

## ORIGINAL ARTICLE

**Dental Anxiety, Smoking and Snuff Use among Dental Patients**

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**ABSTRACT**

**Background and Aims:** Dental anxiety often causes psychological problems including the fear that have a negative impact on dental treatment. Periodontal health and dental deteriorating might be caused by the patient's interference with dental fear. The current study aims to evaluate dental anxiety, smoking and snuff use in dental patients.

**Methods:** One hundred eighty consecutive dental patients with mean age  $\pm$ SD 31.45 $\pm$ 13.75 were investigated for dental anxiety, smoking, and snuff use. The evaluation of dental anxiety was measured with the specific question "Do you feel any type of anxiety while visiting the dentist?" and their answers were given as follows: "Absolutely not", "Somehow" and "Extreme fear". Tobacco use was investigated with the question "Do you smoke or take snuff?" with the alternate replies "Absolutely not", "regularly on a daily basis" and "occasionally". Chi-square test and multiple regression analysis were carried out in statistical analysis using SPSS version 20.

**Results:** Among one hundred eighty dental patients, higher dental anxiety was reported in 32 (17.8%) being common among women (71.9%) than men (28.1%). General mood and social situation was reported negative in 9 and 36 patients respectively. It was observed that tobacco use on routine a basis was more common among men (8.5%) than women (1.5%). Age played key a role in dental fears among patients. Patients of young age feel more anxious than mature or older aged patients. Higher dental anxiety and fear was observed in those dental patients who used snuff on a regular basis compared to occasional and no users at all while controlling for age, social status, and general mood. It was observed that chain smokers feel more anxious compared to occasional or no smoking at all, when smoking was added to the model and asked the participants about their visits to the dentists.

**Conclusion:** Our study findings were common vulnerability factors among dental patients related to dental anxiety or fear, smoking, and snuff use. The reason for patients' anxiety was found to be the fear of pain which was more common among women compared to men. Also, Regular tobacco users felt more anxious than occasional or no users at all. Hence, dentists should focus on anxiety alleviation among patients while treatment and follow-up call for maintenance.

**Keywords:** Dental anxiety, Tobacco use, Dental fear

**INTRODUCTION**

Psychological problems to some individuals are caused by dental fear vulnerability as reported in various studies [1-3]. People with high dental fear are more susceptible to psychological problems such as mood disorder, tobacco use, and anxiety complaints compared to lower dental fear levels [4, 5]. These problems were found in both the young and adult populations. Maintenance, recurrence, and onset of psychological problems could be better understood by adopting cognitive vulnerability. Tobacco and nicotine dependence reported the risk indicators for psychopathology [6, 7]. Individuals might face similar problems related to smoking and anxiety [8-12]. A high rate of anxiety was seen among young and adult patients who were smoking on regular a basis compared to no-smokers. The male population was more anxious than women [13]. Similarly, higher dental fears were reported among snuff users compared to occasional and not at all users. Similar to smoking, psychological problems are caused by snuff usage among dental patients [14, 15]. Smokers had a higher proportion in terms of depression compared to non-smoker [16]. Other studies reported more anxiety in smokers than a non-smoker [17] just like dental fears [18].

Socio-economic status, age, and gender had significant influence over tobacco usage and dental fear association. Women suffer in half proportion compared to men regarding smoking disorder as found by various consistency studies [19-21]. In addition, low socioeconomic status people had a higher prevalence of smoking as shown in the study [22]. Comparing dental fear among women, young age patients, and individual education, it has been found that lower educational level, women and young age patients felt more dental fear [23]. The socioeconomic status indicator was educational level. Smoking, dental fear, and smokeless tobacco users had a greater association with psychological problems. But very few studies were conducted on their association. Differences in socioeconomic status and age regarding dental fears [24], smoking [25], and snuff users were reported in young and aged people. The current study aims to determine dental anxiety, smoking, and snuff use in dental patients. According to our study hypothesis, dental fear is more common among tobacco users and high dental fear among regular chain smokers and snuff takers compared to non-users.

**MATERIALS AND METHODS**

This cross-sectional study was conducted on dental patients for dental anxiety, smoking, and snuff use in dental department Fatima Memorial hospital, Lahore during the period from December 2020 to February 2021. The consent form was taken from each individual prior to conducting the study, Ethical approval was taken from the ethical board of the institution. A questionnaire to each participant was provided with multiple choice of dental fear, regular tobacco usage, and smoking habits. One hundred eighty consecutive dental patients with mean age  $\pm$ SD 31.45 $\pm$ 13.75 were investigated for dental anxiety, smoking, and snuff use. The evaluation of dental anxiety was measured with the specific question "Do you feel any type of anxiety while visiting the dentist?" and their answers were given as follows: "Absolutely not", "Somehow" and "Extreme fear or often". Tobacco use was investigated with the question "Do you smoke or take snuff?" with the alternate replies "Absolutely not", "regularly on a daily basis" and "occasionally".

A single question was set for dental fear assessment among dental patients. The question was based on their dental fear while visiting the dentist with answers provided as follows: "not at all", somewhat, and "often". High-level fear was referred to "often" and lower level to somehow and not at all. These levels of categorization were done due to the severe consequences of high dental fear regarding dental health. Snuff usage and smoking regularities were measured with question "do you smoke or use snuff" with alternate replies "often", "not at all", and occasionally. Snuff in this study referred to all types of smokeless tobacco. Six groups were made among dental patients for analysis purposes which are <19, 20, 21-25, 26-30, 31-40, > 40 years. Association of dental anxiety, smoking, and snuff was measured in each age group. A common question was asked to measure the mode in general "how is your mode?" provided with a scale -15 to +15 where positive value represents positive mode and vice versa. Socio-economic status was measured with questions about their feelings in social situations. The range of value -10 to +10 was set as in alternate replies. Positive, neutral, and negative feelings were set according to their value.

**Statistical Analysis:** A bivariate model was used to measure the associations among dental anxiety, smoking, and snuff usage. The Chi-square test was used for statistical significance evaluation in bivariate regression. Controlling the age and gender effect, multiple regression analysis was carried out for associations among dental anxiety, smoking, and snuff usage. Tobacco usage, socio-economic status, and general mood were added to the model along with repeated analysis. Age was considered as a continuous variable in the multiple regression model. SPSS version 20 was used for analysis and p-value <0.05 was considered as statistical significance.

**RESULTS**

Among one hundred eighty dental patients, higher dental anxiety was reported in 32 (17.8%) being common among

women (71.9%) than men (28.1%). The general mood and social situation were reported negative in 9 and 36 patients respectively. It was observed that tobacco use on a routine basis was most common among men (8.5%) than women (1.5%). Age played a key role in dental fears among patients. Patients of young age feel more anxious than mature or older aged patients. Higher dental anxiety and fear were observed in those dental patients who used snuff on a regular basis compared to occasional and no users at all while controlling for age, social status, and general mood. It was observed that chain smokers feel more anxious compared to occasional or no smoking at all when smoking was added to the model and asked the participants about their visits to the dentist. Six groups were made among dental patients for analysis purposes which is <19, 20, 21-25, 26-30, 31-40, > 40 years as shown in Table 1. Association of dental anxiety, smoking, and snuff was measured in each age group.

Table 1. Age wise distribution among total (180) dental patients

Age (years)	Frequency n	Percentage (%)
< 19	17	9.4
20	31	17.2
21-25	47	26.1
26-30	53	29.4
31-40	21	11.7
>40	11	6.1

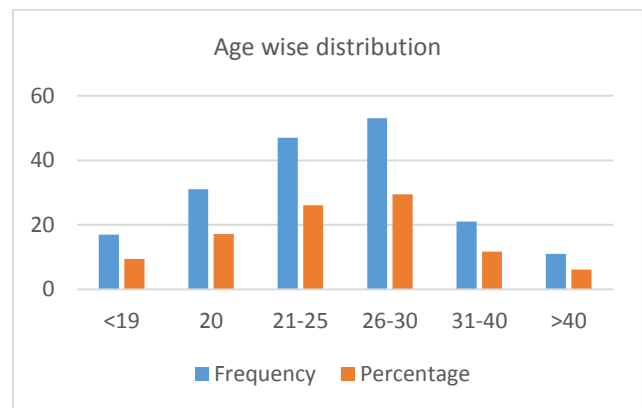


Figure 1. Age wise distribution among total (180) dental patients

People with regular tobacco users had high dental fear compared to occasional and no-users at all. In addition to the general mode, social status, gender, and tobacco use smoking were added to the model. It was observed that chain smokers felt more anxiety than occasional and non-users. Dental fear had significant effects on dental fear because the prevalence of dental fear was less in positive mood than in negative mood of individuals as reported in Table 2. Tobacco use was added to the model and higher dental fear were found among regular tobacco users compared to occasional or not at all users. No association was found between social status feeling and dental fear according to the regression model.

Table 2. Regression analysis results

Parameters	OR	CI 95%	P-value	OR	CI 95%	P-value
Tobacco Use	2.00	1.4-3.00	<0.001			
General mode	1.3	1-2.2	0.066	1.4	1-2.1	0.033
Social situation	1.1	0.9-1.5	0.140	1.1	1-1.5	0.105

## DISCUSSION

A significant association was found between dental fear and other factors such as social status, feelings, gender, age, general mode, and tobacco use. Among regular tobacco users, high dental fear was observed. Generally, smoking has been associated with dental fear and anxiety [26]. High dental fear was observed in regular tobacco users compared to non-users or occasional users. The trend or proclivity of higher anxiety causes smoking and tobacco use as a self-treatment anxiolytic [27]. A significant association was found between dental fear and other factors such as social status feelings, gender, age, general mode, and tobacco use for short term anxiety may be reduced among tobacco users. However, predisposed people using tobacco had a higher proportion in development of the anxiety and dental fear over time. Anxiety may be maintained with symptoms of chronic withdrawal and emotional or somatic precipitation possibilities [28]. Interestingly, the higher prevalence of tobacco among people with harmful and hazardous smoking and snuff taking, and dental fear were observed [29]. Dental fear may be mediated by tobacco use. No clear results and their interpretation could be made because of the study's cross-sectional nature. More studies need to be conducted to know the mediating effect of tobacco for dental disorders due to other drugs. Among regular tobacco users, high dental fear was observed.

Individuals with dental fears faced vicarious experience for treatment for controlling dental fear development than psychological fear. Likelihood of developing anxiety and smoking behaviors increases by smoking and dental fear vulnerability. Individuals having dental phobia are susceptible to these sets of factors. Psychological problems and common behavior patterns were observed among people who used smoking and taking snuff as a self-medication [30]. Smoking pathogenesis was highly dependent on genetic factors as reported by various researchers [31] and significant heritability of nicotine dependency and genetic factors affect dental fear [32]. Dental fear, smoking and tobacco use had common vulnerability influences and characterized as constitutional vulnerability [33].

Higher dental fears were observed among negative mood people compared to neutral or positive one when general mood was taken into account with gender, tobacco use, age and social status feelings. Mood disorders were measured with the nature of general mood. Our study reported that high dental fear exists among high level depressed people compared to low depressed people as found by many other researchers [34]. No association between dental fear and social status was found in our study. Social status based on performance and small group talk have shifted interaction from social status and its feeling was determined by oral presentation. Social behavior could be greatly influenced by social status variation [35]. Inadequate results were found when

association between social status and dental anxiety was done. Reliable and validated data was shown among adult populations in order to measure dental phobia which is the strength of this study [36]. The limitations of our study includes small sample size and most of the young population were neglected as well as health inquiry was not responded to in half of the participants.

## CONCLUSION

Our study findings were common vulnerability factors among dental patients related to dental anxiety or fear, smoking, and snuff use. The reason for patients' anxiety was found to be the fear of pain which was more common among women compared to men. Also, Regular tobacco users felt more anxious than occasional or no users at all. Hence, dentists should focus on anxiety alleviation among patients while treatment and follow-up call for maintenance. Our study found that regular tobacco users had higher dental fear than occasional or not at all users. When treating fearful patients, dentists should consider their vulnerability to dental fear, as well as their use of tobacco due to health problems caused by various risk factors. Dentists performed brief intervention for tobacco that could raise anti-smoking efforts. The dentist should assist psychologists and general practitioners in order to help people who smoke or are afraid of the dentist.

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