International Journal of Dentistry Research

Research Article

ISSN: 2581-3218
IJDR 2022; 7(1): 14-18
Received: 07-03-2022
Accepted: 29-04-2022

www.dentistryscience.com
doi: 10.31254/dentistry.2022.7105

Psychological Appraisal of Periodontal Patients during COVID-19 Pandemic: A cross-sectional study

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Abstract

Introduction- The ongoing coronavirus disease 2019 (COVID-19) outbreak impacts the mental health of patients, health workers, and the public. The level of impact on the mental health of periodontal patients in treatment is unknown. **Aim-** The objective of the present study was to evaluate the psychological stress of periodontal patients who were undergoing treatment during this COVID-19 pandemic. **Materials and Method-** An online survey was conducted on a convenience sample of anonymous participants who were getting treatment done in various dental clinics. The questionnaire comprised of 4 sections. Sections 1-3 included demographic, perception of pandemic and periodontal status of the patients. Section 4 assessed mental health status of periodontal patient. Statistically analysis was done by using descriptive analysis. **Result-** Questionnaires were collected from 1042 patients (398 males, 644 females). The prevalence of mental distress was 95.48% (995/1042). Higher frequency distributions were associated with female participants. The major cause of anxiety was found to be associated with prolonged treatment duration. **Conclusion-** Almost all the periodontal patients experienced mental stress during the pandemic. Multiple factors affected the level of anxiety of periodontal patients, such as the delayed treatment, time since last dental visit, manner of communication with the periodontist, and stress of the pandemic progression.

Keywords: Covid-19, Oral Health, Awareness, Mental Health, Gujarat.

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INTRODUCTION

World has encountered a variety of epidemics and pandemics through time. Several epidemics (like H1N1, H5N1, avian influenza, Ebola, SARS, Zika, and Nipah) have affected India and other countries in the past, which were successfully tackled with appropriate research. COVID-19 was first reported in Wuhan, Hubei Province, China, in December 2019. On March 11, 2020, the World Health Organization declared COVID-19 a global pandemic. By May 28, 2020, the disease was reported in over 210 countries and territories.[1]

Chinese authorities announced a novel coronavirus with genetic structure similar to SARS (80%), and with its origins in bats, it was assumed to be the cause of the new disease. The virus was officially named the *severe acute respiratory syndrome coronavirus 2* (SARS-CoV-2) and the disease it caused was *Coronavirus Disease 2019*, or COVID-19. The first cluster of patients presented with symptoms of fever, cough, myalgia, fatigue, shortness of breath, and pneumonia of unknown etiology.[1]

Respiratory droplets and aerosol transmission were then found to become the potential routes for transmission of COVID-19. So COVID-19 presented a challenging environment in dentistry to perform any procedure safely for both dentist and patient. Dental professionals were identified at very high risk, specifically doing aerosol generating procedures.[2-4]

With the ongoing outbreak, the mental health of COVID-19 patients, health workers, and the public became an issue of great concern. People with stress tend to have issues in the body which can lead to dental and oral health problems. Some previous oral diseases that have been treated may reappear, such as gingivitis or swelling of gums, dental infections, opportunistic infections, and oral diseases due to certain systemic complications and their treatment, as well as recurrence of autoimmune diseases.[5]

During this pandemic, cities were locked down for residents for staying at home to avoid disease transmission. Because of the prolonged lockdown, subjects were suffering from a feeling of isolation from society, which developed into depression and anxiety[5,6]. So, it was assumed that periodontal disease will increase. The periodontal treatment involves the close contact with patients, and it was said that droplets and close contact transmission were the main transmission route for COVID-19.[7] It has been previously reported that 9 dental practitioners were infected by coronavirus in the School and hospital of Stomatology, Wuhan University. Therefore, many dental hospitals and clinics were advised to give only dental emergency treatment.[8,9] Thus, due to this treatment of periodontal patients got interrupted. Furthermore, some patients suffered from periodontal emergencies, such as bleeding gums, mobility, pain in gums, foul odour etc, but were unable to get effective and timely help from the specialists. All these factors led to an increase in psychological stress of patients.[10]

So, the present study was carried out to evaluate the psychological stress of periodontal patients and to check the effect of this stress on periodontal health during this COVID-19 pandemic.

MATERIALS AND METHOD

Study design and participants

The present study was an open, observational, qualitative, descriptive and adaptive questionnaire based online survey. To prevent the spread of the virus through droplets or contact, a web-based survey was conducted. Five dentists were consulted from whom the data of patients undergoing periodontal treatment was received. The questionnaire was circulated to these patients using the link for Google Forms. The purpose of the present survey was to evaluate anxiety in the patients.. These patients were contacted through telephone or internet and an online questionnaire containing of 4 sections was developed in Google forms and circulated amongst the participants.

Data collection

Patients undergoing periodontal treatment were invited to complete the questionnaries. The inclusion criteria were (1) in the process of periodontal treatment (2) having age 18 or above (3) had informed consent for the use of the data recorded, and (4) completed all the items in the questionnaire within a reasonable time.

Measures

The questionnaire comprising of twenty questions on a single screen which could be scrolled down, was divided into four sections.

Section 1 included Sociodemographic information whereas Section 2 focused on the perception of pandemic by the subjects included in the study.

Section 3 focused on the patients' awareness of their own periodontal status whereas Section 4 assessed the cognitive status of the patients in terms of their anxiety or stress levels owing to the pandemic. Descriptive analysis was performed for the gathered data and percentage and frequency of various variables was assessed.

RESULTS

One thousand and forty two participants completed the web-based questionnaires. For categorical data, the frequency and percentage of each category were assessed. For section 1 (table 1) it was found that total of 644 (61.8%) females and 398 (38.2%) males took part in the study from Gujarat state. 530 (50.9%) of participants were of age 31-40 years and 4 (4%) were of >60 years.

Table 1: Demographic Information

Variables	Frequency
Age:-	
- 18-30 yrs	408(39.2%)
- 30-40 yrs	530(50.9%)
- 40-60 yrs	100(9.6%)
- >60 yrs	4(0.4%)
Gender:-	
- Male	398(38.2%)
- Female	644(61.8%)
Income:-	
- 5000-10,000	69(6.6%)
- 10,001-20,000	55(5.3%)
- 20,001-40,000	85(8.2%)
- 40,001-60,000	669(64.2%)
- >60,000	164(15.7%)
Marital Status:-	
- Unmarried	406(39.0%)
- Married	636(61.0%)
Medical History:-	215(20.6%)
- Diabetes Mellitus	470(45.1%)
- Hypertension	16(1.5%)
- Asthma	341(32.7%)
- Others	

For section 2 (table 2), it was found that 644 (61.8%) participants thought that there common mode of transmission for coronavirus can be both direct as well as indirect whereas 127 (12.2%) thought that it transmitted through indirect contact. According to 814 (78.1%) participants, the main concern with this outbreak was risk of infection to them and their relatives and 11 (1.1%) participants believed that there were psychological problems caused by outbreak.

641 (61.5%) participants were taking their treatment in general hospital and 401 (38.48%) were undergoing treatment in private dental clinics. During this period, 689 (66.12%) contacted their dentist through tele-communication whereas 353 (33.87%) went for physical consultation (table 3).

576 (55.27%) subjects complained of bleeding gums followed by 227 (21.78%) pain in gums due to delayed treatment (fig 1). 995 (95.48%) participants were feeling stressed for going to clinic (fig 2) and 891 (85.50%) participants' family and relatives were worried about getting infected through them (table 4).

Table 2: Perception of Pandemics

Variables	Frequency
What according to you is common mode of transmission:- - Direct contact -Indirectcontact - Both	 271(26%) 127(12.2%) 644(61.8%)
According to you, what is the main concern of COVID-19 outbreak? - Danger of disease - Risk of infection for you or your relatives - Isolation from family and/or friends - Impact on your work - Impact on daily life measures - Psychological barriers and distrust between peoples - Public psychological problems caused by outbreaks	 38(3.6%) 814(78.1%) 115(11%) 14(1.3%) 34(3.2%) 16(1.5%) 11(1.1%)
Have you suffered from any of the associated symptoms of COVID-19 (Fever, Cough, Fatigue, Dyspnea & others)? Yes No	 389(37.3%) 653(62.7%)
Do you underwent any test for COVID-19? Yes No	 797(76.48%) 245(23.51%)

Table 3: Assessment of Periodontal Status

Variables	Frequency
From which dental setup are you seeking Periodontal treatment General hospital Private dental clinic	 641(61.51%) 401(38.48%)
Time of last visit to your dentist? <1 month 1-3month 0>6 month	 190(18.23%) 763(73.22%) 89(8.54%)
During COVID-19 Pandemic, how many times you contacted your doctor? 0-1time 2 times >3times Not contacted	 584(56.04%) 372(35.70%) 10(0.95%) 76(7.29%)
How did you communicate your dentist? Physical Consultation Tele-communication	 353(33.87%) 689(66.12%)
What problems are you facing due to delayed treatment? Bleeding gums Pain in gums Tooth Mobility Others	 576(55.27%) 227(21.78%) 128(12.28%) 111(10.65%)
Which type of scaling you prefer during this pandemic? Manual Scaling Ultrasonic Scaling	 635(60.94%) 407(39.05%)

Table 4: Cognitive Status of Periodontal Patient

Variables	Frequency
Do you feel anxious for going to dental clinics during this outbreak? Yes No	 995(95.48%) 47(4.5%)
Do you think delayed treatment due to this pandemic is worsening yourdisease? Yes No	 895(85.89%) 147(14.10%)
Do you think that any gum health procedure leads to the transmission of COVID-19 pandemic? Yes No	 484(46.44%) 558(53.55%)
Are your family or friends worried aboutthemselves getting infected through you? Yes No	 891(85.50%) 151(14.49%)
Do you want to undergo treatment if COVID-19 persists? Yes No	 502(48.17%) 540(51.82%)

DISCUSSION

COVID-19 can be described as a critical pandemic that led to a crippled society within few months of its inception. The Chinese Preventive Medicine Association 2020 advocated the SARS CoV-2 to be a zoonotic virus similar to SARS CoV and Middle East respiratory syndrome coronavirus (MERS-CoV) with the Chinese horseshoe bats known to be the most probable origin and pangolins, the most likely intermediate host.[11,12] It has now been established that this interpersonal transmission occurs majorly through respiratory droplets and contact transmission.[7] Hence, in order to reduce the rate of transmission and prevent the strain on the healthcare systems; economic sealing, lockdown and social distancing was deemed to be a necessity.[13] During COVID-19 lockdown many health issues were occurred.

Our study also revealed that 95.48% of participants had psychological stress, 85.50% participants family were worried about getting infected through them, which indicate that there is adverse effect on mental health.

Number of female patients were 2 times greater than that of male patients, which revealed that they are more prone to periodontal treatment. The results of questionnaires showed that majority of respondents considered this disease as a serious disease. Majority of participants contacted their dentist through tele-communication. Many of particiapants felt anxiousness for going to clinic and didn't want visit clinic till this pandemic exist.

Many factors were found to be associated with worsening of periodontal disease. In our study we found that females had more stress as compared to males which ultimately cause periodontal disease worsening which has got prevalence with bleeding gums, pain in gums, mobility etc.

CONCLUSION

Covid-19 had highly negative impact on our periodontal patients. Almost all the periodontal patients experienced mental stress during the pandemic. Multiple factors affected the level of anxiety of periodontal patients, such as the delayed treatment, time since last dental visit, manner of communication with the periodontist, and the localities of the pandemic progression.

Limitations

There are limitations in our study as the assessment of stress level was done but quantification of stress level was not done. Sample of individuals are 1042 of those patients who were undergoing periodontal treatment in selected five dentists of Gujarat state, which truly not represent the stress level of whole community.

Future Directions

To know the stress level better, it would have to be studied on larger scale and have to take different psychological scales for more direct correlations.

Conflict of interest

The authors declare that there is no conflict of interest.

Financial Support

None declared.

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HOW TO CITE THIS ARTICLE-
Udhani B, Duseja S, ParikhH , Agrawal C. Psychological Appraisal of Periodontal Patients during COVID-19 Pandemic: A cross-sectional study. Int J Dent Res 2022; 7(1):14-18. doi: 10.31254/dentistry.2022.7105