

Assessment of Gap Between Knowledge and Practice of PPEs among Healthcare Professionals During Covid-19”

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ABSTRACT

Objective: To assess the gap between knowledge and practice of PPEs among healthcare professionals during COVID-19.

Study design: Cross-Sectional study.

Study setting: Sheikh Zayed Medical College/Hospital, Rahim Yar Khan.

Study Duration: May-August 2020.

Methodology: A total of 214 Healthcare professionals (including medical and paramedical staff) were included in this study using convenient sampling technique. Data was collected on pre-designed questionnaire. The questionnaire included information regarding age, sex, job title, working station, etc. then data was entered in and analyzed by using SPSS Version. 21. Numerical variables like age was presented as mean \pm standard deviation. Categorical variables like sex, job title, working station were shown as percentages.

Results: Our study included the subjects with 88 (41.1%) males and 126 (58.9%) females. Mean age of study subjects came out to be 26.6 ± 3.954 years. It is observed that only 95 (44.4%) of the subjects have PPEs; only 85 (39.7%) were provided PPEs from their respective healthcare authorities and 137 (64%) can afford purchasing PPEs on their own. And there is a major gap seen between the knowledge about PPEs/ appreciation of their effectiveness and the practice of PPEs by these healthcare professionals. Regarding PPEs (which include gown, surgical mask, N-95 mask, gloves, goggles, head cover, shoe cover, social distancing, hand sanitizer and hand washing), this lag is seen majorly among the healthcare professionals working in general wards; less among emergency staff and least among the subjects working at flu filter clinic or isolation wards.

Conclusion: Majority of healthcare professionals appreciate the effectiveness of PPEs against corona virus but don't bring them into practice; either due to non-availability of PPEs or they have some attitude problem towards it.

Keywords: Healthcare authorities, COVID-19, Knowledge, Practice, PPEs, Availability, Attitude

INTRODUCTION

The COVID-19 pandemic is an ongoing global pandemic of corona virus disease 2019 (COVID-19), caused by severe acute respiratory syndrome corona virus 2 (SARS-CoV-2).^[1] In December 2019, Wuhan, China confirmed this pandemic outbreak.^{[2][4]} The outbreak was officially declared by World Health Organization as a Public Health Emergency of International Concern on 30 January 2020 and a pandemic on 11 March 2020.^{[5][6]} Till 31st of August 2020, more than 25.3 million cases of COVID-19 had been reported in more than 188 countries and territories, with 848,000 deaths and more than 16.6 million recovered patients.^[3]

The COVID-19 virus is investigated to spreads mainly through respiratory droplets produced when an infected person coughs, sneezes or talks. These air droplets can land inside or around the mouth or nose of people who are standing in their near vicinity and can possibly be inhaled into the lungs. Its spread is more likely when the people are in close contact; within about 6 feet to be a bit more precise.^{[7][8][9]} That's why, social distancing and wearing of cloth face masks, surgical masks, respirators, or other face coverings are described as controls for droplet transmission.^{[7][8]} The World Health Organization recommends at least 1 meter (3ft) of social distance;^[9] while the United States Centers for Disease Control and Prevention recommends keeping a social distance of about 6 feet (2m).^[7] Some of the recent

outbreaks have been reported in crowded and inadequately ventilated indoor locations where infected persons spend long periods of time, such as in restaurants or in night clubs.^[9]

So, under these risk factors regarding the transmission of corona virus, some SOPs were announced in order to observe PPEs. Moreover, healthcare professionals are especially at increased risk of getting this corona virus as they have to deal with multiple patients with multiple diseases including COVID-19 itself. The effectiveness of different preventive measures against COVID-19 has partly been acknowledged/proven so far and the data is still being added on the basis of day by day studies.^{[10][11]}

The main objective of this study was to assess the gap between knowledge and practice of PPEs among healthcare professionals during COVID-19 pandemic in order to make necessary improvements in the lagging areas so that, we can respond to any other spikes of such a pandemic crisis in future, in a better way possible.

METHODOLOGY

Study design: Cross-Sectional Study

Study setting: Sheikh Zayed Medical College/Hospital, Rahim Yar Khan.

Study duration: May-August 2020

Study subjects: Medical personnel of Sheikh Zayed Medical College/Hospital, Rahim Yar Khan and general public of Rahim Yar Khan.

Sample size: A total of 214 subjects were included in the study overall prevalence as 35%, power as 80%, confidence interval of 95% and margin of error as 5%.

Sampling technique: Convenient Sampling Technique

Inclusion criteria: Male and female medical personnel of Sheikh Zayed Hospital, Rahim Yar Khan present in a single working shift to make a total count of 214 study subjects.

Exclusion criteria: Subjects who refused to give informed verbal consent and who were absent from shift on the day of data collection.

Data collection and analysis: Data was collected on a pre-designed questionnaire containing information of subjects like age, sex, education level, field of work, etc. The questionnaire comprised of different questions regarding the knowledge about effectiveness of PPEs and their practices. It also included queries regarding the availability and affordability of PPEs. Data was entered in and analyzed by using SPSS Version. xs21. Numerical variables like age was presented as mean ± standard

deviation. Categorical variables like sex, job title and concerned department were shown as percentages.

Approval Committee: Legal and ethical approval was sought from Institutional Review Board of Sheikh Zayed Medical College/Hospital, Rahim Yar Khan before starting the research work and then informed verbal consent was taken from all of the study subjects before taking the data.

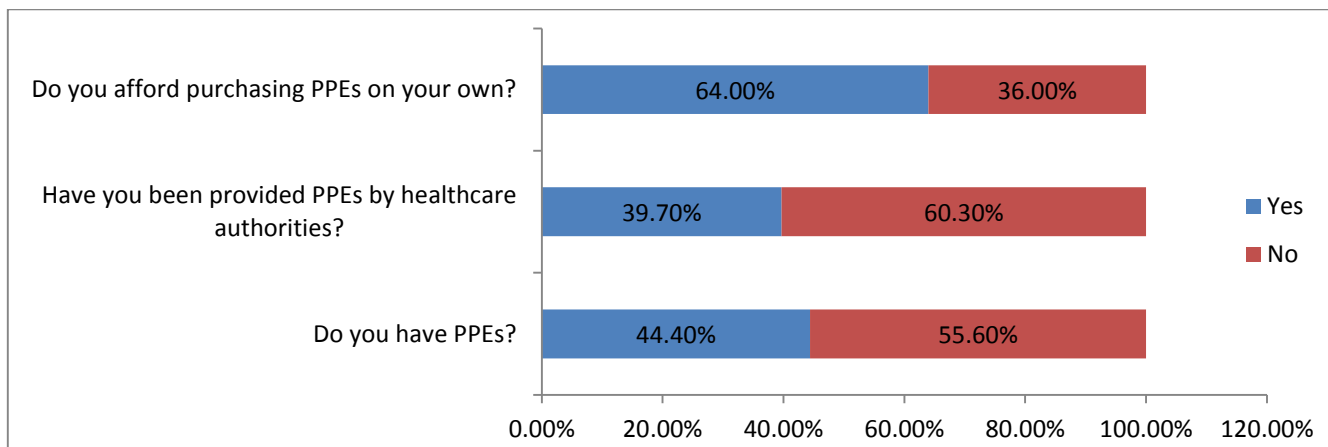
RESULTS

This study included a total of 214 subjects with mean age of 26.6±3.954 years; 88 (41.1%) were males and 126 (58.9%) were females; apart from the fact that all the 214 (100%) study subject had done duties in general wards, 192 (89.71%) also served in emergency and 41 (19.15%) in flu filter clinic/ isolation ward as well; 179 (83.6%) were from medical staff while 35 (16.4%) were from paramedical staff. There is seen a major gap between the knowledge about PPEs/ appreciation of their effectiveness and the practices of PPEs by these healthcare professionals at their respective workplaces; as shown in table below:

Table 1:

PPEs	Ward		Emergency		Flu Filter / Isolation Ward	
	Knowledge	Practice	Knowledge	Practice	Knowledge	Practice
Gown	66.4%	10.7%	93.8%	34.4 %	100%	90.2%
Surgical Mask	98.6%	97.7%	99.0%	97.9%	100%	100%
N-95 Mask	75.2%	40.2%	92.2%	54.2%	100%	73.2%
Gloves	92.5%	83.2%	95.3%	89.6%	100%	100%
Goggles	57.0%	11.2%	82.8%	22.4%	97.6%	78.0%
Head cover	57.0%	29.4%	82.8%	51.6%	100%	87.8%
Shoe cover	60.7%	27.1%	81.8%	50.5%	100%	85.4%
Social Distancing	90.7%	64.5%	91.1%	64.1%	97.6%	87.8%
Hand Sanitizer	96.7%	94.4%	97.9%	95.3%	97.6%	95.1%
Handwashing	95.8%	90.2%	95.8%	92.7%	100%	95.1%

Further, it was observed that, out of 214 study subjects, only 95 (44.4%) have PPEs; only 85 (39.7%) were provided PPEs from their respective healthcare authorities and 137 (64%) can afford purchasing PPEs on their own as shown in figure below:



DISCUSSION

This cross-sectional study, as per its aims, showed some clear cut differences in the level of knowledge and the practices of personal protective equipments among healthcare professionals. It was observed that despite the fact that under the risk factors regarding the transmission of corona virus, some SOPs were announced in order to

observe PPEs, people stayed non-compliant to these SOPs regarding observance of personal protective equipments. Moreover, healthcare professionals are especially at increased risk of getting this corona virus as they have to deal with multiple patients with multiple diseases including COVID-19 itself. As the effectiveness of different preventive measures against COVID-19 has partly

been acknowledged so far and the data is still being added on the basis of day by day studies,^{[10][11]} the knowledge about effectiveness of PPEs still remains questionable to some extent. This becomes one of the reasons regarding non-compliance of these PPEs by healthcare professional as well as by general public.

However, compliance with surgical masks was noted to be the best followed by that with hand sanitizer, hand washing and use of gloves. Secondly, major compliance to PPEs and SOPs was noted among the healthcare professionals who are serving at Flu filter clinics or at Emergency departments because they have direct contact with critical patients as soon as they arrive in the hospital.

It was also observed that one of the reasons leading to non-compliance with PPEs is the availability of PPEs. Out of the 214 study subjects, only 44.40% have PPEs. Against all the efforts made by the healthcare authorities regarding the availability of PPEs, only 39.70% study subjects confirmed that they have been provided with PPEs by healthcare authorities. After that 64.00% study subjects confirmed that they can afford purchasing PPEs on their own as it is a matter of their life and death. As we analyze this data, we see that that also lies some attitude problem with some study subjects who can afford purchasing PPEs on their own but are not doing so. This can be due to poor knowledge among them.

So, we, not only, need to make sure the availability of PPEs for everyone but also need to educate them regarding the use and effectiveness of these PPEs against any disease outbreak in future in order to encounter the virus in a better way possible thus controlling its spread.

CONCLUSION

Majority of healthcare professionals appreciate the effectiveness of PPEs against corona virus but don't bring them into practice; either due to non-availability of PPEs or they have some attitude problem towards it.

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