Original Research Article

Assessment of Knowledge, Attitude, Practice, Anxiety and Perceived Mental Health Care Needs in Frontline Health Care Workers regarding COVID-19, A cross sectional Study from North India

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Abstract

Background: Corona virus disease or SARS-CoV-2 is the rapidly emerging pandemic in the present world. It has become a major concern for the front liners (health care professionals) globally. **Aim** of the study to assess the knowledge, attitude, practice, anxiety and Percieved mental health care needs among health care professionals regarding COVID-19 North India. **Methods:** A cross sectional online survey was conducted during April to june. The following questionnaire used for assessment purpose semi-structured proforma for socio-demographic variables, knolwdge, attitude and practice questionnaire, anxiety questionnaire regarding Covid 19 and perceived mental health cae need scale.**Results:** Total 587 subjects were responded. There were 145 specialists, 147 junior residents and 295 paramedical staff who were included for study pupose.Gender distribution, females (47.70%) and males (52.30%).As the data distribution was not normal distribution, Chi-square test was applied. It was found that knowledge and practice score was significantly higher in junior residents (p = <.05), while attitude score and anxiety was significantly higher in paramedical staff (p = <.05) and perceived mental health care needs were higher in specialists.

Keywords: Covid 19, Health care workers , North India

Introduction

COVID 19 started in December 2019, as viral outbreak in China[1].World Health Organization (WHO) along with Chinese authorities soon established etiological agent and named it Novel Corona Virus (2019nCoV)[2]. On 11th march 2020 World Health Organization (WHO) declared it as pandemic[3].As per WHO till now, prevention is the only strategy to protect spread of corona virus. Preventive measures like avoiding close contacts, regular hand washing, social distancing, and maintaining respiratory hygiene (covering mouth and nose) are necessary to contain spread of Corona virus [4].Health care workers are the main persons involved in the management of patients and hence amongst the high-risk group of acquiring the infection[5] because of overcrowding, absence of isolation rooms, environmental contamination and lack of awareness about infection prevention practices[6]. Literature search about pandemics in past(SARS, Ebola, Spanish flu etc.)shows that pandemics are known to cause various mental health problems along with physical comorbidities for example insomnia, anxiety, depression, stress-related disorders in the infected as well as in the non- infected public[7,8].Knowledge about a disease may affects HCWs' attitudes and practices, and incorrect attitudes and practices directly increase the risk of infection[9]. A cross-sectional survey was conducted by Zhang et al in China including 1357 HCWs across 10 hospitals, 89% of HCWs had sufficient knowledge of COVID-19, more than 85% feared for viral infection and about 89.7% followed correct practices regarding COVID-19. In addition to knowledge level, some risk factors including work experience and job category influenced HCWs' attitudes and practice concerning COVID19 [10].Literature shows that that more than half of the HCWs have good knowledge, most of the subjects have positive attitude and almost three-fourth have good practicing skills[11].Among the HCWs overall risk perception was high and it was found that allied health professionals had more positive attitude than physicians [12].HCWs despite being the crisis management personnel; they are not spared from psychological consequences of pandemic. Various mental health problems faced by them are similar to general public for eg. insomnia, anxiety, depression, stress-related disorders [13, 14]A significant number of health care professionals (45%) has shown anxiety; prevalence of anxiety was found to be more in female HCWs than in males[15] Another recent meta-analysis of various studies, reported pooled prevalence of anxiety to be 23.2 % [16]Various reasons of psychological consequences range from excessive workload, disproportionate working hours, lack of personal

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protective equipment, over-enthusiastic media news, feeling insufficiently supported, role conflict among health care professionals[17]This situation is further complicated by the misinformation across the social media resulting in the stigma against the HCWs, and incidents of violence and ill treatment against them[18].Disasters are frequently dealt by health care professionals and hence it is considered that they would be able to manage its psychological impact by themselves well, so, the mental health issues of the front- line HCWs and other health workers are often ignored[19,20].Though, it was found that in Canada, 47% of HCWs have reported a need for psychological support[21].

Medical and nursing staff with mental health issues was more interested in skills for self-rescue and showed more urgent desires to seek help from psychotherapists and psychiatrists. Those with sub-threshold and mild disturbances preferred to obtain such services from media sources, while staff with heavier burdens wanted to seek services directly from professionals[22].Mental health issues are major health concerns, which are expected to increase day by day. For providing better mental health care, it is necessary to understand the mental health status and associated psychosocial problems of health care workers. Haryana government in concordance with national government has implemented standard operating procedures for the use in health institutions, which includes counseling activities of Covid 19 patients as well as health care professionals[23]·To our knowledge, however, little is known about how the COVID-19 pandemic may affect the mental health status and psychosocial problems of the health care workers, this study is aimed to evaluate knowledge, attitude, psychological impact and perceived mental health care needs in front healthcare workers managing COVID-19 patients of tertiary care hospital designated as COVID-19 hospital.

Materials and methodology

A hospital based cross sectional study was done during April 2020 to June 2020 including a group of health care workers. Convenient sampling technique was used to include study participants. Following HCWs who had done COVID 19 duty and gave informed written consent were included in study. Specialists, junior residents (PG and Non-PG) and Paramedical Staff (i)nursing staff having minimum qualification of General Nursing Midwifery and (ii) lab technician having minimum qualification BSc Medical Laboratory technology and 1 year of experience.Subjects included for studies had performed duties in COVID ICU, isolation wards, flu clinics administration duties and triage duty for screening COVID 19 patients.A self designed semi-structured proforma was used to record socio demographic variables . Knowledge questionnaire was used to assess the knowledge regarding COVID 19 in HCWs. It contains 12 questions: 4 regarding clinical presentations (K1-K4), 3 regarding transmission route (K5-K7), and 5 regarding prevention and control (K8-K12)of COVID-19. These questions were answered on true and false basis on a true/false basis with an additional 'I don't know' option. A correct answer was assigned 1 point and an incorrect / unknown answer was assigned 0 point. Total knowledge scoreranged from 0-12, with a higher score denoting a better knowledge of COVID 19. The Cronbach'salpha coefficient of knowledge questionnaire was 0.71 in our sample, indicating acceptable internal consistency.Attitude questionnairewas used to measure the attitude of HCWs regarding COVID 19 It contains 2 questions; these questions were answered on agree/ disagree basis with additional 'I don't know' option.Practice questionnaire contains 4 questions. These questions were answered on yes/no basis and were scored 1 on 0 respectively for answers.A predesigned, pretested Anxiety questionnaire related to novel coronavirus infection that has 14 items was rated on a 5-point Linkert scale ranging from never, occasionally, sometimes, often and always. Score of the answers were 1, 2, 3, 4, 5 respectively.The perceived mental health care need was assessed by 4 items. These questions were answered on yes/no basis and were scored 1 on 0 respectively for answers.

Data collection process

All the health care workers performing duties as per roster for care of COVID-19 patients, who gave their informed consent, were taken as study subjects. Subjects who were not quarantined were approached directly, while those who were quarantined were approached telephonically and importance of study was discussed. After their willingness, questionnaires along with informed consent form required for study purpose were sent through whatsapp/email. All the protective measures were taken during course of study as per recommended guidelines.The ethical committee of SHKM government medical college, Nalhar, Nuh, had approved the study protocol. Confidentiality of the study participants' identities was maintained throughout the study.

Statistical analysis

After compilation of data, analysis was done using statistical package for social sciences (SPSS), version 24 (IBM, Chicago, USA). Descriptive statistics was used in the study to analyze the findings. Mean and standard deviation and proportions was used to estimate the results of the study.

Results

Table 1:Demographic characteristics of study sample N=587

Sample characteristics	N (%)
Job category	
Specialist	145
JR	147
Paramedical staff	295
Age	
21-30	317 (54%)
31-40	200 (34.07%)
>40	70 (11.93%)
Gender	
Male	307 (52.30%)
Female	280 (47.70%)
Marital status	
Married	369 (62.86%)
Unmarried	212 (36.12%)
others	6 (1.02%)
Covid care duty type	
ICU	60 (10.22%)
Isolation	331(56.39%)
Flu OPD	100 (17.04%)
Triage	77(13.12%)

None of the above	19(3.24%)
Done administrative duty	
yes	56 (9.54%)
Number of duties	
Single	526 (89.61%)
2 or more	61 (10.39%)
Family type	
Joint	152 (25.89%)
nuclear	435 (74.11%)
Children in family	
No	241(41.06%)
Yes	346 (58.94%)
Elderly in family	
No	306 (52.13%)
yes	281 (47.87%)

The sample comprised 587 healthcare workers, with an overall mean age of 31.32 years (SD=6.9); age ranged from 21 to 56 years, almost half of the sample consisted males (52.30%) and half females (47.70%).The sample consisted of 145 (24.70%) Specialists (including faculty, senior residents); 147 (25.04%) Junior residents (PG and non-PG); 295 (50.25%) Paramedical Staff (including nursing staff and lab technician).Family demographics of showed that most of the participants were married 62.86% and 74.11% had nuclear family. Of total study sample 58.94% had children and 47.87% had elderly in family. 61 (10.39%) out of total the health care workers had done 2 or more duties till the completion of study period. Most of the study sample had done isolation duty (56.39%), followed by duty in flu opd 17.04%, triage duty 13.12%, ICU duty 10.22%. Administrative duty was done by 9.54% of HCWs. We have synthesised the descriptive statistics of the sample in Table 1.

Table 2: Comparison of knowledge, attitude and practice scores between job category

Knowledge, attitude and practice scores	Specialist (n=145)	Junior resident (n=147)	Paramedical staff (n=295)	Total	P value	Test performed
Total attitude scores						
Mean ± Stdev	1.68 ± 0.61	1.73 ± 0.65	1.82 ± 0.5	1.76 ± 0.57	0.016	Kruskal Wallis test;Chi square=8.187
Median(IQR)	2(2-2)	2(2-2)	2(2-2)	2(2-2)		
Range	0-2	0-2	0-2	0-2		
Total knowledge score						
Mean ± Stdev	9.71 ± 0.95	10.2 ± 1.13	9.44 ± 1.4	9.7 ± 1.27	<.0001	Kruskal Wallis test;Chi square=37.563
Median(IQR)	10(9-10)	10(10-11)	10(9-10)	10(9-10)		
Range	7-12	6-12	3-12	3-12		
Total practice score						
Mean ± Stdev	3.44 ± 0.8	3.8 ± 0.47	3.51 ± 0.74	3.57 ± 0.71	<.0001	Kruskal Wallis test;Chi square=22.862
Median(IQR)	4(3-4)	4(4-4)	4(3-4)	4(3-4)		
Range	1-4	2-4	1-4	1-4		

The knowledge, attitude and practice scores were not normally distributed. Thus non-parametric test was used for the comparison. Significant difference was seen in total attitude, knowledge and practice scores between job category (p value <.05). Total attitude scores in paramedical staff was significantly higher as compared to junior resident and specialist. Median(IQR) of total knowledge score and practice in junior resident was significantly higher as compared to specialist and paramedical staff (table 2).

Table 3: Comparison of total anxiety score between job category

Total anxiety score	Specialist (n=145)	Junior resident(n=147)	Paramedical staff(n=295)	Total	P value	Test performed
Mean ± Stdev	40.42 ± 10.49	39.15 ± 8.36	43.34 ± 7.9	41.57 ± 8.89	<.0001	Kruskal Wallis test;Chi square=35.216
Median(IQR)	39(32-47)	40(33-44)	44(39-49)	43(35-47)		
Range	24-78	22-66	18-62	18-78		

The variable total anxiety score and perceived mental health care need was not normally distributed. Thus non-parametric test was used for the comparison. Significant difference was seen in total anxiety score and perceived mental health care needs between job category (p value <.05).Median(IQR) of total anxiety score in paramedical staff was 44(39-49) which was significantly higher as compared to junior resident (40(33-44)) and specialist (39(32-47)). Total perceived mental health care needs score in specialist and in paramedical staff was significantly higher as compared to junior resident (table 3).

Discussion

Epidemics and pandemics are a periodic phenomenon. Health care workers face several challenges during such periods. HCWs are at increased risk of exposure to corona virus acquiring this disease. Hence, in this present situation the paramount important that HCW's throughout the world have good knowledge regarding corona virus structure, pathophysiology, symptomology, diagnosis, treatment and prevention methods. Therefore it is very essential to assess the knowledge, practice and attitude of healthcare professionals. Lack of awareness often leads to an unconcerned attitude, which may adversely affect the practices and preparedness to meet these challenges. Impacts of these epidemics and pandemics are often intense and adversely affects the mental health also. The fear and anxiety related to epidemics and pandemics also influence the behavior of people. Hence, this study attempted to evaluate the knowledge, attitude, practices anxiety and perceived mental healthcare needs in HCWs.In the current study, the overall knowledge level of HCW's about the covid 19 is on higher side. This comes in accordance with the study conducted in China, Vietnam and Pakistan[24-26] In an Iranian study it was found that 99% of respondents had excellent knowledge level regarding the disease modes of transmission but regarding the disease symptoms only 86%

had sufficient knowledge[27] On the other hand in a study from the United Arab Emirates, it was found that there was poor knowledge about the disease transmission in HCW[28] Adequate knowledge about the disease preventive aspects was found in an Indian study despite the moderate overall knowledge about the COVID-19 infection[29]Amongst the health care workers total knowledge score in junior resident was significantly higher as compared to specialist and paramedical staff. Knowledge level about COVID-19 was significantly associated with younger age groups especially 20–30 years and with superior education levels[24].This could be explained by the fact that younger highly educated persons tend to use the internet than older less educated persons. In study by Bhagavathula et al reported that physicians have higher knowledge compared to paramedical staff[30].Possible speculation could be that there are disparities of knowledge among HCPs. In addition to doctors, paramedical staff also actively involved in seeking information owing to their active role in improving treatment outcomes of COVID-19 patients. This is of more significance in current scenario when there is no vaccine and research is ongoing so HCPs must aware of all the updates and take precautions in treating and preventing the infection.Our results revealed an overall positive attitude of HCWs towards COVID-19 as a preventable disease. Among the job category attitude score in paramedical staff was significantly higher as compared to junior residents and specialists. This can be because specialists and doctors are more aware about the pathology and outcome of disease than paramedical staff. Our results are in accordance with study done in Egypt where it was found that physicians had a less favorable attitude regarding the COVID-19 situation[28,31].Though some of previous studies is shown results contrary to our results. Zhou et al who found that frontline HCWs as physicians who deal directly with patients had a more optimistic attitude[24].While Albarrak et al and Khan et al didn't found any difference in attitude towards MERS among doctors, pharmacists, and nurses[31,32].Overall in our study three-fourth of the participants has good practicing skills likewise the study conducted by Giao et al and Bhagavathula et al also reported that majority of HCPs have good practicing towards COVID-19[25,28]. The study participants reported frequent use of sanitizers, hand wash, and masks during the past one week. This indicates the increasing concern of participants towards personal hygienic measures to avoid COVID-19 infection. Sensitization and awareness about COVID-19 are reflected in their behavior and attitude significantly as most of the participants agreed with –self-quarantine and adequate hygienic measures. Results revealed that total practice score was significantly higher in junior residents as compared to paramedical staff and specialist in following precautionary measures .Anxiety can lead to limitations in daily activities, avoidance behavior causing limited socialization, self-medication. Because of anxiety, people adopt various unwanted lifestyle and dietary modifications under the influence of rumors. In contrary to previous literature in our study we found that overall anxiety score in HCWs is less, this can be because India was eventually able to control initial rapid surge in the covid 19 cases as the complete lockdown was there through out the country, because of this number of cases were comparatively less as compared to other countries and the resources were arranged mean while to mange the situation. Among the various HCWs anxiety was highest in specialist and lowest in junior residents. The studies from China amidst COVID-19 have reported the prevalence of anxiety among HCWs ranging from 44.6% 14 to 62%[33,34].A non-COVID study conducted in India during the swine flu has found that as high as 98.5% of the health professionals experienced the anxiety of mild type (Beck's Anxiety Inventory)[35] and another comparative study has reported significantly higher anxiety scores (Spielberger State-Trait Anxiety Inventory (STAI)) among the HCWs working in SARS unit than their nonSARS unit counterparts[36]In our study population there was an increased need for mental healthcare needs.Covid 19 is novel situation for every heath care professional, no matter how much experience one holds, so it might be the reasonfor increased health care needs. Our study findings were in concordance with the study done by Roy et al[37].Highest need was observed in specialists than in paramedical staff and junior residents. Meeting the individual mental health needs in typical clinical settings that need face-to-face interviews for evaluation, is challenging in the current scenario considering the risk of the spread of COVID-19 infection. In this situation considering online mental health consultation might be more beneficial.

This study has some limitations. The survey was conducted in rural area in one part of India , so the results may not be generalizable to other hospital HCWs. Additionally, the measurement of KAP may be imprecise due to the limited number of items. The study is limited to the people who had smartphones, e-mail IDs and the ability to understand English. In our study we didn't calculated the probable factors for these differences.

Conclusion

COVID-19 is a rapidly emerging pandemic started in China. Healthcare workers were the front liners so, they must have proper knowledge, attitude and practicing skills. The present study was aimed to assess the knowledge, attitude and practice among healthcare professionals in tertiary care center of Northern India located in rural area. The results showed that attitude towards Covid 19 was better among the paramedical staff as compared to doctors. Knowledge and practice score was higher among junior residents. Anxiety was more among paramedical staff and there more perceived mental health care needs among specialists and paramedical staff. Thus awareness should be created by conducting continous educational professionals programs and it will finally help the HCW's to provide the proper care to the COVID-19 patients and improve the patient's as well as HCWs quality of life.

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