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Impact of smoking on oral health: Knowledge and attitude of medical and dental students

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***Abstract*---**Introduction: Smoking kills more than 8 million people each year worldwide. The rate of morbidity from illnesses linked to smoking is increasing steadily. The adverse effects of smoking on oral health are well documented. The ability of medical and dental students to assist people in quitting smoking is crucial. Objectives: The aim of this study was to evaluate smoking habits, the level of knowledge and attitudes of medical and dental students towards smoking, as well as the role of dental professionals in prevention of smoking. Methodology: A cross-sectional study, including 150 medical and dental students from the Khyber Medical University, housing officers and dentists from the Hayatabad Medical Complex and Peshawar Dental College, was conducted and data was collected by a pre-designed questionnaire. The questionnaire asked about the patient's smoking and quitting habits, their medical and dentists' experiences with smoking cessation and their readiness to follow dentists' recommendations for quitting. Results: Most of the participants were medical students (81/150) and males (99/150). Majority of them were from 18-30 years old. The prevalence of smoking was highest among medical students (23) followed by the housing officers and dentists (12) while a significantly larger number of non-smokers (3) were found among dental students. The typical outcome was psychological distress which is followed by physical discomfort and impairment, while the least common outcomes were mental illness and physical impairment. In all subscales and overall OHIP-14 goals reached in the current sample population, cigarette smokers outperformed non-smokers in terms of total ranking in search engines. It was found that the participants have the biggest influence on people who want to stop smoking, either by prerequisite or motivation. Conclusion: Dentists play an important role in defining the harmful effects of cigarettes on gums and should put in place a center to support customers quit smoking.

***Keywords*---**tobacco, cigarette, smoking, oral health, medical students, dentists.

Introduction

Tobacco utilization is one of the major preventable deaths worldwide. It is approximated that by the twenty-first century, one billion people will have died as a result of its ill effects. [1] With over 100 million adult smokers, India accounts for 12% of the world's smokers. Every year, approximately one million people in India die as a result of smoking. [2]

Tobacco use has been linked to high cholesterol, vascular disease, respiratory issues, kidney failure, and chronic pulmonary disease. Individuals who kick the habit before age 35 die at the same rate as those who never smoked. [3] Smoking is also harmful to oral health, causing unsightly tooth staining and bad breath, as well as weakening immunity, which leads to periodontal diseases. [4] Poor wound going to healing, and increased gingivitis.

Quality of Life (QOL) metrics are progressively being employed to evaluate health consequences, outcomes, and the efficacy of various health initiatives. Correspondingly, QOL is described as an individual's assessment of various regular dental metrics such as sensory dental function, dental problems, mental anguish, and social consequences, all of which have an impact on their overall fellow human.

As a result, quitting smoking and protection should be among the main aims of healthcare systems. Nicotine use does have several sides. Factors that directly affect dental health include periodontal picket development and gum disease. Underlying motives for quitting smoking may include worries about social justice issues like halitosis and dark spots. Experts have the biggest influence on people who want to stop smoking, either by prerequisite.

Measurement has been rising progressively as a result of increased knowledge and awareness. In addition, Pakistan has recently become the top destination for impulsive travel, with dental tourism being the key component of this market. Therefore, dentists are in a unique position to provide year-round advice to their sick patients about quitting smoking.

Material and Methods

Data collection

Data was gathered from 150 volunteer participants after obtaining the written informed consents. A self-administered questionnaire was used in a cross-sectional study to examine demographic details, awareness of the effects of smoking on oral health, and willingness to participate in smoking cessation initiatives and stop smoking. The questionnaire was completely anonymous.

Study layout

Past research adhered to figure out the connection between cigarettes, political attributes, and OHRQOL, along with the correlation between Oral Health-related Quality of Life (OHRQOL) and Health-related quality of life (HRQOL) among many patients presenting.

Criteria for selection

Medicated patients who happened to come to the department of Ingestion and Facial Reconstructive surgery to receive the same dental treatment, known as primary teeth removal, served as the assimilation criteria for this study. The research included sick individuals who did not yet possess dental coverage. Healthcare workshops were taken out of the research if they were in extreme discomfort and were unable to react to the research instruments.

According to Brazilian research, the random sample was determined using the formula for constructing a truly, with the proportions of non-smokers with poor OHRQOL (P1) and cigarette smokers with poor OHRQOL (P2) set at 0.14 and 0.24, in both. Preparatory analysis shows that each group would necessitate 150

patients So because the oral surgical agency received only 180 cases reported from December to June. A birthrate parametric clarification was used from the previous year (6 months) As a result, the total was corrected to 105. After accounting for any errors in the process of research, the research study required a minimum of 125 studies in each group. The study's contestants were then preferred using sequenced checking until a response rate of 250 was managed to reach.

Result

According to demographic data collected in the questionnaire, a significantly higher proportion of medical students (81) and males (99) comparing to females (51) was found (figure 1, table 1). All the students were in the age group of 18-30 (figure 2). The second part of the questionnaire examined previous experience of tobacco smoking and the current smoking habits. Figure 3 shows that the prevalence of smoking was highest among medical students (23). It slightly decreased among the housing officers and dentists (12), thus pointing to the fact that these results are consistent with the national average, while a significantly larger number of non-smokers (3) were found among dental students (table 1).

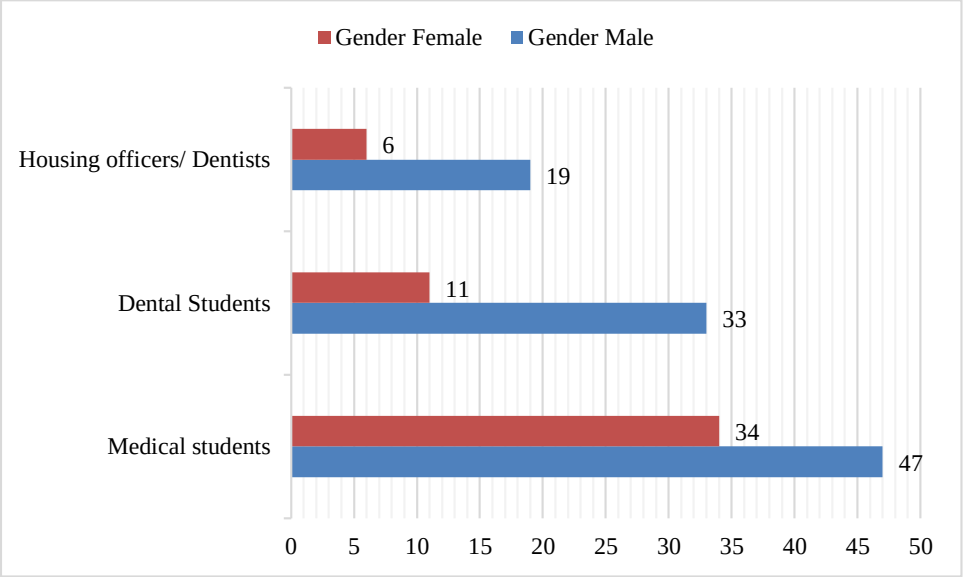

Figure 1. Gender wise distribution of participants

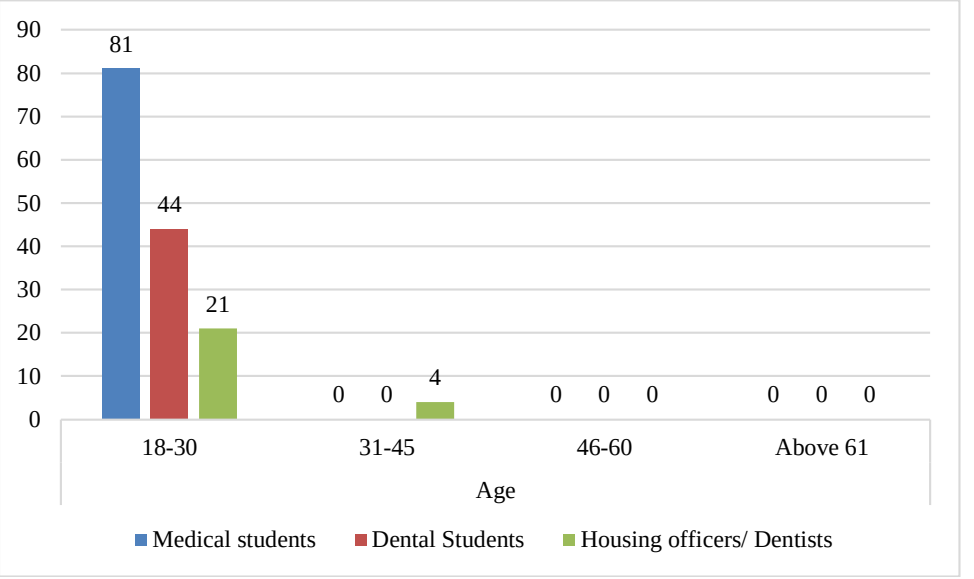

Figure 2. Age groups of participants

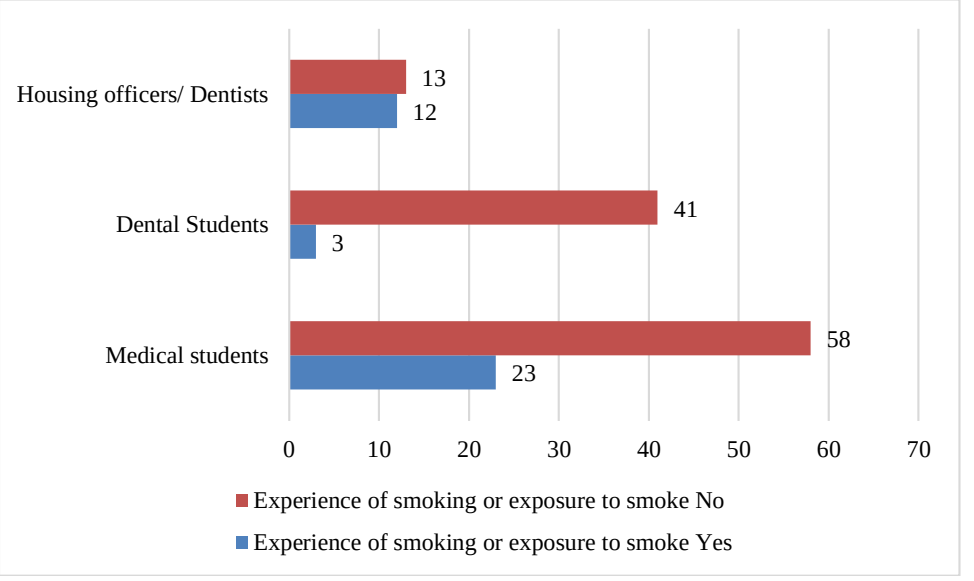

Figure 3. Participants` responses towards the experience of smoking or exposure to smoke

Table 1. Demographic data of the participants

Variables		Medical students	Dental Students	Housing officers/ Dentists
Gender	Male	47	33	19
	Female	34	11	6
Age	18-30	81	44	21

	31-45	0	0	4
	46-60	0	0	0
	Above 61	0	0	0
Experience of smoking or exposure to smoke	Yes	23	3	12
	No	58	41	13

According to the research findings (table 2), males and females had a good correlation with OHIP scores. Patients who were married and earning an income used to have higher OHIP scores and thus lower OHRQOL. The score differential wasn't discovered to be statistically significant despite the above. According to the initial report, patients' mean OHIP scores increased with age, implying poorer OHRQOL in older groups, particularly those over 30. This tendency, even so, was discovered to be non-significant. The education, on the other hand, is strongly related to OHRQOL. Consumers with a high education had significantly very low (p = 00.0322) OHIP achieved scores and thus better OHRQOL than less informed treatment populations.

Table 2. Statistical analysis of the patients` socio-demographic variables and the OHIP-14

Socio-demographic variables	Categories (n)	OHIP-14 (mean ± sd)	Mean rank	*P* value
Age (in years)	15–30 (31)	19.63 ± 8.33	106.83	0.123
	30–45 (71)	51.01 ± 7.69	300.77	
	45–60 (81)	21.91 ± 6.76	114.23	
	≥60 (57)	32.7 ± 8.18	116.63	
Sex	Male (100)	41.82 ± 4.72	123	0.4521
	Female (130)	21.63 ± 9.13	140	
Current marital status	Married (112)	11.97 ± 9.08	127.42	0.296
	Unmarried (28)	19.68 ± 4.50	110.27	
Current earning status	Earning (96)	22.11 ± 9.96	126.34	0.3485
	Not earning (154)	41.46 ± 8.26	124.98	
Education	Illiterate (110)	**12.89 ± 6.14***	140	**0.0322***
	Less than high school (50)	21.46 ± 7.42	60	
	≥ high school (90)	**15.86 ± 6.45***	40	

A little more than a fifth of the survey participants, personality (32.0%), clenched teeth (50.4%), a poor diet (29.6%), and embarrassment (29.8%) reported experiencing any of the following: pain in the tongue on a routine basis, following the scattering of reactions. In addition, well almost one-third of patient populations (37.6%) frequently felt uncomfortable while being required to eat (table 3).

Table 3. Responses of the patients towards the OHIP-14

Items of OHIP-14	SD*	D*	UD*	A*	SA*
Pain in mouth	22 (8.8%)	122 (48.8%)	21 (8.4%)	76 (30.4%)	09 (3.6%)
Bad food	44(33.45)	39 (31.6%)	22 (8.8%)	24 (9.6%)	94 (37.6%)

Self – consciousness	28 (11.2%)	94 (37.6%)	30 (12.0%)	90 (36.0%)	08 (3.2%)
Tense feeling	36 (14.4%)	84 (33.6%)	21 (8.4%)	101 (40.4%)	08 (3.2%)
Unsatisfactory diet	13 (5.2%)	137 (54.8%)	22 (8.8%)	74 (29.6%)	04 (1.6%)
Interruption of meals	30 (12.0%)	139 (55.6%)	27 (10.8%)	49 (19.6%)	05 (2.0%)
Difficult to relax	16 (6.4%)	167 (66.8%)	20 (8.0%)	38 (15.2%)	09 (3.6%)
Feeling embarrassed	15 (6.0%)	131 (52.4%)	21 (8.4%)	72 (28.8%)	11 (4.4%)
Irritable with others	20 (8.0%)	170 (68.0%)	26 (10.4%)	23 (9.2%)	11 (4.4%)

**SD=strongly disagree, D=disagree, UD=undecided, A=agree and SA=strongly agree.*

The overall average rating on the OHIP-14 was 21.71 out of a possible 56. Psychological anguish had the overall average result, accompanied by bodily discomfort and disability, and mental impairment and physical disability had the least (Table 4). Tobacco users had higher total search engine ranking than non-smokers in all subscale scores and total OHIP-14 goals scored in our sample group.

Table 4. Summarizes the descriptive statistics for the total OHIP scores and subscales. (n = 150)

OHIP variables	Mean ± sd	Median ± IQR
Mental impairment	2.223 ± 0.94	2 (4–2)
Societal handicap	3.48 ± 3.24	4 (9–6)
Impair	4.431 ± 4.03	4 (4–2)
Physiological impairment	4.31 ± 2.23	3 (6–9)
A bodily hurt	6.0 ± 2.30	2(4–4)
Function constraint	2.43 ± 1.50	2 (1–3)
Emotional unease	3.80 ± 2.458	4 (11–7)
Average OHIP-14 rating	21.71 ± 8.22	10 (27–17)

Discussion

Smoking tobacco impacts oral health ranging from existing conditions such as oral cancer to conditions commonly staining, with potential consequences for oral health comorbidities and tooth mortality. Smokers are three times more likely than nonsmokers to develop oral cancer. Smoke contains several carcinogens, which produce reactive oxygen species that disrupt the immune system and cause cell mutations (Caliri et al., 2021). Patients appear to be well aware of the dangers of oral cancer associated with smoking (90%). Schematic warnings on tobacco packages may well have resulted in a significant rise in increasing understanding.

Responses from self-administered research questions typically reflect what the respondents believed the person or organization able to conduct the questionnaire expects, patients' positive comments about dental practitioners' involvement in

smoking cessation initiatives are likely to be exaggerated (Alblowi, 2021). Nevertheless, the findings offer comprehensive and comparable information regarding recent opinions about this topic among the medical and dental students as well as the housing officers and dentists in the chosen sample, which can be used to monitor patterns of attitude change over time.

Dental students also had favorable attitudes toward orthodontists' roles in smoking preventative measures and abstinence counseling, and the researchers proved that the application of instructional instruction and student retirement programs during the research can play an important role in their motivation for future anti-smoking activities. Similar reports were published by the Liu et al. (2019) and Khalaf et al. (2020). They should also be more cognizant of their crucial role in promoting healthy lifestyles among patients. Furthermore, specific training is required in which participants can learn basic methodologies for tobacco cessation counseling, thereby supplying educational materials and assistance for sound like a good.

Conclusion

Dentists, in our viewpoint, play an important role in defining the harmful effects of cigarettes on gums and should put in place a center to support customers quit smoking. Tobacco smoke is a serious concern for Bareilly patients, who want their dentists to teach those how to kick the habit but rarely receive practical assistance. Estimates from the previous year put the proportion of adult dental visits at 40.4%. A greater analysis of dentists' roles in extensive smoking comprehensive dissolution and harm reduction is required in the physician's medical environment of Bareilly. Despite numerous patient requests, only a few dental professionals would include vehemently anti initiatives in routine checks. Orthodontic professionals cite a variety of reasons, including a lack of health care respected academic components or an understanding of obtainable consultation resources.

References

1. Alblowi J. A. (2021). Perception of Tobacco Counseling and Cessation among Dental Practitioners. *Journal of smoking cessation*, *2021*, 6692525. https://doi.org/10.1155/2021/6692525
2. Appukuttan DP. Strategies to manage patients with dental anxiety and dental phobia: a literature review. Clin Comet Investig Dent. 2016 Mar 10;8:35-50. doi: 10.2147/CCIDE.S63626. PMID: 27022303; PMCID: PMC4790493.
3. Caliri, A. W., Tommasi, S., & Besaratinia, A. (2021). Relationships among smoking, oxidative stress, inflammation, macromolecular damage, and cancer. *Mutation research. Reviews in mutation research*, *787*, 108365. https://doi.org/10.1016/j.mrrev.2021.108365
4. Khalaf, M. E., Curtin, S., & O Apos Reilly Trace, A. (2020). Perception and Attitudes of Dental Students towards Their Role in the Delivery of a Brief Smoking Cessation Intervention. *Medical principles and practice : international journal of the Kuwait University, Health Science Centre*, *29*(1), 69–74. https://doi.org/10.1159/000501420

5. Liu, D., Ho, T., Duangthip, D., Gao, S. S., Lo, E., & Chu, C. H. (2019). Dental Students' Awareness, Preparedness and Barriers towards Managing Tobacco-Using Patients-A Cross-Sectional Study. *International journal of environmental research and public health*, *16*(10), 1862. https://doi.org/10.3390/ijerph16101862
6. Locker D, Clarke M, Payne B. Self-perceived oral health status, psychological well-being, and life satisfaction in an older adult population. J Dent Res. 2000;79:970–5.
7. Paquette DW, Bell KP, Phillips C, Offenbacher S, Wilder RS. Dentists' knowledge and opinions of oral-systemic disease relationships: relevance to patient care and education. J Dent Educ. 2015 Jun;79(6):626-35. PMID: 26034026.
8. Stacey F, Heasman PA, Heasman L, Hepburn S, McCracken GI, Preshaw PM. Smoking cessation as a dental intervention--views of the profession. Br Dent J. 2006 Jul 22;201(2):109-13; discussion 99. doi: 10.1038/sj.bdj.4813829. PMID: 16841084.