Effects Of Smoking on Oral Health of University Students In Hayatabad Peshawar.

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Abstract

Introduction: Smoking is one of the least harmful sources of disease and death worldwide. To determine the impact of tobacco smoking on oral health among students and the relationship between smokers and non-smokers. to assess the oral health and brushing habits of several departments' students based on age (16–20 years, 21–25 years, 26–30 years).

Material and Methods: A total of 125 students voluntarily participated in the descriptive cross-sectional study. They filled out a pre-design questionnaire with thorough information, and data were gathered from several universities in Hayatabad, Peshawar.

Results: A study involving 125 students was carried out to investigate the impact of smoking on dental health. A total of 125 samples were gathered from students enrolled in various programs, including radiology, dental hygiene, medical lab technician, and other programs. There are 22.4% female students and 77.6% male students among them. There are 30 smokers and 67 non-smokers among the male population, while there are only 27 non-smokers and 1 smoker among the female population. 6.4% of all pupils do not brush, 17.6% brush once a day, and 33.6% brush twice or three times a day.

Introduction:

Smoking causes thousands of early deaths annually and is linked to other major diseases, including as cancer, heart and lung disorders, low birth weight, and many other health issues.(1) In addition to causing tooth discolouration, periodontitis, decay, taste alterations, and nicotine stomatitis, smoking and chewing tobacco also increases the risk of oral health problems.(2,3)

In addition to causing tooth discolouration, periodontitis, decay, taste alterations, and nicotine-induced stomatitis, smoking and chewing tobacco also increases the risk of leukoplakia and cancer, which have a significant morbidity and death rate.(4-6) Given that tobacco products are more dependent on abuse than convenience of use, it is especially critical to keep in mind that their negative effects are dose-structured.(7)

Smokers also have higher dental calculus deposits, even though their levels of tooth plaque vary. Although trends are shifting toward lessening inflammation, the effects of smoking on gum irritation are unclear (25–30).(8,9)

Numerous studies have demonstrated that smoking is the cause of periodontal disease. The patient's knowledge of the effects of smoking on periodontal tissue is evaluated throughout this examination.(10,11) The negative effects of smoking include tooth discolouration, diminished taste and smell perception, melanosis, smoker's palate, oral candidiasis, and dental caries.(12) Smoking can exacerbate periodontal disease and reduce the efficacy of almost all treatments for the condition. Additionally, the primary cause of precancerous lesions and mouth cancer is tobacco use.(13) Smoking during pregnancy can lead to a number of pregnancy-related issues, including low birth weight, preterm birth, pregnancy difficulties, and perinatal death. The risk of tobacco-related illnesses is correlated with the amount of tar and nicotine present in tobacco products.(14)

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Material and Methods:

A total of 125 students from various universities agreed to take part in the research. This cross-sectional study was carried out for description. The impact of smoking on dental health among students was examined in this study. Dental caries, gum expansion, calculus, poor breath, dental plaque, tooth stains, and their relationship to brushing habits are all present in students. The study will run from February 10, 2021, to July 15, 2021. The sample size, about n=125, was determined using the Raosoft Sample Size Calculator with a 95% confidence interval and a 5% margin of error. The data were analysed using SPSS software version 25 to determine the statistical significance of the current study. Convenient sampling was used to collect data.

The institution's ethical committee provided ethical approval. Prior to visiting various Universities for data collection, we received formal consent from our study supervisor. For the purpose of gathering data, a pre-procedural consent was

obtained from each institute's head. Prior to providing a questionnaire for completion, each subject was asked to provide written informed consent. The frequencies, tables, and charts were determined using the SPSS version 25 program. At last, a composite project report containing the data was being presented.

Inclusion Criteria:

Age range: 16–30 years. Both non-smokers and smokers were included. Male participants in the study were those who had discoloured teeth. Students from semesters four through ten were included. Bad breath and teeth stained black. There were students that were male and female. Students who voluntarily participated and completed the survey.

Exclusion criteria:

Age more than thirty but less than sixteen. Gingivitis, periodontitis, and pulpitis are diseases of the oral soft tissues. Students that took high dose tablets resulted in teeth stained black.

Results:

A total of 125 samples was collected from students belong to different disciplines like Bs- Dental 23%, Bs-Radiology 16%, Bs-Medical Lab Technician 13.6% and students from other fields such as MBBS, BDS, Engineering 47.2%. Among these students 31 are smokers and 94 Are non-smokers. In this study the male dominates the females regarding the frequency.

		Smoker		Non-Smoker		
Variable	**Parameters**	Frequency	Percent	Frequency	Percent	**Total%**
1. Gender	Male	30	24%	67	53.6%	77.6%
	Female	1	0.8%	27	21.6%	22.4%
2. Age	16-20 years	5	4%	19	15.2%	16%
	21-25 years	19	15.2%	57	45.6%	60.8%
	26-30 years	7	5.6%	18	14.4%	20%
3. Marital Status	Yes	8	6.4%	26	20.8%	27.2%
	No	23	18.4%	68	54.4%	72.8%
4. Education level	BS-Dental	3	2.4%	26	20.8%	23.2%
	BS-Radiology	9	7.2%	11	8.8%	16%
	BS-MLT	1	0.8%	16	12.8%	13.6%
	Others	18	14.4%	41	32.8%	47.2%
5. Brushing Frequency	Not brushing	4	3.2%	4	3.2%	6.4%
	Not daily	7	5.6%	15	12%	17.6%
	Once a day	13	10.4%	40	32%	42.4%
	2-3 daily	7	5.6%	35	28%	33.6%
6. Plaque on Teeth	Yes	14	11.2%	19	15.2%	26.4
	No	15	12%	63	50.4%	62.4%
	Don't know	2	1.6%	12	9.6%	11.2%
7. Calculus on Teeth	Yes	17	13.6%	21	16.8%	30.4%
	No	13	10.4%	63	50.4%	60.8%
	Don't know	1	0.8%	10	8.0%	8.8%
8. Stain on Teeth	Yes	12	9.6%	24	19.2%	28.8%
	No	19	15.2%	62	49.6%	64.8%
	Don't know	0	0%	8	6.4%	6.4%
9. Bad Breath	Yes	16	12.8%	22	25.6%	38.4%
	No	14	11.2%	64	51.2%	62.4%
	Don't know	1	0.8%	8	6.4%	7.2%
10. Gum Enlargement	Yes	12	9.6%	9	7.2%	16.8%
	No	15	12%	69	55.2%	67.2%
	Don't know	4	3.2%	16	12.8%	16%
11. Gum bleeding	Yes	15	12%	31	24.8%	36.8%
	No	14	11.2%	62	49.6%	60.8%
	Don't know	2	1.6%	1	0.8%	2.4%
12. Dental Caries	Yes	17	13.6%	40	32%	45.6%
	No	11	8.8%	47	37.6%	46.4%
	Don't know	3	2.4%	7	5.6%	8.0%
13. Smoking cause cancer	Yes	26	20.8%	82	65.6%	86.4%
	No	0	0%	6	4.8%	4.8%
	Don't know	5	4%	6	4.8%	8.8%
14. Change oral taste	Yes	22	17.6%	69	55.2%	72.8%
	No	1	0.8%	8	6.4%	7.2%
	Don't know	8	6.4%	17	13.6%	20%

1.1Comparison between Students belongs to different disciplines and the Smoking habit:

The table (1.2) shows the distribution of students among different disciplines such as Bs-Dental Bs-Radiology, Bs-Medical Lab Technician and students belong to other fields. There is statistically difference exist between these groups as we found the P= 0.008.

Are you a Smoker?	Pearson			
Educational level		Yes	No	Chi-Squared Test
	BS-Dental	3	26	P=0.008
	BS-Radiology	9	11	
	BS-MLT	1	16	
	Others	18	41	

Table 1.2 Shows the distribution of Students among different Disciplines

Are you a Smoker?	Pearson			
Frequency of Brushing Daily		Yes	No	Chi-Squared Test
	Not Brushing	4	4	P=.187
	Not Daily	7	15	
	Once Daily	13	40	
	2-3 Daily	7	35	

Table 1.3 Comparison between frequency of teeth Brushing and Smoking habit.

The majority of smokers did not practice brushing their teeth within a set period of time. Of the 31 active smokers who smoked on a daily basis, only 7 had a routine of brushing their teeth twice or three times a day. The other 24 students either had no brushing habits at all, some of them only brushed their teeth once a week, or none at all.

The chi-square test revealed a statistically significant correlation between the students' smoking habit and the amount of plaque on their teeth. Of the 125 participants, 29 were found to have dental plaque, and the remaining 94 pupils did not have any dental plaque. (Table 1.4)

Are you a smoker?	Pearson			
Do you have Plaque on teeth?		Yes	No	Chi-Squared Test
	Yes	14	19	P=0.022
	No	15	63	
	Don't Know	2	12	

Table 1.4. Comparison between individuals have Plaque on teeth with Smoking habit

Are you a smoker?	Pearson			
Do you have Dental calculus?		Yes	No	Chi-Squared Test
	Yes	17	21	P=0.003
	No	13	63	
	Don't Know	1	10	

Table 1.5 Shows an association between Smoking habit and Dental Calculus.

Smoking is considered to be a major risk factor for oral cancer as well as dental complications such as calculus. Therefore, we hypothesized that smoking affects the normal morphology of teeth. Statistical analysis showed that there is a positive relationship between calculus and smoking habits.

As smoking has a negative effect on tooth discoloration, a statistically significant p-value of less than 0.05 was considered. However, the study found no significant association between tooth discoloration and smoking. A p-value of less than 0.05 is considered statistically significant.

Are you a smoker?	Pearson			
Do you have Stain on teeth?		Yes	No	Chi-Squared Test
	Yes	12	24	P=0.127
	No	19	62	
	Don't Know	0	8	

Table 1.6. Comparison between Stain on Teeth and Smoking habit.

There is a strong association between smoking and bad breath. Upon statistically analysis we found the p value 0.011 which is statistically significant So, we accept our alternate hypothesis and that is smoking promotes the bad breath character of one's oral health.

Do you have Bad Breath (Halitosis)?		Are you a smoker? Yes	No	Pearson Chi-Squared Test
	Yes	16	22	P=0.011
	No	14	64	
	Don't Know	1	8	

Table 1.7. Association between Smoking and Halitosis.

The p value is equal to 0.372 which is far greater than 0.05 and test is considered to be statistically non-significant. In our survey the smoking habit did not affect the teeth health, by causing minimum dental caries in the teeth.

Do you have dental caries?		Are you a smoker? Yes	No	Pearson Chi-Squared Test
	Yes	17	40	P=0.372
	No	11	47	
	Don't Know	3	7	

Table 1.8. Relation between Dental Caries and Smoking habit.

Here in this we have no positive relation between oral cancer and smoking habit. 71% of participate say that smoking cause oral cancer and only 3% say No and 26% Don't know about the oral cancer that cause from smoking.

Chi-Squared		Are you a smoker? Yes	No	Pearson Test
Smoking causeoral cancer?	Yes	22	69	P=0.445
	No	1	8	
	Don't Know	8	17	

Table 1.9. Relation between Oral Cancer and Smoking habit.

Discussion:

There is a significant different in oral health status between those students which are smoker and non-smoker including bleeding on brushing, tooth stains, bad breath, Dental caries, Dental plaque and Gum enlargement. Most of university students who smoke cigarette were males. Smoking had a significant association with bleeding on gum P=0.05, Dental calculus P=0.003, tooth stains P=0.127, bad breath P=0.011, Dental caries P=0.372, Dental plaque P=0.022, enlargement of gum P=0.001, smoking cause oral cancer P=0.445, age and Gender with P P<0.003 or P<0.005 respectively.

While in a study, a total of 382 undergraduate students (female: 244, 63.9%) participated with ages ranging from 17-31 years. Most respondents (204, 53.4%) were from BDS. About two-third participants (241, 63.1%) experienced gingival bleeding. Most participants (260, 68.1%) believed there was a relation between the gingival disease and systemic disease.(15)

A population surveillance group screened 19 smokers, 28 ex-smokers, and 44 non-smokers aged 20 to 60 years. The widening gap between smokers and nonsmokers over time means that the decline in smoking rates is slowing as increasing costs allow smokers to achieve peak bone values.(16)
Most oral malignancies, oral mucosal lesions, periodontitis and post-periodontitis treatment damage repair, gingival recession, and coronal and root caries are all associated with smoking. There is evidence that smoking increases the risk of oral disease and that stopping smoking can minimize its harm. Smoking has been shown to be a risk factor for most oral malignancies and leukoplakia.(17)

In Finland, most oral cancers progress very slowly and have a very low incidence. An estimated 1.3% and 0.8% of oral cancers in men and women, respectively, are duodenal cancers. Former smokers have a lower risk of oral cancer than current smokers, but within 10 years of quitting, their risk of oral cancer increases threefold compared with nonsmokers.(18)

Smoking is a known risk factor for dental caries, but the processes that cause it have not been studied. The sugar content of herbal tobacco can reach up to 20%. Furthermore, up to 4% sugar and 13% sweeteners, respectively, are intentionally added during the tobacco manufacturing process. The sugars used as additives in cigarettes consist of glucose, fructose, invert sugar (a polymer of glucose and fructose), and sucrose.(19)

Similarly, smoking may promote changes in the dental plaque microbiome, especially periodontal pathogens, and affect the host response to plaque.(20)

Conclusion:

Tobacco has adverse effects on oral health. Smokers have significantly higher incidence of oral cancer, oral mucosal lesions, periodontitis, dental caries and implant failure. Dental offices offer a unique opportunity to provide smoking cessation support. Dental providers can refer patients to free, evidence-based treatment options, such as telephone quit lines, quit sites and telemedicine, or offer brief educational interventions, behavioral counseling and pharmacotherapy, including nicotine replacement therapy. The most common barriers dentists face in providing tobacco counseling are lack of time and training. Given the myriad roles dental health care providers can play in smoking cessation, additional conferences, workshops, and research are needed to motivate and inform dental health care providers about smoking cessation services and to develop interventions targeted to dental practices.

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Author Contributions

1. Sahab Ullah- Conceptualization and Methodology of study
2. Gul Rukh- Literature review and Manuscript writing
3. Arhum Adnan- Manuscript review
4. Ibrar Ahmad- Data Analysis and data interpretation