

# Knowledge, Awareness, Attitude of Dental Surgeons of Hyderabad on COVID-19 Pandemic

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## ABSTRACT

**Background:** Dental professionals play significant roles in preventing the transmission of 2019-nCoV. Objective: This study was carried out to study how aware and prepared the dental professionals of Hyderabad are to deliver dental care and prevent cross-contamination while handling COVID -19 suspected and positive patients. **Methods:** A cross-sectional study was conducted to assess the awareness, preparedness and attitude of practicing dental surgeons in and around Hyderabad towards delivering dental care amid the coronavirus crisis. A questionnaire of 10 items was designed and 400 questionnaires were distributed amongst the dentists in and around Hyderabad, Telangana state, India. A 3-point scale was made to analyze the awareness, preparedness, knowledge, skills and attitude of dentists towards delivering dental care amidst the crisis by giving option A as yes and B as No and C as sometimes. **Results:** Out of the 400 dental surgeons, 300 were graduates (BDS) and 100 postgraduate dentists (MDS). Our study reveals that dentists with graduation qualifications were taking proper history and screening procedures than post-graduation dentists. But even though graduate dentists had knowledge regarding protective wear, CDC guidelines, waste disposal management and usage of rubber dam, their knowledge was very less than dentists with post-graduation qualifications. **Conclusion:** Hyderabad dentists were mindful of the COVID-19 symptoms, means of transmission, Cross-infection control and operative protocols practiced within dental clinics. However, many dentists, particularly graduate dentists exhibited inadequate knowledge about the specific dental procedures that safeguard the dental staff and patients from COVID-19 in the context of the current outbreak.

**Keywords:** Awareness, COVID-19, CDC guidelines, Dentists, Rubber dam.

## INTRODUCTION

At the end of 2019, Wuhan City, the capital city of Hubei province in China, experienced a new coronavirus outbreak that resulted in more than 1800 deaths and more than 70,000 reported cases of infection in the first 50 days since the outbreak. The new virus is a member of the beta group of coronaviruses and was named the 2019 novel coronavirus (2019-nCoV). Thereafter, the International Committee on Taxonomy of Viruses (ICTV) named the virus SARS-CoV-2 on February 11, 2020 and the disease COVID-19.<sup>[1-3]</sup>

Dental professionals and patients are at an increased risk of contracting COVID – 19 due to the specific nature of dental procedures which involves frequent face to face contact with the

patients, their saliva and contaminated materials. Owing to rapid spread and poor understanding of the disease, the American Dental Association has suggested that all elective dental procedures should be deferred and only patients with true dental emergencies should be catered. Also, universal precautions, careful pre-screening of patients and additional preventive measures are deemed necessary before treating the patients in dental settings. It is mandatory for health professionals to provide good and safe patient care. Therefore, it is imperative that proper information and training sessions should be imparted to dental professionals to ensure awareness and readiness regarding this global emergency. The absence of proper training will not only delay the necessary treatment required for such patients but can contribute to the rapid spread of disease.<sup>[4,5]</sup>

Surveys of knowledge and attitude, can collect information on what is known, believed, and done by a specific population. Such information is necessary because unclear information and negative attitude toward infectious diseases among the community may lead to distress and panic. In

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this time of crisis, research on knowledge and attitude is vital for understanding the professionals level of understanding and practice toward COVID-19.<sup>[6,7]</sup> Hence, the present study was aimed to explore the knowledge, and attitude of dental surgeons at Hyderabad, Telangana state, India, regarding novel COVID-19 disease.

**MATERIALS AND METHODS**

A cross-sectional study was conducted from April 2020 to August 2020 to assess the awareness, preparedness and attitude of practicing dental

surgeons in and around Hyderabad towards delivering dental care amid the coronavirus crisis. All the specialized dentists, postgraduates and graduate dentists who were treating the patients in dental colleges and dental clinics were included in the study. After a thorough literature search, a questionnaire of 10 items was designed [Table 1] and 400 questionnaires were distributed amongst the dentists. A 3-point scale was made to analyze the awareness, preparedness, knowledge, skills and attitude of dentists towards delivering dental care amidst the crisis by giving option A as yes and B as No and C as sometimes.

**Table 1: Questionnaire Used During the Survey**

Question	A	B	C
Q1. Do you take the proper travel history of the patient?	Yes	No	Sometimes
Q2. Do you scrutinize your patients with acute respiratory symptoms and delay their dental appointment?	Yes	No	I never thought of it
Q3. Are you using the recommended face mask and barrier protection equipment like face shields, caps, gloves while handling the patient?	Yes	No	I am unaware
Q4. High volume suction is mandatory in dental practice?	Yes	No	Depends on the situation
Q5. Have you read about the recent ADA informational handout to dentists based on CDC guidelines?	Yes	No	I don't go into detail
Q6. Urgent dental care includes severe toothache, cellulitis, Ludwig's angina, uncontrolled bleeding and Oro-facial trauma	Yes	No	Not always
Q7. Do you prescribe a pre-procedural mouth rinse containing oxidative agents like 0.2% providing before the dental procedure?	Yes	No	Seldom
Q8. Do you use rubber dam isolation to reduce airborne particles?	Yes	No	In selected procedures only
Q9. Do you follow proper waste management in the dental operator?	Yes	No	Sometimes
Q10. After extraction resorbable sutures should be used in patients	Yes	No	Never heard about it

**Statistical Methods:**

The recorded data was compiled and entered in a spreadsheet (Microsoft Excel) and then exported to the data editor of SPSS Version 20.0 (SPSS Inc., Chicago, Illinois, USA). Statistical software SPSS (version 20.0) and Microsoft Excel were used to carry out the statistical analysis of data. Categorical variables were summarized as frequencies and percentages. Chi-square test or Fisher's exact test, whichever appropriate, was used for comparison of categorical variables. A P-value of less than 0.05 was considered statistically significant. All P values were two-tailed.

**RESULTS**

Out of the 400 dental surgeons, 300 were graduates (BDS) and 100 postgraduate dentists (MDS). The results are illustrated in [Table 2,3 & Figure 1,2]. Graduate dentists inquired more about the travel history, contact history and history of participation in large gatherings/meetings than the postgraduate dentists (212/70.66%, vs 65/65%) and the difference was not statistically significant [Table 2 & Figure 1].

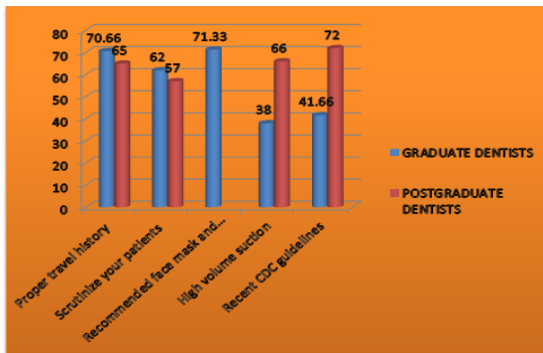
**Table 2: Table showing the Knowledge, Awareness, attitude of dental surgeons of Hyderabad on COVID-19 Pandemic in Number and Percentage (Qno 1-5)**

Q No.	Response	Under Graduates	Post Graduates	Total	P-value
1	Yes	212/70.66%	65/65%	277/66.16%	0.22489
	No	66/22%	30/30%	96/24%	
	Sometimes	22/7.33%	5/5%	27/6.75%	
2	Yes	186/62%	57/57%	243/60.75%	0.734667
	No	92/30.66%	30/30%	122/30.5%	
	I never thought of it	32/10.33%	13/13%	45/11.25%	
3	Yes	214/71.33%	92/92%	306/76.5%	0.000053
	No	75/25%	6/6%	81/20.25%	
	I am unaware	11/3.66%	2/2%	13/3.25%	
4	Yes	114/38%	66/66%	180/45%	<0.00001
	No	95/31.66%	32/32%	127/31.75%	
	Depends on situation	91/30.33%	8/8%	99/24.75%	
5	Yes	125/41.66%	72/72%	197/49.25%	<0.00001
	No	105/35%	18/18%	123/30.75%	
	I dont go in	70/23.33%	10/10%	80/20%	

**Table 3: Table showing the Knowledge, Awareness and Attitude of dental surgeons of Hyderabad on COVID-19 Pandemic in Number and Percentage (Qno 6-10)**

Q No.	Response	Under Graduates	Post Graduates	Total	P-value
6	Yes	100/33.33%	75/75%	175/43.25%	<0.00001
	No	90/30%	15/15%	105/26.25%	
	Not always	110/36.66%	10/10%	120/30%	
7	Yes	135/45%	78/78%	213/54.25%	<0.00001
	No	102/34%	20/20%	122/30.5%	
	Seldom	63/21%	12/12%	75/18.75%	
8	Yes	80/26.66%	84/84%	164/41%	<0.00001
	No	180/60%	12/12%	192/48%	
	In selected procedures	40/13.33%	4/4%	44/11%	
9	Yes	215/71.66%	83/83%	298/74.25%	0.79228
	No	60/20%	12/12%	72/18%	
	Sometimes	25/8.33%	5/5%	30/7.5%	
10	Yes	184/61.33%	64/64%	248/62%	0.480626
	No	86/28.66%	30/30%	116/29%	
	Never heard about it	30/10%	6/6%	36/9%	

186 (62%) of the graduate dentists screened patients for respiratory symptoms and delayed non-emergency procedures, whereas only 57% of the postgraduate dentists screened, the difference being statistically insignificant. There was a statistically insignificant difference between the graduate and postgraduate dentists regarding usage of protective wear as 71.33% of graduate dentists said they used protective eyewear compared to 92 % postgraduates. Regarding the question of High volume suction is mandatory in dental practice, 114 (38%) of the graduate dentists gave the answer as yes when compared to 66% of postgraduate dentists, the difference being statistically significant (P=0.000053). 72% of postgraduate dentists were aware of the CDC guidelines while only 41.66% of graduate dentists knew about it and the difference was statistically significant (p<0.00001) [Table 2 & Figure 1].

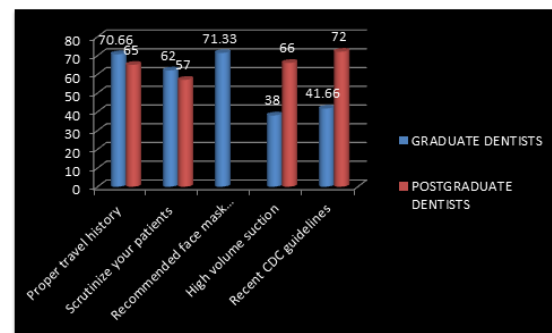


**Figure 1: Showing the Knowledge, Awareness, Attitude of dental surgeons of Hyderabad on COVID-19 Pandemic in percentage (Qno 1-5)**

To the question of whether urgent dental care includes severe toothache, cellulitis, Ludwig’s angina, uncontrolled bleeding and Oro-facial trauma, 100 (33.33%) of graduate dentists agreed in comparison to 75% of postgraduate dentists, the difference being statistically significant (p<0.00001). Only 45% of graduate dentists used a pre-procedural mouthwash before starting the

procedure, whereas 78% of postgraduate dentists used preprocedural mouth rinses. 84% of postgraduate dentists used a rubber dam while only 26.66% of graduate dentists reported having used it, the difference was statistically significant (p<0.00001).

A vast majority of graduate dentists (71.66%) were aware of and followed proper waste disposal in comparison with 83% of dentists with a postgraduate qualification, the difference was statistically insignificant (p=0.79228). To the question of after extraction resorbable sutures should be used in patients, 184 (61.33%) of graduate dentists agreed that they knew, whereas 64% of dentists with a postgraduate qualification, the difference was statistically insignificant (p=0.480626) [Table 3 & Figure 2].



**Figure 2: Table showing the Knowledge, Awareness, attitude of dental surgeons of Hyderabad on COVID-19 Pandemic in percentage**

## DISCUSSION

Dentists are exposed to tremendous risk of 2019-nCoV infection due to face-to-face communication and the exposure to saliva, blood, and the aerosol produced by air rotor use. Dental professionals play significant roles in preventing the transmission of 2019-nCoV. Hence strict and effective infection control protocols are urgently needed.<sup>[7,8]</sup>

Research conducted on 1357 health workers including doctors, nurses and paramedics in China

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showed that medical doctors obtained higher knowledge scores compared with nurses and paramedics (doctors =  $38.56 \pm 3.31$ ; nurses =  $37.85 \pm 2.63$ ; paramedics =  $36.72 \pm 4.82$ ). Compared with frontline health workers who have direct contact with confirmed and suspected patients, non-frontline workers displayed low levels of confidence to fight the virus (OR = 0.562; 95% CI: 0.376, 0.839).<sup>[8]</sup>

In Italy, respondents from 2046 hospital staff showed that, in general, healthcare workers possessed good knowledge.<sup>[9]</sup>

Research on medical students from Iran indicated that such students have an average of 96% correct answers with 79.60%, 13.8%, and 6.7% of students holding high, moderate, and low levels of knowledge, respectively.<sup>[10]</sup>

In Jordan, medical and non-medical students obtained an average score of  $0.81 \pm 0.15$  (SD), where 90% of the participants had good knowledge of COVID-19 symptoms and more than 80% are

aware of the lack of vaccine and treatment for COVID-19. No significant differences were observed regarding knowledge between medical and non-medical students. The cited sources of knowledge about COVID-19 are social media (34%), the WHO (19.9%), TV (17.6%), the Internet (13%), the Ministry of Health (10.1%), and colleagues (5.4%).<sup>[11]</sup>

Research conducted in the US and the UK revealed considerable knowledge among respondents about the transmission, spread, and symptoms of COVID-19. However, a portion of the population cited misconceptions about the prevention of the disease. Nevertheless, the difference in knowledge and misperception between the US and the UK participants is non-significant.<sup>[12]</sup>

Another study in China on 6910 residents argued that the level of knowledge of the residents was positive with a score of 10.8 (SD: 1.6; range: 0–12) [Table 4].<sup>[7]</sup>

**Table 4: Studies showing Knowledge, Awareness, Attitude of dental surgeons of Hyderabad on COVID-19 Pandemic**

S. No	Author	Country	Participants And Knowledge	Observations
1	Zhang, <sup>[7]</sup>	China	Doctors ( $38.56 \pm 3.31$ ) Nurses ( $37.85 \pm 2.63$ ) Paramedics ( $36.72 \pm 4.82$ )	Approximately 89% of health workers obtained sufficient knowledge about COVID-19. Doctors showed higher knowledge scores than nurses and paramedics.
2	Moro, <sup>[8]</sup>	Italy	Healthcare workers = 71.6% Non-healthcare workers = 61.2%	Among healthcare workers, generally good knowledge on the topic was observed
3	Taghrir, <sup>[9]</sup>	Iran	Medical students: correct answers of knowledge = 86.96% 79.60% = high level 13.8% = moderate level 6.7% = low level	Iranian medical students had a high level of related knowledge and high performance in preventive behaviors, but moderate risk perception
4	Alzoubil, <sup>[10]</sup>	Jordan	Medical and non-medical students: An average score of $0.81 \pm 0.15$	The overall understanding of the virus was good and knowledgeable about the major symptoms, such as fever, cough, and difficulty in breathing
5	Geldsetzer, <sup>[11]</sup>	US, UK	NA	Participants generally had good knowledge of the main mode of disease transmission and common symptoms of COVID-19
6	Zhong, <sup>[7]</sup>	China	Average score 10.8 (SD: 1.6; range: 0-12)	Good knowledge
7	Khader, <sup>[13]</sup>	Jordan	Dentists 43.8% - preferred that patients visit the hospital and opt not to treat them 4.6% - refused to treat 49.5% agree that they will treat such patients	Most of the dentists (82.6%) avoided handling patients

In modern society, social media are one of the tools that can be utilized to enhance knowledge among communities. Based on the study in Iran, the students cited that their sources of knowledge about COVID-19 are social media (34%), the WHO (19.9%), TV (17.6%), the Internet (13%), the Ministry of Health (10.1%), and friends (5.4%). A global public health campaign strategy to increase knowledge should be conducted to help in controlling the spread of the disease. In this regard, everybody should work together to eradicate this pandemic.<sup>[8-13]</sup>

Our study reveals that dentists with graduation qualifications were taking proper history and screening procedures than post-graduation dentists. But even though graduate dentists had knowledge regarding protective wear, CDC guidelines, waste disposal management and usage of rubber dam, their knowledge was very less than dentists with post-graduation qualifications. The literature shows that many dental procedures produce aerosols and droplets that are contaminated with bacteria, viruses, and blood, and have the potential to spread infections to dental personnel and other people in the dental office. The majority of patients with

COVID-19 represent relatively mild cases. But every patient can be a potential carrier and it is the need of the hour to deliver dental care with utmost care as any patient can be an asymptomatic carrier.<sup>[9-11]</sup>

Every day new updates are being released regarding the management and delivery of emergency dental treatment amid the Corona crisis where every patient can be a potential carrier. Besides the use of disposable instruments (like mouth mirror, syringe etc), pre-procedural mouth rinse (like 0.2%povidone iodine) to decrease viral load, use of rubber dam to decrease aerosol/spatter generation, use of negative pressure handpieces and anti-retraction valves, well-ventilated operatory and regular sanitization of surfaces, maintenance of hand hygiene which is a five-step procedure and proper waste disposal is of paramount importance.<sup>[12,13]</sup>

Hence there is a need for more awareness and education to be spread amongst the dental fraternity about the transmission modes and CDC guidelines pertaining to patient care and his handling in Covid 19 positive patients.

## CONCLUSION

Dentists of Hyderabad, India were had adequate knowledge of the COVID-19 symptoms, means of transmission, Cross-infection control and operative protocols practiced within dental clinics. However, dentists exhibited inadequate knowledge about the specific dental procedures that safeguard the dental staff and patients from COVID-19 in the context of the current outbreak. The study recommends the establishment of focused dental education drives to span the gap between the current and the requisite knowledge, to influence their attitude positively towards COVID-19.

## REFERENCES

1. Puspitasari IM, Yusuf L, Sinuraya RK, Abdulah R, Koyama H. Knowledge, Attitude, and Practice During the COVID-19 Pandemic: A Review. *J Multidiscip Healthc.* 2020;13:727-733.
2. Shereen MA, Khan S, Kazmi A, Bashir N, Siddique R. COVID-19 infection: origin, transmission, and characteristics of human coronaviruses. *J Adv Res.* 2020;24:91-98.
3. Lai -C-C, Shih T-P, Ko W-C, Tang H-J, Hsueh P-R. Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and coronavirus disease-2019 (COVID-19): the epidemic and the challenges. *Int J Antimicrob Agents.* 2020;55(3):105924.
4. Baseer MA, Ansari SH, AlShamrani SS, Alakras AR, Mahrous R, Alenazi AM. Awareness of droplet and airborne isolation precautions among dental health professionals during the outbreak of corona virus infection in Riyadh city, Saudi Arabia. *Journal of clinical and experimental dentistry.* 2016;8:e379- e87.
5. Bener A, Al-Khal A. Knowledge, attitude and practice towards SARS. *The journal of the Royal Society for the*

- Promotion of Health. 2004;124:167-70. 30. Joukar F, Mansour-Ghanaei F, Soati F, Meskinkhoda P. Knowledge levels and attitudes of health care professionals toward patients with hepatitis C infection. *World Journal of Gastroenterology: WJG.* 2012;18(18):2238-44.
6. Lin Y, Huang L, Nie S, et al. Knowledge, attitudes and practices (KAP) related to the pandemic (H1N1) 2009 among Chinese general population: a telephone survey. *BMC Infect Dis.* 2011;11(1):128.
7. Zhong B, Luo W, Li H, et al. Knowledge, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: a quick online cross-sectional survey. *Int J Biol Sci.* 2020;16(10):1745-1752.
8. Zhang M, Zhou M, Tang F, et al. Knowledge, attitude and practice regarding COVID-19 among health care workers in Henan, China. *J Hosp Infect.* 2020;105(2):183-187.
9. Moro M, Pietro VG, Capraro M, et al. 2019-novel coronavirus survey: knowledge and attitudes of hospital staff of a large Italian teaching hospital. *Acta Biomed.* 2020;91(11):29-34.
10. Taghrir MH, Borazjani R, Shiraly R. COVID-19 and Iranian medical students; a survey on their related-knowledge, preventive behaviors and risk perception. *Arch Iran Med.* 2020;23(4):249-254.
11. Alzoubi H, Alnawaiseh N, Lubad MA, Aqel A, Al-Shagahin H. COVID-19 - knowledge, attitude and practice among medical and non-medical university students in Jordan. *J Pure Appl Microbiol.* 2020;14(1):17-24.
12. Geldsetzer P. Use of rapid online surveys to assess people 's perceptions during infectious disease outbreaks: a cross-sectional survey on COVID-19. *J Med Internet Res.* 2020;22(4):1-19.
13. Khader Y, Al Nsour M, Al-Batayneh OB, et al. Dentists' Awareness, Perception, and Attitude Regarding COVID-19 and Infection Control: Cross-Sectional Study Among Jordanian Dentists. *JMIR Public Health Surveill.* 2020;6(2):e18798.

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