

# Knowledge, Attitude and Practices on COVID-19 among Patients Attending a Private Dental College in Jeddah

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## ABSTRACT

**Introduction:** The close proximity to the patient's oropharyngeal region and also involved aerosol production presents a potential high risk for the transmission of disease across patients and dental health practitioners. This requires dentists and patients to be aware of the risks of contracting coronavirus from the patient's perspective when they seek dental treatment.

**Aim:** To assess the knowledge, attitude and practices of the patients toward the dental visits during the pandemic crisis.

**Materials and Methods:** The present study was a cross-sectional questionnaire-based study conducted in Ibn Sina National College, Jeddah, Saudi Arabia from 6<sup>th</sup> July, 2020 to 24<sup>th</sup> July 2020. All the patients who had visited the dental clinics attached to the dental college were sent online google docs form with a consent through WhatsApp. Questions were divided into 2 sections, one section related to demographic data of participants like age, gender, education level, frequency of dental visits and the

other section related to patients' perspective with regards to the coronavirus infection in the dental set up. The results were analysed using SPSS version 23.

**Results:** The questionnaire was sent to all the patients online and all of them had responded to the survey. Majority of the patients {1757 (80.9%)} have knowledge about the COVID-19 disease signs, symptoms, transmission and complications. Among these respondents 6.6% (144) had routinely visited a dentist, 8.8% (192) had sometimes visited a dentist and only 0.3% (7) visited a dentist only once and they generally try to avoid visiting a dentist.

**Conclusion:** At a clinical level, education is limited only to the patients who approach the dentists. At a community level, government, dental colleges and dentists have to take several measures in educating the public in equipping them with health promotional materials. Community-based online programs should be planned and implemented by different levels of administration.

**Keywords:** Coronavirus-19 pandemic, Descriptive study, Education of patients, Patient care, Patient education, Promotion of health

## INTRODUCTION

Disease outbreak due to novel pathogens is a global challenge to public health. Coronavirus strain COVID-19 is a pandemic and the world is facing many challenges in the battle against it. Coronaviruses are found in humans, other mammals and birds which are responsible for a cluster of diseases affecting the respiratory, hepatic, enteric and neurological systems in the body [1,2]. Coronaviruses are enveloped RNA viruses and six strains of these viruses are known to cause human disease. Four of them, namely, 229E, OC43, NL63 and HKU1 are prevalent among humans and cause symptoms of common cold in immunocompetent people [3]. The remaining two strains, the Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV) and the Middle-East Respiratory Syndrome Coronavirus (MERS-CoV) are both potentially fatal and have been responsible for respiratory disease outbreaks in 2003 and 2012, respectively [4].

In December 2019, an unidentified microbial agent was reported to be the cause of atypical pneumonia in patients in the city of Wuhan, Hubei Province, China [5]. The Chinese Center for Disease Control (Chinese-CDC) identified this agent as the 2019-novel coronavirus (2019 n-CoV) which was later renamed as SARS-CoV-2 by the International Committee on Taxonomy of Viruses [6]. The World Health Organisation (WHO) named this disease as the Coronavirus Disease 2019 (COVID-19), called it a "public health emergency of international concern" on 30<sup>th</sup> January 2020 and declared it a "pandemic" on 12<sup>th</sup> March 2020 [7,8]. Until the end of May, WHO reported 5,817,385 confirmed cases of COVID-19 with 362,705 deaths globally [9] with the disease spread across many countries in the world including Saudi Arabia.

The symptoms of COVID-19 include one or more of the following; fever, cough, dyspnoea, myalgia, headache and diarrhoea, rhinorrhoea, pharyngalgia and sore throat were noted in some cases [10,11]. The unique nature of dental treatments requires direct contact between patients and dental health practitioners. The close proximity to the patient's oropharyngeal region and also involved aerosol generation presents a potential high risk for the transmission of disease across patient and dental health practitioner [12]. This requires patients to be aware of the risks of contracting coronavirus when they seek dental treatment. The present study was aimed to assess the knowledge, attitude and practices of the patients toward the dental visits during the pandemic crisis.

## MATERIALS AND METHODS

The present study was a cross-sectional study conducted in Ibn Sina National College, Jeddah, Saudi Arabia from 6<sup>th</sup> July 2020 to 24<sup>th</sup> July 2020. All the patients who had visited the dental clinics attached to the college prior to the COVID-19 crisis were contacted online through WhatsApp during this period. The sample included all the patients treated by the students of the final year dentistry program. The inclusion criteria for the study was all respondents' who had filled the google docs as there was a consent to the study in the beginning of the google doc before filling the questionnaire. Ethical approval for the study was obtained from the Ethical Committee of Ibn Sina National College with a number of (H-06-09-062020).

### Questionnaire

A pilot study was conducted on 50 patients seeking their response on their perspective on the current COVID-19 crisis. The authors

preparation of the questionnaire from the information in the pilot study was collected from open ended questions and based on the various responses from the patients the close-ended questionnaire of 13 questions were constructed by the authors. The first 3 questions were based on demographic details and the remaining on the knowledge, attitude and practices of the participants on COVID-19. The completed questionnaire was proof read by a group of dentists to check for clarity and meanings of the statements. The test re-test correlation coefficient for the questions ranged from 0.95-0.99. The Cronbach's alpha value has ranged from 0.75-0.85. Questions were divided into two sections, one section related to demographic data of participants like age, gender, education level, frequency of dental visits and the other section related to patients' perspective with regards to the coronavirus infection in the dental set up.

The questionnaire was sent to all the patients online and all of them had responded to the survey.

## STATISTICAL ANALYSIS

Data were coded and entered into a spreadsheet using Microsoft Excel. Chi-square was calculated for the analysis of all the independent variables. Statistical analysis was performed using Statistical Package for Social Sciences (SPSS, IBM Version 23).

## RESULTS

The total number of responses received was 2172. From the responses received the demographic details of the respondents has been detailed in [Table/Fig-1]. The female participants were higher than the males. Majority of the participants were graduates, 665 (30.6%) were males and 1125 (51.8%) were females. Maximum participants were in age group between 20-29 years i.e 1031 (47.5%).

The knowledge and attitude of the respondents is described in [Table/Fig-2]. Majority of the patients {1757 (80.9%)} had knowledge about the COVID-19 disease signs, symptoms, transmission and complications.

Among these respondents 6.6% (144) had routinely visited a dentist, 8.8% (192) had sometimes visited a dentist and only 0.3% (7) visited a dentist only once and they generally try to avoid visiting a dentist. Majority of the respondents did not know 33.8% (734) or had perceived that there was no relation 42.6% (926) between the COVID-19 crisis and dentistry. Among all the patients only 343 (15.8%) had visited a dentist during this pandemic crisis.

Nearly, 50% of the patients had visited the dental clinic for emergency taking the precautions suggested during this pandemic time. Majority of the patients who visited the dental clinic had a good experience. Ninety five percent of the respondents that is 325 out of 343 had knowledge about all the precautions to be taken when visiting a dental clinic. The details of the participants who visited the dentist have been tabulated in [Table/Fig-3].

## DISCUSSION

Majority of the participants of the study had knowledge of COVID-19 and precautions to be taken during the pandemic when visiting a dentist. The literature was unable to provide information to assess the dental patients' perspective on COVID-19 the questions had to be tailored after feedback from the patients on the open-ended questions. There is very sparse information available on dental patients' perspective on the COVID-19, pandemic. The data available from medical patients and literature reviews was used in discussing the results of the present study.

The majority of the participants of the present study and the study by Latiff LA et al., were females [13]. In the present study, level of education of the participants was graduation in contradiction to Latiff LA et al., with many having just completed secondary school education [13]. There was a significant relationship between educational level and the demographic characteristics of age and gender in our study which is in line with a study conducted by Marshall H et al., [14], but in contrast to the results of Latiff LA et al.,

Variables		Education level			Total	Chi-square value (p-value)
		Uneducated	Higher education	Graduate		
Gender*	Male	2 (0.1)	113 (5.2)	665 (30.6)	780 (35.9)	7.486 (0.024)
	Female	2 (0.1)	265 (12.2)	1125 (51.8)	1392 (64.1)	
Age*	<20	0 (0%)	129 (5.9)	32 (1.5)	161 (7.4)	490.869 (<0.01)
	20-29 years	0 (0)	110 (5.1)	921 (42.4)	1031 (47.5)	
	30-39 year	2 (0.1)	51 (2.3)	408 (18.8)	461 (21.2)	
	>40	2 (0.1)	88 (4.1)	429 (19.8)	519 (23.9)	

[Table/Fig-1]: Demographic details of the respondents.

\*p<0.05 considered significant

Variables		How often have you visited a dentist?			Total	Chi-square value (p-value)
		Routinely	Sometimes	Once		
Do you think you have enough knowledge about COVID-19 (signs, symptoms, transmission and complications)?*	Yes	535 (24.6)	1102 (50.7)	120 (5.5)	1757 (80.9)	12.022 (0.017)
	I don't know	68 (3.1)	216 (9.9)	20 (0.9)	304 (14)	
	No	25 (1.2)	75 (3.5)	11 (0.5)	111 (5.1)	
Do you think you have enough knowledge about COVID-19 and its relation to dentistry?*	Yes	184 (8.5)	304 (14)	24 (1.1)	512 (23.6)	30.986 (<0.01)
	I don't know	222 (10.2)	469 (21.6)	43 (2)	734 (33.8)	
	No	222 (10.2)	620 (28.5)	84 (3.9)	926 (42.6)	
Do you realise how dangerous the speed of transmission of the virus?*	Yes	608 (28)	1308 (60.2)	141 (6.5)	2057 (94.7)	10.927 (0.027)
	I don't know	6 (0.3)	29 (1.3)	1 (0.0%)	36 (1.7)	
	No	14 (0.6)	56 (2.6)	9 (0.4)	79 (3.6)	
Are you afraid to visit the dentist this period?*	Yes	481 (22.1)	1059 (48.8)	113 (5.2)	1653 (76.1)	76.544 (<0.01)
	I don't know	12 (22.1)	86 (48.8)	28 (5.2)	126 (76.1)	
	No	135 (0.6)	248 (4)	10 (1.3)	393 (5.8)	
Have you visited the dentist during the pandemic crisis?*	Yes	144 (6.6)	192 (8.8)	7 (0.3)	343 (15.8)	42.421 (<0.01)
	No	484 (22.3)	1201 (55.3)	144 (6.6)	1829 (84.2)	

[Table/Fig-2]: Knowledge and attitude of the participants about situation during the pandemic.

\*p<0.05 considered significant

Variables		What is the reason for your visit?			Total	Chi-square value (p-value)
		Emergency	Routine dental check-up	To complete the treatment		
Did you follow any precautions?	Yes	162 (47.2)	37 (10.8)	129 (37.6)	328 (95.6)	8.505 (0.075)
	No	5 (1.5)	5 (1.5)	4 (1.2)	14 (4.1)	
	I don't care	1 (0.3)	0 (0)	0 (0)	1 (0.3)	
How was your experience of visiting dental clinic during this period?	Good	127 (37)	37 (10.8)	96 (28)	260 (75.8)	5.485 (0.241)
	Satisfying	33 (9.6)	5 (1.5)	32 (9.3)	70 (20.4)	
	Bad	8 (2.3)	0 (0)	5 (1.5)	13 (3.8)	
What precautions do you think we have to follow during visiting the dental clinic?	Wearing mask	2 (0.6)	0 (0)	4 (1.2)	6 (1.7)	6.785 (0.341)
	Washing hands with soap and water	0 (0)	1 (0.3)	2 (0.6)	3 (0.9)	
	Using Sanitizer	0 (0)	0 (0)	0 (0)	0 (0)	
	Avoid touching the surfaces then touching the face	5 (1.5)	0 (0)	4 (1.2)	9 (2.6)	
	All of the above	161 (46.9)	41 (12)	123 (35.9)	325 (94.8)	

**[Table/Fig-3]:** Participants details of the visit to the dentist.  
p-value <0.05 considered significant

[13]. The barriers of education is breached as the campaigning by the Ministry of Health for the various precautions to be taken by the community for this pandemic is being done in the local languages as in the study by Latiff LA et al., [13]. The association between knowledge, attitude and practices among the community is very vital as sufficient knowledge will lead to a positive and hopeful attitude which will result in good practices.

Nearly all the participants of the survey had the knowledge on how dangerous the speed of transmission of the virus as in the study by Latiff LA et al., [13]. In the present study, there was a statistical association between the visit to the dentist and knowledge of the participants about the virus. The current study respondents had knowledge about the COVID-19 disease signs, symptoms, transmission and complications; but did not know that there was a relation between the COVID-19 crisis and dentistry. Knowledge has a significant influence on attitude and practices of the community.

Most of the participants of the study had visited the dental clinic for emergencies but not all the hundred percent of the participants followed all the safety precautions that had to be taken. There needs to be a continuous reinforcement of the precautions at a national and local level on the various measures to be taken by patients visiting dental clinics and hospitals. At the same time, studies may be conducted to identify the various barriers among the patients in following the various protocols to visiting dental clinics and hospitals to ensure health promotional measures in helping to remove them from a patients' perspective. In a study by Hernández-García I and Giménez-Júlvez T, and Pappot N et al., the difference in information concerning the prevention of COVID-19 when found on official websites versus digital media may lead to lack of complete information to the patient [15,16]. Advertisement of the importance of the sources of information for the community also plays a very important role on health promotion of the community. The building of the knowledge, attitude and practices among the community will significantly bring about improvement in the self-management strategies leading to a healthy lifestyle.

The main limitation of the study is that the sample is restricted to the patients visiting our dental hospital attached to the college. The aim of the study was to identify the patients' perspective on the COVID-19 crisis so as to provide an insight to the health authorities to plan for programs aimed at improving the knowledge, attitude and practices of the patients visiting dental clinics. Patients have a very important role to play in the healthcare system and so at an individual and organisational level, there is an urgency of trying all the possibilities of e-health solutions [17]. There may be logistic issues related to e-health solutions but the increased use of tele-dentistry may help enable isolated patients to get timely advice for

small help that do not require a visit to the dental clinics. It has come out clearly that patients require health education on importance of precautions that the patients have to take when visiting a dental health care practitioner. At a clinical level education is limited only to the patients who approach the dentists. At a community level government, dental colleges and dentists have to take several measures in educating the public in equipping them with health promotional materials. Community-based online programs should be planned and implemented by different levels of administration. Monitoring of planning and execution of health education programs by appropriate authorities at regular intervals is vital for a safe and healthy living.

Dentists and their team have a duty to promote and encourage safety precautions to be adapted by the community. This aspect due to its vital influence on the society may be taught at a University level as a part of the curriculum to combat such a crisis. Dentists play a very important role and barriers in this path may be removed in order to achieve improvement in knowledge, attitude and practices in the society at large. In the process of health promotion, it would be easy to use pamphlets, posters, videos to educate the community. High risk individuals such as children, pregnant women, medically compromised patients, elderly individuals require special focus. This is effective through online community-based activities with support from the government and Nongovernment organisations.

### Limitation(s)

The limitation of the study is that the sample is involving only the patients who visited dental clinic associated to one private dental college.

### CONCLUSION(S)

In conclusion, the participants had enough knowledge about COVID-19 (signs, symptoms, transmission and complications) and its relation to dentistry. Routinely who were visiting a dentist also was afraid of going to the dental clinic during this pandemic. They had visited the dental clinic for emergencies but not all the hundred percent of the participants followed all the safety precautions that had to be taken. Although this was a small non-representative sample of patients all over the country to take the feedback the necessity of educating the community about safety precautions being taken in the clinic by the dentists and the safety precautions to be taken by the patients' needs to repeatedly emphasised through various social media.

"Stay home-stay safe and stay corona free is a message to be spread among all the community to make it a better place to live."

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