

ORIGINAL ARTICLE

Awareness of COVID-19 among dental practitioners of Multan

MUJEEB AHMAD¹, UMAIR HUSSAIN², ASRAR ELAHI¹, AMARA NAZIR¹, JAWADTAREEN¹, FAROOQ AHMAD CHAUDHARY³

¹Department of Periodontics, College of Dentistry, Bakhtawar Amin Medical & Dental College, Multan

²Department of Oral Surgery, Nishtar Institute of Dentistry, Multan.

³Department of Community Dentistry, School of Dentistry, Shaheed Zulfiqar Ali Bhutto Medical University, Islamabad,

Correspondence to Dr. Asrar Elahi, Email: asrarelahi@hotmail.com cell# +923355304186

ABSTRACT

Background: Corona Virus Disease 2019 (COVID-19) is a global pandemic still at large whose vaccination is in a trial phase. Dental practitioners are at high risk of exposure to this deadly epidemic. Therefore, the purpose of this study is to assess the knowledge and practice of dentists in the city of Multan, Pakistan.

Method: This cross-sectional study was carried out in Multan, Pakistan from January to March 2021. A 30 items valid and reliable self-administrative questionnaire was used to assess the knowledge, practice, and source of information regarding the COVID-19 pandemic from dentists.

Result: The results showed that the majority of dentists practicing in Multan had good knowledge (97.8%) and more than half of the respondents had good practice (65.6%). The most common source of their knowledge was WHO and Television. Almost half of the respondents showed fear of this virus in their practices.

Conclusion: Dental practitioners of Multan revealed good knowledge regarding COVID-19. However, some key points were lacking in their knowledge and practice. Our findings have important implications for developing strategies that will improve the knowledge and practices of dentists in this region and also in whole country.

Keywords: COVID-19, Coronavirus, Knowledge, Awareness, Dentists, Multan.

INTRODUCTION

In December 2019, The Chinese healthcare professionals reported a new pathogen to World Health Organization which was spreading rapidly causing life-threatening symptoms in human beings¹⁰. This novel virus Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV2) was declared as a global emergency and the WHO and CDC issued precautionary measures for general population and for people working in health care departments^{1,2}. The mode of spread of this virus is through direct contact with respiratory droplets of an infected individual. The virus is transmitted when the infected person coughs or sneezes and the virus reaches the eyes, nose or the mouth of a healthy individual¹¹. The virus can survive on external surfaces for few minutes to few hours so one can also get infected in that way³.

In the beginning, the authorities in most of the countries imposed a strict lockdown to minimize the spread of virus. But this could not be done for a long time as it was affecting the livelihood of a great number of people¹². Hence people had to return to their normal routines with extra protective measures. The dental profession along with other professions is specially at high risk of getting infected and spreading this disease¹³. A dentist's field of operation is majorly the oral cavity of human beings which is a potential place for the spread of this virus. Dental procedures that require the use of rotary instruments like hand piece, ultrasonic scalers and water jets produce huge amount aerosol that can stay in the air for a long duration⁴. Thus regular preventive protocols are not sufficient in dental clinics and dental hospitals. Extra-ordinary measures are needed to ensure the safety of dentists as well as patients¹⁴. World Health Organization and the Centre for Disease Control have issued standard safety protocols for dental health care professionals which need to be strictly followed.

Pakistan despite being a third world country has been tackling with this pandemic quite impressively and its efforts have been appreciated worldwide. First case of COVID-19 in Pakistan was reported on 26th of February 2020 and since then the number of infected individuals has risen to more than 535 thousand^{5,9}. Therefore it is necessary that all dental professionals must be fully aware of all the safety protocols in their clinical practices and that their knowledge COVID-19 is up to date. Our study aims at assessing any deficiencies in knowledge or practice so that proper steps should be taken to eradicate such misconducts.

METHODS

Study design and population: We conducted a cross sectional survey among the dental professionals of Multan city. The survey consisted of a simple two-page questionnaire. We targeted the major dental hospitals of Multan and the data was collected in person following strict protocols of distancing and COVID-19 prevention.

Sample size calculation: Sample size was calculated by Open Epi, an online software for sample size calculations. Assuming there are 1000 dentists practicing in the city of Multan, the required sample size comes out to be 278, with a confidence level of 95% and a 5% margin of error.

Data collection: The questionnaire that we used was pre-validated as it has been used in a previous research⁶. It consisted of following components:

1. First portion includes baseline characters i.e age, gender, designation and years of experience whether it is more or less than 5 years.
2. Second section includes 12 questions about the knowledge of COVID-19. The questions included knowledge of sign and symptoms, mode of transmission and preventive measures of COVID-19. All questions were close ended with possible

responses of true, false or don't know. Each correct response was assigned 1 mark and 0 mark for incorrect/don't know response. The dentists having a score of 60% or more were considered having good knowledge and those below 60% were considered having poor knowledge.

3. Third section asked respondents to identify their source of knowledge. We added the major global sources such as WHO and CDC and some Pakistani institutes such as Pakistan Medical Commission and National Institute of Health.
4. Fourth section included 9 questions about the practices of dentists in their clinics and hospitals regarding COVID-19. A score of 1 was given for good practice and 0 for poor practice. Respondents with a score of 80% or more were considered having good practices and those with less than 80% were considered having poor practice.
5. Fifth section included 4 questions that aimed to assess the fear of dental practitioners towards COVID-19.
5. In the end the participants were asked to provide their consent to the use of all this information for research purpose.

Statistical Analysis: Statistical analysis was done on statistical software IBM SPSS version 25. Descriptive variables such as age were written with means and standard deviations. The categorical variables were written with their number and percentages. A Student t test was used to examine the relationship of socio demographic characteristics and practice score. The significance level was set at 5% and analysis was done in the IBM SPSS v24.

RESULTS

Characteristics of the respondents: Our study included 278 dentists who are working in the dental hospitals and also some are working in their private clinics. Their mean age was 29.6 with minimum 23 and maximum 65 years. The majority was of males (52.9%) while remaining 47.1% were females. Out of 278, only 70(25.2%) were specialists while 208(74.8%) were general dentists. The practitioners having an experience of more than 5 years were 116(41.7%) (Table 1).

Knowledge of dental practitioners towards COVID-19: Majority of dentists (97.8%) showed good knowledge of COVID-19. Poor knowledge was reflected in questions regarding transmission of COVID-19 from asymptomatic patients, the effects of COVID-19 in children and the cleaning of contaminated surfaces with 0.5% Sodium hypochlorite. In these questions the correct responses were 16.5%, 66.9% and 64.7% respectively. The mean total score of knowledge was 9.59 ().

Source of Information: The main source which the dentists of Multan used to acquire knowledge of COVID-19 was WHO (83%). After that the most common sources were social media and TV with a percentage of 78 and 67.9% respectively. The least selected source was PMC 35%. The details are summarized in Table 3.

Practice of dentists during the pandemic: A good majority of dental professionals (65%) depicted good

clinical practices. Good practices were apparent in questions regarding washing hands with alcohol rubs (93.5%), Washing hands before and after every patient (91.3%) and in asking patients about history of COVID-19 (89.9%). Lower percentage of good practice was observed in providing PPE for the assistant (61.7%), providing masks and disinfectants in the waiting area (66.4%) and disinfecting the chairs of waiting area after every two hours (59.2 %). The mean practice score was 7.1 (Error!

Reference source not found.).

Fear of dental professionals towards COVID-19

According to our study, more than 80% of dentists reported that they were afraid to treat a suspected or confirmed COVID-19 patient. Almost 80% of dentists were afraid of getting infected from fellow colleagues. 67% of dentists reported that their assistants expressed their desire to stop working due to COVID-19. A vast majority of dentists (71.8%) were afraid of the impact of this pandemic on their livelihood. Table 4 shows the details of these responses.

Relationship between practice scores and characteristics of participants:: Bivariate analysis showed that there is no direct relation of practice scores with designation and fear of dentists to treat COVID-19. However, there is a direct relation between gender and experience, and their practice scores (Table 5).

DISCUSSION

The results of our study showed that the dentists of Multan had good awareness of COVID-19. More than 97% of the participants had good knowledge of this pandemic. Our study revealed that 84% of the dentists obtained their knowledge from WHO. More than 65% of dentists exhibited good practice at their clinics and hospitals. Fear of this lethal virus prevailed among more than 70% of the participants. The results of this study are consistent with several other studies carried out in different parts of the world¹⁵⁻¹⁷.

Overall the dental practitioners displayed good knowledge of COVID-19 but there were some key points that were lacking in their knowledge and need to be highlighted. More than 80% of participants believed that the disease can be transmitted from asymptomatic patients. However, the latest studies of WHO demonstrate that disease cannot be transmitted from asymptomatic patients. A good majority (67%) believed that COVID-19 does not infect children at all. This is wrong because studies show that it can infect children as well but the symptoms are not severe as that of adults.

WHO was declared as the major source of knowledge of COVID-19 for dentists. The second most commonly used source was social media. The least used source of knowledge was the Pakistani dental and medical institutes. This is an alarming situation as the social media cannot be considered as an authentic and reliable source of knowledge. The Pakistan Medical Commission needs to take steps to promote awareness of COVID-19. They need to run awareness campaigns in all major hospitals. Dental practitioners displayed good clinical practices overall. Poor practice was apparent in providing dental assistants with PPE. Assistants are equally exposed to the risk of COVID-19 and must be provided with PPE in dental clinics. Almost

44% dentists did not provide masks and disinfectants for patients in waiting rooms. Although it is the responsibility of every citizen to wear mask when going out but still the waiting areas are crowded places and surgical masks should be available for everyone along with hand sanitizers. The chairs in the waiting areas should also be disinfected after every two hours to minimize the risk of disease spread.

Our study showed that more than 70% of dental professionals are afraid of this pandemic but are still working in their clinics hospitals. Psychological intervention is needed to ensure that their mental health is not affected....

Recommendations for dental practice during COVID-19 pandemic: As stated earlier, hand hygiene has been considered the most important factor in preventing COVID-19 transmission. So all dental professionals must use alcohol based hand rubs in their clinics and hospitals. Studies have shown that it reduces the risk of COVID transmission⁷. Everyone including dentist and his team must wash hands before and after every patient. PPE should be made mandatory at every healthcare facility¹⁸. PPE includes the use of eye wears, face shields, face masks, head caps, gloves and gowns etc. PPE follows a specific donning sequence i.e. gloves should be put on at the end¹⁹. In the beginning it was recommended that a proper respirator such as N95 should be used but now WHO recommendations allow that a surgical mask is also sufficient⁸.....

Patient filtering should also be employed to reduce crowding at dental offices. Only those patients should be treated that require immediate care. All elective procedures must be postponed. Campaigns must be ran to make the public aware to visit dentist only in case of emergency. Every patient should be monitored at the entrance of dental hospitals with infra red thermometers to check if they have a fever. A brief history of fever or any respiratory difficulty should be taken²⁰.

Dental professionals should be given special trainings regarding precautions of COVID-19 in the form of diplomas and short courses. Dentists should be fully aware of the hazards of COVID-19 and prevent its transmission following strict protocols.

CONCLUSION

In conclusion the dental practice poses a high risk of infection and transmission of COVID-19 if appropriate measures are not taken strictly. Dentists of Multan showed good awareness of COVID-19 and were taking all the necessary precautions to prevent its spread. However, some vital elements of safety were missing in their practices. Our research points out such deficiencies and therefore it has important implications to develop strategies to create optimum conditions for safe dental practice in the future.

Authors Contribution: AE supervised the project. JT and UH collected the samples. MA and FA analyzed all data, performed literature review and wrote the manuscript. All authors read and agreed to the final manuscript.

Funding: No funding was received

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Table 1 Characteristics of study participants

Variables		Min-Max	Mean (S.D)	Number (%)
Age (years)		23-65	29.6 (6.3)	
Gender	Male			147 (52.9)
	Female			131 (47.1)
Designation	General Practitioner			208 (74.8)
	Specialist			70 (25.2)
Experience	less than 5 years			162 (58.3)
	more than 5 years			116 (41.7)

Table 2: Knowledge of dental practitioners towards COVID-19

Questions	Correct response (%)	Incorrect response (%)
Incubation period of COVID-19 is 5-14 days	269 (96.8)	9 (3.4)
Main symptoms = dry cough, Fever> 38°C, sore throat, shortness of breath, tiredness	261 (93.9)	17 (6.4)
COVID-19 does not affect children at all	186 (66.9)	92 (34.5)
COVID-19 can be prevented by Vaccine	228 (82.0)	50 (18.7)
COVID-19 can be transmitted by respiratory tract secretions	244 (87.8)	34 (12.7)
Corona virus can persist on surfaces for few hours to several days	243 (87.4)	35 (13.1)
Disease can be transmitted from asymptomatic patients	46 (16.5)	232 (86.9)
Use of PPE is recommended to prevent transmission	260 (93.5)	18 (6.7)
Hand hygiene has been considered most critical in preventing COVID-19 spread	252 (90.6)	26 (9.7)
All contaminated surfaces must be cleaned with diluted (0.5%) Sodium Hypochlorite	180 (64.7)	98 (36.7)
Minimize operations that produce aerosols	268 (96.4)	10 (3.7)
PPE donning sequence 1 gown 2 mask 3 Gloves	229 (82.4)	49 (18.4)

Table 3: Correct responses of dental practitioners regarding COVID-19 and source of knowledge.

Practices in dental offices and hospitals	Number (%)
Clean hands with alcohol based rub	259 (93.5)
Clean and disinfect environmental surfaces	225 (81.2)
Wear PPE for dentist	223 (80.5)
Wear PPE for assistant	171 (61.7)
Wash hands before and after every patient	253 (91.3)
provide patients with mask and disinfectant in waiting room	184 (66.4)
disinfect surfaces, chairs and doors of waiting area every two hours	164 (59.2)
disinfect dental chair and light after every patient	246 (88.8)
Ask every patient about symptoms of COVID-19 , travel history, lab testing	249 (89.9)
Source of Knowledge	
World Health Organization	232 (83.8)
National Institute of Health, Pak	127 (45.8)
TV	188 (67.9)
Social Media	216 (78.0)
Pakistan Medical Commission	97 (35.0)
Centre for Disease Control	105 (37.9)

Table 4 Fear of dental professionals towards COVID-19 Questions

	Positive response (%)	Negative response (%)
Are you afraid to treat a suspected or confirmed COVID-19 patient?	215 (85.3%)	63 (14.7%)
Are you afraid of getting infected from a colleague?	202 (80.2%)	76 (19.8%)
Did your assistant express his/her desire to stop work due to fear of COVID-19?	169 (67.1%)	109 (32.9%)
Are you afraid of impact of COVID on dentist's livelihood?	181 (71.8%)	97 (28.2%)

Table 5 Relationship of dentist's characteristics with their practice scores.

* A student t test

	Practice Mean (SD)	P value
Gender*		
Males	8.37 (1.52)	0.001
Females	6.79 (1.86)	
Designation*		
General dentist	8.06 (1.74)	0.521
Specialist	7.21 (1.63)	
Experience*		
Less than 5 years	7.86 (1.80)	0.001
More than 5 years	7.44 (1.52)	
Afraid to treat COVID-19 confirm case		
Yes	7.23	0.105
No	6.65	