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ORIGINAL: Evaluation of Patients' Anxiety about COVID-19 Infection through Dental Visits in Sari Dental School Clinic in 2021

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ABSTRACT

Introduction: Dental treatments have a high-risk nature due to the close relationship between the patient and direct exposure to saliva, blood, etc. Concerns about the transmission of COVID-19 infection have led to the formation of some form of patient fear. Therefore, considering the importance of mental health, the present study was designed to investigate the degree of anxiety in people with COVID-19 through dentistry.

Material and Methods: In the present descriptive study, 384 questionnaires were randomly distributed among the patients of Sari Dental Clinic in the period of April to June 2021. After the necessary explanations and obtaining informed written consent, the questionnaires were completed by the clients. Finally, the data were analyzed using SPSS V.22 software and statistical tests. Values greater than 0.05 were also considered significant.

Results: In this study, 29.2% were male and 68.8% were female, and corona-related anxiety was more common in women and married people. As they got older, they tended to respond to higher options like most of the time or always. The higher the level of education, the less noticeable the unnecessary visits to the dental clinic.

Conclusion: People were more worried about transmitting the disease to those around them and this anxiety was more in women than men. Married people were also more anxious than single people. Anxiety was significantly higher in the unemployed than in the employed. There was a significant relationship between degree and level of anxiety and people with higher education levels showed more anxiety.

Introduction

SARS-CoV-2 is a viral pneumonia that started in late December 2019 in Wuhan, China and has spread to other countries around the world, becoming a pandemic (1). This emerging virus is the third coronavirus of the coronaviridae family, which is highly pathogenic in the 21st century, after SARS-CoV (first in 2002) and MERS-CoV (first in 2012) (2, 3). And today its pandemic is the biggest challenge that global health has faced since World War II (1). According to studies, 2019-n CoV nucleic acids are present even in saliva collected directly from the salivary gland ducts, and salivary glands are likely to be a potential source of the virus (4). Even 20 days

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or more after the development of antibodies against surface and internal proteins of SARS-CoV-2, the RNA of this virus can be present in saliva (5). On the other hand, it should be noted that saliva, in addition to major and minor salivary gland secretions, also contains a combination of naso-pharyngeal and bronchopulmonary secretions (6), which makes salivary applets the main source of infection (7).

It should be noted that dental treatments are high-risk due to the close relationship between the patient and the treatment team, as well as direct exposure to saliva, blood and other body fluids that are dispersed in the office environment by high-speed rotary instruments. In this regard, it has been shown that the transmission of this virus can occur even during long-term surgery by inhaling ambient air (8) and since the incubation period varies from 7 to 24 days, so the patient and the dentist viral pathogens that are transmitted through the oral cavity and respiratory tract are exposed. At present, there is no practical solution to prevent the production of aerosols mixed with the saliva and blood of patients in the environment, which has raised many concerns about the transmission of COVID-19 infection, especially since these aerosols can be Remain in the air for a long time and also settle on other surfaces and instruments, even in the absence of a carrier, lead to cross-contamination (9).

Today, the prevalence and increasing trend of coronavirus has led to the formation of a patient's fear of becoming infected. Pathological fear is one of the most annoying obsessions that causes severe anxiety and controlling and restrictive behaviors towards oneself and others in individuals and has negative psychological effects on public health (10, 11). Reasonable attention to the factors associated with COVID-19 may be helpful in protecting individuals during times of crisis, but over-attention can be psychologically damaging, especially when individuals' personal experiences. Through the media, it can also increase the level of fear and anxiety caused by it (12) and thus lead to the weakening the immune system and make them more susceptible to the disease and the damage caused by it. Identifying this disease and especially the anxiety caused by it can help improve the quality of life and health of the community by providing effective solutions (13).

Therefore, due to the importance of mental health, the present study was designed to evaluate the degree of anxiety about COVID-19 infection through dentistry in patients referred to the clinic of Sari Dental School to assess their anxiety, to raise awareness about Dental health protocols should be followed so that people can refer to the required dental treatments with more confidence so that their oral health, which is a full-fledged mirror of public health, is not overshadowed.

Methods

In the present descriptive study, based on the research method and Cochran's table, 384 questionnaires were randomly distributed among the patients of Sari Dental School clinic in the period of April to June 1400. After providing sufficient information about the plan and how to respond as well as obtaining informed written consent, the questionnaires were completed by the clients. The questionnaire consisted of 25 questions (18 questions from the Corona Anxiety Assessment Scale (CDAS) and 8 questions related to anxiety associated with dental treatment in the Corona pandemic crisis). Validity evaluation with a calculation of Cronbach's alpha of 0.91 showed that this questionnaire has a good validity. Its reliability was also reported to be appropriate in the opinion of experts. Then, after statistical analysis using Kolmogorov-Smirnov test, it was shown that all cases except age were abnormal with an accuracy of 0.99. For this purpose, non-parametric methods should be used in the analysis. Finally, the obtained data were analyzed using SPSS software version 22 and statistical tests. Values greater than 0.05 were also considered significant.

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Results

In this study, in which a total of 384 people participated, 29.2% were male and 68.8% were female. Also, in terms of marital status, 30.5% of the respondents were single and 66.4% were married. The frequency distribution of the age of the respondents in ***Figure 1*** shows that most of them were in the ages of 30 to 40 years. The distribution of respondents' education is also shown in ***Figure 2***.

Frequency of answers provided by respondents

The results of Chi-square test shown the frequency of answers provided by the respondents in ***Table 1*** show that based on all the questions, especially questions 10 to 24, most of the respondents do not have any concerns about COVID-19.

According to Friedman statistical test, there is a significant difference between the questions of the questionnaire in terms of importance and from the respondents' point of view, these questions are not of equal value and importance. Respondents gave higher priority to the questions number 7, 25 and 4 questions, respectively, or in other words, had higher concerns.

Gender of the respondents with the type of their response

According to the non-parametric Mann-Whitney comparison test in ***Table 2***, the questions number 1 to 5, 9, 12, 15, 21 to 23 were statistically significant with respect to gender, so that corona-related anxiety was more common in women.

Age of the respondents with their type of response

Examination of non-parametric Spearman correlation coefficients showed that a positive correlation was found between the age of the respondents and the questions number 5 (r=0.142), 6 (r=0.104) and 25 (r= 0.109); This means that as the respondents got older, they tended to respond to higher options like most of the time or always.

Marriage status of the respondents with the type of their response

According to the Mann-Whitney comparative statistical test and according to the p-value in ***Table 3***, and at a significance level of 0.05, the attitude toward the questions performed between single and married groups, in questions number 5, 8, 22 and 24, there is a statistically significant difference, as married people have expressed more anxiety. In other questions, the views of the two groups on the subject in question were the same at the significance level of 0.05.

Employment status of respondents with the type of their response

According to the Mann-Whitney comparative statistical test and considering the p-value value in ***Table 4***, which is at a significance level of 0.05, there is a statistically significant difference between the employed and unemployed groups in questions number 9, 11 and 20, in such a way that unemployed people have expressed more anxiety. In other questions, the views of the two groups on the subject in question were the same at the significance level of 0.05.

Level of education of the respondents with the type of their answers

In order to evaluate the effect of education on answering the questions of the questionnaire, Kruskal-Wallis statistical test at a significance level of 0.05 was used. The results show that in questions number 10, 12, 19, and 20, considering that the p-value is less than 0.05, it was found that there was a significant difference in answering the questions between different educational groups. According to the average rank of the answered options in the education groups in ***Table 4***, the average rank has been calculated and analyzed. Higher education, unnecessary visits to the dental clinic have been significantly reduced.

According to Spearman test, positive correlation between education and the

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questions number 1 (r=0.121), 4 (r=0.135), 12 (r=0.155), and 21 (r=0.126) as well as the negative correlation between education and the 17th question (r=-0.110) has been found that as people increase their level of education, more fear is created in people, which makes it even more difficult for them to talk about.

Discussion

Pandemics that have occurred throughout history and recorded high rates of infection and death have caused a great deal of fear and anxiety among the people. For example, the psychological consequences of anxiety and distress caused by the two pandemics of SARS and MERS in both normal people and the medical staff have been shown in studies (14-16). Since the outbreak of the COVID-19 pandemic and the release of epidemiological data on the disease, studies on the impact of this global event on mental health around the world have been recommended (17-19). So far, several studies have examined the psychological effects of this disease on the dental treatment staff (20-23). In the present study, the level of anxiety of patients referred to the clinic of Sari Dental School to get COVID-19 through dental procedures was investigated.

Comparisons between the genders showed that women had more fear and anxiety than men, both in general and in dental clinics. The results of several studies, including those of Peloso et al., Cotrin et al., And Carrillo - Diaz et al., Were consistent with the present study (24-26). This has been shown in previous studies that women generally show higher levels of anxiety in the face of crisis situations as well as when visiting dental clinics (27-29).

In examining the relationship between the age of the respondents and their level of anxiety about COVID-19, the analysis related to the three questions of the questionnaire were found that with increasing age, the level of anxiety also increases significantly. However, in the study of Cotrin et al., Which was performed on 354 people aged 12 to 49 years in Brazil, no significant relationship was observed between age and the level of anxiety caused by COVID-19 (25). However, this discrepancy can be due to the different distribution of the number of people at different ages in the two studies.

One of the results of this study showed that married people are more worried about getting the disease than single people. In similar studies to the present study, this issue has not been investigated; however, in studies that have generally discussed the effects of COVID-19 on mental health in different communities, a positive correlation has been shown between marriage and fear of COVID-19 (30-32). But studies that have generally looked at the effects of COVID-19 on mental health in different societies have examined the relationship between marriage and the fear and anxiety caused by the disease. Alnazly et al., in a study of 365 Jordan health workers in 2020, reported that the rate of anxiety in married people was significantly higher than in single people (32). Mohammadpour et al. In a study using a 7-item questionnaire of general anxiety disorder on 403 people in Kermanshah, concluded that there is a positive correlation between marriage and fear caused by COVID-19 (30). The study found that unemployed people were more anxious than employed people. This may be related to the level of income of individuals; Unemployed people go to the dental clinic only in emergencies due to lack of reliable financial resources. In a study by Aquilanti et al., Which looked at how Italians reacted to the COVID-19 pandemic in terms of dental care, it was reported that people in general who had low incomes due to financial losses from the COVID-19 outbreak were anxious. They tolerated more and postponed their dental appointments. However, in this study, only 8.9% of people mentioned financial problems as the main reason for anxiety and lack of referral (33, 34).

Examining the relationship between education level and the level of anxiety caused by COVID-19, it was found that there is a significant difference between different educational groups, and with increasing

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education, people's fear and anxiety about developing COVID-19 increased to the point that some even They could not easily talk about their anxiety. Consistent with the results of this study, Aquilanti et al. Also reported that people with higher levels of higher levels of fear and anxiety were observed and these people were more likely to postpone their dental appointments (33).

The results of the present study showed that most of the patients referred to the clinic of Sari Dental School do not have much concern about their infection with COVID-19; rather, their main concern was the transmission of the disease to those around them. In a study of a population of 595 people in Brazil, Peloso et al. stated that most of the subjects were afraid of developing COVID-19 and were canceling their dental appointments (11).

Given that the data of this study were collected from people who referred to the clinic and probably people who were more anxious did not go to the clinic and were not studied in the community of this study, this result can be reported differently in other situations. Therefore, it is suggested that similar studies be performed in larger populations.

Conclusion

In this study, the relationship between general COVID-19 anxiety as well as anxiety caused by dental treatments in the era of this pandemic was investigated with several variables. In general, people were more concerned about transmitting the disease to those around them than worrying about getting it. Also, according to the results, it was found that fear and anxiety caused by COVID-19 were significantly higher in women than men. Married people were also significantly more anxious than single ones. Anxiety was significantly higher in the unemployed than in the employed. There was a significant relationship between education and anxiety and people with higher education showed more anxiety.

Ethical standards statement

This study was approved by the Research Ethics Committee of Mazandaran University of Medical Sciences (IR.MAZUMS.REC. 1400.213).

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Conflicts of interest

The authors declare no conflict of interest regarding publication of this article.

Authors' contributions

All authors have intellectually committed to the study design and process. The final manuscript was revised and accepted by all authors.

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