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Psychological Impact Of Covid-19 On Oral Health-- An Online Questionnaire Based Study On Follow Up Patients

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Abstract

Background: The anxiety induced by covid-19 on global population is well established. No realm of individual life survived its onslaught. Its deleterious impact on patients visiting dental facility for follow-up phase of periodontal therapy has not been studied yet. This study will evaluate the fear of follow-up patients in seeking further dental care during Covid-19 pandemic.

Methodology: A cross-sectional study was carried out on follow-up patients in Post Graduate department of the hospital. A total of 60 patients (35 females,25 males) on supportive periodontal therapy were selected for the study. Subjects were administered the Corah's Dental Anxiety Scale questionnaire and asked to indicate their degree of anxiety Patients with a DAS score above 13 were enrolled in Group A as anxious/fearful group. Rest of the subjects were enrolled in Group B (Relaxed group). A short Covid dental Fear question (CDFQ) was also asked. Questionnaire was disseminated to the study group by utilizing online social media platforms.

Results: There were 25 patients in Group A (47.17%). Group B had 28 patients (52.83 %). CDFQ showed 73.58 % of patients having varying degrees of fear of visiting hospital. Mean for Group A and B was 14.4 & 9.77 respectively (p-value < 0. 001)

Conclusion: Covid-19 pandemic has induced a significant amount of fear of contracting the virus, in dental patients scheduled to revisit for Maintenance phase of periodontal therapy.

Keywords: COVID-19, Dental Anxiety, Dental Anxiety Scale, follow-up patients, maintenance therapy, online questionnaire, periodontics

Introduction

Covid-19 pandemic brought up a challenging atmosphere to all realms of medical sciences. Oral and dental care setting were no different. Dental professionals had to cope up with the Covid-19 challenge in a more sophisticated manner while dealing with patients and procedures around a potential aerosolic environment. It goes without saying that patients were apprehensive and anxious about visiting a dental care facility for fear of contracting the virus. If some cultures are suspicious, fearful, or anxious toward dentistry, then avoiding any dentistry might be the accepted behavior within that culture. [1]

Fear and anxiety toward the dentist and dental treatment are both significant characteristics that contribute to avoidance of dental care. [2,3] Fear is a reaction to a known or perceived threat or danger. It leads to a fight-or-flight situation. Dental fear, also termed as Odontophobia, is a reaction to threatening stimuli in dental situations. The prevalence of dental fear has reached 24.3%, a figure which has been maintained over the last decade among the adult population. [4] Covid-19 has added a new dimension

to Odontophobia with patients fearful about cross contamination of Sars CoV-2 at a dental facility. This apprehension of patients is genuinely warranted. Currently, one in five healthcare workers have been infected with COVID-19. Healthcare professionals have a potential of becoming unwanted carriers and transmit the disease to other patients, their family members and to the community. [5] Since there is a high possibility of spread of and exposure to blood, saliva, body fluids, and respiratory secretions while providing dental services. Due to the characteristics of the dental settings, mutual infection between dentists and patients are possible. Therefore, the principle of infection control should be strictly enforced, to provide safety for both dentists and patients. [6,7]

Maintenance or Supportive periodontal therapy or Phase IV therapy in Periodontal care forms the corner stone of periodontal care. The response to Non-surgical or Surgical Therapy is reevaluated at specific time phases to maintain and improve the outcomes of earlier phases of periodontal therapy. Covid-induced dental fear could pose significant challenge to periodontists in maintaining the standard treatment protocol. Patients on maintenance schedule may either delay or avoid their follow up visits.

The prospect of this study is to assess the psychological impact of covid-19 on patients supposed to visit dental and oral care facility for supportive/ follow-up phase of periodontal therapy.

Materials and Methods

A cross-sectional study was carried out on follow-up patients of the Post Graduate department of Periodontics and Oral Implantology. A total of 60 patients (35 females,25 males) on supportive periodontal therapy and scheduled to visit the department were the target group of the study. Subjects were administered the Corah's Dental Anxiety Scale questionnaire and asked to indicate their probable degree of anxiety as and when they are supposed to visit the hospital (Table 1). Patients with a DAS score above 13 were enrolled in Group A (anxious/fearful group). Rest of the subjects were enrolled in Group B (Relaxed group) The DAS gives a general overview of patient's dental fear with four questions, each one with five alternative answers. Questionnaire was disseminated to the study group by utilizing online social media platforms. A short single covid-19 dental fear question (CDFQ) with 4 possible choices was also used as an instrument of measuring the covid-19 induced dental fear (Table 2). Before entering the present study, the patients were informed about the study design and the voluntariness of participation by telephone. The Ethics Committee of Hospital approved the study design.

Statistical Analysis

Data was analyzed for statistical significance using the Chi-Square test in the case of categorical variables. Student's t-test was applied for continuous variables. A p value less than 0.05 was considered significant.

Results

Out of 60 patients, 53 patients (33 females and 20 males) responded to the questionnaire. In the present study, the average DAS score was 11.92 ±2.98. There were 25 patients in group A (47.17%), having DAS scores of 13 or higher. Group B , having a DAS score below 13, had 28 patients (52.83 %) (Table 3) . Mean for Group A and B was 14.4 & 9.77 respectively (p-value < 0. 001) which is statistically significant indicating a good amount of fear or anxiety development in fair percentage of patients who were scheduled to visit the hospital. (Table 4)

On the basis of responses to Covid-19 dental fear question (CDFQ), patients were distributed to 4 groups. 16 patients (30.19%) responded that they would, in all likelihood, miss their appointment altogether due to high fear of contracting the covid-19 and were put in "highly fearful" group. 10 patients (18.86 %) would prefer to delay their appointment and were classified as "moderately fearful". 13 patients (24.53 %) reported themselves as "slightly fearful" but would visit the hospital on scheduled appointment. 14 patients (26.42%) reported themselves as "not fearful" and would surely visit the hospital for their follow up visit. (Table 5) The mean DAS for males was 10.90 and for females was 12.54. The chi square statistic is 0.6626 and a p-value of 0.415 which is not significant. (Table 6).

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Table 1. The Dental Anxiety Scale (DAS) [30]

If you had to go to the dentist tomorrow, how would you feel about it?
1 I would look forward to it as a reasonably enjoyable experience. 2 I wouldn't care one way or the other. 3 I would be a little uneasy about it. 4 I would be afraid that it would be unpleasant and painful. 5 I would be very frightened of what the dentist might do.
When you are waiting in the dentist's office for your turn in the chair, how do you feel?
1 Relaxed. 2 A little uneasy. 3 Tense. 4 Anxious. 5 So anxious that I sometimes break out in a sweat or almost feel physically sick.
When you are in the dentist's chair waiting while he gets his drill ready to begin working on your teeth, how do you feel?
1 Relaxed. 2 A little uneasy. 3 Tense. 4 Anxious. 5 So anxious that I sometimes break out in a sweat or almost feel physically sick.
You are in the dentist's chair to have your teeth cleaned. While you are waiting and the dentist is getting out the instruments which he will use to scrape your teeth around the gums, how do you feel?
1 Relaxed. 2 A little uneasy. 3 Tense. 4 Anxious. 5 So anxious that I sometimes break out in a sweat or almost feel physically sick.

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Table 2. Covid Dental Fear Question (CDFQ) [original]

In view of Covid-19 pandemic, how fearful are you for your follow up visit to dental hospital ?
1. Highly fearful (will miss my appointment)
2. Moderately fearful (will delay my appointment)
3. Slightly fearful (will visit)
4. Not fearful (will surely visit)

Table 3. Fearful and Relaxed Patient Groups (DAS Score)

Group	N	Percentage
A (Fearful Group)	25	47.17
B (Relaxed Group)	28	52.83

Table 4: Mean DAS

Group	**Mean DAS**	**Standard Deviation**	**p-Value**
A	14.4	0.97	**0.001**
B	9.77	1.22	

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Table 5. Patient Groups according to CDFQ

Group	N	Percentage
Highly fearful (will miss my appointment)	16	30.19
Moderately fearful (will delay my appointment)	10	18.86
Slightly fearful (will visit)	13	24.53
Not fearful (will surely visit)	14	26.42

Table 6. Male and Female Distribution & Respective Mean DAS

Gender	Group A (N)	Group B (N)	Mean DAS	Chi square	P-value
Males	8	12	10.90	0.66	0.4
Females	17	16	12.54		

Discussion

Covid-19 pandemic crippled each and every realm of individual life. Its impact on health has been most devastating with so many lives being lost to it. Oral health, too, could not outlast the deadly impact of Sars-CoV-2. Most of the studies conducted thus far have focused on assessment of fear and anxiety among dental and oral care practitioners. Patient's fear of contracting the virus while moving out to seek dental care has been obvious and well observed yet its effect not analysed and evaluated. Thus, the aim of this study was to assess psychological impact of covid-19 on patients supposed to visit dental and oral care facility for supportive/ follow-up phase of periodontal therapy. This study evaluated and analyzed the fear of follow-up patients in seeking further dental and oral health care during Covid-19 pandemic. Dental fear should be studied with regard to the situation to which it pertains, the reactions it evokes, and its duration. [8] The present study analyses dental fear and the subsequent reaction of the patients amid the uncertain anxious situation created by the raging pandemic.

The two dental fear measurements used were self-developed CDFQ and the vastly validated and well-established DAS. [9,10,12] CDFQ seems to measure dental fear relatively well at the same time being simple and easy to respond. Correlations among the two dental fear measurement instruments (CDFQ and DAS) were relatively high and similar. The CDFQ was found to work well with the patients having no problems responding to it. The correlations of the CDFQ were tested with commonly used, valid, reliable, but long dental fear measurement instruments, the DAS, with good results.

In a study by Caltabiano, Felicity, Lauren, Anton, Jade Spiteri et al (2018), who investigated the

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expectations and experiences of a sample of new patients visiting an Australian regional university Student Dental Clinic with regard to anxiety provoking and alleviating stimuli in the clinical environment, the mean DAS score from all respondents was 10.76 (SD = 5.06). [11] In the present study, mean DAS was 11.11 ± 2.98. This statistically significant increase in the mean DAS score is a representative figure of Covid-19 induced dental fear among the follow up patients scheduled to revisit the department for maintenance therapy. The patients in our study had anxiety levels significantly higher to those of patients attending admission clinics in dental hospitals from four cites in three different countries, undergoing procedures by experienced dental practitioners. [12]

Nicolas E, Collado V, Faulks D, Bullier B, Hennequin M. A et al (2007) in a national cross-sectional survey of dental anxiety in the French adult population, estimate the prevalence, severity and associations of dental anxiety. Moderate dental anxiety (14>or=DAS>or=13) was revealed for 172 persons (6.2%), while 195 (7.3%) had severe dental anxiety (DAS>or=15), giving an overall prevalence of dental anxiety of 13.5%. [13] The fearful group in the current study constituted of 47.17%. This significant higher prevalence of dental fear and anxiety post Covid-19 is staggering and needs professional attention.

Liu, Y., Huang, X., Yan, Y., Lin, H., Zhang, J., & Xuan, D. (2015). studied was to the characteristics of dental fear of Chinese adult patients with periodontal disease and provide information for clinical assessment. The prevalence of dental fear was 74% among 1203 patients, 23.4% of total with high dental fear, while 27.3% in the patients with periodontal disease. The dental fear of patients with periodontal disease was significantly higher (10.70 ± 3.09) than those without periodontal disease (10.24 ± 3.00) according to the result of DAS.{14} It was 9.0 on DAS with 16.7% high dental fear prevalence in Norway population [15], while 8.4 with 13% high dental fear in British and 18.1% high dental fear in Australian [16,17] The prevalence of 47.17 % fear and average DAS of 11.11 of periodontal patients in the present study , establishes the Covid-19 induced dental fear in patients.

In the present study, the prevalence of dental fear was significantly higher in women than men, which was consistent with literatures. [18,19,20] The probable reasons of higher fear in female patients might well be related to higher peaks and rates of anxiety and phobia in females. [21] The heritability factor behind higher fear and anxiety in females can also be a possible reason. [22]

Dental professionals have been practicing increased infection control and taking universal precautions since the 1980s HIV epidemic. [23] However, Covid-19 pandemic has posed new challenges to the dental and oral care professionals in maintaining a watertight aseptic environment to prevent cross contamination. The Occupational Safety and Health Administration designates the performance of aerosol-generating procedures on known or suspected COVID-19 patients as “very high risk”. [24] Two of the highest aerosol-creating procedures involve inventions that have been considered major advances in dental practice, because they are faster and less painful for the patient: the high-speed handpiece with its water spray coolant and the ultrasonic scaler used by hygienists to remove hard deposits on teeth. [25]

Prevention is a cornerstone of public health. The COVID-19 pandemic presents an opportunity for the dental profession to shift from an approach focused on surgical intervention to one emphasizing prevention. Embracing nonsurgical, non-aerosolizing caries prevention and management will be critical in this endeavor. [26] Prevention and nonsurgical caries management include many options. Evidence-based materials include dental resin sealants, glass ionomers as sealants or as part of atraumatic restorative treatment performed with hand instruments, silver diamine fluoride, sodium fluoride varnish, and other self-applied and professionally applied topical fluorides. [27,28,29] These materials can be applied without generating aerosols, reducing the risk of viral transmission. [26]

The periodontal care during the maintenance therapy reinforces the treatment delivered during the earlier phases. Communicating the importance of follow-up care to the patients while at the same time allaying their fears adds a new dimension of responsibility to the periodontists, in particular and dental professionals, in general.

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Many oral health care providers are anxious about returning to work, and many patients may be hesitant to enter a dental office. Communications concerning patient and provider safety are critical. Communication and clarity are critical, especially with low-literacy populations. Messaging should include the importance of maintaining good oral health and its role in overall health. [26]

Since this study had a sample size of 60 patients, future studies with larger sample size should be carried out. Moreover, other dental fear measurement instruments could also be utilized to asses the Covid induced dental fear among follow-up patients. This study design could also be amplified by including general population on the whole instead of follow up patients.

Conclusion

Covid-19 pandemic has induced a significant amount of fear of contracting the virus, in dental patients scheduled to revisit for Maintenance phase of periodontal therapy. The fear and anxiety among female patients are more as compared to male patients. Communication across the patient-provider bridge has become more indispensable.

Conflict of Interest: The authors declare no conflict of interest.

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Author's Contributions

Author [1] carried out the study implementing and drafting the manuscript. Author [1,2,3,4] participated in data analysis and interpretation of data revised critically. Author [2, 3, 4] conceived the study, and participated in its design and coordination and helped to draft the manuscript. All authors read and approved the final version of the manuscript.

Ethics

The Ethics Committee of Hospital approved the study design (OMFS/GDC-S/11365). This study was conducted while upholding the principles and concepts of Helsinki Declaration and simultaneously abiding by the current standard ethical guidelines, to the best of our understanding and ability.

Patient Consent

Before entering the present study, the patients were informed about the study design and the voluntariness of participation by telephone. Informed online consent was also taken from each participant at the end of the questionnaire.

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