

Dental Appointments and Treatment Plan Experiences in Saudi Arabia during COVID-19 Pandemic

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Abstract

Background: The state of apprehension among dentists and patients has led to how dental treatment should be planned during this pandemic. Because of these reasons, dentists have become reluctant to deliver the required dental treatment to their patients. Even patients delayed their dental treatments because of lockdown conditions, fear of cross-infections, economic crises, etc. Thus, the present study was conducted to assess the impact of the COVID-19 pandemic on dental appointments and treatment among the public of Saudi Arabia.

Materials and Methods: To analyze the effect of COVID-19 on dental appointments and treatment of patients, eight well-constructed questions were framed and asked. Reason for disruption of dental treatment, type of treatment patients were undergoing, whether they wanted to get their treatment done, and what impact pandemic had on their treatment were also evaluated. The data obtained were subjected to statistical analysis using IBM SPSS version 20.0 software.

Results: A total of 3127 participants were included in the study, out of which 14.49% were males and 85.51% were females. 79.43% of participants mentioned that due to the COVID-19 pandemic, completion of dental treatment was disrupted. 46.72% of participants wanted to get their treatment completed after the pandemic, and 34.47% of participants felt that pandemic had affected their dental appointments by making them more apprehensive, with a significant relation statistically (p -value < 0.05). Most of the participants suffered from pain (41.8%) during the pandemic, followed by dentinal sensitivity (39%).

Conclusion: COVID-19 pandemic has increased fear and anxiety among the common public in Saudi Arabia. This fear delayed the appointments and dental treatments of patients. We recommend that awareness programs be conducted among the public to improve awareness about precautions taken in dental setup and timely management of dental ailments

Keywords: COVID-19 Pandemic; Saudi Arabia; Dental Appointments; Treatment; Fear

Introduction

The whole world has been affected by the outbreak of the SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) virus since December 2019 [1]. The first case of COVID-19 infection was reported in Wuhan, China that later involved different areas of the world. To date, WHO has reported 218 946, 836 confirmed cases and 4,539,723 deaths worldwide [2]. For 21 months, we have been dealing with the COVID-19 infection, and we are still in the middle of this pandemic. In Saudi Arabia, from January 3, 2020, to September 17, 2021, there have been 546,336 confirmed cases of COVID-19 with 8,645 deaths, reported to WHO [3].

The causative agent of infection was identified as a novel enveloped betacoronavirus, which is a highly virulent pathogen. It can be transmitted from one person to another via virus-laden respiratory droplets of an infected individual. This pandemic has affected the healthcare system of the whole world. The necessary healthcare services are being provided even under the situation of lockdown during this pandemic [4].

Thus, healthcare professionals are at a high risk of getting an infection because of their close contact with infected patients. Among the healthcare professionals, dental surgeons are the ones who are directly exposed to droplets and aerosols being splashed out of the patients' oral cavity [5,6]. Thus, being at high risk of infection, dentists can spread the infection to their family members, friends, and other patients. Because of these reasons, dentists have become reluctant to deliver the required dental treatment to their patients. Even patients delayed their dental treatments because of lockdown conditions, fear of cross-infections, economic crises, etc.

The state of apprehension among dentists and patients has led to how dental treatment should be planned during this pandemic. The dentists should reduce the time needed for the dental treatment, the number of visits to the dental clinic, and the limited use of aerosol-generating procedures.

Although various studies have been conducted evaluating dentists' awareness regarding precautions and treatment protocols of COVID-19 infection in Saudi Arabia [4,7,8], no study has been conducted to estimate the impact of the COVID-19 pandemic on dental appointments of the general public and about their ongoing treatment. Thus, the present study was conducted to assess the impact of the COVID-19 pandemic on dental appointments and treatment among the public of Saudi Arabia.

Materials and Methods

The present cross-sectional study was a questionnaire-based study conducted from May 2021 to September 2021. The self-administered structured questionnaire was used to assess the demographic variables, information regarding the impact of the COVID-19 pandemic on dental appointments and treatment of patients. The validity of the questionnaire was assessed and found to be appropriate ($\alpha = 0.85$). The study was conducted following the Declaration of Helsinki and was approved by the local ethics committee of the institute (ECM#2021-...). Informed written consent was obtained from all subjects before their enrolment in this study. The demographic data collected was age, gender distribution, and region they belong to.

Eight well-constructed questions were framed and used to analyze the effect of COVID-19 on dental appointments and the treatment of patients. The response to all these questions was recorded. Reason for disruption of dental treatment, type of treatment patients were undergoing, whether they wanted to get their treatment done, and what impact pandemic had on their treatment were also evaluated. Questions were analyzed using various relevant options for each question.

The data obtained were subjected to statistical analysis using IBM SPSS version 20.0 software. Descriptive statistics, i.e. frequencies and percentages, were computed. The comparative analysis was done using chi-square statistical analysis.

Results

Demographic data were recorded regarding age, gender distribution, and region they belong to. A total of 3127 participants were included in the study, out of which 14.49% were males and 85.51% were females, with a significant relation statistically (p -value < 0.05) (Table 1). The maximum number of subjects (39.65%) belong to 20-30yrs old age group, followed by < 20 yrs old group (24.49%) and least number of subjects (6.65%) were aged > 50 yrs old with an insignificant relation statistically (p -value > 0.05) (Table 2). 51.04% of subjects belonging to the Southern region, followed by 21.9% subjects residing in the central region, and minimum participants were of eastern region (8.9%), with an insignificant relation statistically (p -value > 0.05) (Table 3).

Gender	No. of subjects	Percentage
Male	453	14.49
Female	2674	85.51
Total	3127	
Chi square	1.342	
p-value	<0.05 (Significant)	

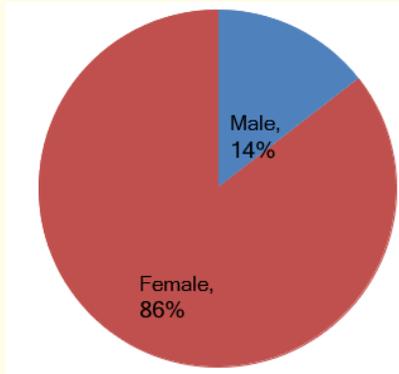


Table 1: Distribution of study subjects.

Age Groups	No. of subjects	Percentage
< 20 years	766	24.49
20 - 30	1240	39.65
31 - 40	499	15.95
41 - 50	414	13.24
> 50	208	6.65
Chi square	7.001	
p-value	>0.05 (Insignificant)	

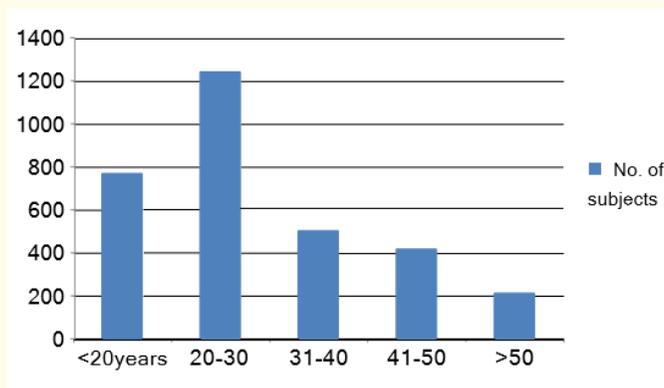


Table 2: Distribution of study subjects according to age groups.

Region	No. of subjects	Percentage
Central Region	686	21.94
Southern Region	1596	51.04
Eastern Region	280	8.95
Western Region	440	14.07
Northern Region	125	3.99
Chi square	1.559	
p-value	> 0.05 (insignificant)	

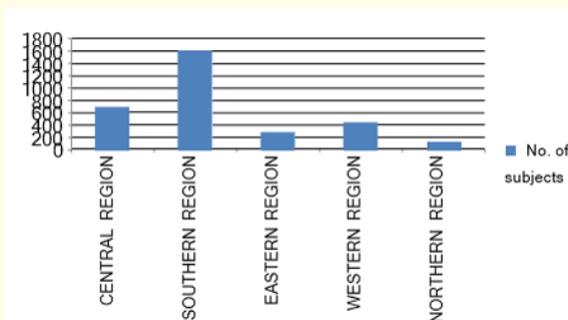


Table 3: Distribution of study subjects according to region.

Table 4 showed the responses to eight questions asked to assess the reason for the disruption of dental treatment, type of treatment patient was undergoing, whether they wanted to get their treatment done, and what impact pandemic had on their treatment. 79.43% of participants mentioned that due to the COVID-19 pandemic, completion of dental treatment was disrupted, with a significant relation statistically (p-value < 0.05). 76.08% of participants took treatment from private practitioners, followed by 18.64% seeking treatment in Government colleges. 57.21% disrupted dental treatment due to fear of getting the infection, and 30.6% due to curfew conditions.

Questions	Options	No. of subjects	Percentage	Chi square	p-value	
Q1. Has corona outbreak disrupted completion of your dental treatment	Yes	2484	79.43	11.324	< 0.05	
	No	643	20.56			
Q2. The clinic where your treatment was being delivered	Private clinic	2379	76.08	7.214	< 0.05	
	Dental college	165	5.27			
	Govt college	583	18.64			
Q3. Cause of disruption in dental treatment	Hours of curfew	958	30.63	1.512	> 0.05	
	Fear of infection	1789	57.21			
	Clinic refused appointments	254	8.13			
	Transportation problem	181	5.78			
	Health problem	75	2.39			
	Clinic closed	287	9.18			
	Q4. What type of treatment did you opt (multiple answers)	Tooth filling	830	26.54	8.100	> 0.05
		Extraction	233	7.45		
		Root canal treatment	619	19.79		
		Children dental treatment	127	4.06		
		Gum treatment	239	7.64		
		Cosmetic dentistry	201	6.43		
		Denture	23	0.74		
		Scaling/Tooth cleaning	5	0.15		
		Orthodontic treatment	695	22.22		
Q4. What type of treatment did you opt (multiple answers)	Implant	207	6.62	8.100	> 0.05	
	Crown, and bridge	380	12.15			

Q5. When you prefer to complete your treatment	I will complete it after pandemic completely over	1461	46.72	1.112	< 0.05
	I completed it with took all necessary protection measures	435	13.91		
	I am continuing my treatment with precaution	1231	39.37		
Q6. How will the pandemic affect your appointment in the future	The epidemic made me leave my appointment	79	2.53	2.161	< 0.05
	The pandemic made me more apprehensive	1078	34.47		
	The pandemic had impact on	465	14.87		
	I will cancel my appointments	191	6.11		
	I became more commitment my appointments	1314	42.02		
Q7. Did you have any dental problems during the corona pandemic that couldn't be treated	Yes	1713	54.78	13.091	> 0.05
	No	1414	45.22		
	Pain	1308	41.82		
	Filling broken	1164	37.22		
	Ulcer	17	0.54		
	Displaced orthodontic brackets	654	20.94		
	Bleeding gum	1104	35.30		
	Denture broken	344	11.00		
Q8. What is the problem you encounter (multiple answers)	Sensitivity Dental	1245	39.82	2.160	> 0.05
	Other problems dental	654	20.92		

Table 4: Distribution of study subjects according to questions asked.

The most common dental treatment the subjects were undergoing was restoration (26.54%), followed by orthodontic treatment (22.22%) and root canal treatment (19.79%), with an insignificant relation statistically (p-value > 0.05).

46.72% of participants wanted to complete their treatment after the pandemic, whereas 39.37% continued their treatment with precautions, with a significant relation statistically (p-value < 0.05). 34.47% of participants felt that pandemic had affected their dental appointments by making them more apprehensive, with a significant relation statistically (p-value < 0.05). 54.78% of participants suffered from dental problems during the corona pandemic that could not be treated, with an insignificant difference statistically (p-value > 0.05).

During the pandemic, most of the participants suffered from pain (41.8%), followed by dentinal sensitivity (39%), broken filling (37.2%), and the least common being ulcer (0.054%), with an insignificant difference statistically (p -value > 0.05).

Discussion

The present cross-sectional study revealed the anxiety among the participants regarding getting infected during their dental treatments. To assess the impact of the COVID-19 pandemic on dental appointments and treatment, a closed-ended questionnaire was used to gather information about fear and anxiety among the general public of Saudi Arabia.

In the present study, we found that 46.72% of participants wanted to complete their treatment after the pandemic, whereas 39.37% continued their treatment with precautions. This figure might be since, in our study, most of the participants (85.51%) were females, and they were more anxious than men. Similar results were noticed in Nazir M., *et al.* [9], who also observed that females demonstrated significantly higher dental fear than male counterparts. Similar findings of increased dental fear in the female gender were also reported in the studies by Saatchi M., *et al.* [10] and Ogawa M., *et al.* [11]. The expectations of society of males being strong may also lead to under-reporting their dental fear [12].

During the pandemic, most of the participants suffered from pain (41.8%), followed by dentinal sensitivity (39%), broken filling (37.2%), and the least common being ulcer (0.054%). Similar findings were observed by Nazir M., *et al.* [9] who found that during the COVID-19 pandemic and dental pain, fractured tooth, fractured prosthesis, and facial swelling were the most commonly reported dental conditions. Similarly, Guo., *et al.* [13] found that pulpal or periapical lesions were most common, followed by cellulitis/abscess and dental trauma being the main reasons for emergency dental visits during the COVID-19 epidemic.

We found that 57.21% disrupted dental treatment due to fear of getting the infection, and 30.6% due to curfew conditions. Similar findings were observed among people with high dental fear who tend to avoid or delay dental visits, and many regularly cancel dental appointments [14].

The limitation of the present study is that data was collected in a short duration of time, evaluating the effect of this pandemic on the psychology of patients and its impact on appointments and dental treatments. As the present study was limited to only one country, so the generalizability of the study is limited. Thus, the findings of the present study should be interpreted carefully and not be globalized. Future studies should be conducted with large sample size, evaluating the pandemic impact on the dental treatment of patients from different areas of Saudi Arabia. A cross-sectional study design is also limited in drawing inferences about a causal relationship between independent and dependent variables. Thus, more prospective studies should be carried out in the future.

Conclusion

COVID-19 pandemic has increased the level of fear and anxiety among the common public in Saudi Arabia. This fear delayed the appointments and dental treatments of patients. We found that most subjects were unwilling to get their dental treatment done during this pandemic because of fear of getting infected during dental intervention. Most of the participants indicated that they would visit a dental clinic for a dental emergency like dental pain and sensitivity. Thus, we recommend that more dentistry-specific awareness programs be conducted among the public to improve the awareness about precautions being taken in dental setup and timely management of dental ailments. Female gender, dental pain, and reduced dental attendance were significantly and independently related to increased dental fear.

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