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Knowledge, attitude and practices towards COVID-19 among healthcare workers of Karnataka, India: a cross-sectional survey

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ABSTRACT

Background: COVID-19 is a Public health emergency of international concern which has affected over 213 countries infecting millions across the globe and also affected the economy worldwide. This study was conducted in Healthcare Workers as they are the frontline warriors in fighting this pandemic and their knowledge, attitude and practices towards the disease are valuable.

Methods: Online cross sectional study was conducted on Healthcare Workers. A self-administered Google form was used to collect the data through social media. Data was analyzed using MS Excel. P<0.05 was considered statistically significant obtained using SPSS version 22.

Results: The mean age among the participants was 30.7 ± 9.9 years. Majority were in the age group of 20-30 years (60.9%), followed by 31-40 years (18.9%), 41.-50 years (9.1%) and >50 years (5.4%). 46.3% of the participants were females and 53.0% were males. 37.1% were doctors, 14.0% are nurses and 46.9% are paramedical staff. In the present study, Mean knowledge score is 5.86 ± 1.32 , mean attitude score is 6.48 ± 0.93 and the mean practice score is 4.60 ± 0.79 , thus 95.7% of the participants have good knowledge and attitude, where as 90.3% have good practices towards COVID-19.

Conclusions: The HCWs of Karnataka have good knowledge, positive attitude and good practices. To further improve their preparedness and response towards infectious diseases and pandemics mandatory training programs can be introduced, as such programs enhances knowledge and boosts confidence among HCWs which is very crucial in medical as well as public health emergencies.

Keywords: Attitude, COVID-19, Healthcare workers knowledge, Practice

INTRODUCTION

Novel corona virus (COVID-19) is an emerging respiratory tract infectious disease caused by the coronavirus subtype SARS-CoV-2 infection which was first detected in Wuhan, China, in December 2019 which has now spread worldwide. The World Health Organization declared the outbreak a Public Health Emergency of International Concern on 30 January 2020

and a pandemic on 11 March. On 4 July 2020, scientists reported that the Infection Fatality Rate (IFR) of COVID-19 and related pandemic is estimated as 0.6%, and the Case Fatality Rate (CFR) as 5%. As of 7 July 2020, more than 11.5 million cases of COVID-19 have been reported in more than 188 countries and territories, resulting in more than 536,000 deaths. India had 721,310 active cases and 440,229 cured cases with 20,184 deaths as on July 7th 2020. It is expected that the number will in grow

future. India has the highest number of cases in Asia. Therefore, all possible preventive action should be taken to control the spread of the infection.

Common symptoms include fever, cold, cough, fatigue and shortness of breath. The disease turns severe only in individuals with chronic diseases, autoimmune diseases and among aged people. The disease spreads via droplets produced by the infected individuals while coughing, sneezing or talking. These droplets may contaminate surrounding surfaces and objects, the transmission risk from such surfaces is less. Currently, there is no specific antiviral treatment and preventive vaccine. Therefore, the guidelines are recommended to decline the spread of infection and respond to the challenges during the epidemic. The best prevention is to avoid being exposed to COVID-19. This is done by washing hands with soap and water as frequently as possible, using hand sanitizers, face masks, avoiding social gatherings and crowded places, isolating confirmed and suspected cases.

A healthcare worker is one who delivers care and services to the sick and ailing either directly as doctors and nurses or indirectly as aides, helpers, laboratory technicians, or even medical waste handlers.³ Healthcare workers (HCWs) are at the frontline of COVID-19 pandemic response and are exposed to dangers like pathogen exposure, long working hours, psychological distress, fatigue, occupational burnout and stigma, and physical violence. A poor understanding of the disease among HCWs can result in delayed identification and treatment leading to rapid spread of infections.⁴

Objectives of the study was to assess knowledge, attitude and practice towards COVID-19 among Healthcare Workers and to find out the association between occupation and Knowledge, attitude and practice core among Healthcare workers of Karnataka, India.

METHODS

A quick online cross-sectional survey was conducted among Healthcare workers of Karnataka, India from 15th May to 2nd June 2020. Data was collected through Google form which had 2 parts. First part consisted questions related to socio-demographic profile and second part consisted question related to KAP. This online questionnaire contained a total of 24 questions among which 8 for assessing Knowledge, 9 for assessing attitudes and remaining 7 for assessing practice. Google form was sent to Healthcare Workers in the social media group like Whatsapp and Facebook and also through Email. Further they were asked to share among their colleagues and friends who were in the same field.

Assuming the prevalence of knowledge about COVID-19 to be 50% as it's a new disease, sample size was calculated. Considering knowledge to be 50% with 95% confidence level and 10% relative precision, minimum sample size to be studied was calculated using sample

size formula of single proportion to be 100. Data was analyzed using MS Excel.

As more responses were obtained than the required sample size, all the responses were included. Results were expressed as percentage, mean, standard deviation and Chi-square. Statistically significance was considered for P<0.05 this was calculated using SPSS version 22.

KAP scoring

Scoring was done for knowledge, attitude and practice questions. For each correct answer 1 mark was assigned and mean value was calculated. Participants who scored more than mean value were considered to have good knowledge, attitude and practices while those who scored less than mean value were considered to have poor knowledge, attitude and practices.

RESULTS

The mean age among the participants was 30.7 ± 9.9 years. Majority were in the age group of 20-30 years (60.9%), followed by 31-40 years (18.9%), 41.-50 years (9.1%) and >50 years (5.4%). 46.3% of the participants were females and 53.0% were males. 37.1% were doctors, 14.0% are nurses and 46.9% are Paramedical staff (Table 1).

Table 1: Distribution of participants based on sociodemographic details.

Variables		Frequency (n=164)	Percent	
	20-30	103	60.9	
Age (in	31-40	31	18.9	
years)	41-50	15	9.1	
	>50	9	5.4	
Gender	Female	76	46.3	
Gender	Male	87	53.0	
	Doctor	61	37.1	
Occupation	Nurse	23	14.0	
Occupation	Paramedical staff	77	46.9	
Do you	Yes	102	62.1	
live in Karnataka	No	62	37.8	

In the present study, Mean knowledge score is 5.86 ± 1.32 , mean attitude score is 6.48 ± 0.93 and the mean practice score is 4.60 ± 0.79 , thus 95.7% of the participants have good knowledge and attitude, where as 90.3% have good practices towards COVID-19.

The common clinical features of COVID-19 like fever, cough, breathlessness was known to 98.7% of the study participants. There is a misconception that influenza vaccine offers protection against COVID-19 as 48.1% believed it so. 96.9% of the participants knew that

patients with COVID-19 tend to develop severe acute respiratory distress. The incubation period range was well known to the study participants as 95.7% answered the question correctly. 93.3% of them were aware that patients with co-morbidities such as diabetes and hypertension are at a greater risk of developing the disease.

Though the name of the disease itself suggests that it is caused by a virus and even though 98.1% of them agree with the fact but 65.2% of the participants find antibiotics to be the first line of treatment. 87.1% knew that COVID-19 could be fatal (Table 2).

It was known to 85.9% of the respondents that following the precautions suggested by WHO, CDC the transmission of COVID-19 can be prevented. Healthcare workers feel any COVID-19 information should be disseminated to them as 89% agree with the same. 91.4% feel intensive and emergency treatment should be given to diagnosed COVID-19 patients. Healthcare workers feel the prevalence of the COVID-19 can be reduced by their active participation in training programs like infection prevention and control as 90.2% agreed with the same.

98.1% of the respondents felt gowns, masks, gloves and goggles to be a must during their dealings with the patients.

In case of an effective vaccine 92% of the respondents would take it. 97.5% of them feel that patients with COVID-19 should be kept under isolation. Healthcare workers have the opinion that patients with symptoms similar to COVID-19 do not reveal all the symptoms when in a clinical setting as 82.3% have experienced it. To prevent the spread and contract with the virus 96.3% of Healthcare workers paid more attention to their personal hygiene (Table 3).

While 96.3% of the respondents educated their patients about the disease. A good number that is 97.5% of HCWs used face masks in the crowds. 92.6% of the respondents avoid touching eyes, nose and mouth as far as possible. As high 79.8% of HCWs found it difficult to deal with patients in healthcare facilities amidst the pandemic. Frequency of changing disposal face masks was poor as only 45.7% of HCWs changed in every few hours while others used the same for days and weeks, this could also be because of shortage of supplies.

Table 2: Distribution of participants based on the knowledge regarding coronavirus.

Knowledge questions	Frequency	Percentage
The main clinical symptoms of nCOVID-19 are fever, cold, dry cough,		
breathlessness		
Correct	162	98.7
Incorrect	2	1.2
Influenza vaccine also gives protection from n COVID-19?		
Correct	79	48.1
Incorrect	55	33.5
Don't know	32	19.5
COVID-19 patients develop severe acute respiratory illness		
Correct	159	96.9
Incorrect	5	3.0
The incubation period of nCOVID-19 ranges between 2-14 days?		
Correct	157	95.7
Incorrect	0	0
Don't know	7	4.2
People with co morbidity like diabetes and hypertension are at greater risk of		
developing COVID-19?		
Correct	153	93.2
Incorrect	11	6.7
Antibiotics are first line treatment?		
Correct	107	65.2
Incorrect	40	24.3
Don't know	17	10.3
Coronavirus infection could be fatal?		
Correct	143	87.1
Incorrect	21	12.8
COVID-19 is a viral infection?		
Correct	161	98.1
Incorrect	3	1.8

Table 3: Distribution of participants based on the attitude regarding coronavirus.

It is my opinion that if there is an available vaccine for the disease, It should be used	Attitude questions	Frequency	Percentage
Agree 151 92.0 Disagree 4 2.4 Neutral 9 54.8 In my opinion patients with symptoms similar to Covid-19 do not reveal all their symptoms Section 135 82.3 Disagree 135 82.3 Disagree 15 9.1 Neutral 14 8.5 In order to prevent contracting and spreading COVID-19, I pay more attentions by personal hygiene than usual 158 96.3 Agree 158 96.3 18 96.3 Disagree 2 12 14 8.5 18 18 96.3 18 18 96.3 18	It is my opinion that if there is an available vaccine for the disease, It should be		
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In my opinion patients with symptoms similar to Covid-19 do not reveal all their symptoms	Disagree	4	2.4
symptoms Agree 15 9.1 Disagree 15 9.1 Neutral 14 8.5 In order to prevent contracting and spreading COVID-19, I pay more attention to my personal hygiene than usual	Neutral	9	54.8
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Only 52.4% of HCWs washed/sanitized their hands before and after their dealings with the patients while 40.8% would wash only when required and 6.7 washed after every time they dealt with the patients. Only 44.5% participated in trainings regarding COVID-19, even though there is enough emphasis on the trainings and preparedness related to the pandemic it is far from practice in reality (Table 4). In our study 55.7% of the doctors have good knowledge with 55.7% of them having

good attitude and 60.7% have good practices. 34.8% of the nurses have good knowledge, 65.2% have good attitude and 39.1% have good practices. 24% of the paramedical staff have good knowledge, 84.4% of them have good attitude while 84.4% have good practices.

There is also statistically significant association between occupation and knowledge, attitude and practices (Table 5).

Table 4: Distribution of participants based on the practices regarding coronavirus.

Practice questions	Frequency	Percentage
Do you educate your patients about the disease?		
Yes	158	96.3
No	1	0.6
Sometimes	5	3.0
Do you use face mask in crowds?		
Yes	160	97.5
Sometimes	4	2.4
Do you avoid touching your eyes, nose or mouth as far as you can?		
Yes	152	92.6
No	7	4.2
Sometimes	5	3.0
It is difficult to deal with patients in health care facilities during this pandemic		
True	131	79.8
False	7	4.2
Sometimes	26	15.8
How often do you change disposable face mask?		
After few hours	75	45.7
After few days	38	23.1
After few weeks	51	31.0
How often do you wash/sanitize your hands?		
Before and after dealing with patients	86	52.4
Only after dealing with patients	11	6.7
Only when required	67	40.8
24. During the outbreak, did you participate in training programs on COVID-19?		
Yes	73	44.5
No	75	45.7
Not yet	16	9.7

Table 5: Association between occupation and knowledge, attitude and practices.

Occupation	Knowled	lge	P value	Attitude		P value	Practice		P value
	Good	Poor		Good	Poor		Good	Poor	
Doctor	55.70%	44.30%		55.70%	44.30%		60.70%	39.30%	
Nurse	34.80%	65.20%	0.002	65.20%	34.80%	0	39.10%	60.90%	0
Paramedical staff	26.00%	74.00%		84.40%	15.60%	V	84.40%	15.60%	- U

DISCUSSION

The mean age among the participants was 30.7 ± 9.9 years. Majority were in the age group of 20-30 years (60.9%), followed by 31-40 years (18.9%), 41.-50 years (9.1%) and 90.00 years (90.00). 90.00 years (90.00) were males. 90.000 were doctors, 90.000 are nurses and 90.000 are Paramedical staff.

In the present study, mean knowledge score is 5.86 ± 1.32 , mean attitude score is 6.48 ± 0.93 and the mean practice score is 4.60 ± 0.79 , thus 95.7% of the participants have good knowledge and attitude, where as 90.3% have good practices towards COVID-19.

The findings were consistent with study conducted by Saqlain et al. in Pakistan and Richa et al. in Nepal, among Healthcare workers, where 93.2% and 82.15% of the participants had good knowledge scores towards COVID-19 respectively.^{5,6} Similarly a study conducted by Minge Zhou et al among healthcare workers in Henan, China showed that 89% of HCWs had sufficient knowledge, about 85% of them feared self-infection with the virus, and 89.7% followed correct practices regarding COVID-19.⁷

In our study 98.7% of the participants knew about clinical symptoms of COVID-19. This result is in par with result of the con ducted by Saqlain et al. among Healthcare workers, where 98.7% knew about common symptoms of COVID-19.6 The incubation period was known by

95.7.9% in the present study whereas 96.38% participants knew about incubation period in the study by Saqlain et al.⁵ In the current study 48.3% of the participants felt influenza vaccine can protect against the disease whereas in the study conducted by Saqlain only 23.19% believed it to be so, in the same study 90.82% knew that coronavirus infection could be fatal which is at par with our findings of 87.1%. As reported by Saqlain et al 78.99% of the respondents knew the severity of the disease is more likely in patients with comorbidities like diabetes and hypertension whereas in this study 93.2% of the respondents knew it, in the same study 17.87% believed antibiotics to be the first line of treatment which is comparatively less than our findings where 65.2% considered antibiotics to be the first line of treatment.⁶

The respondents in the study by Saglain et al knew that it's a must to use gowns, gloves, mask and goggles while dealing with the patients, in our study 98.1% of the respondents also agreed with the same. In the same study 97.80% knew the importance of isolation in treating the COVID-19 patients which is consistent with our findings of 97.5%. The findings of practices in Saqlain et al study were 88.7% of the participants had good practices like educating the patients about the disease, wearing face masks, following respiratory etiquettes sanitizing/washing hands frequently are very much similar with our study where 95.7% had positive practices and 90.3% had positive attitude in our study.6

Limitations

Our study lacks complete representativeness due to its online nature and no standardized and validated tool for data collection was used.

CONCLUSION

The HCWs of Karnataka have good knowledge, positive attitude and good practices. To further improve their preparedness and response towards infectious diseases and pandemics mandatory training programs can be introduced, as such programs enhances knowledge and boosts confidence among HCWs which is very crucial in medical as well as public health emergencies.

Recommendations

Our study lacks complete representativeness due to its online nature of study thus more studies are required to

investigate the KAP towards COVID-19 among Healthcare workers of Karnataka.

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