

## ASSESSING SMOKING HABITS, ATTITUDES, AND KNOWLEDGE AMONG DENTAL STUDENTS OF PAKISTAN: A SURVEY STUDY

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### ABSTRACT

**Background:** Smoking is a leading contributor to avoidable deaths globally, making it a critical public health concern, and dental professionals play a crucial role in promoting smoking cessation and oral health.

**Objective:** To assess the smoking habits, attitudes, and knowledge among dental students in Pakistan.

**Study Design:** A Cross Sectional Study.

**Place and Duration of Study.** Department of Dentistry Bacha Khan College, Mardan from Jan 2024 to July 2024

**Methodology:** A cross-sectional study among Pakistani dental students used a self-administered questionnaire. A sample of 222 students from 25 institutes completed the survey, and data was analyzed using SPSS 27 to identify trends and patterns.

**Results:** 222 dental students (mean age  $22.26 \pm 2.25$  years, 58.6% male) found that 15 (7%) were current smokers, with 60% having attempted to quit. Male students were more likely to smoke ( $p < 0.001$ ). Despite this, 96.8% recognized smoking's impact on oral health and 90.1% believed dental professionals should promote cessation. Encouragingly, 86.9% received education on smoking cessation and 64.4% felt confident advising patients on quitting. These findings suggest a positive attitude towards promoting smoking cessation, but a need for continued education to enhance confidence in providing advice. However, there was no statistical difference in smoking rates between preclinical and clinical dental students ( $p = 0.845$ ) **Conclusion:** Dental students in Pakistan have a high smoking prevalence, but a positive attitude towards promoting smoking cessation. However, they need more education and training to effectively advise patients to quit smoking, emphasizing the need for strategies to promote smoking cessation in dental settings

**Keywords:** Smoking habits, Dental students, Attitudes, Survey study, Oral health, Smoking cessation.

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### INTRODUCTION

Tobacco use poses a significant threat to global health, causing over 8 million deaths annually. Nicotine, a highly addictive substance, is a major risk factor for cardiovascular and respiratory diseases, various types of cancer, and other debilitating health conditions. Low- and

middle-income countries are disproportionately affected due to aggressive tobacco industry marketing and interference. Moreover, second-hand smoke exposure claims 1.2 million lives each year, with nearly half of all children exposed to polluted air and 65,000 dying from

related illnesses. Smoking during pregnancy can lead to long-term health issues for babies. Heated tobacco products and e-cigarettes, though seemingly alternative options, contain harmful toxins and pose significant health risks, with long-term effects yet to be fully understood <sup>(1)</sup>. Tobacco smoking poses a monumental public health threat globally, significantly contributing to the development of cancer, heart disease, and respiratory disorders. Annually, smoking is responsible for approximately 7.7 million fatalities worldwide, making it a pressing health concern that necessitates urgent attention and action <sup>(2)</sup>. A pressing concern is the growing popularity of novel nicotine-based products, including heated tobacco products (HTP), electronic cigarettes (e-cig), and other emerging alternatives (such as hookah, smokeless tobacco, and dissolvable tobacco) that are particularly appealing to younger generations <sup>(3, 4)</sup>. Pakistan has made efforts to control tobacco use, but its implementation of MPOWER measures is constrained by poor enforcement and a shortage of funds and personnel, leading to a significant gap in meeting WHO-recommended standards <sup>(5)</sup>. Globally, more than a third of people (37%) are still at risk of secondhand smoke exposure, according to a recent report <sup>(6)</sup>. Passive smoking is a significant health threat, deeply connected to smoking, and can trigger severe and potentially deadly medical conditions, as even minimal exposure can be harmful <sup>(7)</sup>. Furthermore, secondhand smoke exposure elevates the risk of developing various diseases, including coronary heart disease, stroke, oral cancers (affecting the throat, tongue, soft palate, and tonsils), and periodontal disease <sup>(8)</sup>. The World Dental Federation's guidelines mandate that graduating dentists possess the necessary skills and knowledge to identify and treat smoking habits, acknowledging the significant impact of smoking on oral health. Tobacco cessation counseling is a vital responsibility of dentists, but unfortunately, their

has seen limited Study on the various methods and strategies for effective tobacco cessation counseling <sup>(9,10)</sup>. Students must recognize their responsibility as healthcare providers to offer guidance and support, and be aware of the expectations placed upon them in this role <sup>(11)</sup>.

Smoking remains a significant public health concern worldwide, with well-documented adverse effects on general and oral health. Dental professionals play a crucial role in promoting smoking cessation due to their frequent interactions with patients and the visible effects of smoking on oral health. Understanding the smoking habits, attitudes, and knowledge of dental students can provide insights into future interventions and educational strategies.

The primary objective of this study is to evaluate the smoking habits, attitudes towards smoking, and knowledge about smoking cessation among dental students of Pakistan. The secondary objective is to assess the confidence of dental students in advising patients on smoking cessation. The findings will contribute to understanding this population's smoking behaviors and potential educational needs to prepare future dental professionals to effectively advise patients about smoking cessation.

## METHODOLOGY

A cross-sectional survey was conducted among undergraduate dental students in Pakistan. The study was carried out across 25 dental colleges in Pakistan over the study period (duration not specified). A total sample of 222 undergraduate dental students (130 males and 92 females) was included. A convenience sampling technique (non-probability sampling) was used to recruit participants. Undergraduate male and female dental students enrolled in dental colleges in Pakistan were included in the study. Students other than undergraduate

dental students, those with co-morbidities, absent students, and those repeating the academic year were excluded.

The study adhered to the ethical guidelines of the 2013 Helsinki Declaration. Ethical approval was obtained from Bacha Khan Medical College, Mardan (Certificate No. 523/BKMC) dated 11 December 2023.

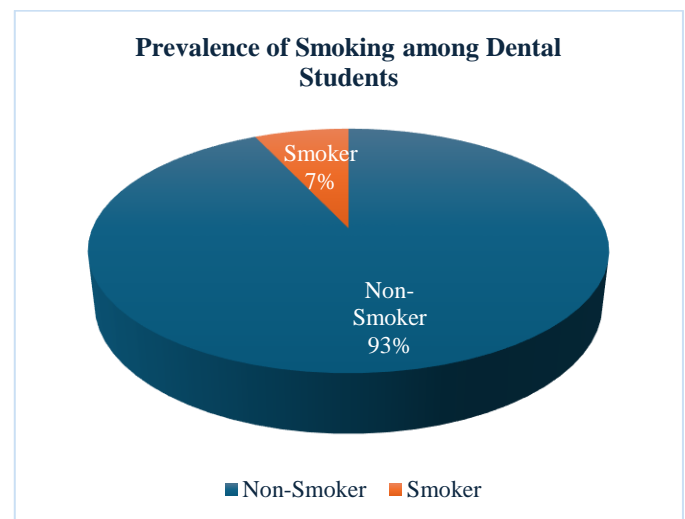
Data were collected using a self-administered questionnaire after obtaining written informed consent from all participants. The questionnaire consisted of three sections: demographic information, smoking habits, and attitudes and knowledge regarding smoking. The collected questionnaires were coded and entered into Microsoft Excel for organization. The data were then exported to SPSS version 27.0 for analysis. Descriptive and inferential statistics, including independent sample t-tests and Analysis of Variance (ANOVA), were applied to evaluate smoking behaviors, attitudes, and knowledge among dental students.

**RESULTS**

A total of 222 dental students, with a mean age of 22.26 ± 2.25 years (ranging from 18 to 28 years), participated in the study. The gender distribution showed that 58.6% of the respondents were male, while 41.4% were female (Table 1.0). The survey revealed that 15 (7%) of the dental students were current smokers (Graph 1.0). Among these, 8 (53.3%) smoked between 10 to 20 cigarettes per day. Notably, 60% of the current smokers had attempted to quit smoking in the past (Table 1.2). The study found a significant difference in smoking prevalence between male and female students, with males more likely to be current smokers (p < 0.001). However, there was no statistical difference in smoking rates between preclinical and clinical dental-students- (p=0.085).

The majority of dental students (96.8%) recognized

the impact of smoking on oral health, and 90.1% believed that dental professionals should promote smoking cessation. Encouragingly, 86.9% of the students reported receiving education on smoking cessation in dental school (Table 1.1 A). Furthermore, 64.4% of the students felt very confident in advising patients on quitting smoking, while 25.7% were somewhat confident (Table 1.1 B). These findings suggest that dental students have a positive attitude towards promoting smoking cessation, but there is a need for continued education and training to enhance their confidence in providing smoking cessation advice to patients



**Graph 1.** Prevalence of Smoking among Dental Students

**Table 1:** Percentage of Study Sample according to Education Level and Gender

Variables		Frequency(N)	Percentage (%)
Gender	Male	130	58.6%
	Female	92	41.4%
Education level	1 <sup>st</sup> year B.D.S	42	18.9%
	2 <sup>nd</sup> year B.D.S	40	18%
	3 <sup>rd</sup> year B.D.S	40	18%
	Final year B.D.S	100	45%

**Table 1.1(A):** Knowledge and Attitude Regarding role of Dentist in Smoking Cessation

Questions	Yes	No
Do you believe smoking effects oral health	215(96.8%)	07(3.2%)
Have you received education on risk of smoking in dental school	193(86.9%)	29(13.1%)
Do you think dental professionals should promote smoking cessation	200(90.1%)	22(9.9%)

**Table 1.1 (B):** Practice of Dental Students Regarding Smoking Cessation

Question	Very confident	Somewhat confident	Not confident
How confident do you feel in advising patient about smoking cessation	143(64.4%)	57(25.7%)	22(9.91%)

**Table 1.2:** Smoking Habits and cessation Efforts among Smoker Dental Students

Questions	Response	
How often do you smoke ?	Occasionally	08(53.3%)
	Rarely	04(26.7%)
	10-20	03(20%)
How many cigarettes do you smoke per day?	10-20	05(33.33%)
	Less than 10	03(20%)
	1 or less than 1	07(46.67%)
Which type of smoking product do you use?	Cigarette	09(60%)
	E- cigarette	02(13.3%)
	Others	04(26.67%)
Have you attempt to quit smoking?	Yes	09(60%)
	No	06(40%)

## DISCUSSION

The prevalence of smoking in this study among the dental students in Pakistan constituted 7% of the population, which is significantly lower than the 20% among all

university students in Pakistan and 16% among dental students in Odisha, India <sup>(14)</sup>. These results indicate that the tendency to smoke is low among dental students in Pakistan, which peculiarities of the cultural norms might explain the raised sensitivity to the harm caused by smoking or the impact of the specialized anti-smoking program in healthcare education. Less frequent rates may also be due to cultural and social reasons like societal taboos about smoking, particularly in women. However, an increase in smoking prevalence among female students was registered albeit modestly, which may be attributed to growing urbanization, alteration of gender patterns, and the campaigning surrounding women, meaning a women's cigarette brand being marketed as features like light cigarettes. Notably, the research shows that 90 per cent of Pakistani dental students felt confident about the ability to offer smoking advice to patients, higher than the (87 per cent) confidence level internalized in prior research conducted at the level of medical practitioners <sup>(15, 16, 17)</sup>. This confidence indicates that dental professionals are ideally positioned to make a significant contribution to tobacco control by offering behavioural counselling. Because of their position as oral health professionals, they can play a crucial role in encouraging individuals to quit smoking. They are in a unique position to detect the early manifestation <sup>(18)</sup>. Additionally, dental students who participated in this research presented excellent knowledge of the impact of smoking on oral health, such as gingival disease, caries, oral cancer, and so forth. This realisation was higher than that seen in medical students at Aga Khan University, who tended to be aware of the overall impacts of smoking on the body system but did not have specific knowledge regarding manifestations in the mouth <sup>(19)</sup>. This discrepancy suggests that any healthcare curriculum should include integrated education on smoking-related issues, enabling future physicians and dentists to participate in public health <sup>(20)</sup>.

## CONCLUSION

This study reveals that dental students in Pakistan have a low smoking prevalence and positive attitude towards promoting smoking cessation. However, they need more education and training to effectively advise patients to quit smoking, emphasizing the need for strategies to promote smoking cessation in dental settings. The findings suggest that dental students are more likely to engage in tobacco cessation counseling with their patients, a crucial aspect of preventive care. The study highlights the importance of targeted education and training for healthcare professionals to address the unique oral health challenges posed by smoking. By integrating smoking cessation education into dental curricula, dental schools can equip future generations of dental professionals with the knowledge and skills necessary to make a meaningful impact on public health. Overall, this study contributes to understanding the smoking habits

and attitudes of dental students in Pakistan and provides insights into future interventions and educational strategies to promote smoking cessation and improve oral health.

**DISCLAIMER:** NIL

**CONFLICT OF INTEREST:** NIL

**FUNDING DISCLOSURE:** NIL

**ETHICAL APPROVAL:** Ethical approval obtained from the Bacha

## AUTHORS CONTRIBUTIONS

**Concept & Design of Study:** Muhammad Usman Sultan

**Drafting:** Muhammad Anas

**Data Analysis:** Sajid Ali

**Critical Review:** Sajid Ali

**Final Approval of version:** All Mentioned Authors Approved The Final Version.

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