

Awareness towards COVID-19 Precautions among Dental Students: A Short Survey

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ABSTRACT

Objective: To assess the awareness of Coronavirus Disease (COVID-19) among dental undergraduates, interns and postgraduate students.

Materials and Methods: A questionnaire based online survey with regards to knowledge, attitudes, practice was completed by 424 dental students. The questionnaire was divided into 4 sections comprising 13 questions. The initial section collected demographic information of the participants like age, gender, and education status. The knowledge, attitude, and practice of dental students regarding COVID-19 was evaluated in the 2nd, 3rd and 4th section, respectively.

Results: An overall mean score of 9.74 ± 2.31 out of 15 was noted. The mean score for knowledge among participants was 3.06 ± 0.17 , which indicated that the participants level of knowledge was fair. In total, 81.8% of participants were aware of the main symptoms of the disease. However, 78.8% of participants reflected a positive attitude towards the use of a mask specifically for the carriers with a droplet spread disease. Students' t-test did not show any significant difference with respect to knowledge, attitude and practice among male and female participants. Whereas a statistically significant differences in participants' knowledge and attitude domains was noted with respect to the education levels, as postgraduate students possessed a higher mean scores when compared to interns and undergraduate students

Conclusion: Awareness about COVID-19 among undergraduate, intern and postgraduate dental students was fair.

KEY WORDS

attitudes, COVID-19, dental students, knowledge, practice

INTRODUCTION

COVID-19, which was initially reported from Wuhan province of China, has become a global pandemic by affecting the entire population of the world. None of the nations are able to provide any substantial relief and solution from this crisis rather to convince their citizens to make aware and taking precaution by modifying their life style. To contain the rapidly spread of COVID-19, the lockdown was imposed in all the nations, which resulted in the freezing of all economic and social activity in society¹⁾.

COVID-19 is caused by a novel coronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) which causes pneumonia, and other symptoms like increased body temperature, malaise, dry cough, and shortness of breath and loss of smell. SARS-CoV-2 infection is also known to cause an acute inflammatory response (cytokine storm) and respiratory failure^{2,3)}.

Various educational institutes, along with dental colleges and hospitals have also been significantly affected by the current pandemic situation. The chances of viral transmission are more for those working closely to or near patients, such as family members and health care workers⁴⁾.

Because of generation of the aerosol during various dental operative

procedure, the dental professionals are considered to be at the higher risk of SARS-CoV-2 infection. Hence, it is necessary that the risk of transmission through dental procedures should be reduced by adapting proper infection control protocol. Dental practitioners should possess adequate knowledge of the characteristics of SARS-CoV-2 and updated infection control and therapeutic measures⁵⁾.

The present questionnaire-based online cross-sectional study was carried out to assess the awareness of Coronavirus Disease (COVID-19) among dental undergraduates, interns and postgraduate students.

MATERIALS AND METHODS

The present study was carried out after obtaining clearance from Institutional Review Board. The participants of this study incorporated undergraduates, interns and postgraduate students of dentistry. The objective of the study was explained and consent was obtained from all the participants. The questionnaire was prepared on the google form and was shared with the participants. The questionnaire for the present study was adapted from the similar study, followed the guidelines provided by CDC to evaluate awareness of airborne isolation precautions among the dental professionals⁶⁾. The questionnaire was prepared in English for

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Table 1: Demographic details of the participants

Demographic Characteristics		Frequency (N)	Percentage (%)	95% CI
Age	< 20 years	116	27.4	0.14 - 0.19
	20 - 30 years	226	53.3	0.21 - 0.41
	> 30 years	82	19.3	0.32 - 0.38
Gender	Male	178	42.0	0.16 - 0.27
	Female	246	58.0	0.21 - 0.34
Educational status	Undergraduate	266	62.7	0.46 - 0.56
	Intern	86	20.3	0.29 - 0.37
	Postgraduate	72	17.0	0.33 - 0.41

ensuring comprehension by all dental students and pretested in a pilot study conducted in 20 health professionals and modifications were made accordingly. The validation was carried out in a panel expert and among 10 dental students. Test-retest analysis showed a good reliability (Cronbach's alpha ($\alpha = 0.83$)) of the questionnaire.

The questionnaire was divided into 4 sections comprising 13 questions. The initial section collected demographic information of the participants like age, gender, and education status. The knowledge, attitude, and practice of dental students regarding COVID-19 was evaluated in the 2nd, 3rd, and 4th section, respectively. The responses were recorded on 10 questions with a total score of 15. The scoring pattern was followed as that of Al Jaseer *et al*⁶.

The obtained data was analysed using IBM SPSS Statistics version 22.0 (IBM, Armonk, NY, USA). Results were presented through frequencies, percentages, mean, and standard deviation values for the knowledge, attitude, and practice scores. The study variables were analysed by applying Kruskal Wallis tests and Mann-Whitney U-test and $p < 0.05$ was considered statistically significant.

RESULTS

In the present study, the response rate was 94.85%, as 424 out of 447 participants responded to the questionnaire. Out of the total samples 178 (42%) were male and 246 (58%) were female. Majority (53.3%) of the participants were in the age group of 20 to 30 years old. Most of the study participants were undergraduate students (62.7%) followed by interns (20.3%) and postgraduate students (17%) (Table 1). Distribution of the study participants responses with regards to their knowledge, attitude, and practice on COVID-19 precautions is represented in table 2.

Table 2: Frequency distribution of overall scores

Total Score	Frequency (N)	Percentage (%)
1	5	1.18
2	5	1.18
3	27	6.37
4	11	2.59
5	13	3.07
6	19	4.48
7	16	3.77
8	21	4.95
9	43	10.14
10	73	17.22
11	88	20.75
12	61	14.39
13	19	4.48
14	9	2.12
15	14	3.30
Total	424	100.00

An overall mean score of 9.74 ± 2.31 out of 15 was noted. The mean score for knowledge among participants was 3.06 ± 0.17 , which indicated that the participants level of knowledge was fair.

Participant's level of knowledge, attitude, and practice on COVID-19 precautions is mentioned in table 3. In total, 81.8% of participants were aware of the main symptoms of the disease. However, 78.8% of participants reflected a positive attitude towards the use of a mask specifically for the carriers with a disease which spreads through the droplet. As far as safety practices related to COVID-19 are concerned, 75.9% of participants showed their agreement towards the statements "Bathing with hot water to kill COVID-19 attached to the body is regarded as a false myth". Students' t-test did not show any significant difference with respect to knowledge, attitude and practice among male and female participants (Figure 1). Whereas a statistically significant differences in participants' knowledge and attitude domains was noted with respect to the education levels, as postgraduate students possessed a higher mean scores when compared to interns and undergraduate students ($P < 0.05$). (Figure 2).

Table 3: Knowledge, attitude, and practice with regards to COVID-19 precautions

Questions pertaining to various domains	Correct responses	
	N	%
Knowledge		
1. Novel COVID-19 virus is primarily transmitted between people through droplets.	221	52.1
2. The presenting symptoms of COVID-19 infection are all the following except runny nose.	347	81.8
3. Active symptoms of COVID-19 may be presented; 2 - 14 days after exposure.	281	66.3
4. As per the CDC guidelines, to be protected from COVID-19, washing hands and cleaning surfaces should at least for 20 seconds.	199	46.9
Attitude		
5. Individuals with a droplet spread disease should be isolated in a separate room.	316	74.5
6. Individuals with a droplet spread disease should be maintained at a minimum distance of 150 centimetres	272	64.2
7. Carriers with a droplet spread disease must wear a mask amid transport.	334	78.8
8. Mask must be worn if or when an individual is within a 90 cm distance from a patient under droplet precaution care.	312	73.6
9. Mask should be worn most of the time to prevent the spread of COVID-19.	108	25.5
Practice		
10. Bathing with hot water to kill COVID-19 attached to the body is regarded as a false myth.	322	75.9

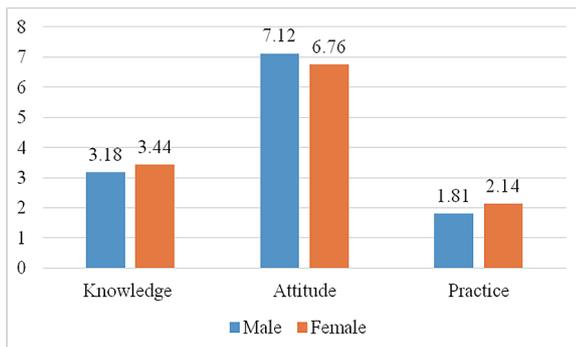


Figure 1: Correlation between gender distribution among different domains

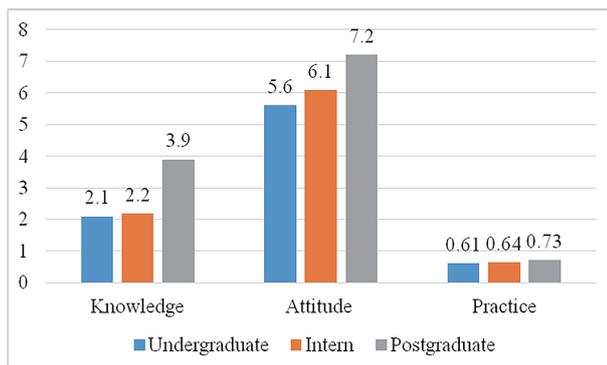


Figure 2: Correlation between educational status distribution among different domains

DISCUSSION

Dental institutions are responsible to provide needful measures for the preventing various health related issues, providing adequate knowledge to undertake safety measure while treating the patients and establishing healthier working environment. The main objective of the dental education is to train the dental students by encouraging them to evolve accurate knowledge and attitudes about various protocols for managing infections which originate from different sources⁷.

There is a need that all the health professionals should be updated about the current protocols in place in this pandemic situation⁸. To the best of our knowledge, limited studies have been carried out to evaluate the awareness of dental students about the global pandemic of COVID-19 and its impact on dental speciality. This questionnaire based study was carried out with an objective to assess the knowledge and attitude and practice about COVID-19 precautions among dental undergraduate and postgraduate students.

In a similar, previous questionnaire-based study conducted in Mumbai among healthcare students and professionals, including a dentistry subgroup (students and faculty), revealed a high level of awareness⁹. Similarly, a higher level of awareness was noted among the participants of the similar studies conducted in Universities of Saudi Arabia⁶ and Italy¹⁰, among dental students.

The data from the present study revealed an overall fair score of awareness among various undergraduate and postgraduate dental students. The mean scores indicated a fair level of knowledge and attitude, among dental students towards COVID-19, whereas level of practice was low. This discrepancy may be due to the exiting situations and circumstances during the time of the survey. Mass quarantine was imposed in the entire country, where most of the participants were in isolation to minimize the risks of contamination and contraction of the disease. Increased level of knowledge and adoption of precautionary measures may be noted due to continuing information provided by news agencies, internet and government authorities regarding various modes of transmission of COVID-19, curative aspects, and preventive protocol^{11,12}. In the present study we did not observe any significant gender differences

with regards to knowledge, attitude and practice, this was in accordance with the findings of Bennardo *et al.*¹⁰, whereas Al Jasser noted a higher level of practice among female participants as compared with their male counterparts⁶.

In our study, postgraduate students showed a statistically higher level of knowledge attitude and practice when compared to interns and undergraduate students. The possible explanation behind this may be, the higher experience and more advanced skills in information search, critical reading, as well as problem focused observation among postgraduate students¹³.

The findings of the present study were compared with those of other studies concerning the awareness of healthcare students and workers due to the limited literature regarding this topic. A similar level of knowledge among dental healthcare providers was also reported by studies conducted in other regions, including Turkey⁶, Saudi Arabia, Turkey¹⁴ and Bangladesh¹⁵.

The limitation of the present study is that, lack of participants from different dental institutes of all states, which could helped represent the awareness among dental students at regional and national level.

CONCLUSION

From the results of the present study, it can be concluded that awareness about COVID-19 among undergraduate, intern and postgraduate dental students was fair. This suggests the significance of enhancement of the present level of awareness for effective protection and safety measures among the dental students who are at high risk for exposure. Conducting online courses to upgrade the knowledge of dental students about infection control protocol and various protocols to prevent the transmission of COVID-19 are recommended.

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