequencing of questions and time to complete the survey were deeply evaluated in pretesting. The open-ended discussion with respondents during pretesting helped to filter out the options which were looking duplicate or less important. Pretesting helped to know the comfort of the staff in responding to issues which were earlier assumed to be sensitive and could increase nonresponse. Training to the investigators increased their comfort in probing, particularly in asking sensitive questions.

Time to call a respondent was very critical to get satisfactory participation of the respondent and giving prime importance to the patient care which was a shared responsibility of all the health workers of the facility because new tasks added in the list were being managed through mutual redistribution of the duties. Knowing the availability time of HCPs, not just helped to plan the time to call respondent but also call the respondent at his or her given time is a more ethical approach and one can expect to get more reliable information when respondent is physically and mentally relaxed. A more realistic and time specific data is itself a determinant of data quality.

Conclusion

In the COVID-19 study the quality of data was an area of concern because due to COVID-19 lockdown several restrictions were imposed on people's personal life, which has compelled us to think differently. Quality of data is a shared responsibility between the interviewer and the respondent. The sensitivity of information is different for both of them because interviewers try to attest its reliability, validity and completeness while for respondents it is just a revelation based on experience, knowledge and understanding. Reaction of the respondent to a question can be assumed but cannot not be confidently predicted. On the part of interviewer, adopting appropriate measures to collect quality data is the only way. Therefore, while planning social surveys during situations like COVID-19, all considerations need to be given for meticulous planning. Using mix mode of data collection with the same respondent, as done in this COVID-19 survey, there must be some questions in both the tools where the responses of the respondents can be cross checked for data quality purpose. Use of technology in social surveys during COVID-19 like situations is still evolving. However, it can

be concluded that technology can open new avenues of social research but the basic rule of social research always need more planning and acumen execution.

Limitations

This pandemic and lockdowns were new to everyone thus all team members included in the study, along with respondents, were still evolving and coming to terms in understanding the infection and related aspects.

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