

# Cross-Sectional Analytical Study to Determine Knowledge and Attitude of Dental Students about COVID-19 Disease and Its Precautionary Measures

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## ABSTRACT

**Objective:** To determine knowledge and attitude of dental and medical students about COVID – 19 disease and its precautionary measures

**Methodology:** The study was conducted after approval from the ethical review committee of the Foundation University College of Dentistry, Islamabad from June 2021 to September 2021. Inclusion criteria adhered to the recruitment of fourth and final-year students of dentistry. Informed written consent was taken after explaining the study protocol. The format of the questionnaire was based on previously published studies, literature, and guidelines provided by Centers for Disease Control. The questionnaire was validated by a Pilot Study and the opinion of dental health experts on the subject. Methodology constituted of a paper-based and web-based questionnaire with closed-ended questions and feedback were received from (60%) participants. Variables for analysis included demographic profile, next section comprised of questions regarding COVID – 19 disease knowledge, its precautionary measures, and attitude towards the disease. Moreover, participant's awareness in case of suspected infection was also analyzed to gauge the level of preparedness. There was a total of 256 participants enrolled in this study via consecutive non-probability sampling methodology.

**Results:** There was a total of 256 participants enrolled in this study. Out of 256, 154 (60.2%) were male and 102 (39.8%) were females. 110(42.8%) believed that COVID-19 symptoms resolve without treatment, 256(100%) believed that disease spread can be prevented with education. 222(86.6%) endorsed a preference to avoid or work with the COVID-19 Patient. As per opinion regarding social distancing, wearing masks and washing hands before initiation of treatment, 246(95.1%) believed it to be mandatory for disease transmission reduction whereas 38(14.9%) considered it unnecessary.

**Conclusion:** Dental students demonstrated ample awareness and knowledge regarding COVID-19 disease presentation, preventive measures, and strategy in case of suspected infection with a motivated attitude to spread awareness among the population.

**Keywords:** Adverse effects, COVID-19, fever, vaccine.

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## I. INTRODUCTION

Coronavirus disease 2019 (COVID-19) is a highly contagious disease first reported in December 2019 in the Wuhan region of China. Fever, Cough, fatigue, muscular pain, anosmia, and dyspnea are the most frequently reported symptoms [1]. In addition to the above-mentioned symptomatology serious life-threatening complications associated with COVID-19 mortality and morbidity include septic shock, metabolic acidosis, acute respiratory failure, bleeding, and clotting disorder [2]. WHO declared COVID-19 pandemic due to extreme infectivity of virus which halted social life had serious effects on education and work with subsequent psychological effects. COVID-19 pandemic

has serious untoward effects on the mental health of medical and dental students due to social isolation, quality of education, and possible delays in graduation [3]. To date there is no effective treatment for COVID-19 disease prevention is of utmost significance to halt disease spread [4]. To flatten the disease spread curve ministry of health has emphasized several precautionary measures to be adopted at the population level. Knowledge attitude and behavior of individuals play a significant role in combating infectious disease as was evident in the SARS epidemic in 2003 [5].

Clinical and epidemiological data have shown human to human disease transmission is very rapid and SARS-CoV-2 has a higher infectivity rate than SARS-CoV, but decreased

mortality rate than SARS-CoV [6], [7]. As a part of stringent measures taken at the government level mainstream media like social media, newspapers, posters and internet-based resources are spreading awareness about government directives on precautionary measures medical and dental students can be a significant part of awareness-raising campaigns [2], [8]. It is needful to understand the student response in the face of a public health emergency. In resource-limited settings of low-income communities like Pakistan, medical students may encounter COVID-19 affected patients [9]. Extreme anxiety and lack of proper knowledge in medical and dental students can hamper their proper medical judgment at the appropriate level by overestimating the situation [10].

The rationale behind this study was to evaluate the knowledge and attitude of dental and medical students about COVID – 19 disease and its precautionary measures. To date, few publications investigated the practice, knowledge, and cognition of this significant cohort in this outbreak.

## II. METHODOLOGY

The study was conducted after approval from the ethical review committee of National university of medical sciences, Islamabad from Nov 2021 to feb 2022.

The sample size (139) was calculated by using the WHO sample size calculator and keeping a level of significance 95% confidence interval, 5% error, and anticipated level of knowledge to be 90 % was determined using a study conducted by [11].

Inclusion criteria adhered to the recruitment of fourth and final-year students of dentistry. Informed written consent was taken after explaining the study protocol. The format of the questionnaire was based on previously published studies, literature, and guidelines provided by the Centers of Disease Control. The questionnaire was validated by a Pilot Study and the opinion of dental health experts on the subject. Methodology constituted of a paper-based and web-based questionnaire with closed-ended questions and feedback was received from (60%) participants. Variables for analysis included demographic profile, next section comprised of questions regarding COVID – 19 disease knowledge, its precautionary measures, and attitude towards the disease. Moreover, participants' awareness in case of suspected infection was also analyzed to gauge the level of preparedness. There was a total of 256 participants enrolled in this study via consecutive non-probability sampling methodology.

Data was entered and analyzed by data management software IBM SPSS (version 23.0). The descriptive statistics for the categorical variable were presented as frequency and percentage while the mean and standard deviation was reported for continuous variables. The categorical groups were compared by using the Chi-square test. A significance value of  $\leq 0.05$  was considered statistically significant.

## III. RESULTS

There was a total of 256 participants enrolled in this study. Out of 256, 154 (60.2%) were male and 102 (39.8%)

were females. Responses of participants regarding Knowledge, Attitude, and Awareness in case of suspected infection are elucidated in Table I and Table II respectively.

TABLE I: PARTICIPANTS' RESPONSES TO EVALUATE KNOWLEDGE

Question	n	%
Symptom's of COVID-19		
Fever	253	98.9
Cough	246	95.9
Runny nose	70	27.5
Sore throat	163	63.6
Shortness of breath	234	93.3
Red eyes	18	7.1
Diarrhea	67	26.0
Vomiting	35	13.8
Asymptomatic	115	45.0
Risk Factors		
Diarrhea	23	8.9
Respiratory infection	234	91.4
Travel to endemic areas	244	95.5
Contact History	244	95.5
Transmission Preventive Measures		
Cooked Food	89	34.2
Facemask on suspected individual	226	88.1
Well ventilated rooms for suspected individual	201	78.4
Personal Protective Equipment for Healthcare workers	214	83.6
Cautious Transportation of Patients	216	84.4
Hand Hygiene	249	97.4

TABLE II: PARTICIPANTS' RESPONSES TO EVALUATE ATTITUDE

Do COVID-19 symptoms resolve without treatment?		
• Yes	110	(42.8%)
• No	146	(57.2%)
Prevention of Disease Spread with Education		
• Yes	256	(100%)
Preference to avoid or work with COVID-19 Patient		
• Yes	222	(86.6%)
• No	34	(13.4%)
Response on coughing or sneezing patient in clinic		
Treatment Refusal		
• Yes	10	(4.1%)
• No	246	(95.1%)
Referral to Hospital		
• Yes	38	(14.9%)
• No	218	(85.1%)
Opinion regarding social distancing, wearing masks, and washing hands before initiation of treatment		
Mandatory for disease transmission reduction		
• Yes	246	(95.1%)
• No	10	(4.1%)
Not necessary		
• Yes	38	(14.9%)
• No	218	(85.1%)

110(42.8%) believed that COVID-19 symptoms resolve without treatment, 256(100%) believed that disease spread can be prevented with education. 222(86.6%) endorsed a preference to avoid or work with the COVID-19 Patient. As per opinion regarding social distancing, wearing masks and washing hands before initiation of treatment, 246(95.1%) believed it to be mandatory for disease transmission reduction whereas 38(14.9%) considered it unnecessary (Table – III).

TABLE III: PARTICIPANTS' RESPONSES TO EVALUATE  
AWARENESS IN SUSPECTED INFECTION

Dental staff should work or not with Flu-like Symptoms		
• Yes	38(14.9%)	
• No	218(85.1%)	
Dentist's role in educating about COVID-19?		
• Very significant	212(82.9%)	
• Moderately significant	35(13.8%)	
• Mildly significant	9(3.3%)	
Further Action in case of unprotected exposure to a known or suspected COVID-19 patient		
• Yes	212(82.9%)	
• No	244(17.1%)	
Further Action in case signs or symptoms are suspected of COVID-19 infection?		
• Yes	231(90.3%)	
• No	25(9.7%)	

#### IV. DISCUSSION

SARS-Cov-2, an emerging topic of discussion in almost all the communities of the world has gained significant importance in the field of research also. Due to the bulging rise in the victims of COVID - 19, it came in for several pieces of research. Our study evaluated the amount of information and knowledge in dental practitioners and the level of prevention in their setup. Being an exceptionally infective and spreadable disease, it has vitiated people in masses, which according to the World Health Organization, in tenure of fewer than 6 months, have crossed the number of 2 million [12]. Information regarding COVID - 19 spread and prevention is consistent among dental health care workers. It was also observed that effective precautionary measures are taken to prevent the disease. Agreeing the amount of information regarding the spread and prevention and sign symptoms of the disease was also appreciated. Moreover, the amount of the cognizance of the current situation of COVID - 19 was practically found more in dentists with higher and more practiced individuals, quite similar to other conducted studies. Regarding the deterring methods of channeling COVID - 19, hand washing/sanitizer and usage of the mask were not widely observed but it was reported in other conducted studies. Some dentists preferred the use of mouthwashes before initiating the dental procedure to decrease disease transmission [13]. The personals had effective knowledge regarding the outbreak and preventive measures of COVID - 19 in dental setups. The initial days of the pandemic traced back from Wuhan sparked worldwide communication regarding what is the disease, how it is present, and importantly how to prevent it. Dentists and their staff were almost very well informed by all the aspects of COVID - 19 either via their respective departments or through government-funded campaigns, electronic and social media. Also, each dental care worker has enough information about the presenting complaints and progress of COVID - 19 and the route of transmission. All of them were very aware of droplet and airborne being the routes as also shown by some other study [14]. The information regarding the lifecycle and incubation period of the virus, which is 14 days, was not found in a satisfying number of individuals. We also evaluated individuals regarding the incubation which ranges up to 14 days. Upon querying regarding the importance of knowing the

incubation period we informed them of the importance of a secure span of virus and disease in an infected individual presenting in a dental clinic. The individuals were also asked a situation where if they get presented with an active case of COVID - 19, how would they progress? A majority agreed to treat the patient and then referring them to get worked up for the disease. While the rest agreed upon referring the patient to the hospital for COVID - 19 workup and treating them afterward. It depicted how dentists and their staff should be careful regarding a patient with flu-like symptoms. It was also discussed in a study conducted In Jordan where the emphasis was given upon dental healthcare workers to be vigilant about a patient with symptoms of cold and flu and the further plan of treatment of the affected by referring them to COVID - 19 care unit after acquiring history of travel, contact, and if present, the severity of the disease. The dentist too should inform and undertake preventive measures like face masks, sanitizer, encouraging hand washing, and spacing [15]. It is an understandable view that if there is enough information about the disease and its progression along with the necessary precautions to be taken when a suspected COVID - 19 patient comes up, is present only then the dentists can promote the use of protective equipment and precautionary methods. A cross-sectional study in Saudi Arabia, that younger dental practitioners were less careful and casual about the COVID - 19 as compared to senior and elderly dentists [16]. Apart from the dentists themselves, A worrisome point was when half of the total number of dental staff was not very aware of or cautious of the disease or followed the recommended protective measures as per WHO [17]. A sensible amount of knowledge is necessary to be spread among dentists and their staff regarding the signs and symptoms along with preventive understanding. Our study evaluated dental practitioners regarding their knowledge and practice and the majority responded positively. Keeping in view the current variations and progress in Sars-Cov-2, constant updating knowledge is necessary to be provided to the health care staff who are fighting this war on the frontline. It is also necessary to record febrility or a febrility of every staff member daily before entering workspace and providing with necessary protective equipment and a detailed history of contact or travel to be inquired by the patient [18].

#### V. CONCLUSION

Dental students demonstrated ample awareness and knowledge regarding COVID-19 disease presentation, preventive measures, and strategy in case of suspected infection with a motivated attitude to spread awareness among the population.

#### CONFLICT OF INTEREST

Authors declare that they do not have any conflict of interest.

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