Original Research Article

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Knowledge, attitude, and practices regarding COVID-19 among obstetric health care professionals in a tertiary care hospital, Karachi, Pakistan

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ABSTRACT

Background: The recently ongoing pandemic COVID-19 tramp in number of healthcare professionals (HCPs). They are facing the challenge of managing pregnant patients and their unborn babies. This study was done to evaluate the knowledge, attitude, and practices (KAP) among obstetric health care workers towards the COVID-19.

Methods: This cross-sectional study was conducted among OHCP at Aga Khan University Hospital, Karachi, Pakistan. For each correct answer 2 points were assigned. Scores for each category were calculated. According to Bloom's cut-off good knowledge was considered for >80% scores, for practice and attitude scores of 8 and 6 were considered as appropriate respectively.

Results: A total of 124 responses were analyzed. Most of the responders were females (97.6%) in the age group of 25-50 years (96%). Most obstetrics healthcare professionals had good knowledge and practice scores (n=92.75%, 91.1%, respectively). We also observed positive attitude scores (n=92.7%) with a mean COVID-19 knowledge score was 18.71±3.34 (range: 10-24) whereas the mean score of practice was 5.76±0.68 (range: 0-6) suggesting good knowledge and practice. The mean attitude score was 8.60±1.37 (range: 2-10) indicating a positive attitude. However, in univariate analysis, we did not find a significant association with categorical variables.

Conclusions: There was comparatively good knowledge regarding Covid-19 among obstetric healthcare workers. Implementation and dissemination of hospital infection control guidelines and training against COVID-19 infection helped to attain appropriate knowledge translating into positive attitude and practices among healthcare workers.

Keywords: Attitudes and practices, Covid-19, Health care worker, Knowledge

INTRODUCTION

An ongoing pandemic Covid-2019 is a new challenge facing all over the world, it has declared a serious public health disaster by WHO on January 31st, 2020.¹ Wuhan, the capital of China was the first place enfolded by this pandemic inDecember2019.² Millions of people have been affected by this infection in its first wave, now the second wave has gripped the whole globe.^{3,4} The correct assessment of overall morbidity and mortality associated with this pandemic has never been truly established in different countries for various reasons.^{5,6}

A highly infectious current strain of COVID-19 belongs to the coronavirus family; its common symptoms are fever, fatigue, myalgia, sore throat, anosmia, and dry cough.⁷ The severity of the disease ranges from a mild flu-like illness to severe diseases like pneumonia, ARDS, aseptic shock, and multi-organ failure ensuing in severe morbidity and mortality.⁸ Vaccination is the only effective way to prevent this infection.⁹ As there is no specific treatment for this disease except for quarantine, and close surveillance of disease progression.¹⁰ An investigational Covid-19 vaccine has been approved by FDA for an emergency use authorization (EUA), however, the safety and effectiveness of this vaccine continue to be evaluated,

particularly in pregnancy. ¹¹ Initial results of vaccine trials during pregnancy did not show major concerns regarding fetal safety. However, larger trials are required to inform its effectiveness for feto-maternal outcomes. ¹²

On account of this ongoing pandemic, HCP are performing as first-line soldiers and facing challenges with brief knowledge and training since the first wave of this pandemic.¹³ Obstetrics healthcare professionals (OHCP) are also facing the challenge of managing pregnant patients and their unborn babies.¹⁴ There is a lot of insecurity and fear in health care professionals, pregnant women, and their families related to this infection.¹⁵

Obstetrics healthcare professionals (OHCP) have the responsibility to update their knowledge, as good knowledge always translates into high-quality patient care. In our hospital, there is continuous efforts have been made to ensure dissemination and implementation of infection control guidelines and training of health care professionals against COVID-19 infection to attain appropriate knowledge translating into a positive attitude.

Understanding of awareness and attitude towards disease process, care provision, and self-protection is very important as it helps them in scaling up the correct preventive measures, and skills for handling this ongoing pandemic most effectively. ¹⁶ This study would provide us an insight to focus on relevant areas to improve the knowledge, attitude, and practices of obstetric health care professionals during the ongoing peak of COVID-19.

This study aimed to estimate awareness, attitude, and practices of obstetrics HCP involved in the care of pregnant women during the COVID-19 pandemic in a tertiary care hospital.

METHODS

This cross-sectional survey was conducted during the second peak of COVID-19 in November 2020 and December 2020 including doctors and medical staff working in the obstetrics and gynecology department of Aga Khan University Hospital, Karachi, Pakistan.

Sample size calculated by WHO calculator was 124 assuming a response rate of 70%, confidence interval (CI) 95%, Z as 1.96, and margin of error as 5% (by assuming 200 health care professionals have been working in obstetrics and gynecology unit), and duration of study was one month.

Data was collected after the approval of the ethical review committee using a structured questionnaire. The participants of the study were health care professionals working in obstetric unit including nurses, residents, and consultants. Nurses work in shifts and at the beginning of each shift, nurses were approached for informed consent to fill the study questionnaire. Similarly, doctors were approached at the beginning of on calls. Complete privacy and social distancing were ensured for the study participants. After taking consent, a designated room, midway of ward and labor room was used to fill study questionnaire by participants who work in wards and labor room. For the health care professional working in clinics, a history-taking room was utilized. One of the team members was available to facilitate the participant in case of queries related to a questionnaire and the time duration required to fill one form was 5-7 minutes. All the obstetric health care workers who consented were included in this study.

The reliability of the study questionnaire was checked by conducting a pretext among health care professionals by taking 5% of the sample size. Amendments have been considered and incorporated into the questionnaire.

The questionnaire consisted of two parts: first part included demographic variables; age, gender, marital status, number of family members, job category, and working hours. The second part included a total of 12 questions concerning clinical presentations, transmission routes, and the impact of COVID-19 infection on pregnancy, additional 8 questions were related to their attitude and practices towards this outbreak while dealing with patients.

Each question of the knowledge section was answered as true or false and the score of 2 was considered for a correct answer or zero for an incorrect answer. The total score ranged was 0-24. Participants who scored >20 (>80%) were considered to have good knowledge. Scores of 14-19 (58-79%) were classified as average knowledge and less than 14 (<58%) was recorded as inadequate knowledge. For attitude, score 8-10 was considered as a positive attitude and below 8 needs improvement similarly, for practice section, the score of 6 was classified as having good practice whereas less than 6 score classifieds as having poor practice. Adequate and inadequate knowledge (yes/no), positive attitudes (yes/no), and practices (good/poor) as outcome variables.

Statistical analysis

Data was entered and analysed using SPSS version 21. Categorical variables were calculated by frequencies and percentages. Mean and the standard deviation was calculated for continuous variables. Knowledge, attitude, and practices were compared with different categories of age, marital status, and the number of family members, job category, and working hours by chi-square test or Fisher exact test. A p value of less than 0.05 was considered significant in all tests.

RESULTS

A total of 124 obstetric health care professionals (OHCP) participated in this survey. Most of the participants were under 40 years of age. Out of 1 24 participants, 48

(71.8%) were doctors, 76 (5.6%) were nurses. Other demographic variables of the obstetrician are shown in Table 1.

Table 1: Demographic characteristics of obstetric health care professionals (n=124).

Variables	Frequency	Percentage				
Age groups (in years)						
≤30	63	50.8				
31-39	42	33.9				
40-49	12	11.3				
>50	5	4				
Gender						
Male	3	2.4				
Female	121	97.6				
Marital status						
Single	56	45.2				
Married	68	97.6				
Number of family members						
1- 2	86	69.5				
3-4	32	25.8				
>4	6	4.8				
Living with early relative	44	35.5				
Job categories						
Doctor	48	71.8				
Nurse	76	5.6				
Working hours						
8-12	89	71.8				
12-24	7	5.6				
24-36	28	22.6				

Table 2: Mean KAP score of obstetric healthcare professionals toward COVID-19.

KAP	Mean±SD	95% CI for mean	Min- Max
Knowledge score	18.71±3.34	18.12 to 19.30	10-24
Attitude score	8.60±1.37	8.35 to 8.84	2-10
Practice score	5.76±0.86	5.60 to 5.91	0-6

Knowledge of OHCP was assessed by 12 questions in which all OHCP responded that the COVID-19 virus spread via the respiratory droplet and close contact of infected persons. However, 99% of OHCP were aware of the clinical symptoms, and 92% of responders currently mentioned that there are no effective treatments for COVID-19. Almost 75% to 85% of responders correctly answered questions regarding the severity of the disease in pregnancy, risk of teratogenicity in a fetus, mode of delivery, and safety of breastfeeding in mild COVID-19 diseases. More than 60% of OHCP had awareness regarding the use of N-95 masks, the transmission of infection from asymptomatic COVID-19 patients, and the risk of adverse pregnancy outcomes in the third trimester. More than 50% of OHCP answered appropriately for optimum distance (Figure 1).

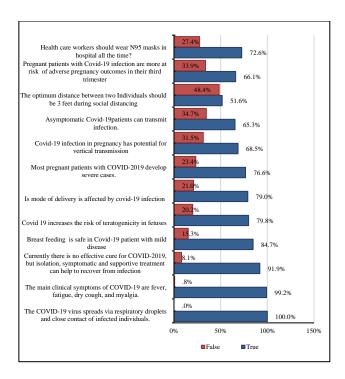


Figure 1: Knowledge of obstetric health care professionals toward COVID-19.

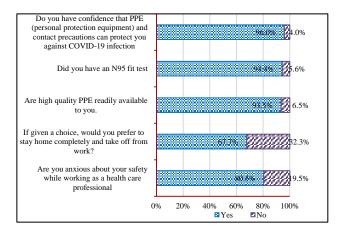


Figure 2: Attitude of obstetric health care professionals toward COVID-19.

The mean COVID-19 knowledge score was 18.71±3.34 (range: 10-24) (Table 2) and the correct response rate for knowledge was 92.7% (115/124) (Figure 4). An attitude of the OHCP toward COVID-19 was assessed using five-question items. Of the total 96% of participants strongly agreed that PPE and contact precaution protects against infection. These findings demonstrated a highly positive attitude of the N-95 fitness test (94.4%) and high-quality PPE availability (93.5%). There were 67.7% of respondents did not prefer to stay home completely, however, 80.5% were anxious about safety while working as a health care professional (Figure 2).

The mean attitude score of OHCPs toward covid-19 was 8.60±I.37 (range: 2-10) (Table 2). A positive attitude was observed in 92.7% (115/124) OHCPs (Figure 4).

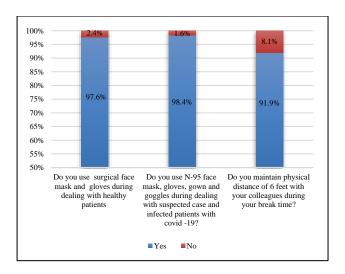


Figure 3: Practice of obstetric health care professionals toward COVID-19.

Figure 3 represents the responses for practice assessed by using three items questionnaire. Most of the respondents had good practice; almost 98% OHCPs used surgical facemask with gloves while dealing with non-COVID-19 cases. They also used an N-95 mask, gloves, gown, and goggles for dealing with suspected and infected patients of COVID-19. Furthermore, 92% of responders

maintained a physical distance of 6 feet. Table 2 represents the mean practice score of OHC Ps of 5.76±0.68 (range: 0-6) suggesting good practice observed in 91.1% (113/123) OHCPs (Figure 4). However, in univariate analysis, we did not observe a significant association of KAP among categorical variables (Table 3)

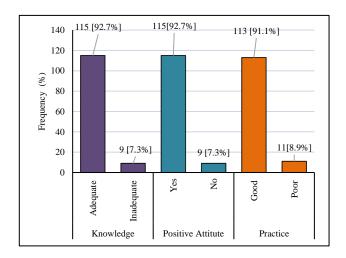


Figure 4: Obstetric health care professionals with KAP toward COVID-19.

Table 3: Comparison of KAP with demographic of obstetric health care professionals.

		Knowledge			Attitude			Practice		
Variables	N	Inadequate	Adequate	P	Negative	Positive	P	Poor	Good	P
		N (%)	N (%)	value	N (%)	N (%)	value	N (%)	N (%)	value
Age groups (in years)										
≤30	63	6 (9.5)	57 (90.5)	0.612	5 (7.9)	58 (92.1)	0.693	6 (9.5)	57 (90.5)	0.881
31-39	42	2 (4.8)	40 (95.2)		2 (4.8)	40 (95.2)		3 (7.1)	39 (92.9)	
>40	19	1 (5.3)	18 (94.7)		2 (10.5)	17 (89.5)		2 (10.5)	17 (89.5)	
Marital sta	Marital status									
Single	56	5 (8.9)	51 (91.1)	0.515	4 (7.1)	52 (92.9)	0.964	5 (8.9)	51 (91.1)	0.984
Married	68	4 (5.9)	64 (94.1)		5 (7.4)	63 (92.6)	0.964	6 (8.8)	62 (91.2)	
Family members										
1-2	86	6 (7.0)	80 (93)	0.655	7 (8.1)	79 (91.9)	0.734	8 (9.3)	78 (90.7)	0.736
3-4	32	2 (6.3)	30 (93.8)	0.655	2 (6.3)	30 (93.8)		3 (9.4)	29 (90.6)	
>4	6	1 (16.7)	5 (83.3)		0 (0)	6 (100)		0 (0)	6 (100)	
Job categor	Job categories									
Doctor	48	1 (2.1)	47 (97.9)	0.152	4 (8.3)	44 (91.7)	0.734	5 (10.4)	43 (89.6)	0.748
Nurse	76	8 (10.5)	68 (89.5)		5 (6.6)	71 (93.4)		6 (7.9)	70 (92.1)	
Working h	Working hours									
8-12	89	8 (9.0)	81 (91)		5 (5.6)	84 (94.4)		6 (6.7)	83 (93.3)	
12-24	7	0 (0)	7 (100)	0.470	2 (28.6)	5 (71.4)	0.079	1 (14.3)	6 (85.7)	0.410
24-36	28	1 (3.6)	7 (96.4)		2 (7.1)	26 (92.6)		4 (14.3)	24 (85.7)	-
Good = adeq	Good = adequate + average knowledge									

DISCUSSION

This KAP study is a unique study as it mainly focused the obstetrics healthcare professionals who are directly or indirectly involved in suspected or confirmed COVID-19

patients. The findings of our study showed more than 90% of health care professionals have a good understanding of COVID-19 (mean score: 18.71 ± 3.34) translating into a positive attitude (mean score: 8.6 ± 1.37) and good preventive practices (mean score: 5.76 ± 0.68)

(Table 2), which is comparatively better than other studies, reported poor knowledge. 17,18

The frontline soldiers, health care professionals are in intimate contact with the suspected or infected COVID-19 patients. Hence, the understanding of knowledge about Covid-19 is of prime importance.¹⁹ In our study, a good response rate of knowledge was comparable with a study performed in another region of Pakistan, which also reported adequate knowledge (94.8%) of health care professionals towards COVID-19.20 Although there were differences in demographics of health care professionals. the knowledge seemed to be comparable among them probably due to implementation and dissemination of hospital infection control guidelines and training against COVID-19 infection (Table 3). The good response for COVID-19 vaccination also provides confidence in healthcare professionals while dealing with obstetrics patients in this ongoing pandemic. This is in contrast with the study suggestive of differences in knowledge score with different categories of healthcare professionals.²¹

Knowledge is necessary for encouraging positive attitudes to fight against COVID-19 pandemic.²² Our study recognized a positive attitude (mean 5.60±1.37) among OHCPs (Table 2). A probable explanation of this finding may be good knowledge influences a positive attitude. Although they are anxious about their safety while working but they prefer to work, as high quality, PPE is readily available to them, and they had confidence that PPE (personal protection equipment) and contact precautions will protect them against COVID-19 infection. This finding is similar to Bhagavathula et al.²³

Interestingly, attitude did not differ significantly with different demographic variables like age, marital status, family members, working hours, and job category (Table 3). This is consistent with Giao et al, who also did not find a statistically significant association of attitude with different demographic variables.²⁴

Knowledge and attitude greatly influence the practice of individuals; an adaption of preventive practices is very important to defeat this pandemic.²⁵ In the present study, OHCPs found to have good practice for wearing of face mask, gown, gloves, and goggles while dealing with suspected or infected patients and maintaining social distance (Figure 3). This finding is same as a study in China, which showed 89.7% healthcare workers followed correct practices for COVID-19 infection.²⁶ However, their practices did not differ by their demographic characteristics (Table 3).

Our study has several limitations. The results of this study may not be generalizable as it was conducted in only one tertiary care hospital in Karachi, Pakistan. Additionally, health care workers other than obstetrics healthcare professionals were not enrolled in the study so the assessment of their knowledge, attitude, and practices was left unreported. The newer aspects of emerging evidence

regarding the ongoing COVID-19 pandemic need to be explored with a detailed questionnaire.

CONCLUSION

There is comparatively good knowledge about COVID-19 among obstetric healthcare professionals. Implementation and dissemination of hospital infection control guidelines and training against COVID-19 infection helped to attain appropriate knowledge translating into positive attitude and practices among healthcare workers towards COVID-19 infection. However, we did not find significant differences among health care workers in the level of knowledge, attitude, and preventive practice against COVID-19 disease.

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Ethical approval: The study was approved by the

Institutional Ethics Committee

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