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ORIGINAL RESEARCH

A study on risk perception, cognitive awareness and emotional responses to identify unmet training needs of frontline health care workers for COVID-19 containment in India

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Abstract

Aim: Frontline Health Care Workers (FLHCWs) are the key workforce in the fight against ongoing COVID-19 pandemic. They hail from the community and are responsible for supporting the health system in generating awareness, implementing preventive strategies, contact tracing and isolating potential cases. In their job responsibilities, FLHCWs thus may perceive heightened risk of exposure to the virus, leading to overwhelming emotional response and psychological distress. The objective of this study was to investigate risk perception, cognitive awareness and emotional responses among FLHCWs trained to deal with Covid 19, to identify unmet needs of this training in India.

Methods: A cross-sectional study was conducted in a total of 131 frontline workers selected by a multistage sampling process from two states (Odisha and Himachal Pradesh) of India. The FLHCWs were interviewed personally (when feasible) with the help of a predesigned pretested semi-structured questionnaire.

Results: The findings suggested that majority (90%) of the FLHCWs perceived that they are susceptible to nCoV-19 infection and 77.1% of FLHCWs felt high probability of them getting infected with the nCoV-19. Almost 90% of them responded that it is something they think about all the time and 41% of FLHCWs admitted that they feel helpless in the situation. About 63% of FLHCWs perceived that the nCoV-19 infection was a severe illness and 35% perceived it to be very severe and life threatening. Although most of them had received some unstructured and non-uniform training on preventive measures against COVID-19, yet only 38% felt that the knowledge was adequate to protect themselves from the nCoV-19 infection. The training sessions lacked psychological component for capacitating them with coping skills to address their emotional and psychological responses.

Conclusion: The FLHCWs experienced heightened risk perception and symptoms of emotional distress in significant numbers even after trainings. A more inclusive public health policy dialogue to address the emotional and psychological coping skills is needed for capacitation of these frontline workers to address the challenges of Pandemic response now and in future.

Keywords: *capacity building, Covid-19, emotional response, FLHCWs, pandemic, social support.*

Conflicts of interests: None declared.

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Introduction

The novel coronavirus 2019 (nCoV-19) pandemic has caught the health systems off-guard and countries are struggling to control the galloping rates of transmission (1). The role of frontline health care workers (FLHCW) in generating awareness and promoting preventive methods to limit further transmission of nCoV-19 in the communities is critical.

With 13,36,861 confirmed Cases and 31,358 total deaths, India presently has the third highest number of confirmed nCoV-19 cases and the eighth highest number of deaths due to nCoV-19 worldwide (2). The government of India has launched a massive operation to engage lakhs of FLHCWs in form of Accredited Social Health Activists (ASHAs) to contain the spread of nCoV-19 in the rural areas of different states of the country (3). They serve as an important link between community and the health facilities and are particularly indispensable to reach out to populations in remote and rural parts of India for dealing the nCoV-19 pandemic. The job responsibilities of FLHCWs fighting nCoV-19 in India involves (4):

- Generating awareness in the community through Inter-personal communication about (a) Uptake of preventive and control measures including regular handwashing, practicing respiratory hygiene, maintaining social distance (b) Addressing myths and misconceptions;
- Supporting Auxiliary Nurse Midwives (ANMs)/Supervisor in house-to-house active surveillance and contact tracing including (a) Identification of HRG, probable cases and their contacts;
- Mobilizing community to ensure uptake of medical services in urban and rural areas; and
- Reporting and providing feedback across different phases of nCoV-19

pandemic (number of cases, imported/sporadic cases, clusters and community wide transmission).

In their line of duties, many FLHCWs had to work for longer hours with *Personal Protective Equipment* (PPE) on and survey around 30 to 50 houses in a day depending on the risk levels of the area.

Due to 'Corona phobia', they were often encountering stigma and physical violence during their home-to-home surveys (5). There is great fear regarding personal well-being secondary to community transmission of the disease. This may result in overreaction, and plethora of other psychological manifestations like excessive worry, fear of infection and death and feeling of helplessness etc. Psychological preparedness of FLHCWs, their cognitive awareness and coping for emotional responses in these situations, have compelling relevance during this pandemic (6).

Perspectives on emotional and psychological preparedness especially the needs of specific populations like FLHCWs while working for nCoV-19 are sparse.

This study was conducted with the following objectives:

- To assess the gaps in risk perceptions, cognitive awareness and capacity for coping with emotional responses in their job responsibilities during Covid 19 pandemic;
- To identify unmet needs for training and various challenges FLHCWs face while working in the community for COVID-19 containment.

Methods

A cross-sectional study was carried out from April 2020–June 2020 at selected 15 districts from the eastern state of Odisha and Northern city of Himachal Pradesh in India. A multistage sampling scheme was followed. The required sample size was calculated as 122 considering prevalence of

fear as 80% (as quoted from another study conducted in India by Parikh et al) at 10% error level and considering design effect as 2. Adjusting for non-response additional 10% sample size was added to 122 making the total sample size as 134. However, three of the responses were incomplete and were omitted and finally 131 responses were included in the study.

In the first stage purposive selection of districts were done to select 13 districts from Odisha (Puri, Gajapati, Keonjhar, Kendrapara, Jagatsinghpur, Cuttack, Angul, Bhadrak, Balasore, Mayurbhanj, Sambalpur, Sundargarh, Sonapur) and 2 districts from Himachal Pradesh (Mandi, Kangda). In the second stage fifteen health centers (14 PHC and 1 CHC) from each district were selected by using simple random selection technique. List of FLHCW was prepared working under these centers. In the third stage the sample of 131

FLHCWs were randomly selected from the list and interviewed in person (when feasible) or over telephone, using a predesigned pretested semi-structured interview schedule consisting of 34 items. Written informed consent was taken prior to the interviews. Confidentiality and anonymity of the respondents was maintained throughout the study. Data was analysed using Microsoft Excel and SPSS Ver. 20. Appropriate statistical tests of significance were applied as necessary. The data were analysed using descriptive and inferential statistics.

Results

Sociodemographic profile of FLHCWs

Nearly half (52%) of the FLHCWs were between the age group of 21-40 years old. Majority of them (70%) were educated up to matric or higher level. Most of them were trained for covid-19 (Table 1).

Table 1. Distribution of the FLHCWs according to the socio- demographic profile and training status (N=131)

Socio-demographic characteristics	Number	Percent
Age (in yrs.)		
21 – 30	07	5.34
31 – 40	61	46.56
41 – 50	58	44.28
51 – 60	05	3.82
Educational Qualification		
Primary	1	0.77
Upper Primary	39	29.78
Matric	56	42.74
Higher Secondary	22	16.79
Graduation	13	9.92
Training		
Trained	125	95.5
Untrained	6	4.5

Perception of risk: Majority (90%) of the FLHCWs felt that they are susceptible to nCoV-19 infection. 58% of them expressed

that despite having knowledge about preventive measures it is difficult for them to avoid acquiring the infection. Most of the

FLHCWs (77.1%) felt that probability of them getting infected with the nCoV-19 is likely or extremely likely.

Perception of severity: 63% of them feared that nCoV-19 infection causes severe illness and 35% perceived it to be very severe and life threatening.

Table 2. Distribution of FLHCWs according to their knowledge and risk perception (N=131)

Knowledge and risk perception	No. FLHCWs	%
Knowledge of protective measures against nCoV-19		
Not at all	0	0.0
Inadequate/some	80	61.1
Adequate	51	38.9
Perception regarding possibility of avoiding nCoV infection		
Extremely difficult	3	2.3
Difficult	74	56.5
Easy	43	32.8
Extremely easy	11	8.4
Total	131	100
Perception of Susceptibility to nCoV-19 infection		
Not at all susceptible	14	10.7
Susceptible	67	51.1
Very susceptible	50	38.2
Perception regarding possibility of getting themselves infected with the nCoV-19		
Extremely unlikely	1	0.8
Unlikely	29	22.1
Likely	83	63.4
Extremely likely	18	13.7
Perception about severity of nCoV-19 infection		
Not Severe	2	1.5
Severe	84	63.1
Very Severe and life threatening	47	35.3

Cognitive awareness regarding effectiveness of various preventive measures and the ease of practicing them [Figure 1]:

Cognitive awareness is the most important part of decision making and practicing a

particular behaviour. When asked about their perceptions regarding the protective measures against nCoV-19 infection, most of the FLHCWs (61.1%) reported that they have some knowledge about how to protect themselves from nCoV-19 but only 38%

believed that the knowledge was adequate to protect themselves from the nCoV-19 infection.

When asked to rank the preventive measures based on their effectivity, majority (74.8%) of the FLHCWs responded that washing hands frequently with soap and water was the most effective way to avoid infection followed by social distancing. Very few of them mentioned measures like staying at home, registering names in Govt. portals like ‘Arogya Setu’, using gloves and not spitting in public place

as preventive measures that are important in preventing spread of nCoV-19. (Table 3). On applying chi-square test those who were educated up to higher secondary and above had significantly better knowledge of protective measures against nCoV-19 (Chi=79.56 p<0.01). Their perception regarding possibility of getting themselves infected with the nCoV-19 was that chances of getting infected was low if preventive measures were practised properly (Chi=6.64 p<0.05).

Figure 1. Distribution of ASHAs according to their cognitive awareness of preventive measures to limit spread of COVID-19 infection



On questioning about their ease to practice preventive measures like washing hands and wearing masks, few (1.5%) of the FLHCWs said that wearing mask always was very inconvenient. 46% of them reported feeling uneasy and suffocated while wearing mask all the time. Some FLHCWs (22.1%) felt inconvenient to maintain social distancing while others

(10%) found washing hands frequently with soap and water very inconvenient.

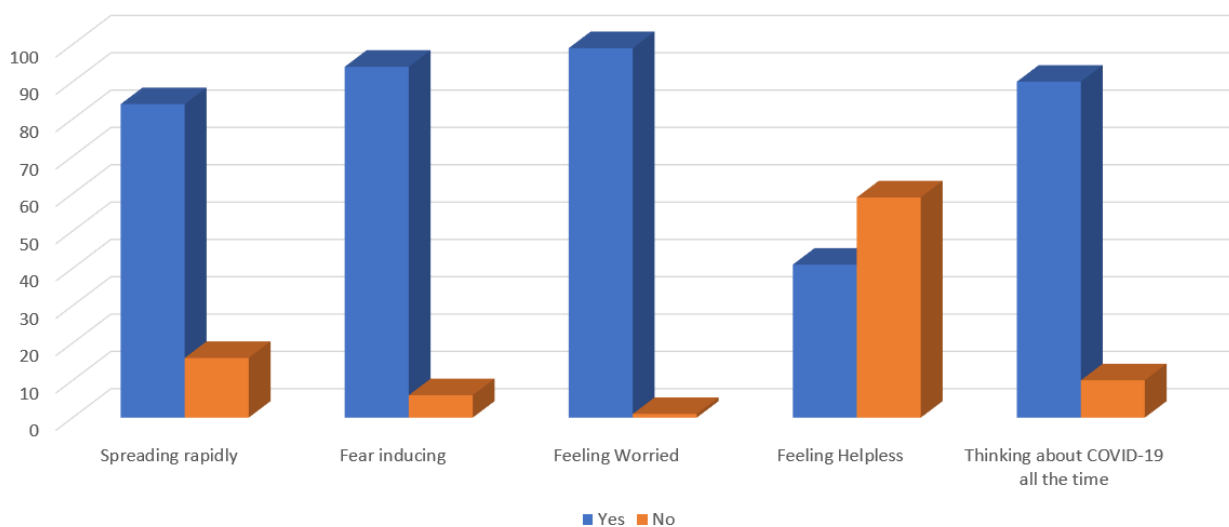
Capacity for coping with emotional responses in Covid 19 pandemic work

When asked about their emotional response to nCoV-19 infection, almost all of them (99%) answered that they feel worried about the possibility of acquiring nCoV-19

infection. 94% of them said that nCoV-19 is causing a lot of fear amongst them. 90% of them also responded that it is something they think about all the time and 41% of FLHCWs admitted that they feel helpless because of nCoV-19. 22% of FLHCWs admitted that they search for information about nCoV-19 more than 10 times a day. Most of them (64% reported checking COVID related information more than 10 times a day due to worry.

42% of the respondents said that getting infected due to their job responsibilities, was a major concern to them; some others (5.3%) reported non availability of sufficient PPE kits as a major concern. However, 59% of FLHCWs felt that nCoV-19 infection could be combatted through their own practices.

Figure 2. Perceptions of FLHCWs about nCoV-19 infection and emotional response towards it (N=131)



On probing about other challenges faced while doing active surveillance in the community, more than half of the FLHCWs reported that the stigma against the virus has also set off a chain of harassment against them, further demolishing their morale. Anxieties of their family members over their possibility of getting infected and transmitting it to others in the household also affected their attitude towards work. Some of them also reported feeling lonely and depressed when they stayed isolated at home due to the compulsion of maintaining physical distancing from their friends, relatives and family members.

Identified unmet needs for training of FLHCWs for effectively addressing these gaps:

For performing COVID-19 related work, almost 96.2% of the FLHCWs had received some training regarding COVID-19. However, most of them said that the training sessions were unstructured and not uniform. Also, the training session lacked psychological component for capacitating them with coping skills to address the psychological responses.

Discussion

In a similar study for Risk perception assessment of COVID-19 among Portuguese Healthcare Professionals (HCPs) it was found that 54.9% of HCPs believed there was a high probability of becoming infected. Regarding the likelihood of family and friends becoming infected, about 60% of them felt there was

a “moderate” probability. Regarding the perceived effectiveness of the quarantine measures, more than 70% believing it to be “very effective”. Most participants (60.0%) had the opinion that communication from the Health Authorities was “moderately adequate”. When asked about health services' preparations to manage this pandemic, 63.5% of the HCPs responded to be “poorly prepared” (7).

In another study conducted in Italy it was found that health workers reported higher risk perception, level of worry, and knowledge as related to COVID-19 infection compared to general population. Psychological state, gender, and living area were found to be important predictors of these factors. Instead, judgments about behaviours and containment rules were more linked to demographics, such as gender and alcohol consumption (8).

In a questionnaire-based on-line survey taken by a total of 744 healthcare personnel (mostly Indian) about 80% of the healthcare professionals were worried about being infected. Almost 98% of healthcare professional, identified ‘Difficulty in breathing’ as the main symptom and more than 90% of the respondents knew and practiced different precautionary measures. A minority of the respondents (28.9%) knew that there was no known cure yet. Almost all respondents from both the groups agreed on seeking medical help if breathing difficulty is involved and self-quarantine if required (9).

In another cross-sectional, web-based study conducted among 529 HCWs in Iran, it was seen that a significant proportion of HCWs had poor knowledge of its transmission (61%) and symptom onset (63.6%) but showed positive perceptions of COVID-19 prevention and control. Factors such as age and profession were associated with inadequate knowledge and poor perception of COVID-19 (10).

A cross-sectional study was performed between January 2020 and February 2020 at District Hospital, Ho Chi Minh City in

327 healthcare workers showed good knowledge with approximately two thirds of the participants well aware about the mode of transmission, isolation period and modalities of treatment and held positive attitude regarding the risk of personal and family members getting illness. There was a negative correlation between knowledge scores and attitude scores ($r=-0.21$, $P<0.001$) (11).

An online cross-sectional study undertaken in a Teaching Hospitals (MUTHs) in Uganda through WhatsApp Messenger among HCWs reported that HCWs had sufficient knowledge, 21% ($n = 29$) had positive attitude, and 74% ($n = 101$) were following good practices toward COVID-19. Factors associated with good practices were age 40 years or more (aOR: 48.4; 95% CI: 3.1–742.9; $p = 0.005$) and holding a diploma (aOR: 18.4; 95% CI: 1–322.9; $p = 0.046$) (12).

Findings from an online survey-based study conducted among healthcare professionals in Pakistan showed HCPs have good knowledge (93.2%, $n=386$), positive attitude and good practice regarding COVID-19. HCPs perceived that limited infection control material and poor knowledge regarding transmission of COVID-19 are the major barriers in infection control practice. Factors such as age, experience and job were significantly associated with good knowledge and practice.

Conclusion

Risk perception and fear of vulnerability to Covid 19 was high among the FLHCWs leading to a greater chance of FLHCWs being unwilling to participate actively in the programs for response to pandemics in future. FLHCWs need to be better trained with substantial emphasis on emotional and mental wellbeing and should be provided with all the essential commodities particularly sufficient personal protective equipment, to conduct active surveillance safely. Emphasis is needed during training

to build capacity emotional and psychological coping skills for reducing emotional and psychological distress of FLHCWs deployed for work during pandemics. The community also need to be better informed and motivated to avoid stigmatization and harassment of the FLHCWs.

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