

# Relationship between Tobacco Smoking and Dental Fear among Adolescents of 15-18 Year Age in Pakistan

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## ABSTRACT

**Aim:** To assess the relationship between dental fear and smoking among adolescents of 15-18 year of age in Pakistan

**Method:** This study was a prospective cross-sectional survey design which was conducted in Lahore. After taking permission from the school's head, data was collected from the male students of grade 9<sup>th</sup>, 10<sup>th</sup>, 11<sup>th</sup> and 12<sup>th</sup> using questionnaire and later on one of their parents was approached to fill the questionnaire. For this purpose, only one school was targeted. Sample size was of 200 participants whereas parents of all the student participants participated in the study.

**Results:** The results of chi-square revealed that dental fear was quite high among male students, occasional use of tobacco, and use of mouthwash minimum thrice a day. It was also found that students of those parents whose occupational level was low reported higher dental fear.

**Conclusion:** It was found that adolescent male students were found to have more dental fear who smoke tobacco as compared to those who do not smoke. It is important to ask about smoking habits as well as dental fear when examining oral health maintenance of adolescents.

**Keywords:** Smoking, Tobacco, Adolescents, Dental fear

## INTRODUCTION

Dependency of nicotine and smoking has been found affecting the general health as well as oral health<sup>1,2</sup> and a link has been explored between psychological well-being and smoking, for instance, general anxiety<sup>3</sup>. Among smokers, anxiety has been more commonly reported as compared to non-smokers which has been found more among adolescents<sup>3,4</sup>. Dental fear has also been reported more among smokers of higher age as compared to non-smokers<sup>5,6</sup>. On the other hand, this relationship of dental fear due to smoking has not been explored among teenagers. Majority of the smoking cases reported that they started smoking in their adolescent period<sup>7</sup>. It was found that psychopathological vulnerability has a link with smoking, as well as dependency of nicotine which is later associated with dental<sup>8,9</sup>. These findings signify that dental fear is associated with smoking which quite possibly shared susceptibility reasons. The understanding of these reasons could be explained by cognitive vulnerability model which is responsible for the onset of the psychological problems as well as provides the ways of maintaining mental health<sup>10</sup>.

Gender, age, oral health maintenance as well as socio-economic status affect the relationship between smoking and dental fear. People with low economic status are found more involved in smoking habits.<sup>11</sup> It was also found that individuals of younger age, females and those

who have low educational levels are higher in dental fear than males, individuals of old age, and those who have higher educational levels<sup>8,12,13,6</sup>. Less frequent brushing habits were reported by smokers as compared to nonsmokers<sup>14</sup>. Moreover, poor level of oral hygiene habits were reported by individuals with higher dental fear levels as compared to the individuals with low levels of dental fear<sup>6</sup>. But, the discrepancies are found with these outcomes<sup>13</sup>.

Therefore, this study aimed to assess the relationship between dental fear and smoking among adolescents of 15-18 year of age in Pakistan. So, it was hypothesized that dental fear is more likely to be reported by tobacco smokers as compared to non-smokers.

## METHODS

This study was a prospective cross-sectional survey design which was conducted in Lahore. After taking permission from the school's head, data was collected from the male students of grade 9<sup>th</sup>, 10<sup>th</sup>, 11<sup>th</sup> and 12<sup>th</sup> using questionnaire and later on one of their parents was approached to fill the questionnaire. For this purpose, only one school was targeted. Sample size was of 200 participants whereas parents of all the student participants participated in the study.

The questionnaire comprised of statements asking about use of tobacco, dental fear and habits of maintaining oral health. The questionnaire used was pre-validated. The questionnaires included questions on dental fear, tobacco use and oral health-related habits. One of the parents

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completed the questionnaire at home and reported the occupations of both parents. The questions included in this study have been found to be reliable and valid.<sup>15</sup>

To measure the level of dental fear, only one question was asked which had six response options; 1 means not afraid, 2 means a little afraid, 3 means afraid to some degree, 4 means quite afraid, 5 means very afraid and 0 means I don't know. Participants who responded as "quite" or "very afraid" were categorized of having dental fear, whereas those who responded "I don't know" were excluded.

To assess the usage of tobacco in terms of smoking, eight response options were given which were "3-4 times per day", "twice a day", "once a day", "2-3 times per week", "once a week", "twice per month", "less often" and "never" were dichotomized as 0=never and 1=occasionally or more often.

Habits of maintaining oral health were assessed with survey questionnaire rated on 7-point Likert scale, "3-4 times per day", "twice a day", "once a day", "2-3 times per week", "once a week", "twice per month", and "less often" or "never".

Habits of maintaining oral health were catered as dichotomous data as 0=good or 1=poor which was grounded on the Current Care Guidelines. Teeth brushing with fluoride toothpaste, twice a day, usage of mouthwash three times a day with no usage of smoking was considered as Good habits. The occupation level of parents was taken as 0 means both parents have low level of occupation, 1 means one parent with high occupation level and other have low occupation level, whereas 2 means both parents have high level of occupation.

Data was entered and analyzed in SPSS version 23.0. Chi-square test was used to assess the relationship between parents' occupational level, oral health habits, dental fear, and tobacco use.

## RESULT

The results of chi-square revealed that dental fear was quite high among male students, occasional use of tobacco, and use of mouthwash minimum thrice a day. It was also found that students of those parents whose occupational level was low reported higher dental fear.

	Dental Fear			Tobacco Use		
	Yes	No	Sig.	Yes	No	Sig.
Dental Fear at higher level				30.5%	10.7	.001
Occasional use of tobacco smoking	47.8%	36.9%	.001			
Brushing of teeth twice a day	46.4%	47.2%	.700	42.2	48.5	.005
Mouthwash use thrice a day	25.6%	33.2%	.003	22.4	38.2	.010
<b>Parents Occupation</b>						
Both parents at Low level	66.6%	57.2%	.017	65.5%	50.0%	.001
One parent at High level	15.0%	19.6%		12.1%	34.7%	
Both parents at High level	18.4%	23.2%		22.4%	15.3%	

## DISCUSSION

Dental fear was found higher among adolescents (males) who were using tobacco in smoking as compared to the male students who do not smoke which were found in accordance with the studies which reported higher dental fear among university going students<sup>6</sup> and adults<sup>5</sup> who use tobacco for smoking.

Generally, evidence suggested that tobacco smoking as well as dependency on nicotine is interlinked with higher level of anxiety leads to psychological problems.<sup>3</sup> The relationship of tobacco smoking, and dependency on nicotine with level of anxiety could be clarified at 3 levels. Firstly, tobacco smoking along with the urge of taking nicotine results in the higher level of anxiety, the inverse connotation, or a collective susceptibility model which means that a single aspect or factors in collective aggravate tobacco smoking, dependency on nicotine and level of anxiety<sup>3</sup>. The current study focused on four levels of tobacco users, i.e., daily users, tobacco users who use it once a week, two times every month or sometimes. The tobacco users included in the study were of all categories, i.e., with long smoking history as well as new users while keeping in mind that psychological disorders may share collective susceptibility influences,<sup>10</sup> there might be some legal vulnerabilities among some male adolescents which have developed the tobacco smoking habit, dependency on nicotine and increased level of anxiety led them to develop dental fear. Moreover, some studies reported the

genetic impact in the dental fears aetiology<sup>16</sup> as well as association of smoking behaviors with genetic alterations<sup>17</sup>. There may be common vulnerability in terms of some communal genetic markers behind tobacco use and dental fear. But, longitudinal studies are required to evaluate the fundamental trails between tobacco smoking and dental fear while considering the impact of general anxiety on developing the habit of tobacco smoking.

## CONCLUSION

It was found that adolescent male students were found to have more dental fear who smoke tobacco as compared to those who do not smoke. It is important to ask about smoking habits as well as dental fear when examining oral health maintenance of adolescents. Dental fear treatment and brief intervention for tobacco should be given to the patients who report dental fear<sup>1</sup>. Further research is required to assess the common factors associated with tobacco smoking and dental fear.

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