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Original Research Article

Awareness regarding personal protection measures during COVID 19 pandemic among undergraduate students in a teaching hospital in South India

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ABSTRACT

Background: WHO declared corona virus disease as a pandemic on March 11th 2020. Health care workers are at a greater risk of infection as they come into contact with the patients. Consistent use of personal protective equipment is important to reduce nosocomial transmission and stops further spread of the disease. The main aim of the study was to assess the awareness of personal protective measures among undergraduate students.
Methods: A cross sectional study was conducted among Final MBBS part-1students of Kurnool Medical College, Kurnool from August to September, 2020, after obtaining IEC clearance. Assuming an awareness of 50%, allowing 20% error, a sample size of 100 was obtained using the formula 4pq/l2. The study subjects were selected by simple random sampling. Questionnaire is based on "Center for Disease Prevention and Control" of health care personnel and sent to the participants through Google forms.
Results: Overall, 51% were males, 85% were aware of source of infection, close contact (87%), hand hygiene practices(84%), usage of masks (82%), sequence of donning (58%) and doffing (42%) of PPE.
Conclusions: 83% (>10/15 responses) were aware about personal protection and prevent the spread of the disease but very few of them knew in depth about the same, hence a need to reiterate these facts.

Keywords: COVID-19, Personal protective measures, Undergraduate students

INTRODUCTION

Currently, the world is responding to a pandemic of contagious respiratory disease caused by a novel corona virus, named COVID -19. The first reports of cases were from Wuhan, Hubei Province in China on 31st of December 2019 as an unknown case of pneumonia.[1] Within few weeks the infection has been spread to the other countries of the world. India reported its first case in Kerala. WHO declared the novel corona virus outbreak a public health emergency of international concern on 30th January 2020, which was the 6th declaration of its kind in WHO history.[2] On March 11th 2020, WHO declared corona virus disease as a pandemic.[3] It spreads primarily through respiratory droplets, when an infected person coughs or sneezes? Health care workers who are frontliners are at a greater risk of infection as they come into contact with the patients. Consistent use of personal protection equipment is important to reduce nosocomial transmission and to prevent further spread of the disease.[4] Personal protection measures include hand hygiene practices and personal protective equipment which includes, mask or face shield, hand gloves, gown, head cover, goggles and footwear. Medical students, with adequate training can work as volunteers and can take part in the management of the pandemic.

METHODS

After obtaining IEC clearance (Letter/IEC No.08/2020-KMC, dt.14-09-2020) and informed consent taken from the study participants, a cross-sectional web based study was conducted among final year part -1 students of Kurnool Medical College, Kurnool during the months of August - September 2020. Participants were selected by simple random sampling. Assuming an awareness of 50% among the participants and allowing 20% error a sample size of 100 was obtained using the formula $4pq/l^2$.

4x50x50/10x10 =10000/100 = 100

The questionnaire consisted of 18 questions regarding COVID – 19. Out of 18 questions, 15 were given score of 1 for each question. Participants who have scored more than 10 out of 15 were considered having good awareness. The questionnaire developed for this study was based on frequently asked questions found on Center for Disease Control official website5. The study was piloted among ten students and those ten students were not included in the present study. The questionnaire was sent to the participants via Google forms. Questionnaire consisted of two parts, part-1 containing age and gender and part -2 containing questions regarding COVID-19.

Inclusion criteria

Final part 1 MBBS students who consented for the study were included in the study.

Exclusion criteria

Students who didn't give consent and other UG batches were excluded from the study.

Statistical analysis

Data was entered in MS Excel version 7 and analyzed by using IBM SPSS version 21. Data was presented as frequencies and percentages. Chi- square test was used to test the significance and pvalue <0.05 was considered statistically significant.

RESULTS

Out of 100 study participants, majority were males (51%) and fall between the age group 20-22 years (97%) (Table 1). 85% were aware of the causative agent, only few people don't know that novel corona virus is also called as SARS CoV 2. 80% knew that the main mode of transmission is via respiratory droplets. 87% of the participants knew the exact definition of close contact and 98% knew about respiratory hygiene/ cough etiquette. 83% stated that WHO recommended routine wearing of masks for healthy people during this outbreak. 95% had received formal training on hand hygiene, 84% were aware of hand hygiene practices and only 42% knew about preferred method of hand hygiene. 97% had an idea about WHO steps of hand washing. Only 37% received training on sequence of donning and doffing of PPE (Table 2).

Surprisingly, 58% were aware of the sequence of donning and 42% about doffing of PPE. In the present study, 83% (score>10/15) were aware about personal protection measures and knew how to prevent the spread of the disease. A box plot was drawn to represent median scores and there is no significant difference between males and females (Figure 1). Chi-square test was done to know the association of the gender with the score obtained and is not statistically significant (Table 3). Both males and females have equal knowledge with no significant difference.

Table 1: Percentage of correct responses-age group and gender.

S. no.	Age (in years)		Gender		Total
	20-22 (n=97)	23-25 (n=3)	Male (n=51)	Female (n=49)	(n=100)
	N (%)	N (%)	N (%)	N (%)	N (%)
Q1	82 (84.54)	3 (100)	43 (84.31)	42 (85.71)	85 (85)
Q2	94 (96.91)	3 (100)	50 (98.04)	47 (95.92)	97 (97)
Q3	91 (93.81)	3 (100)	50 (98.04)	44 (89.80)	94 (94)
Q4	82 (84.54)	1 (33.33)	42 (82.35)	41 (83.67)	83 (83)
Q5	78 (80.41)	2 (66.67)	37 (72.54)	43 (87.75)	80 (80)
Q6	84 (86.6)	3 (100)	45 (88.24)	42 (85.71)	87 (87)
Q7	94 (96.91)	3 (100)	50 (98.04)	47 (95.92)	97 (97)
Q10	41 (42.27)	1 (33.33)	20 (39.22)	22 (44.89)	42 (42)
Q11	81 (83.51)	3 (100)	40 (78.43)	44 (89.80)	84 (84)
Q12	79 (81.44)	3 (100)	41 (80.39)	41 (83.67)	82 (82)
Q13	80 (82.47)	2 (66.67)	43 (84.31)	39 (79.59)	82 (82)
Q15	58 (59.79)	0 (0)	25 (49.01)	33 (67.34)	58 (58)
Q16	41 (42.26)	1 (33.33)	16 (31.37)	26 (53.06)	42 (42)
Q17	96 (98.96)	3 (100)	51 (100)	48 (97.95)	99 (99)
Q18	48 (49.49)	2 (66.67)	26 (50.98)	24 (48.97)	50 (50)
Overall correct responses	83.51%	100%	82.35%	85.71%	83%

Table 2: Percentage of responses regarding training and WHO steps of hand washing.

S. no.	Age in years		Gender		Total
	20-22 (n=97)	23-25 (n=3)	Male (n=51)	Female (n=49)	(n=100)
	N (%)	N (%)	N (%)	N (%)	N (%)
Q8. Training on hand hygiene	92 (94.85)	3 (100)	50 (98.04)	45 (91.84)	95 (95)
Q9. WHO steps of hand washing	94 (96.91)	3 (100)	49 (96.08)	48 (97.96)	97(97)
Q14. Training on PPE	36 (37.11)	1 (33.3)	23 (45.10)	14 (28.57)	37 (37)

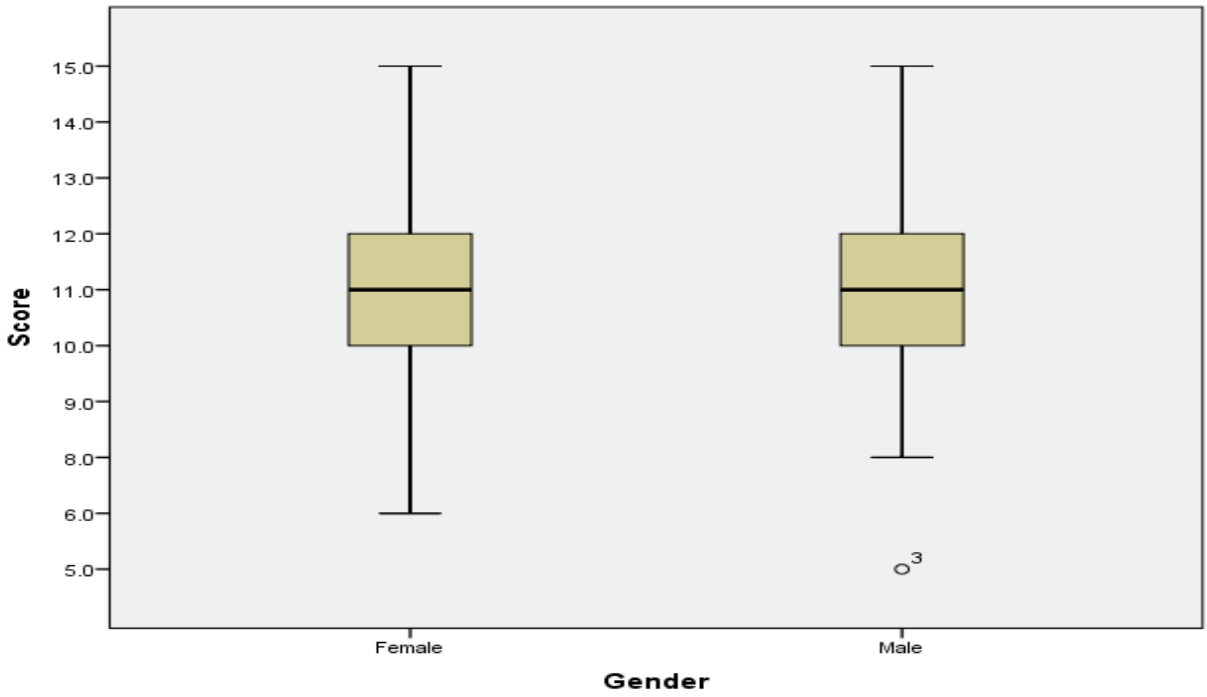

Figure 1: Box plot showing median scores for males and females.

Table 3: Association of gender with the score obtained.

Gender	Score		Total
	5-9	10-15	
Male	9	42	51
Female	8	41	49
Total	17	83	100

Chi square test is 0.031, p-value 0.860; not significant.

DISCUSSION

Though the participants are not involved in the patient management there are chances of having contact with patient at some or the other point of time. So there is need for awareness regarding their protection and in turn the prevention of the spread. Participants in the present study has adequate awareness. Adequate awareness often leads to optimistic attitudes, which could positively affect the preparedness of Health care providers to address pandemic issues stated by Roy et al.[6] It has been advised by WHO that every person should follow hygiene measures, such as regular hand washing and avoid touching mouth, nose, or eyes with hands and avoid contact with sick people and animals.[7] In the present study majority of the participants (83%) knew about the measures that should be adopted for the prevention of CoVID19 such as, cleaning hands with soap and water, use of alcohol based sanitizer, usage of masks, maintaining 1 meter distance and avoiding personal contact.

In the present study 87% were aware of defining a "close contact". According to the US CDC, a close contact is defined as being within approximately 6 feet (2 meters) of a COVID-19 case for a prolonged period of time or having direct contact with infectious secretions of a COVID 19 case. Correct hand hygiene practices are very crucial to prevent the spread of the disease. In the present study 42% knew the preferred method of hand washing where as in a study done by Modi et al it was 52.5%.[8] The CDC recommends alcohol- based hand rub (ABHR) in most situations9. The question in the present study was preferred hand hygiene technique which is hand washing with soap and water for at least 20 seconds with the whole process lasting for up to 40-60 seconds.[10]

CONCLUSION

Participants have adequate awareness regarding personal protection measures but very few of them knew in depth. Besides being aware of the PPE, it is also important to know the correct sequence of donning and doffing of PPE. Educating them by conducting training programs and periodic webinars is necessary to create awareness in depth.

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