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ORIGINAL ARTICLE

Association of Awareness in Medical and Dental Students regarding Adverse Effects of Smoking on Periodontal Health

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ABSTRACT

Aim: To study the association of awareness in medical and dental students regarding the adverse effects of smoking on periodontal health.

Methodology: A data was gathered from 290 college students through a simple random sampling technique by using a Cross-sectional study. The questionnaire was split into two sections where data on demographics and questions on knowledge of the effect of smoking on periodontal health were gathered from the participants. The study was started after getting institutional ethical approval. All participants verbally consented, and confidentiality was maintained. A p-value of 0.05 was regarded as significant, with a confidence interval of 95%. The Chi-square test with SPSS version 26 was used to examine the statistical significance of various associations.

Results: A total of 290 students completed the questionnaire and out of which 140(48.3%) were BDS students while 150 (51.7%) were MBBS students. The results obtained on awareness regarding the effects of smoking on periodontal health showed that gum diseases (0.003), halitosis (0.010), delayed wound healing (0.009), altered taste sensation (0.001), Oral cancer(0.013), mouth ulcers (0.036) were significantly associated with the use of smoking. The results emphasized to conduct anti-smoking awareness in students by conducting oral health education programs to persuade individuals to give up the smoking habit as many of the students were not willing to quit smoking despite knowing the harmful effects of smoking. Therefore, use of tobacco must be banned and it should be addressed at primary preventive level with a focus on quitting the tobacco which will further reduce the disease burden on the healthcare system related with smoking.

Conclusion: There was a significant association between awareness regarding the effects of smoking on periodontal health which showed that gum diseases, halitosis, delayed wound healing, altered taste sensation, oral cancer, and mouth ulcers are related to smoking.

Keywords: Oral Cancer, Gum disease, Mouth ulcer, Awareness, Halitosis, Tobacco, Smoking, Periodontal health.

INTRODUCTION

Tobacco is regarded as the main hazard element for the world's burden of diseases as it impacts the immunity of individuals. The Prevalence of use of tobacco is 31.5% in Pakistan in 2010 whilst periodontitis is 30% as per WHO. Smoking has been established as a salient hazard aspect for various systemic diseases as well as for periodontal disease and is harmful to periodontium safety according to epidemiological studies[1]. Any form of tobacco (smoked or smokeless) is related to exclusive diseases like oral cancer, precancerous lesions, periodontal disease, tooth decay and halitosis and systemic diseases like cardiac disease, and lung illnesses as well[2].

Adverse effects of tobacco use additionally provoke gingival recession, staining of the teeth, benign mucosal conditions, and precancerous and malignant lesions which result in teeth loss. Some of the most crucial reasons due to which an adolescent initiates smoking are commercials of cigarettes, stress, low self-esteem, poor academic performance, the incidence of smoking amongst parents, use of cigarettes by different household members, friends, and a team of workers at college which similarly will increase the hazard of creating periodontal disease. Smoking no longer fully influences the health of an individual negatively however additionally will amplify the healthcare expenditure and prices in the form of loss of productiveness and income of the households which in addition will expand the economic burden on the healthcare of any country[3].

Smoking is inclined to grow the probability to boost greater periodontal disease and showed poor response to both surgical and nonsurgical periodontal treaments[4]. Moreover, the onset, severity, and development of the periodontal disorder affect the oral health of an individual [5,6]. Calculus and plaque are presented greater in people who smoke and additionally increase the chance of growing gingivitis and periodontitis. Furthermore, the function of dentition and the esthetic is additionally affected by periodontal disease, therefore affecting the quality of life and loss of teeth in individuals[7,8]. Adolescents start smoking at an early age as they got addicted to nicotine due to hormonal and cognitive changes that occurred at this age. The brains of adolescents at some point of prefrontal cortex maturation may also negatively affect everyday maturation, cognitive ability, attention, intellectual health, personality and so have greater nicotine-induced enjoyable outcomes from smoking than adults. Therefore, amplify nicotine dependence in young people might also result in the persevered use of cigarette smoking, although understanding the unfavourable consequences of smoking[9]. Moreover, cultural, social and behavioural elements are additionally influenced by smoking in adolescents. Tobacco use not only damages health but additionally will increase the expenses on an individual's family, so there is a need to make effective policies by authorities to reduce the use and availability of tobacco in the country[10]. Furthermore, an effective evaluation of the long-term health outcomes and medical costs of smokers and non-smokers should be compared with the health burden and medical costs caused by smoking and primarily based on such information high-quality Cigarette cessation program should be initiated to assist stop cigarette smoking in teenagers[11].

Smoking has detrimental direct impact on dental health, which has been thoroughly established by decades of extensive research. The awareness regarding harmful effects of smoking has been increased tremendously after Covid-19 era as many smokers developed complications after having Covid. Furthermore, different mass media awareness campaigns regarding harmful effects of smoking were also launched. Therefore, this study is conducted in students to investigate the awareness regarding the adverse effects of smoking on periodontal health.

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METHODS AND MATERIAL

A cross-sectional study was used carried out on medical and dental students in whom information was collected by using a

close-ended questionnaire with ages ranging from 18-25 years. The data was collected by way of the use of a simple random sampling technique. The questionnaire comprising of two sections in which data was gathered about the demographic profile of the college students and different questions associated with the effects of smoking on periodontal health. The questionnaire consists of a demographic profile, which was age, gender and study year.

Several questions were also asked additionally about the awareness of the individual regarding effects on oral health, general health, oral cancer, discolouration, halitosis, cavities, delayed wound healing, changes in the sense of taste and mouth ulcers. Both genders with ages 18-25 years were the inclusion criteria while students other than Dental and Medical students whose ages were less than 18 or more than 25 were excluded from the study. Ethical approval was sought from the Research and Ethical Review Board of the Dental College. Verbal consent was taken from all the participants and confidentiality was ensured. A confidence interval of 95% was established and a p-value <0.05 was considered significant. Descriptive statistics included percentages and frequencies while Chi-Square tests were used to find out the significant association between the variables (P<0.05) by using SPSS version 26.

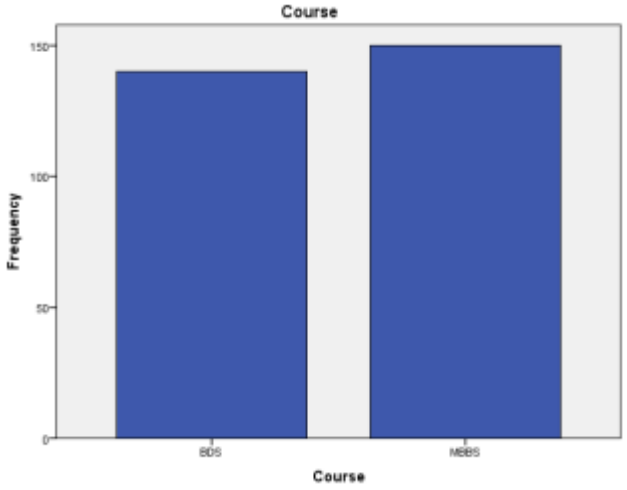
RESULTS

There were 290 respondents out of which 140(48.3%) were BDS students while 150 (51.7%) were MBBS students as shown in Table 1 and figure 1 below.

Table 1: Distribution of the type of students

Type of students	Frequency	Total
BDS	140 (48.3%)	290
MBBS	150 (51.7%)	

Figure 1: Distribution of the type of students



Fifty-two percent of the BDS students and forty-seven percent of MBBS students were aware that smoking had a link with gum diseases with a P-value (0.003). Fifty-one percent of students of BDS while forty-nine percent of students of MBBS were aware that halitosis had an association with smoking and the p-value is statistically significant (0.010). Fifty-four percent of the BDS students and forty-five percent of students of MBBS were aware that smoking is associated with delayed wound healing with a p-value of 0.009 which is statistically significant. Fifty-seven percent of students of BDS while forty-two percent of students of MBBS were aware that smoking was associated with altered taste sensation with a significant P-value of 0.001. Fifty percent of students of BDS while forty-nine percent of students of MBBS were aware that oral cancer was associated with smoking with a significant P-value of 0.013. Fifty-one percent of students of BDS while forty-eight percent of students of MBBS were aware that mouth ulcers had an association with smoking with a statistically significant P- Value of 0.036 (Table 2).

Table 2: Association of awareness regarding adverse effects of smoking on Periodontal Health

Study variables	BDS	MBBS	P value
Gum disease			
Yes	125(52.3%)	114(47.7%)	0.003
No	15(29.4%)	36(70.6%)	
Halitosis			
Yes	131(51%)	126(49%)	0.010
No	9(27.3%)	24(72.7%)	
Delayed wound healing			
Yes	92(54.8%)	76(45.2%)	0.009
No	48(37.2%)	74(60.7%)	
Altered taste sensation			
Yes	92(57.1%)	69(42.9%)	0.001
No	48(37.2%)	81(62.8%)	
Oral cancer			
Yes	135(50.4%)	133(49.6%)	0.013
No	5(22.7%)	17(77.3%)	
Mouth ulcer			
Yes	120(51.3%)	114(48.3%)	0.036
No	20(35.7%)	36(64.3%)	

(*p<0.05 is considered significant)

DISCUSSION

Smoking is a risk factor for adolescents and it is no longer solely associated with lung and cardiovascular disease but additionally with general health. The occurrence of cigarette smoking in the current study in medical students was hundred and 50(51.7%) greater than the BDS college students' one hundred forty (48.3%) which is greater than the medical students (0.9%) in Nigeria.

The distinction in the effects would be due to the large prevalence of smoking in Pakistan than in Nigeria[12].In this study, the students agreed that smoking is related to gum disease, halitosis, and delayed wound healing with P-Value of 0.003, 0.010 and 0.009 respectively which is equal to south Nigeria where smoking is associated with gum disease, halitosis and delayed wound healing with a P-value (0.003)[13].

Another study conducted in Jordan showed that smoking is related to gum diseases (90.3%), halitosis (91.5%), delayed wound healing (64.4%), and oral cancer (85.7%)[14]. Similar results were shown by the study conducted in Saudia Arabia which showed that oral cancer (85.6%), halitosis (89.2%) and mouth ulcers (59.8%) are associated with smoking[15]. These studies showed similar results which would possibly be due to appropriate knowledge and awareness regarding the consequence of smoking and its relationship with periodontal health.

In the current study, the students agreed that smoking is also associated with altered taste sensation, oral cancer and mouth ulcer with a P-Value of 0.001, 0.013 and 0.036 respectively which is in contrast to the study conducted in Malaysia which would possibly be due to the low degree of education regarding detrimental effects of smoking and its relationship with oral cancer, mouth ulcers and altered taste sensation[16].

CONCLUSION

This study shows a positive association of awareness in medical and dental students regarding the adverse effects of smoking on periodontal health. The majority of students were aware of the harmful effects of smoking, but ongoing dental health education campaigns and awareness seminars should be held to further reduce smoking's prevalence in the young generation. These campaigns and seminars should be repeated every 3-6 months to strengthen the knowledge and for the long-term benefits. Additionally, oral health experts should educate students about the harmful effects of smoking as well as provide information on how

to stop smoking, together with medical and other associated professionals.

Conflict of interest: Nothing to declare

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