

## Assessment Of Knowledge Regarding COVID-19 And It's Preventive Protocol Among Dentists Of North Gujarat

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**Abstract:** Background: The World Health Organization (WHO) had declared the Novel Coronavirus as a Pandemic in March, 2020. As dentists are at an increased risk due to the aerosol transmission, it is extremely important for them to understand the virus spread. Objectives: To assess the knowledge and attitude of the dentists of north Gujarat population towards the novel Coronavirus and their knowledge regarding the spread of their infections. Material And Methods: A descriptive, cross-sectional study was conducted among 274 dentists including post graduate and undergraduate dental students, faculty members and private practitioners of North Gujarat. A Questionnaire was circulated using the Google forms, consisting of two parts: first – consisted of demographic details and the second part consisted of 25 questions regarding knowledge of dentists towards the COVID-19 and its impact on their dental practice. The level of significance was set at  $\leq 0.05$ . Result: The study participants were well aware about the COVID-19 prevention protocols. Majority of the participants 59.5% agreed that elective dental procedures needed to be postponed for at least 3 weeks. Also 73% stated that 90GSM of PPE kit was considered appropriate to protect from cross-infection. The results were statistically significant. Conclusion: The study concluded that dentists had sufficient knowledge regarding COVID-19 protocols but same was not implemented in their practices. Dentists should have proper knowledge regarding the transmission and prevention of infection from the virus as they are at high of developing an infection. [Attur K Natl J Integr Res Med, 2022; 13(1): 31-36, Published on 26/01/2022]

**Key Words:** COVID-19, Dentists, Prevention

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**Introduction:** The World Health Organization (WHO) had declared the Novel Coronavirus as a Pandemic in March, 2020. The epidemic which had initially started in China in December, 2019 soon became a public health concern not only for China, but for countries all around the world<sup>1</sup>.

There were two other similar viruses discovered earlier: 1) Severe Acute Respiratory Syndrome Coronavirus (SARS-COV) and Middle East Respiratory Syndrome (MERS). The COVID-19 has also been called SARS-CoV-2 but the former name has gained more popularity<sup>1</sup>.

The incubation period for the novel Coronavirus had been estimated to be 5 to 6 days on an average. The infection spreads by aerosol transmission. The signs and symptoms of the disease typically mimic that of any other viral infection (in early stages). Some common signs and symptoms are: fever, nonproductive - cough, cold, shortness of breath, fatigue, loss of taste and smell sensation<sup>2</sup>.

Healthcare providers all over the world are still at an increased risk of contracting the disease as they are the first to come in contact with an individual suffering from the disease. Due to the high transmission of the infection by aerosols, dentists are at an increased risk of contracting the disease even more as compared to other healthcare workers<sup>3</sup>.

As dentists are at an increased risk due to the aerosol transmission, it is extremely important to understand the virus, its transmission in general settings as well as in dental settings, the clinical manifestations of the infection and ways and means of practicing dentistry fruitfully in such times. Therefore, this study was conducted with the aim of assessing the knowledge, attitude and practices of the dentists during the pandemic era.

Aim: To assess the knowledge and attitude of the dentists of north Gujarat population towards the novel Coronavirus and their knowledge regarding the spread of their infections.

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**Objective:** To assess the knowledge and attitude of the dentists of north Gujarat population towards the novel Coronavirus and their knowledge regarding the spread of their infections through a validated questionnaire.

**Material & Methods:** A descriptive, cross-sectional study was conducted among the post graduate dental students, undergraduate dental students, faculty members and private practitioners of North Gujarat. Ethical approval was obtained from the Ethical Committee of the Concerned Institute. The study was conducted for a period of one month in May 2020. A multi-stage sampling was done and a Questionnaire was drafted using the Google forms. The questionnaire consisted of two parts: first – consisted of demographic details like name, age, gender, designation, branch of dentistry (if Post

graduate) and the second part consisted of 25 knowledge and attitude of dentists towards the Novel Coronavirus and their dental practices during the pandemic. The questionnaire was sent to all members via email, WhatsApp messages or SMS.

The data collected was entered into Microsoft Excel 2013 and was analyzed using SPSS v20.0. Percentages and Chi Square test were applied. The level of significance was set at  $\leq 0.05$ .

**Results:** The present study was conducted among 274 study participants, out of which 123(44.9%) were male and 151(55.1%) were female. Table 1 shows the distribution of study participants based on their specialty, amongst which majority of them are General practitioner.

**Table 1: Distribution Of Study Participants Based On Their Gender And Specialty (N=274)**

Specialty	Gender		Total
	Male	Female	
General Practitioner	61(49.6%)	91(60.3%)	152(55.9%)
Endodontist	30(24.4%)	29(19.2%)	59(21.5%)
Prosthodontist	9(7.3%)	3(2%)	12(4.4%)
Periodontist	1(0.8%)	11(7.3%)	12(4.4%)
Oral And Maxillofacial Surgeon	14(11.4%)	4(2.6%)	18(6.6%)
Orthodontist	7(5.7%)	4(2.6%)	11(4%)
Pedodontist	1(0.8%)	4(2.6%)	5(1.8%)
Oral Radiologist	0(0%)	5(3.3%)	5(1.8%)
Total	123(44.9%)	151(55%)	274(100%)
Chi-Square Value: 28.75			P Value $\leq 0.05^*$

Level of significance  $\leq 0.05$ , \*Significant, \*\*Non-significant

**Table 2: Distribution Of Dentists' Awareness, Perception, And Attitude Regarding COVID-19 (N=274)**

Participants Response	Gender		P Value
	Male	Female	
<b>Patients With Chronic Illness Getting Affected By Covid19</b>			
Yes	115(93.5%)	147(97.4%)	$>0.05^{**}$
No	8(6.5%)	4(2.6%)	
<b>Importance Of Residential Address Of Covid19 Patient</b>			
Highly Important	119(96.7%)	147(97.4%)	$>0.05^{**}$
Not So Important	4(3.3%)	4(2.6%)	
<b>Transmission Of Infection From An Asymptomatic Covid19 Infected Patient</b>			
Yes	122(99.2%)	142(94%)	$\leq 0.05^*$
No	1(0.8%)	9(6%)	
<b>Presence Of Covid19 Virus In Saliva</b>			
14 Days	96(78%)	132(87.4%)	$\leq 0.05^*$
29 Days	27(22%)	19(12.6%)	
<b>Agents Used For Fumigation</b>			
Acetaldehyde	112(91.1%)	146(96.7%)	$\leq 0.05^*$
Formaldehyde	11(8.9%)	5(3.3%)	

**Table 3: Distribution Study Participants Based On Their Responses Regarding Practicing Dentistry During COVID19 (N=274)**

Participants Response	Gender		P Value
	Male	Female	
<b>Distance Between 2 Persons In Waiting Area</b>			$\leq 0.05^*$
1 Foot	15(12.2%)	38(25.5%)	
3 Feet	58(47.2%)	77(51%)	
5 Feet	50(40.7%)	36(23.8%)	
<b>Type Of Filter To Be Used In Air Conditioner In A Clinical Setup</b>			$\leq 0.05^*$
Washable Filters	37(30.1%)	29(19.2%)	
Electrostatic Filters	9(7.3%)	28(18.5%)	
HEPA Filters	77(62.6%)	94(62.3%)	
<b>Importance Of Anti-Retraction Handpiece</b>			$>0.05^{**}$
Prevents Cross Infection	107(87%)	122(80.8%)	
Reduces Procedure Time	16(13%)	29(19.2%)	
<b>Most Protective Mask To Prevent COVID19</b>			$>0.05^{**}$
Triple Layered Surgical Mask	5(4.1%)	15(9.9%)	
Particulate Respirators (N-95)	99(80.5%)	113(74.8%)	
FFP-3 Standard Mask	19(15.4%)	23(15.2%)	
<b>Postponing Of Elective Dental Treatment</b>			$\leq 0.05^*$
1 Week	5(4.1%)	0(0.0%)	
2 Weeks	45(36.6%)	61(40.4%)	
3 Weeks	73(59.3%)	90(59.6%)	
<b>Type Of GSM PPE Kit To Be Used By Dentist</b>			$\leq 0.05^*$
50 Gsm	21(17.1%)	51(33.8%)	
90 Gsm	102(82.9%)	100(66.2%)	
<b>Mouth Rinse Before Clinical Procedure</b>			$>0.05^{**}$
0.2% Povidone Iodine	47(38.2%)	57(37.7%)	
1.2% Hydrogen Peroxide	17(13.8%)	35(23.2%)	
Both	55(44.7%)	50(33.1%)	
No Mouth Rinse To Be Used	4(3.3%)	9(6.0%)	

Level of significance  $\leq 0.05$ , \*Significant, \*\* Non-significant

Among the study participants, 135(49.3%) believed it was mandatory for patients to maintain 3 feet social distance in the dental setup. The high efficiency particulate filter was considered best among 171(62.4%) as it effectively filters the airborne particles from the room. Majority of the participants 59.5% agreed that elective dental procedures needed to be postponed for at least 3 weeks. Also 73% stated that 90GSM of PPE kit was considered appropriate to protect from cross-infection.

**Discussion:** The Covid 19 pandemic contributed to a major disruption in the world. It has affected all sectors of the economy, be it the education sector, business sector, hospitality sector or the dental field. Due to the guidelines given by the

WHO during the start of the pandemic, dental clinics all over the world had to be shut down<sup>1</sup>.

After easing the lockdown restrictions, many dental practices had modified their services to only emergency treatment or had shut down completely. As Covid 19 is a highly infectious disease, dentists need to have a proper knowledge about the disease and preventive measures to be taken to stop the spread of the infection<sup>4</sup>.

In the current study, 121 (44.9%) respondents were males and 151(55.1%) respondents were females. Majority of the respondents were general practitioners (55.9%) out of which 91(60.3%) were females. The result obtained

regarding the distribution of the respondents based on their gender and their specialty was significant in the present study. (P- Value  $\leq 0.05$ ) 97.4% female dentists responded positively that patients with chronic illness are more at risk of getting infected with Covid 19. However, the result between the genders was non-significant. 70.5% participants from a study conducted in Saudi Arabia also agreed that patients with diabetes, hypertension and cancer were more at risk of getting infected from Covid 19<sup>4</sup>.

Peng et al had submitted a review which stated that asymptomatic individuals with the SARS-CoV 2 could transmit the virus to healthy individuals from the first day of infection to the fourteenth day. When the respondents were asked if there is a possibility of transmission of Covid 19 from an asymptomatic patient, 142 (94.4%) females and 122 (99.2%) males responded positively. The result was significant.

A similar study was conducted by Hlehel et al among the Labanese dentists, where, majority of the dentists who participated in the study knew that Covid 19 can be transmitted when the individual is symptomatic and also when the individual is asymptomatic with a positive RTPCR or asymptomatic<sup>5</sup>.

In a study conducted by Alwazzan et al in Saudi Arabia, majority of the study participants 93.3% agreed that Covid 19 can spread from infected individuals only and 97.8% participants agreed that an infected individual has the potential to infect the entire dental clinic upon entering it<sup>4</sup>.

Saliva of humans is said to harbor a vast majority of the oral microorganisms. Various studies have been conducted depicting the association between salivary microorganisms and systemic and oral diseases. Therefore, Covid 19 which is majorly an upper respiratory tract infection has a possibility of being found in saliva too.

The virus could reach the saliva via infection in the upper and lower respiratory tract, from blood through the gingival crevicular fluid and from the various salivary glands through the ducts.

Therefore, having adequate knowledge of the virus and its incubation in saliva is important for the dentists. The incubation period of the SARS CoV 2 in saliva is said to be for 29 days<sup>6</sup>. Majority of males and females in the current study

responded that the incubation period of the virus in saliva is only 14 days. Only 22% male dentists knew that incubation period of the virus in saliva was 29 days. This result was significant between both the groups. This definitely shows a lack of knowledge among the dentists regarding the virus. In another study conducted among the Lebanon population, majority of the dentists knew the incubation period for the virus in the body which is 1-14 days. However, not many studies have explored the knowledge of dentists regarding the incubation period of the virus in saliva<sup>5</sup>.

When the participants were asked regarding the best agent for fumigation of dental clinic during the pandemic, 91.1% males replied with acetaldehyde and only 8.9% stated formaldehyde.

96.7% females replied with acetaldehyde and only 3.3% replied with formaldehyde. The result was significant between the two groups.

Formaldehyde fumigation technique should be used for disinfecting the entire dental clinic as per the guidelines given by the CDC, WHO<sup>7</sup>. In a study conducted by Sarfaraz S et al, majority of the dentists agreed that a strong disinfectant containing chlorine should be used for the dental clinic<sup>7</sup>.

A multisite dentists perspectives study was published by Bakeen L. They stated that oral healthcare providers are unprepared when met with an infection which spreads through respiratory droplets.

Therefore, there is a greater need to educate the dentists of safety measures to protect themselves against the SARS CoV 2 infection<sup>8</sup>.

Majority of the participants from both genders in the current study replied that the N-95 masks are the most protective against the infection. However, the result wasn't significant.

Studies conducted in Europe, North America, East Mediterranean and West Pacific also did not show any statistically significant result among the various regions regarding the N95 mask usage.

However, they did find statistical difference between the familiarity of usage and the comfort of wearing the N95 masks<sup>8</sup>. Additionally, the

dentists in present study were asked regarding the GSM of PPE kit and majority replied that it should be 90 GSM (grams per square meter) which was significant between the groups.

Scaling, root planning, restorations and root canal treatment are examples of the elective dental treatments. These treatments don't fall under the emergency dental treatment classification given by the ADA (American Dental Association).

A significant difference was observed between both the groups regarding the postponement of the elective dental treatments for 3 weeks. In a study conducted in Chennai city in India, majority of the respondents replied that they handled only emergency dental cases during the pandemic<sup>7</sup>.

Some dentists had shut down for an uncertain period of time not providing any treatment to any patients<sup>4</sup>. The SARS- CoV 2 virus thrives in the Oro nasal cavity of individuals in the initial stages.

Therefore, asymptomatic individuals who may have the virus could transmit it to the dentist. As a precautionary measure, the dentist should make the patient use a mouthwash.

0.2% Povidone Iodine and Hydrogen peroxide are both effective mouthwashes used routinely in dentistry. Majority of the males replied during the pandemic as well, they would use both mouthwashes as a pre procedural rinse for the patients.

57 (37.7%) females stated that they would use only 0.2% Povidone Iodine as a pre procedural mouthwash. The result however, was not significant between the genders.

Sarfaraz S in their study, found that majority of the dentists would give 0.5% Chlorhexidine mouthwash as a pre procedural oral rinse as compared to the Povidone Iodine or CPC (Cetyl Pyridium Chloride)<sup>7</sup>.

The current study throws some light regarding the knowledge that dentists have of the novel Corona virus.

Although the respondents had good knowledge, more interviews or questionnaires need to be prepared to assess their knowledge regarding the preventive measures against the infection in dental clinics.

Also, the current study did not include a large number of dentists; therefore, the results cannot be generalized to the entire dental population in our area.

**Conclusion:** According to this study it was concluded that Dentists had sufficient knowledge regarding COVID-19 protocols but same was not implemented in their practices. Dentists are the connecting link in between the transmission chain of COVID-19 infection.

In the midst of the pandemic, it is the duty of Dentists to identify the risk factors and take necessary measures to adapt and provide optimum health care to patients along with protecting themselves from the cross-infection.

The dental professionals should be aware about the recent protocols the government and the health organizations are taking to limit the spread and implement them into their routine practice.

Dental professionals should consider taking COVID-19 Prevention programs initiated by WHO to improve their knowledge and be aware about the risks. New approaches such as telephonic consulting should be taken into consideration.

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