ORIGINAL ARTICLE

Barriers to the Maintenance of COVID 19 Cross Infection Control Protocols among Medical and Dental Practitioners

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ABSTRACT

Objective: To determine the barriers to the maintenance of COVID 19 cross infection control protocols among medical and dental practitioners

Methodology: A cross sectional study was conducted in College of Dentistry, Sharif Medical and Dental College, Lahore from July 2021 to July 2022 on medical and dental practitioners. The sampling technique employed was convenient sampling. Medical and dental practitioners irrespective of their age, gender and specialty of practice were included in the study. Data was collected using a pre-validated questionnaire with a Cronbach alpha value of 0.7.

Results: There was s statistically significant difference in the scores of barriers to maintenance of COVID 19 cross infection control protocols of overcrowding in the hospital (p= ≤0.001), limitation of infection control material (p=≤0.001), insufficient training in infection control (p=0.05), lack of handwashing (p=0.022), not wearing a mask while examining the patient (p=≤0.001) and lack of knowledge about mode of transmission of COVID 19 (P=0.036)

Conclusion: The barriers faced to maintenance of cross infection control protocols pertaining to the hospital administration were reported to be higher for medical practitioners in comparison to the dental practitioners. The barriers faced to maintenance of cross infection control protocols pertaining to the attitude and practices of health care workers were also higher for medical practitioners in comparison to the dental practitioners.

Keywords: Cross infection control, COVID 19 pandemic, medical practitioners, dental practitioners

INTRODUCTION

The COVID-19 pandemic is already sweeping the globe. Since a clustering of acute pneumonia cases was initially reported in December 2019 in Wuhan, Hubei Province, China, this unique infection has spread very quickly and lethally, prompting the World Health Organization to declare it a pandemic on March 11, 2020. Infection prevention and control principles are universal; nevertheless, important measures and obstacles differ depending on the medical context and disease population[1]. SARS-CoV-2 has been studied extensively to establish the routes of transmission, and it has been determined that it is primarily transmitted via respiratory droplets and direct COVID-19 in Medical Centre: Droplet spread, in which huge droplets (5-10 m) transmit viral particles, is assumed to be the major route of transmission[2]. When a person comes into close contact (within one and a half meters) with a patient who is suffering respiratory symptoms (e.g., coughing or sneezing), they potentially expose their oral and nasal mucosae, as well as their eyes, to potentially contaminated airborne droplets[3]. To avoid infection, infection control guidelines advocate complementing standard precautions with aerosol (transmission-based) prevention[4]. Washing hands with soap and water for a minimum 20 seconds is an important part of standard precautions, particularly when hands seem clearly dirty and then after encountering any surface, cough, sneezing, or cleaning the nose[5]. Personal protective equipment (PPE) for health care professionals involves face masks, respirators, gloves, and goggles or face shields, which are recommended to guard against droplet infections[6]. Face masks are used by patients as source control to prevent the spread of diseases to others, as well as to prevent respiratory particles and spray of bodily secretions on the face[7]. During the COVID-19 outbreak, two instances in two distinct countries highlight the relevance and significance of infection control in hospitals. In the Wuhan Mental Health Center in China, more than 50 patients and 30 staff members were infected[8]. These incidents demonstrate the susceptibility of hospital infection prevention and control. The front line worriers of the COVID-19 outbreak response are health care professionals (HCPs)[9]. As a result, health care providers should take contact and droplet precautions, and they should wear personal protective equipment (PPE)[10].

Universal reference control, early detection and isolation of patients suspected of having disease, through use of proper PPE when treating for patients with COVID-19, and environmental decontamination are all required in health care settings to limit COVID-19 transmission[11]. According to a study by Khader et al., 74.7 % of study participants agreed it was necessary to advise patients to sit sufficiently away, wear masks in the waiting room, and perform hand hygiene before entering the dentist chair to reduce disease transmission[12]. According to the findings from Pakistan, 13.8 % of respondents removed the mask while speaking with the patient, 20.2 % used again it, 44.9 % properly used the yellow-coded bag for collection of waste, 93.9 % wear masks in health centers, and 94.6 % wear masks on hospital premises, and 93.9 % wear masks in clinics[13]. According to a survey done in Pakistan Overcrowding, a lack of infection control materials, HCPs' lack of commitment to policies and practices, inadequate training, and a deficiency of infection control rules and procedures were cited as barriers[14]. According to a study done in south Ethiopia the barriers for maintaining the cross infection control protocol on community level includes: Lack of community knowledge, negligence, and ignorance, not using a facemask or using it wrongly, and a misunderstanding about the disease were the key factors affecting health care providers' use of preventative measures for the COVID-19 pandemic[15]. Health care related barriers includes: The most widely speculated issue or problems in the implementation of COVID-19 pandemic prevention measures were negligence and ignorance. The most common barriers to the implementation of preventative measures on institutional level were a lack of personal protective equipment (facemasks and gloves), a shortage of hand washing solutions (alcohol and sanitizer), and insufficient training and trained personnel. Key informants also mentioned the lack of guidelines, water shortages, lack of duty, the OPD, and emergency rooms[15].

Currently, investigations on the COVID-19 pandemic in various aspects are being published. However, only a few studies have looked into the barriers that restrict health practitioners from

using COVID-19 prevention methods. As a result, these research gaps in the study setting needed to be filled. The aim of this study was to determine the barriers to the maintenance of COVID 19 cross infection control protocols among medical and dental practitioners.

METHODOLOGY

A cross sectional study was conducted in College of Dentistry, Sharif Medical and Dental College, Lahore from July 2021 to July 2022 on medical and dental practitioners. The sample size was calculated to be 150, keeping a precision of 5%, confidence level 95% and prevalence of good practices regarding COVID-19 to be 89%[16], using an online sample size calculator. The sampling technique employed was convenient sampling. Medical and dental practitioners irrespective of their age, gender and specialty of practice were included in the study. Participants who refused to give consent and had less than 6 months of clinical experience were excluded. Informed consent was taken from the participants before data collection. Data was collected using a pre-validated questionnaire with a Cronbach alpha value of 0.7[17]. The responses to the questions were on five point Likert scale (strongly agree, agree, neutral, disagree and strongly disagree).

Recorded data will be coded and entered using SPSS statistical package version 23. P value ≤ 0.05 will be taken as significant. Mann Whitney U test was used to find the statistical difference in in the scores of the barriers to cross infection control protocol maintenance among medical and dental practioners. Eta squared was to find the strength of association of barriers to maintenance of cross infection control protocols and area of practice (medical/dental)

RESULT

A Cross sectional comparative study was conducted in 150 participants with 66.7% medical practitioners while 33.3% dental practitioners. All the participants were less than 30 years of age with 35.3% males and 64.7% females.

Table 1 shows a statistically significant difference in the scores of barriers to maintenance of cross infection control across medical and dental practitioners except lack of policies for cross infection control. The mean rank score for all the barriers to maintenance of cross infection control protocols pertaining to the hospital administration was higher for medical practitioners in comparison to the dental practitioners as shown in table 1.

Table 1 also shows that the relationship between the barriers to maintenance of cross infection control practices with the area of practice was very weak.

Table 2 shows a statistically significant difference in the scores of health care worker attitude and practice related barriers to maintenance of cross infection control across medical and dental practitioners except less commitment of HCW to the policies. The mean rank score for all the barriers to maintenance of cross infection control protocols pertaining to the attitude and practices of health care workers was higher for medical practitioners in comparison to the dental practitioners as shown in table 2. Table 2 also shows that the relationship between the barriers to maintenance of cross infection control practices with the area of practice was very weak.

Table 1: Hospital administration related barriers to maintenance of COVID 19 cross infection control protocols among medical and dental practitioners

Barriers to maintenance of cross infection	Profession	N	Mean Rank	Sum of Ranks	Mann-Whitney U test	Z	P value	Eta square
Overcrowding in the hospital	Medical practitioners	100	90.35	9035.00	1015.000	-6.528	≤0.001	0.28
	Dental practitioners	50	45.80	2290.00				
Lack of policy and procedures of infection control practice	Medical practitioners	100	80.26	8026.00	2024.000	-2.071	0.38	0.028
	Dental practitioners	50	65.98	3299.00				
Limitation of infection control material	Medical practitioners	100	85.65	8565.00	1485.000	-4.901	≤0.001	0.161
	Dental practitioners	50	55.20	2760.00				

Table 2: Health care worker attitude and practice related barriers to maintenance of COVID 19 cross infection control protocols

Barriers to maintenance of cross infection	Profession	N	Mean Rank	Sum of Ranks	Mann-Whitney U test	Z	P value	Eta square
Less commitment of HCW to the policies and procedure	Medical practitioners	100	79.32	7932.00	2118.000	-1.670	0.095	0.018
	Dental practitioners	50	67.86	3393.00				
Insufficient training in infection control measures	Medical practitioners	100	80.01	8001.00	2049.000	-1.956	0.05	0.025
	Dental practitioners	50	66.48	3324.00				
Lack of handwashing after examination or contact with the patient	Medical practitioners	100	80.72	8071.50	1978.500	-2.283	0.022	0.034
	Dental practitioners	50	65.07	3253.50				
Not wearing a mask while examining the patient or contact with patient	Medical practitioners	100	81.64	8164.00	1886.000	-2.693	≤0.001	0.0486
	Dental practitioners	50	63.22	3161.00				
Lack of knowledge about mode of transmission of the COVID 19	Medical practitioners	100	80.40	8040.00	2010.000	-2.098	0.036	0.029
	Dental practitioners	50	65.70	3285.00				

DISCUSSION

Thousands of healthcare workers have been affected by the COVID-19 pandemic all over the world, therefore, a comprehensive assessment of the preventive measures and practices among healthcare workers related to COVID-19 and identification of the reasons for shortcomings within is crucial for a safer working environment[18]. Around 11 times increase in the risk of infection in healthcare workers is observed as compared to the general population and the occurrence of COVID-19 infection in HCWs is stated up to 38.9% in numerous studies[19,2] According to our study The barriers faced to maintenance of cross infection

control protocols pertaining to the hospital administration were reported to be higher for medical practitioners in comparison to the dental practitioners. The barriers faced to maintenance of cross infection control protocols pertaining to the attitude and practices of health care workers were also higher for medical practitioners in comparison to the dental practitioners.

It is shown by Several studies that inadequate handwashing, reuse of PPE, improper PPE use, working in a high-risk environment, longer working hours, and family members affected by COVID-19 infection are also important risk factors for contracting COVID-19 infection[20]. Universal precautions should be followed and specific preventive measures directed toward aerosol transmission are essential for the prevention of the spread of this disease. Studies carried out in Pakistan [14], Ethiopia [21], and china [22] evidenced that inadequate infection prevention training or insufficient training in infection control measures the caused substandard practice of precautionary measures for the COVID-19.

According to our study There was s statistically significant difference in the scores of barriers to maintenance of COVID 19 cross infection control protocols of overcrowding in the hospital (p= ≤0.001), limitation of infection control material (p=≤0.001), insufficient training in infection control (p=0.05), lack of handwashing (p=0.022), not wearing a mask while examining the patient (p=≤0.001) and lack of knowledge about mode of transmission of COVID 19 (P=0.036).

Lack of awareness, lack of motivation, lack of attention, negligence, and ignorance of the community in healthcare institutions are also considered barriers in the practice of preventive measures for COVID-19 among health professionals[23]. These matters should be given attention urgently to improve cross-infection control in hospital settings.

This study will help identify the breaches in cross infection control protocols made by medical and dental practitioners and therefore, bring attention to the necessary training programs required for training the clinicians in this regard.

CONCLUSION

The barriers faced to maintenance of cross infection control protocols pertaining to the hospital administration were reported to be higher for medical practitioners in comparison to the dental practitioners. The barriers faced to maintenance of cross infection control protocols pertaining to the attitude and practices of health care workers were also higher for medical practitioners in comparison to the dental practitioners.

Limitation: A larger sample size would have helped unravel more findings.

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