

## **The Frequency and Prevalence of Smoking Among Dental Students in Southern Iraq**

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### **Abstract**

**Background** The biggest avoidable cause of mortality and disability is tobacco smoking. Tobacco use is linked to 30% of cancer cases, and 4 million individuals worldwide pass away from tobacco-related causes each year. According to the information that is now available, increasing tobacco use is linked to an increased risk of disease, even though quitting smoking can lower that risk. Despite their awareness of the negative effects smoking has on oral health and public health in general, the spread of smoking among dental college students will have a significant future impact because experimental research has shown that medical professionals who smoke may not be as effective at quitting as those who do not. They abstain from smoking cigarettes.

**Aim:** To ascertain the incidence of smoking and its impact on dentistry students' attitudes and behaviors toward dental health in the southern region of Iraq.

**Materials and Methods:** At the University of Al-ayen Iraqi College of Dentistry in the southern part of Iraq, a cross-sectional study involving 250 dental students was carried out. A customized version of the Jordan University of Science and Technology questionnaire was used to survey the subjects. Only male smokers and non-smokers were compared using multivariate logistic regression analysis.

**Results:** There were 222 responders (88.8%), of which (56.6 %) were men and (43.4 %) were women. There was a 25.6% smoking prevalence. Male students smoked at a higher rate (24.8%) than did female pupils (0.8%). For male students, the multivariate logistic regression analysis model for smoker; six answers show a significant difference (p: 0.05) between the smokers and nonsmokers. Brushing frequency was higher among non-smokers (OR 7.76, CI 1.14–35.11) compared with smokers. Additionally, there were significantly more pupils among nonsmokers (OR 10.24, CI 1.52–65.67) who had never received professional instruction on how to wash their teeth .

Nonsmokers believe they spend too much time brushing their teeth (OR 11.54, CI 1.93–75.06), more so than smokers do. Nonsmokers were more concerned about having bad breath (OR 13.03, CI 2.73–49.41) and were more concerned with the color of their gums (OR 7.12, CI 1.48–42.82).

**Conclusions:** The results of the study showed how prevalent smoking is among dental students who are male.

## **Introduction**

In contemporary societies, tobacco use is the leading preventable cause of death and disability. Every year, 4 million people die from tobacco use-related causes worldwide, and tobacco use is associated with 30% of cancer cases [1, 2]. The information that is currently available indicates that while stopping smoking can reduce the risk of disease, increased tobacco use is associated with increased risk [3]. Coronal and root caries, ulcers, cleft lip and palate, and periodontal disease are only a few of the oral conditions for which smoking poses a serious risk. Patients' tobacco consumption affects cancer therapy, dental implants, wound healing, and cosmetic procedures [4, 5]. Without respect to the patient's dental health habits, it was discovered that cigarette smoking was negatively correlated with oral health status (periodontal disease, tooth loss, and decaying teeth) [6]. Research additionally revealed that tobacco users had greater oral health issues and brushed and flossed their teeth less frequently than nonusers [7]. For dental professionals' tobacco use is readily apparent due to telltale signs of smoking, including bad breath, discolored teeth, inadequate oral hygiene, and the previously stated oral disorders. Extended dental appointments typically provide a forum for patients and dentists to address tobacco use and its consequences [8]. Moreover, two thirds of US dentists who were asked if they believed they should advise their patients to give up smoking said yes [9]. However, just around 25% of smokers today said that their dentists had advised them to give up smoking, and only 33% of them thought they were effective in this regard [10]. Less than 10% of dentists in the US stated that they knew enough about smoking cessation methods [11, 12]. Empirical research has demonstrated that healthcare workers who smoke might not be as successful in helping patients stop smoking as those who do not smoke while health professionals' guidance and support in quitting smoking are crucial, many dental health practitioners still smoke [13].

Dentists should not smoke to be an example and role model for their patients, families, and friends, even while students pursuing healthcare professional education get a deeper understanding of the pathophysiology and risk factors of tobacco-related disorders, many nonetheless start or continue smoking while attending university. The aim of this study was to record the effects of smoking on students' attitudes and behaviors regarding oral health as well as to investigate the prevalence of smoking among dentistry students in Nasiriyah City, South Iraq.

## **Material and Methods**

In the University of Alayen Iraq College of Dentistry southern of Iraq we invited students from all five academic years to take part in the study. Consent was expressed by filling out the survey; participation was entirely voluntary.

In this study, a modified English version of the Jordan University of Science and Technology survey [14] was employed. Dental students received the typewritten English survey at the conclusion of class. Questions from the pupils about the definitions of the words were welcome, and the other students were informed of the answers.

There were (9 items) in the poll (table 1). No information regarding the student's academic record was gathered, and it was completed anonymously. Students had to indicate their gender, year of study, and if they were smokers, as well as how much and how long they

## **Statistical Methods**

In accordance with Rigotti et al. [15], logistic regression analyses were performed. The initial step was doing univariate analysis to compare the responses provided by smokers and nonsmokers, respectively. Subsequently, multivariate logistic regression models were built using a stepwise backward selection technique, with the dependent variable being the smoker's status. Questions with a p value of  $\leq 0.05$  were permitted to be included in the model, and at  $p < 0.05$ , they were eliminated. Lastly, shift patterns in the responses to specific queries were examined. The multivariate logistic regression models were rerun exclusively for male smokers using the same inclusion and exclusion criteria, as many smokers were men. We computed the 95% confidence intervals (CI) and odds ratios (OR). The data were processed, and statistical analysis was performed using the statistical software Systat® 8.0 (SPSS Inc., Chicago, USA).

Table 1: Jordan University of Science and Technology survey modifications used in this investigation

No.	information details	yes	no
1-	I am smoker		
2-	I smoking 20 cigarettes per day		
3-	I smoking mor thanone year ago		
4-	I at least twice a day clean my teeth		
5-	I have never been professionally taught how to brush		
6-	I feel that I spend too much time brushing my teeth		
7-	I worry about having bad breath.		
8-	I am bothered by the color of my gums		
9-	I am satisfied with the appearance of my teeth.		
	Iam male <input type="checkbox"/> femal <input type="checkbox"/>		
	I am in <input type="text"/> class		

## Results

Out of the 250 dentistry students, 222 (88.8%) finished the survey. Table 2 displays the participation students' breakdown by gender and academic year. Between the academic years, there was no large difference in the participation percentage, which ranged from 15.7 to 24.4%. Table 3 demonstrates that (24.8%) of male students and just (0.8%) of female students were overall

smokers Figure 1.( 6.1%) of all smokers who smoke more than twenty cigarettes a day. As of the questionnaire date, around (7.4%) of respondents had been smokers for more than a year.

Table 2. Dental students who took part of survey were divided into groups according to their academic year and gender.

Academic year	male no.(%)	female no.(%)	Total
1st	27 (12.1%)	21 (9.5%)	48 (21.7%)
2nd	28 (12.6%)	16 (7.3%)	44 (19.8%)
3rd	22 (9.9%)	19 (8.5%)	41 (18.4%)
4th	31 (13.9%)	23 (10.4%)	54 (24.4%)
5th	18 (8.1%)	17 (7.7%)	35 (15.7%)
total	126(56.6%)	96 (43.4%)	222 (100%)

Table 3. Distribution (%) of smokers, both male and female, over various academic years who smoke more than 20 cigarettes a day and have been smokers for more than a year.

Academic year	Smoker male percent. (%)	Smoker female percent. (%)	Smoking mor than 20 cigarettes Per day percent.	Smoking mor than one year percent.
1st	14.6%	1.1%	4.7%	2.1%
2nd	18.4%	0%	3.9%	6.4%
3rd	22.4%	0%	5.1%	4.8%
4th	21.8%	1.3%	4.9%	7.4%
5th	47%	1.7%	12.2%	16.2%
total	24.8%	0.8%	6.1%	7.4%

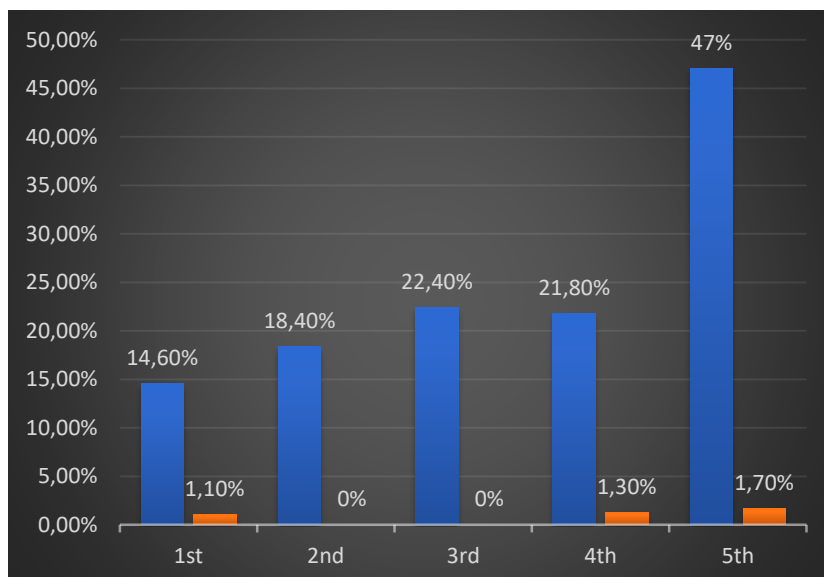


Figure 1 : smoker percent comparison for both males and females student's

Table 4 presents the results of the multivariate logistic regression analysis model for smoker students; six answers show a significant difference ( $p: 0.05$ ) between the smokers and nonsmokers. Brushing frequency was higher among non-smokers (item 4) (OR 7.76, CI 1.14–35.11) compared with smokers. Additionally, there were significantly more pupils among nonsmokers (OR 10.24, CI 1.52–65.67) who had never received professional instruction on how to wash their teeth (item 5). Nonsmokers believe they spend too much time brushing their teeth (item 6) (OR 11.54, CI 1.93–75.06), more so than smokers do. Nonsmokers were more concerned about having bad breath (item 7) (OR 13.03, CI 2.73–49.41) and were more concerned with the color of their gums (item 8) (OR 7.12, CI 1.48–42.82). Finally, nonsmokers were less satisfied with the appearance of their teeth than smokers (OR 0.31, CI 0.03–0.86) (item 9).

Table 4. Multiple logistic regression analysis results specific to males

Item	Description	Estimate	SE	p	Odds ratio	95% CI
	Constant	-12.642	3.893	0.004		
4	I brush my teeth twice daily or more	1.178	0.921	0.090*	7.76	1.14–35.11
5	I have never been professionally taught how to brush	2.374	0.851	0.007*	10.24	1.52–65.67
6	I feel that I spend too much time brushing my teeth	1.972	0.925	0.091*	11.54	1.93–75.06
7	I worry about having bad breath	2.988	1.291	0.002*	13.03	2.73–49.41
8	I am bothered by the color of my gums	3.009	0.772	0.006*	7.12	1.48–42.82
9	I am satisfied with the appearance of my teeth	-0.983	0.871	0.008*	0.31	0.03–0.86

Dependent variable: smoking status and nonsmokers Response: Likelihood ratio 93, 8 d.f.,  $p < 0.000$

\* Statistically significant

## Discussion

The general approach in attitudes/behavior assessments was employed in this study to examine the attitudes and behaviors regarding dental health between dentistry students who smoke and those who do not. Every survey item had a yes/no binary response format. Recently, dental and dental hygiene students worldwide were asked to compare their opinions and practices around oral health using this questionnaire. [9].

A modified English version of the Jordan University of Science and Technology survey to make the questionnaire more appropriate for our students and culture, it was changed, it was optional to take part in the survey. Very few students decided not to participate, even if some were absent on the day the survey was distributed. For survey purposes, the participation percentage of 88.8% was deemed satisfactory. Alomari, et al. reported that the prevalence of smoking among the dental student population at Jordan University of Science and Technology was approximately 31% and 4.1% for males and females, respectively. Our study showed that the prevalence of smoking among males' dental students was (24.8)% in significant decrease in little percentage than Jordan University of Science and Technology also ( 0.8%) for females. This may be because of Jordan students more stress also more spread of smoking between Jordan males' population [14] .

In a study by Rigotti et al. conducted in 2000 the use of cigarettes is among young people in the age groups between 18-24 years, it is common at a rate of (37.1%), but at a similar rate between the sexes with a significant increase in males, as the percentage of smoking in males was (37.9%) and in females (29.7%). Don't forget that the study has proven that the use of tobacco products in forms other than smoking is based on the difference in people's culture and customs, but smoking cigarettes remains the highest method of consumption. Tobacco products: In our current study, we found that the percentage of male smokers is higher than that of females, with a clear difference, with a clear increase in the number of males who use cigarettes for smoking, as the percentage of male smokers reached ( 24.8%) while the percentage among females did not exceed ( 0.8%) this large difference in results is due to the nature of society, its behaviors, and the restrictions in behavior imposed by society on women more than men, not on the basis of concern for health and knowledge of the harms of smoking [15].

An additional study by Machuca et al, published in year 2000 also revealed that smoking had a negative effect on periodontal health, the study showed that approximately (43%) of the smokers (53%) who participated in the study smoked 20 cigarettes per day, which is a higher percentage than what we obtained in our current study. Where the percentage was (6.1%), the reason is that the percentage included a smaller number of cigarettes, from 5 cigarettes to 20, while our study included only those who smoke 20 cigarettes or more daily [16].

While a study conducted at King Saud University showed a very high percentage of those who smoke (11-20 cigarettes) daily among students of the College of Dentistry, where the percentage was (64%), which is a very high percentage, especially among students of the College of Dentistry who have great knowledge of the negative effects of smoking. Although the culture of Iraqi and Saudi society is very similar, there remains a large difference in the percentage, as the percentage in our study of dental students did not exceed (6.1%). In addition, smoking of tobacco through (shisha) is at a high percentage, as our study was limited not counting the percentage of tobacco smoking through (shisha) only Cigarettes, and did not address shisha smoking, which was mentioned in their study, the study also showed that (47%) of smokers started smoking 3 years ago or more, while the percentage in our study did not exceed (7.4%). This is not forgetting that the percentage in our study included smoking for more than one year. In this case, we find that Saudi students tend to smoke more than The Iraqi students also had a clear similarity between the

percentage of female smokers among the Saudi students (0%) while among the Iraqi female students, also, the percentage was low, the percentage of female smokers was only (0.8%),[17].

Yasso, F. (2014). There were 302 male and 198 female medical students in the study, which comprised 500 total students. A questionnaire form was used by the researchers to collect data. Several factors were included in the poll, such as age, gender, smoking habits of family members, and self-reported smoking causes. According to this article, (21%) of medical student's smoke cigarettes We find that this percentage is like our found among the dental students in our study, as the percentage was (24.8%), one significant finding in this research report is (42%) of the smokers beginning during their first year of medical school or when they were 18-19 years old, despite being aware of the negative effects of smoking, most of them were unwilling to give it up. The study found that men made up most smokers. There was no correlation found between medical students' smoking habits and those of their relatives. According to the students, the top three reasons people smoke cigarettes are amusement (22.1%), tension and stress relief (18.3%), and anxiety and emotional factors (11.5%),[18].

Alzuhery, M.(2021) a study conducted on tobacco smoking and its associations among students at Hilla College University in Babylon - from the central regions of Iraq .Out of the 500 students who completed the questionnaire, 233 were smokers, 213 were male smokers, and 20 were female smokers. The majority of students (68.7%) disagree that a member of their family should smoke, friends were the primary source of the first cigarette (52.8%), private concerns were the primary cause of smoking (48%), the percentage of smokers whose behavior score and knowledge score were correlated was (46.6%),[19].

In another study, it was conducted in the city of Sulaymaniyah, northern Iraq, to show tobacco consumption among medical professionals, including doctors and dentists, was found to be (26.5%). Notably, the rate of smoking was considerably greater among men than women. The average age at which people began smoking was 22.3 ( $\pm 4.8$ ) years. Merely (7.3%) of medical personnel underwent official instruction on quitting smoking. Every respondent acknowledged the negative health effects of smoking. Nonetheless, there was a lower likelihood of ever smokers agreeing that medical professionals should have a positive influence by abstaining from smoking when compared to never smokers[20].

## **Conclusions**

A The study's findings demonstrated how common smoking is among male dental students. Additionally, it demonstrated how the students' habits and dental health were negatively impacted by cigarette smoking. These findings highlight the need for further initiatives to support dentistry students' education and tobacco cessation so that they can effectively assess the smoking behaviors of their patients and provide encouragement to stop. In addition, the curriculum must incorporate subjects including stress management.

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