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COVID-19 and dental anxiety

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ABSTRACT

Introduction: Coronavirus disease 2019 (COVID-19) broke out in December 2019 and was declared a pandemic by the World Health Organization in March 2020. The anxiety caused by COVID-19 is extremely critical as it causes delays in dental visits. The aim of this study was to determine dental anxiety during COVID-19.

Materials & Methods: This descriptive study was conducted online in February 2022 using a self-designed questionnaire consisting of three sections: questions about dental anxiety, questions about fear of COVID-19, and questions about dental anxiety during COVID-19. The content validity and reliability of the questionnaire were confirmed among the studied subjects. The forms were filled out by all 502 patients. Data were analyzed using SPSS 27. The Chi-square test was used to determine the significance levels of the number of positive responses for each question. A p-value of 0.05 was considered significant.

Results: Due to the present pandemic, this study found that patients had a great fear of visiting the dentist because they were afraid that they might contract the disease at the dentist or in a dental office. These results showed that the dentist's explanation of the dental work process was critical in reducing the fear of contracting COVID-19 from the dentist or dental team (p-value < 0.05) and may increase the number of patient visits for dental problems.

Conclusion: This study illustrates that people's complaints from COVID-19 and other similar conditions are serious. We must always define how we can better serve patients and protect staff because this disease is not the first pandemic and cannot be the last.

Keywords: Anxiety, Dentistry, Coronavirus

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Introduction

Coronavirus disease 2019 (COVID-19) broke out in December 2019 and was declared a pandemic by the World Health Organization in March 2020. [1] COVID-19 caused many concerns in society and

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postponed essential healthcare services, including dental care and oral health research because they must preserve scarce personal protective equipment, maintain social distancing, and protect the staff and patients from potential risks of exposure and illness. [2] Dental associations in many countries stopped optional dental treatments. In addition, many dental schools and universities were closed for months. [3]

Anxiety caused by COVID-19 is very critical and is related to contamination. [4] On one hand, the psychosocial implications of the COVID-19 pandemic are fear of self-infection, the spread of the disease to close people, the stress caused by continuous economic and social instability, emotional problems caused by isolation and the sadness of the possibility of losing a loved one. On the other hand, pre-pandemic factors affecting anxiety should also be considered; the literature has shown that patients often experience stress during dental treatment. In addition, patients with more neuroticism, such as high-grade anxiety or other anxiety disorders are more afraid of dental care. These feelings are associated with avoiding dental care, which can negatively affect the outcome of the treatment of dental problems. All these factors make patients visit dental offices less often. [4] A cross-sectional study based on online survey data showed that deteriorating socioeconomic conditions due to the COVID-19 pandemic caused delayed dental visits, which led to an increase in toothache. [5]

There is a need to understand the increasing psychological difficulties among different people during the COVID-19 pandemic. Even the most commonly reported health concerns among dentists were anxiety and depression. [6] An important finding that studies have reported is that saliva is highly sensitive and specific for the diagnosis of COVID-19, and dentists can detect that before the procedure. [1] Therefore, visiting a dentist can play a role in preventing the spread of the disease through early diagnosis. The anxiety caused by COVID-19 is extremely critical as it causes delays in dental visits. therefore, the aim of this study was to determine dental anxiety during COVID-19.

Materials & Methods

This descriptive study was conducted under the ethical code of IR.RUMS.REC.1401.077 in February 2022 using a self-designed questionnaire consisting of three sections: questions about dental anxiety, questions about fear of COVID-19, and questions about dental anxiety during COVID-19.[3] The questionnaire was presented to several specialists in the field of dentistry, and their opinion on the correctness and appropriateness of the questions for the study was obtained, the necessary corrections were applied, and the content validity was confirmed. The size of Cronbach's alpha reliability coefficient in this study was equal to 0.814 (0.774, 0.847), which indicated the good and appropriate reliability of the questionnaire used in the study among the studied subjects. Data were analyzed using SPSS 27. The Chi-square test was used to determine the significance levels of the number of positive responses for each question. A p-value of 0.05 was considered significant. This survey was conducted at the community level, not among those visiting the dental office because many people did not go to receive dental services due to the feeling of uneasiness about dentistry in the Corona condition. The forms were filled out by all 502 patients, and the response rate was 85%.

$$n = \frac{\left(Z_{1-\frac{\alpha}{2}} + Z_{\beta^*}\right)^2 p(1-p)}{(p-p_\circ)^2}$$

The questionnaire was sent to all the people who were accessible through social networks. People filled the forms willingly with personal satisfaction.

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Results

In this study, the results are presented in three different sections: Dental Anxiety, Dental Anxiety during COVID-19, and COVID-19 Anxiety.

Dental anxiety: These findings indicated that the sound of the dental turbine drill had a significant effect on people's anxiety, while the explanation of the dental work process by the dentist was effective in reducing anxiety (Table 1). The amount of dental anxiety to waiting in the waiting room, general anxiety, and the thought of anesthesia injection were not significant. The graph below shows the rate of positive responses for every question. As it is shown in the diagram, the highest percentage of positive answers associated with reduced anxiety was related to the explanation of the work process by the dentist (Graph 1).

Dental Anxiety during COVID-19: The findings showed that anxiety due to COVID-19 was incredibly critical because it caused delays in dental visits. In addition, the fear of being infected with COVID-19 through a dentist or a dental team was additionally significant. We found that 303 (60.4%) patients were afraid to see a dentist due to fear of COVID-19, and 276 (55%) patients thought that they might be infected by the dentist or the dental office. Not visiting a dentist during COVID-19 for routine check-ups was evident, and most people answered "no" to the same question. In addition, the findings showed that many people were not aware of teledentistry (Table 2). The graph below shows the rate of positive responses for every question. As it is shown within the diagram, the highest percentage of positive responses is informing the dentist if an individual has COVID-19, and the least percentage of positive responses is expounded on having information about teledentistry (Graph 2).

COVID-19 Anxiety: The findings showed that people's discomfort from COVID-19 is serious (Table 3). The graph below shows the proportion of positive answers for every question. As it is shown in the diagram, the highest percentage of positive responses was related to the distress caused by thinking about COVID-19, and the least percentage of positive responses was related to the question of shaking hands when thinking about COVID-19 (Graph 3).

Table 1. Dental anxiety

Variable	Yes Frequency (Percent)	No Frequency (Percent)	P-value*
1. Are you generally anxious about going to the dentist?	249 (49.6)	253 (50.4)	0.858
2. Will your anxiety reduce if your dentist explains the process of working on your teeth?	422 (84.1)	80 (15.9)	<.001
3. Does waiting in the waiting room make you more anxious?	260 (51.8)	242 (48.2)	0.422
4. Does the thought of injecting anesthesia in dentistry make you anxious?	261 (52.0)	241 (48.0)	0.372
5. Does the sound of a dental turbine make you anxious?	277 (55.2)	225 (44.8)	0.020

* A p-value of 0.05 was considered significant.

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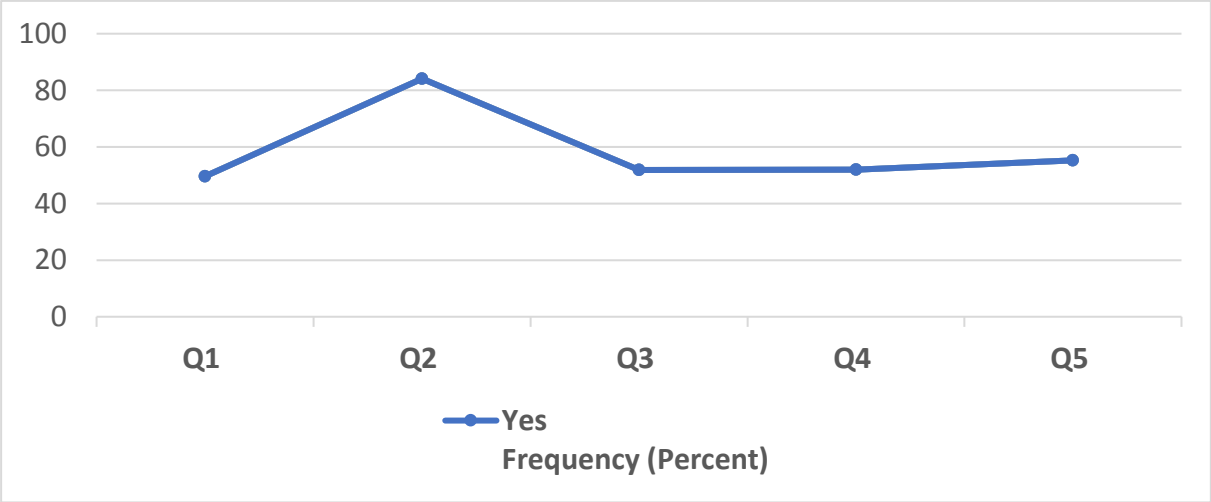
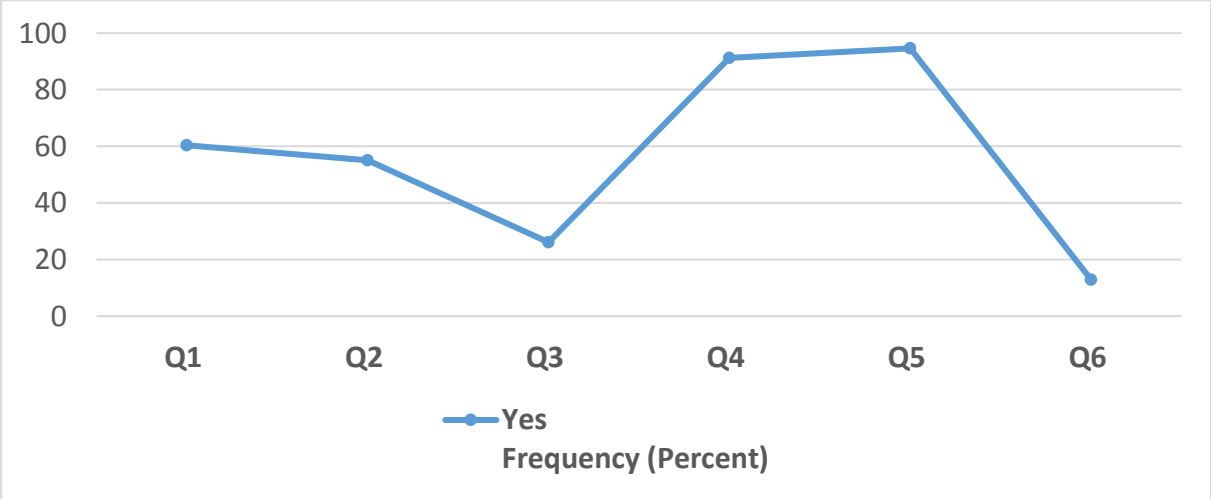


Graph 1. Dental anxiety. Yes frequency (Percent)

Table 2. Dental Anxiety during COVID-19

Variable	Yes Frequency (Percent)	No Frequency (Percent)	P-value*
1. Are you anxious to go to the dentist because of COVID-19?	303 (60.4)	199 (39.6)	<.001
2. Are you afraid of getting COVID-19 through your dentist or dental team?	276 (55.0)	226 (45.0)	.026
3. Do you go to the dentist for routine dental examinations at the time of COVID-19, except in emergencies?	131 (26.1)	371 (73.9)	<.001
4. Do you think dental offices should be open during Corona?	458 (91.2)	44 (8.8)	<.001
5. Do you tell your dentist if you have COVID-19?	475 (94.6)	27 (5.4)	<.001
6. Do you know about Teledentistry?	65 (12.9)	437 (87.1)	<.001

* A p-value of 0.05 was considered significant.



Graph 2. Dental anxiety at COVID-19. Yes frequency (Percent)

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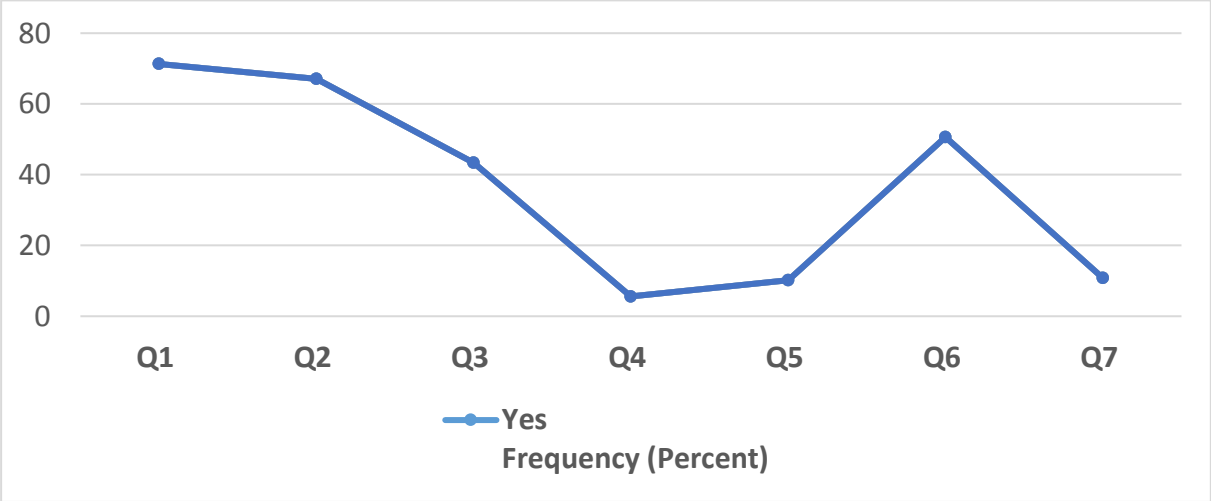
Table 3. COVID-19 Anxiety

Variable	Yes Frequency (Percent)	No Frequency (Percent)	P-value*
1. Does thinking about Corona bother you?	358 (71.3)	144 (28.7)	<.001
2. Do you get nervous or anxious when watching Corona news on social media?	337 (67.1)	165 (32.9)	<.001
3. Are you often anxious about COVID-19?	218 (43.4)	284 (56.6)	0.003
4. Do your hands tremble when you think of COVID-19?	28 (5.6)	474 (94.4)	<.001
5. Has the stress of the COVID-19 condition caused insomnia in you?	51 (10.2)	451 (89.8)	<.001
6. Are you afraid of getting COVID-19?	254 (50.6)	248 (49.4)	0.789
7. Do you get heart palpitation when you think of COVID-19?	54 (10.8)	448 (89.2)	<.001

***** A p-value of 0.05 was considered significant



Graph 3. COVID-19 anxiety. Yes frequency (Percent)

Discussion

The COVID-19 pandemic has had psychological implications due to the quarantine as well as the fear of transmission of COVID-19, which has led to anxiety symptoms caused by isolation. [7] A study reported that most people had enough information about COVID-19, thanks to large-scale awareness campaigns by governments and social media.[3] The current study found that being confused about COVID-19 significantly caused anxiety, and many people suffered greatly from being quarantined. It also showed that people became anxious about receiving an excessive amount of information and news about the COVID-19, which appeared to be detrimental to public health. Additionally, one study found a link between using social media and anxiety. [8] The pandemic condition has also led to anxiety about visiting a dentist. [4] A study from Pakistan, which had results similar to the present study, showed that the biggest psychological barrier for patients to visit their dentist is the fear of contamination by the dental team.[1] However, a clinical study in the dentistry field showed that endodontic treatment does not cause excessive anxiety and fear, even in a pandemic condition. [9]

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Our findings showed that 73.9% of people did not go to the dentist for routine checkups during COVID-19, which may significantly reduce oral health within the community. One study from Japan showed that people who skipped regular dental visits during the COVID-19 pandemic had relatively poor periodontal health. [10] Therefore, we must examine the factors affecting patients' anxiety and suggest effective ways to reduce them. One study suggested that patients should use 1% povidone-iodine or 1.5% oxide mouthwashes for 1 minute before procedures to control aerosol transmission. [2] However, some antimicrobial mouthwashes proposed by articles might cause confusion among physicians and adversely affect the healthcare protocols created for the pandemic. [11]

Dental staff must be alert to effectively communicate with patients, build mutual trust, provide information, and process some style of remote dental care. In this regard, the use of telehealth and other technologies has been considered a suitable alternative to face-to-face services, especially in public health emergencies. Common methods including; phone calls, video calls, teleconferencing, texting via social media, and email, allows orthodontists and dental staff to speak with patients more confidently during a pandemic. [8] Our study showed that many people are unaware of this field of dentistry, so patients' information should be increased. In addition, dentists should use more teledentistry, especially in situations like COVID-19. Teledentistry can increase job security for the dentist and the dental team, as well as reduce the anxiety of patients and improve their health.

It would have been better to use the questionnaire in the current research to check demographic information and other issues such as education because gender and education and, as a result, people's level of knowledge have a great impact on their anxiety. In one study, the anxiety level of women was evaluated as higher than men.[2] Similarly, another study showed that female gender and previous psychiatric history are risk factors for anxiety levels.[12] One of the limitations of this study was the lack of access of all people to the WhatsApp application or email to use the questionnaire link. In addition, there were similar studies with gender separation, but this was not evaluated in the present study. It should be possible to reduce the anxiety associated with dental procedures during COVID-19 conditions by extending awareness, as there is no virus bigger than fear and no vaccine greater than knowledge. [13] According to a study, even emotional help may undo the consequences of stress. [14]

Conclusion

This study illustrates that people's complaints from COVID-19 and other similar conditions are serious. We must always define how we can better serve patients and protect staff because this disease is not the first pandemic and cannot be the last.

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Conflicts of Interest

There is no conflict of interest to declare.

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Author's Contribution

Samaneh Keshavarz developed the original idea and the protocol, abstracted and analyzed data, and wrote the manuscript. Hamid Abbasi contributed to the development of the protocol, acquisition of data, abstracted data, and prepared the manuscript. For statistical analysis, we used the help of a statistical consultant, which was mentioned in the acknowledgments section.

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