

Awareness of COVID-19 Infection and its Safety Protocols among Health Care Workers in Pakistan: A Cross Sectional Study on Knowledge, Attitude and Practice (KAP)

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ABSTRACT

Objective: To draw a comparative analysis of the levels of awareness of COVID-19 pandemic and its protective measures amongst health care workers (HCWs).

Materials and Methods: This cross sectional study on Knowledge, Attitude and Practice (KAP) was conducted at PIMS Hospital, Islamabad from 1st August 2020 to 30th September 2020. 156 professionals in the hospital including doctors and paramedics, who directly or indirectly came in contact with or managed COVID-19 patients, were included in the study with their consent and were provided with a questionnaire of 22 questions which comprised of answers of 'yes', 'no' or 'I don't know'. All participants were divided into two groups; the doctors were assigned Group 1 while the paramedics Group 2. Their answers were studied and overall KAP and comparison was analyzed using SPSS, v 22; IBM Corporation, Armonk, NY. The correct responses were considered 'Poor' (<70%), 'Good' (70-90%) and 'Very Good' (>90%).

Results: The difference in gender population between two groups was not significant. The difference in correct knowledge, attitude and practice between two groups was statistically significant.

Conclusion: The attitude and practice about COVID-19 and its preventive measures was good in all professionals, though the doctors had very good (>90%) attitude. The knowledge was poor (<70%) in paramedics. The awareness programs are still required to continue better understanding and practice of COVID-19 especially in paramedics.

Keywords: COVID-19, Corona, Knowledge, Attitude, Practice, Healthcare workers.

INTRODUCTION

Corona Virus Disease of 2019 (COVID-19) caused by novel corona virus 'Severe Acute Respiratory Syndrome-Corona virus' (SARS-CoV2) first appeared in Wuhan, China in December 2019 followed by rapid spread all over the world¹. On 11 Feb 2020 World Health Organization (WHO) named it COVID-19² (coronavirus disease 2019) and declared it as world pandemic on 11 March 2020^{2,3} and upto date it has killed millions by damaging vital organs of the body. The nature of virus, its spread ability, its sustainability in various environmental factors and the preventive measures for its spread have all been studied and knowledge spread through media sources which has gradually lead to restriction of its spread.

An enthusiastic campaign for spreading awareness of COVID-19 was started at global media, national media and the hospital. Many guidelines were distributed to common people by World Health Organization (WHO), United Nations Children's Fund (UNICEF), Centre for Disease Control and Prevention (CDC), National Health Service (NHS) Pakistan, and healthcare workers were especially trained to handle the COVID-19 patients and to have safety precautions for themselves and the community. The international awareness has lend a hand in the restraint of SARS-CoV-2.³ The role of healthcare professionals in hospitals was vital in this regard and their knowledge of COVID-19, SARS-CoV2 and its prevention was found to be instrumental in controlling this huge disaster.

In this study attempt was made to assess and compare the knowledge, attitude and practice of COVID-19 pandemic in doctors and paramedics at PNS Hafeez hospital in Islamabad city, who directly or indirectly were involved in managing COVID-19 patients. The hospital we chose for this study hosted more than 500 confirmed COVID-19 cases by the time we started study and almost all medical staff was assigned some duties which linked to care such patients.

MATERIALS AND METHODS

After approval by the hospital ethical review committee this cross sectional study was conducted at PIMS Hospital, Islamabad during from 1st August 2020 to 30th September 2020. 156 HCWs including

doctors and paramedics in the hospital participated in the study and signed the consent forms. All the participants were provided with a questionnaire (in the language in which they were comfortable) comprising of 22 different questions which were to be answered either 'yes', 'no' or 'I don't know'. The questionnaire was designed with the help classified medical specialist and the senior internist in the hospital, keeping in view the up to date information of COVID-19 and the level of information provided to everyone on electronic and social media and the local information campaign in the hospital. The participants were given option to leave the study any time or ask any question for the clarification of the questionnaire. They signed the consent forms and filled the forms as best of their knowledge and practice. All the participants were assigned into two groups; Doctors were assigned group 1 and the paramedics group 2. All the forms from each patient were saved for record keeping and statistical package for social sciences (SPSS 22.0) for windows was used for statistical analysis. The correct responses were regarded as 'Poor' (<70%), 'Good' (70-90%) and 'Very Good' (>90%). Frequencies along with percentages for qualitative variable (gender) and descriptive statistics i.e. mean \pm standard deviation for quantitative values (correct answers) were used to describe the data. Chi square test was used to compare qualitative variables, and independent t test to compare quantitative variables between two groups and between males and females.

RESULTS

In this study, 77 (49.4%) participants were male and 79 (50.6%) female. The gender wise distribution is given in Table 1. Group 1 comprised of 40 (25.6%) participants while group 2 comprised of 116 (74.4%) participants. Analysis of the data revealed that the health care workers in the hospital had 80.82% (\pm 8.54) correct answers. The group 1 had 86.81% (\pm 9.36) correct answers; group 2 had 78.75% (\pm 7.20) correct answers as given in Table 2. The difference of results between groups was statistically significant (p value <0.001); while the difference between both genders was not statistically significant (p value >0.001) (Table 3). Further stratification revealed the knowledge was poor (67.3%) in group 2 as compared to group 1 (83.3%); attitude was very good in group 1

(92%) and good in Group 2 (86.7%), while practice was good in both the groups (80% and 79.3% respectively) as shown in Table 4. The questionnaire and the correct response against each question of each group is given in Table 5.

Table 1: Group Wise Demographic Data (n=156)

Characteristic	Study Population (n=156)	Group 1 (n=40)	Group 2 (n=116)	p Value (Between groups)
Gender (Male/Female)	77 / 79	18 / 22	59 / 57	0.873*

* Chi Square test

Table 2: Correct Response Comparison between Two Groups

Variable	Study Population (n=156)	Group 1 (n=40)	Group 2 (n=116)
Correct response	80.82% \pm 8.54	86.81% \pm 9.36	78.75% \pm 7.20
P value	<0.001**	<0.001*	<0.001*

** One sample t test

Table 5: Questionnaire and Correct Response

Question	Correct Response Study Population	Correct Response Group 1	Correct Response Group 2
Knowledge			
Surgical mask is enough to avoid COVID-19 infection	30.1%	37.5%	27.6%
Hand washing with soap for 10 seconds is insufficient to kill COVID-19 virus	51.9%	67.5%	46.6%
I think germs can not transmit through air	89.7%	97.5%	87.1%
Only antiseptic soaps can kill germs	58.3%	87.5%	48.3%
COVID 19 transmission can be stopped with face masks, hand washing or social distancing	97.4%	100%	96.6%
Social distancing of 6 feet is not enough to avoid COVID 19 transmission	85.3%	95%	81.9%
Contact with COVID 19 patient's blood can also be source of infection	55.8%	70%	50.9%
Hand sanitizer has no role in protection	91.7%	95%	90.5%
Any patient that presents with fever and flue like symptoms should be considered suspicious of having COVID-19 infection	82.7%	100%	76.7%
Attitude			
I am satisfied with the information that I have about my own safety in handling patients in the hospital	100%	100%	100%
Face mask should be worn by me while handling the patient	100%	100%	100%
Face mask should be worn by the patient while in the hospital	98.7%	95%	100%
It is inevitable to avoid COVID 19 transmission by wearing face masks and disposable hand gloves while checking patients vitals or taking blood samples	75%	95%	68.1%
While COVID 19 pandemic is still not over, complete PPE should be worn while dealing with any patient who visits hospital	35.9%	47.5%	31.9%
Hand wash station should be there in every clinic/laboratory/ward	98.7%	100%	98.3%
I am aware of technique of disposing off of PPE/ face mask/ hand gloves	96.8%	100%	95.7%
After removing PPE, changing dress is not necessary at the end of duty	86.5%	87.5%	86.2%
I believe I am more prone to acquire COVID 19 infection as compared to common man	92.3%	95%	91.4%
Using hand sanitizer after dealing with a patient is good habit	96.8%	100%	95.7%
Practice			
I reuse gloves	82.1%	92.5%	78.4%
I reuse surgical mask for more than one day	70.5%	65%	72.4%
I change my gloves between patients	85.9%	82.5%	87.1%

DISCUSSION

SARS CoV-2 virus is from the same family as SARS-CoV and Middle East Respiratory Syndrome (MERS) viruses which spread in 2002 and 2012 respectively³. The disease produced by SARS CoV-2 virus has presented with wide range of symptoms and signs, ranging from asymptomatic cases to highly lethal features leading to serious morbidity and mortality¹. The studies have revealed large viral loads in SARS Cov-2 infection and vastly contagious nature as compared to SARS CoV and MERS, though the mortality rate is lower in the former.^{3,4} It primarily affects lungs though other organs have also been severely affected like heart, kidneys, liver, eyes, nerves and muscle.^{5,6,7,8,9,10} The SARS CoV-2 virus is distinct from other viruses in morphological factors and virulence. It is a large virus with a size between 65-125 nm, with a unique spherical shape with tiny club shaped spikes^{11,12}. The coat of virus makes it resistant to many environmental factors and medicines. When virus infects an individual a rigorous immune response is created in the body with the release of interleukins and cytokines. The immune response is thought to produce extensive

* Independent t test

Table 3: Correct Response Comparison between Genders

Variable	Males (n=77)	Females (n=79)
Correct Response	80.62% \pm 8.45	81.01% \pm 8.68
P value	>0.001	>0.001

* Independent t test

Table 4: Correct Response Stratification of Two Groups

Variable	Study Population (n=156)	Group 1 (n=40)	Group 2 (n=116)
Correct response	71.4% \pm	83.3%	67.3%
Knowledge	88%	92%	86.7%
Attitude	79.5%	80%	79.3%
Practice			

fibrosis of lungs, loss of function and subsequent oxygen insufficiency in the body, with severity dependant on the extent of lung tissue involved.

The SARS CoV-2 virus initially appeared in Wuhan, China and spread almost throughout the world in couple of months affecting millions of people worldwide due to its highly contagious ability. It mainly transfers by droplets when an infected persons coughs, sneezes or breaths so closely but also transfers by direct contact with patient and surfaces and feces.^{2,3} The virus can live for 3 days on plastic and stainless steel, one hour on copper and about 1 day on cupboards.^{13,14} WHO and UNICEF since start of the pandemic has circulated directives for preventive measures especially emphasizing on wearing masks, washing hands frequently with soap, using hand sanitizers and ensuring social distancing. These measures have largely proven to be gold standard in preventing the spread of the disease.

The knowledge of the pandemic and the practice of protective measures are considered very important for HCWs since these are the frontline fighters against SARS CoV2. In

Pakistan, like many countries in the world, direct and indirect awareness programs were started to provide HCWs with latest and authentic information of the COVID-19. Initially group of Chinese HCWs who fought the pandemic in Wuhan and greatly controlled the disease, was invited to various hospitals in Pakistan including the one where we have conducted our research and information was shared with the hospital's HCWs. Alternatively, regular theoretical and practical lectures were arranged in the hospital to circulate emerging knowledge and improve practices of HCWs. In our study we tried to assess the knowledge, attitude and practice of the HCWs about COVID-19 with an aim to weigh up a need of rectification and further improvement in awareness programs. The participants of the study included doctors and paramedics who actually took care of the patients of COVID-19. By and large the knowledge, attitude and practice of HCWs were satisfactory, though doctors appeared to have better knowledge and practice. With our study, we came to a conclusion that local and international campaigns of awareness of COVID-19 have greatly improved the correct knowledge among HCWs; though better understanding of the disease is always required by the HCWs and frequent awareness methods should continue at all levels of information since the latest knowledge is also a need of all times, especially about preventive measures and the treatment modalities. Our study will help government and non government organizations of Pakistan in planning health care management in communities.

CONCLUSION

THE COVID-19 pandemic has affected the whole world. Most HCWs were well informed about COVID-19 and have been taking preventive measures for its spread ability; though there is still a need to continue circulation of information and to implement the precautionary measures at all levels at hospitals.

Conflict of Interests: The authors report no conflict of interests. The authors alone are responsible for the content and writing of the paper. None of the authors has a financial or proprietary interest in any material or method mentioned

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