ORIGINAL ARTICLE

Effect of Covid-19 Fear on Dental Anxiety Levels among Adult Patients in Periurban Islamabad

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ABSTRACT
Objectives: To evaluate dental anxiety levels and fear of covid-19 and the correlation of dental anxiety with covid-19 fear.
Methods: A cross-sectional study was conducted at Rawal General and Dental Hospital Islamabad, Pakistan using convenient sampling technique over a period of 6 months. A sample size of 167 adult (18yrs+) patients was taken. Data was collected through validated questionnaires in the OPD.
Results: It was observed that people with higher fear of covid-19 had significantly higher dental anxiety levels and vice versa. The relation being significant ($p < 0.05$).
Conclusion: it was found that female patients had both high dental anxiety and fear of covid-19 while people aged 41yrs and above only had higher fear of covid-19 as compared to dental anxiety
Keywords: Covid-19, Fear of Covid-19, Dental Anxiety, Covid-19 and Dental Anxiety

INTRODUCTION

Dental anxiety is the reactionary anxiety developed due to unpleasant experiences in a dental environment to specific objects or events (1). This behavior results in patient avoiding or delaying necessary dental treatment(2) . A study in Saudia found that young female patients were most anxious (3). According to a research conducted in Bahria dental college Karachi Of the total participants, 650 (92.32%) patients provided consent. Average dental anxiety scale score was 12.46, representing high anxiety score. (4) Dental anxiety leads to delayed treatment resulting in poor oral health that increase embarrassment, guilt and inferiority complex and adversely effects lifestyles and wellbeing of people (5).

Covid-19 is a viral disease that affects respiratory system of human beings (6) . It is a highly transmittable and pathogenic viral infection causing a severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), that emerged in Wuhan, China and spread around the world (7) . It can be transmitted by means of personal contact, respiratory droplets and even through the surrounding things. (8) It could be fatal if immunity is weak and people are suffering from hypertension, diabetes, cardiac conditions etc however they don't reflect absolute mortality as people even with these conditions have successfully recovered. (8) Covid-19 has restricted social gatherings and smart lockdown has been reinforced everywhere in world including Pakistan, Some People who are so much afraid of this virus are trying to avoid other people themselves as quarantine is only solution to decrease rate of this out breaking pandemic which is also affecting their mental health. (9)   . People are on self-medication which includes analgesics, antipyretics, antitussives, antidiarrheal, calcium and vitamin supplements, anabolic steroids, sedatives, certain antibiotics, and many herbal and homeopathic remedies. (10)

A research conducted in U.S.A found that the neurocircuitry of anxiety disorders are linked to the study of brain responses to emotional stimuli in healthy humans, (11). Another study with a sample size of 400 people, conducted in Karachi during the month of march 2020, concluded that individuals experienced higher anxiety levels more frequently regarding their own health, that of their associates and avoidance behavior due to covid-19 pandemic. Likewise fear of covid can have a significant effect on dental anxiety levels among patients in Pakistan.

Research Question: What is the effect of covid-19 pandemic on dental anxiety levels among adult patients frequenting a dental teaching hospital in periurban Islamabad?

Alternate Hypothesis: Fear of covid-19 has an effect on dental anxiety levels.

Null Hypothesis: Fear of covid-19 has no effect on dental anxiety levels.

Objectives:

1. Evaluating fear of covid-19 among adult dental patients.
2. Dental anxiety levels among adult patients frequenting to the dental OPD.
3. Correlating the two to find out that whether fear of covid-19 is affecting dental anxiety levels among patients or not.

Operational Definitions:

1. Dental Anxiety: Dental anxiety is the term used to describe fear, anxiety or stress in dental setting. Being scared to visit dentist can relate in delaying or avoiding dental dental treatment. Dental anxiety can be associated with certain triggers such as needles or dental setting in general.
2. Covid-19 pandemic: The current global pandemic caused by a newly discovered strain of corona virus (SARS-CoV-2).
3. Fear: The emotion of pain or uneasiness caused by sense of impending danger, or by prospect of some possible evil.

METHODOLOGY

This cross-sectional study was carried out in Rawal General and Dental Hospital Islamabad over a period of 6 months.

The sample size was calculated using WHO sample calculator with assumptions; Confidence level= 95%, Alpha error= 5%, Anticipated proportion with dental anxiety= 87.6% and Precision= 5%. The total sample size was calculated to be 167 using convenient sampling technique.

The study population was composed of adult patients reporting to the dental OPD, only patients that gave their consent, were 18yrs+ and reported to the dental OPD were included. Patients that were younger than 18yrs, required a medical proxy, and had a self-proclaimed history of covid-19 and patients that reported to different dental departments other than the OPD were excluded.

Data was collected by the researchers through validated questionnaires. The questionnaires were a set of questions with multiple answers and a scale. For dental anxiety levels Norman Corah's Dental Anxiety Scale (12) was used having a set of four questions a "relaxed" b "a little uneasy" c "tense" d "anxious e "so anxious that I sometimes break out in a sweat or almost feel physically sick" the lowest score of '1' awarded to 'a' and highest of '5' to 'e', a minimum score of 5/20 and maximum of 20/20. The Fear of Covid-19 scale (13) and its Urdu version (14) was used for Covid-19 fear , having 7 questions and a likert type scale for answers from strongly disagree to strongly agree, the minimum score of '1' was awarded to 'strongly disagree' and maximum score of '5' to 'strongly agree' the overall highest score being 35/35 and lowest possible score being 7/35.Overall score was calculated by adding up Corah Dental Anxiety score with fear of covid-19 score. The Urdu version of this scale was used for patients unable to understand English. Demographic information such as Age, Residence, Gender and Level of Education were also collected.

The questions were interviewer led and asked in English language and only in cases where the patient was unable to understand English were they be asked in Urdu. Patient's names were not recorded to ensure confidentiality and anonymity. A patient was only a participant for the time that he was answering the questions.

Data was entered and analyzed in SPSS version 20. Categorical variables such as sex, education and responses to Norman Corah's Dental Anxiety Scale and Fear of Covid-19 Scale were analyzed as frequency and percentage. Quantitative variables like age were measured as mean and standard deviation. Correlation coefficient was used for dental anxiety and fear of covid-19. Average fear of covid-19 was stratified according to gender and age of patients using T-test and ANOVA respectively, a p-value of less than 0.05 was consider significant.

RESULTS

For this study sample of 167 was taken of which 69 (41.3%) were male and 98 (58.7%) were females. The age of sample population ranged from 18-70 years with a mean age of 30±10yrs. The highest number of participants belonged to the age group 21-30yrs (59.3%) and the graduate level of education (41.3%). It was observed that people with higher fear of covid-19 had significantly higher dental anxiety levels and vice versa the relation being significant (p value=0.005). The mean dental anxiety levels, fear of covid-19 and overall scores were found to be significantly higher in females than males (Table 6). People 41yrs and above had the highest overall scores, 41-50yrs having 31.73±8.43 and 50yrs+ having 30.80±7.4. There is a significant positive correlation between covid 19 fear and Denta

Table 1: Baseline Characteristics (n=167

Age in Years	Number of Cases	Percentage
Up to 20	16	9.6%
21-30	99	59.3%
31-40	31	18.6%
41-50	11	6.6%
51 & above	10	6.0%
Gender		
Male	69	41.3%
Female	98	58.7%
Education		
Illiterate	5	3%
Up to Class 5	7	4.2%
Matric	22	13.2%
Intermediate	36	21.6%
Graduation	69	41.3%
Masters and Above	28	16.8%

Table 2: Descriptive Statistics of Dental Anxiety and Fear of Covid-19

	Descriptive Statistics	
Corah's Score	9.72+-3.49	
Fear of Covid-19 Score	17.91+-5.80	
Overall Score	27.63+-7.40	
Correlation of Dental Anxiety Levels with Fear of Covid-19 and Overall Score		
	Evaluation coefficient	p-value
Corah Score with Fear of Covid-19 Score	0.217	0.005
Corah score with Overall Score	0.644	<0.001
Correlation of Fear of Covid-19 with Overall Score		
Fear of Covid-19 Score with Overall Score	0.888	<0.001

Table 3: Mean Dental Anxiety Levels, Fear of Covid-19 and Overall Scores according to Gender

	Gender	Mean ± Std.Deviation	p-value
Corah score	Male	8.83±3.23	0.004
	Female	10.39±3.53	
Fear of covid score	Male	17.06±6.041	0.107
	Female	18.56±5.6	
Overall score	Male	25.87±7.52	0.009
	Female	28.95±7.08	

Table 4: Mean Dental Anxiety Levels, Fear of Covid-19 and Overall Scores according to Age

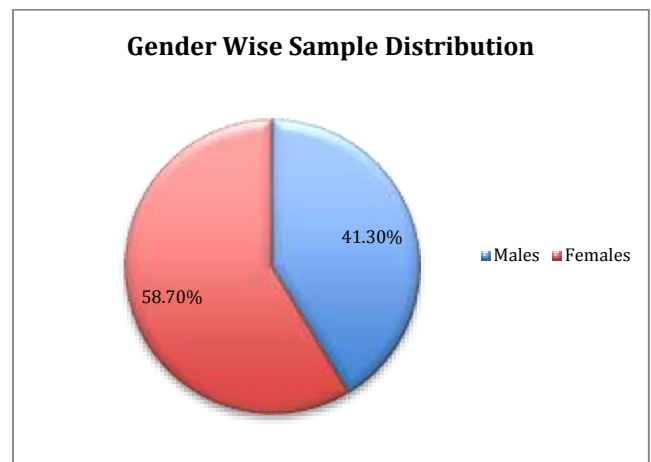| age wise		Mean ± Std. Deviation	p-value
corah score for dental anxiety	Up to 20	10.56 ± 3.37	
	21-30	9.69 ± 3.52	
	31-40	9.32 ± 3.5	0.59
	41-50	10.91 ± 3.62	
	51 or above	8.60 ± 3.27	
fear of covid score	Up to 20	15.94 ± 4.77	
	21-30	18.04 ± 5.24	
	31-40	16.10 ± 6.63	0.009
	41-50	20.82 ± 7.07	
	51 or above	22.20 ± 5.81	
overall score	Up to 20	26.50 ± 4.05	
	21-30	27.73 ± 7.2	
	31-40	25.42 ± 8.12	0.77
	41-50	31.73 ± 8.43	
	51 or above	30.80 ± 8.32	

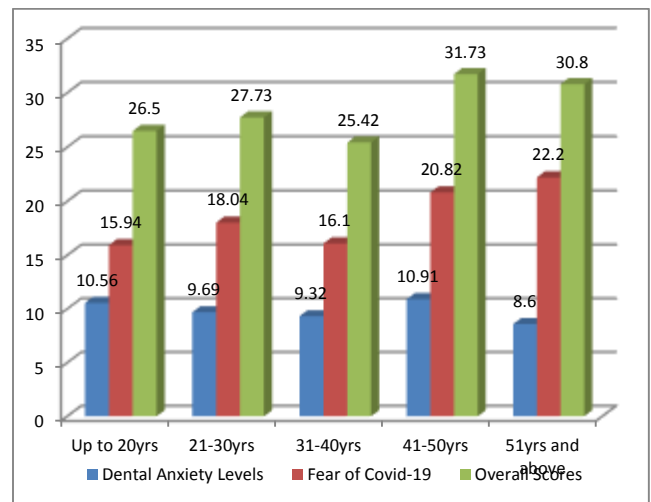Fig 1: Showing gender distribution in the sample.

Fig 2: This bar chart illustrates the Dental Anxiety levels, Fear to Covid 19 and Overall score in different age groups of sample
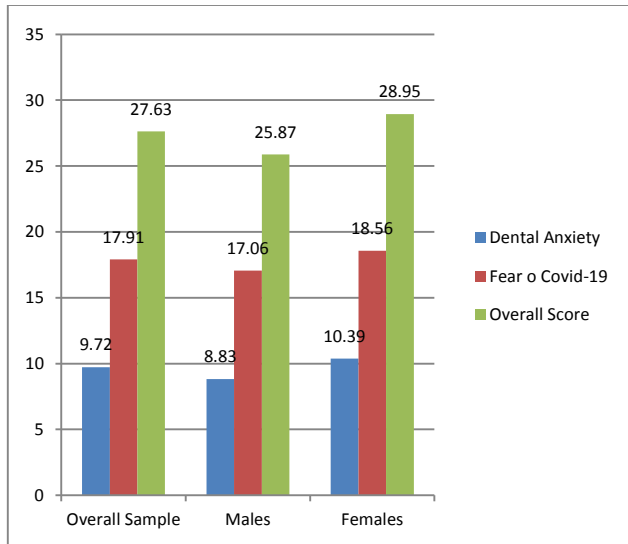
Fig 3: This bar graph shows the mean Dental Anxiety levels, Fear of Covid 19 and overall score in males and females.

DISCUSSION

Dental anxiety is something that dentists have to face all the time. Patients with dental anxiety avoid dental treatment resulting in deteriorating dental health. Some patients even tend to faint on the dental unit. With the current pandemic there is widespread fear of covid-19 in the world, with governments enforcing lockdowns . This study highlights correlation between dental anxiety and fear of covid-19. In this study it was found that fear of covid-19 has statistically significant positive effect on dental anxiety. In another study it was published that current pandemic has increased dental anxiety among patients (15). The findings of this study were in accordance with other studies carried out in Pakistan and worldwide. As fear of Covid-19 has a significant relationship with dental anxiety, therefore the findings of this study will help address dental anxiety levels in patients.

As per findings of this current study females report highest rate of anxiety and fear of covid-19. In another research carried out in Rey Juan Carlos Madrid, Spain they also reported higher levels of dental anxiety and fear of covid-19 among females (16). A study conducted in Karachi, Pakistan on covid-19 pandemic and anxiety among health care professional showed similar results with females having higher overall scores (17) therefore they need to be approached more carefully.

Study carried out by Kayseri, Turkey reported that age has no significant effect on anxiety levels of patient (18). Another study carried out by University of Solerno, Italy shows that the patients visiting dental hospitals over the age of 60 years have higher fear of Covid-19 (19). Our study shows that overall Covid-19 fear score and dental anxiety fear is highest amongst the age group of 41 & above. In this age group dental anxiety score was less compared to other age groups but the fear of Covid-19 score was high making their overall score the highest. Hence addressing their fear of Covid-19 will result in greatly reducing of their overall scores.

Implementation of personal protective equipment, walk through sanitization gates and screening with infra-red thermometer at hospital/dental practice entry points, social distancing protocols with hand sanitization areas for both doctors and patients will bring some satisfaction to the patients. Moreover mass vaccination will significantly reduce fear of covid-19.

This study will help dental practitioners to address dental anxiety levels in patients during the pandemic. It will help bring awareness in the dental community to approach high anxious group with caution. Hospitals and dental clinics can design their setups in ways to coup up with effect of fear of covid-19 on dental anxiety levels.

One of the main limitations was that results from this study cannot be generalized because it was carried out in a single dental hospital. In our sample the oldest patient was 70 years old while there was no upper age limit set, hence in future studies even number of samples should be taken from each age group. Due to lockdown we encountered hindrance in data collection because of reduced patient flow.

CONCLUSION

Our study concluded that overall prevalence of dental anxiety and fear of Covid-19 was found significantly high. Female patients were observed to be more anxious and fearful compared to males. It was observed that people having high fear of Covid-19 were also having higher dental anxiety scores. Moreover the age group 41 years and above had higher fear of covid-19 scores than dental anxiety levels when compared to the younger patients.

REFERENCES

1. Rankin JA, Harris MB. Dental anxiety: the patient's point of view. J Am Dent Assoc. 1984;109(1):43–7.
2. Gatchel RJ. Effectiveness of two procedures for reducing dental fear: group-administered desensitization and group education and discussion. J Am Dent Assoc. 1980;
3. Fayad MI, Elbieh A, Baig MN, Alruwaili SA. Prevalence of dental anxiety among dental patients in Saudi Arabia. J Int Soc Prev Community Dent. 2017;7(2):100–4.
4. Syed S, Bilal S, Dawani N, Rizvi K. Dental anxiety among adult patients and its correlation with self-assessed dental status and treatment needs. J Pak Med Assoc. 2013;
5. Vermaire JH, De Jongh A, Aartman IHA. Dental anxiety and quality of life: The effect of dental treatment. Community Dent Oral Epidemiol. 2008;36(5):409–16.
6. Waris A, Atta UK, Ali M, Asmat A, Baset A. COVID-19 outbreak: current scenario of Pakistan. New Microbes New Infect. 2020;35(20):100681.
7. Shereen MA, Khan S, Kazmi A, Bashir N, Siddique R. COVID-19 infection: Origin, transmission, and characteristics of human coronaviruses. J Adv Res. 2020;24(March):91–8.
8. Garima S, Singh N. Fatality in COVID 19: an overview of causes of death and organ involvement. Int J Adv Med. 2020;7(7):1190.
9. Um Min Allah N, Arshad S, Mahmood H, Abbas H. The psychological impact of coronavirus outbreak in Pakistan. Asia-Pacific Psychiatry. 2020;12(4):0–1.
10. Malik M, Tahir MJ, Jabbar R, Ahmed A, Hussain R. Self-medication during Covid-19 pandemic: challenges and opportunities. Drugs Ther Perspect. 2020;36(12):565–7.
11. Shin LM, Liberzon I. The neurocircuitry of fear, stress, and anxiety disorders. Neuropsychopharmacology. 2010.
12. Corah NL. Development of a Dental Anxiety Scale. J Dent Res. 1969;
13. Ahorsu DK, Lin CY, Imani V, Saffari M, Griffiths MD, Pakpour AH. The Fear of COVID-19 Scale: Development and Initial Validation. Int J Ment Health Addict. 2020;
14. Mahmood QK, Jafree SR, Qureshi WA. The Psychometric Validation of FCV19S in Urdu and Socio-Demographic Association with Fear in the People of the Khyber Pakhtunkhwa (KPK) Province in Pakistan. Int J Ment Health Addict. 2020;
15. Majeed MM, Siddiqui Z, Tabbasum U, Sarwar H, Minhas S, Bhatia MR. Psychological barriers among dental patients during the covid-19 crisis. Rawal Med J. 2021;46(1):7–10.
16. Carrillo-Diaz M, Lacomba-Trejo L, del Valle-González A, Romero-Maroto M, González-Olmo MJ. Anxiety and facial self-contacts: possible impact on COVID-19 transmission in dental practice. BMC Oral Health [Internet]. 2021;21(1):1–9. Available from: https://doi.org/10.1186/s12903-021-01564-6
17. Saleem Z, Majeed MM, Rafique S, Siqqiqui Z, Ghandhi D, Tariq H, et al. COVID-19 pandemic fear and anxiety among healthcare professionals in Pakistan. 2020;1–17.
18. Arslan S, Ertaş ET, Ülker M. The relationship between dental fear and sociodemographic variables. Erciyes Tip Derg. 2011;33(4):295–300.
19. Martina S, Amato A, Faccioni P, Iandolo A, Amato M, Rongo R. The perception of COVID-19 among Italian dental patients: an orthodontic point of view. Prog Orthod. 2021;22(1):0–7.