Journal of Cancer Education (2023) 38:821–828
https://doi.org/10.1007/s13187-022-02191-7

Tobacco Use Among Dental Students in Morocco: Opportunities for Professional Cancer Education

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Accepted: 10 June 2022 / Published online: 22 June 2022

Abstract

The study aimed to evaluate tobacco use, attitudes, knowledge, and perceptions about tobacco control policies and smoking cessation counseling among dental students in Morocco. This cross-sectional study was conducted at the Dentistry Faculty of the Mohammed VI University of Health Sciences of Casablanca, using the Global Health Professions Student Survey (GHPSS) tool. Participants completed a self-administered survey questionnaire, including information on socio-demographic characteristics, tobacco use, exposure to secondhand smoke, attitudes, behavior and cessation, curriculum, and training. A total of 426 dental students were included in the study. Over 15% of the participants were current smokers, and 31.2% had tried smoking at least once. About 29.3% reported having been exposed to secondhand smoke in family settings and 49.5% in other environments. The majority of the students had felt that health professionals were role models for their patients. However, only 20% had felt they had received formal training in smoking cessation approaches. More than 70% of smokers had tried to quit smoking in the past year; however, only 41.7% reported having received help or advice. It is crucial that education and public health officials join efforts to plan and carry out programs aimed at training dental students in evidence-based cessation counseling methods, in order to change their own smoking behavior and assist their future patients. Improving dental school curriculums with regard to tobacco use prevention and cessation is also a powerful means of alleviating the national burden of cancer.

Keywords Tobacco use · Tobacco control · Tobacco cessation · Dental students · Professional cancer education · Morocco

Introduction

According to the World Health Organization (WHO), there are 1.3 billion smokers in the world in 2021. It is well recognized that tobacco use leads to serious health effects and is a common risk factor for several diseases and conditions. Despite the intensive efforts undertaken to reduce tobacco consumption, it remains a worrying global health issue, responsible for a death toll of more than 8 million annually [1].

In 2017, the prevalence of tobacco use in the middle income countries was 20.8% [2]. In 2016, Morocco was among the countries with the highest smoking prevalence in the Eastern Mediterranean Region according to the WHO [3]. Data from the National Survey on Common Risk Factors for Non-Communicable Diseases conducted in 2017 indicated that the prevalence of smoking in the Moroccan population was 13.4% among adults over 18 years of age, with 26.9% of which were men and only 0.4% were women

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[4]. Tobacco use is also responsible for 8% of deaths in the country, and the causes of death include lung cancer and respiratory diseases. In 2020, lung cancer was the third most common cancer in both sexes with an age-standardized rate of 18.3/100 000. In 2020, 6551 lung cancer deaths were estimated in Morocco [5].

Tobacco use has been strongly associated with squamous cell carcinoma in the head and neck region. In fact, oral cavity cancer (OCC) has been identified as the most common cancer in the head and neck apparatus, and tobacco use was the most common risk factor [6]. Tobacco-induced oral diseases contribute significantly to the national oral disease burden in Morocco. In 2020, 731 new cases of oral and lip cancer and 391 deaths were reported. Similarly, smokeless tobacco use was significantly associated with the risk of oral cancer especially among women in the Eastern Mediterranean Region [7].

University environments are known to be convenient places for students to be introduced to tobacco use through peer influence due to increased interaction and a big percentage of their time spent in such places. Studies have shown that the majority of students begin smoking due to peer pressure or as a way of trying to mirror the behavior of their family members [8]. The World Health Organization Oral Health program has identified oral health professionals as key actors in OCC prevention. The program supports translating knowledge into actions that involve dentists such as community-based activities in schools as well as interventions on the national level [9]. Therefore, the smoking habits of students pursuing dental studies are worthy of our attention, as they are likely to become examples to their patients and they have the responsibility of advancing knowledge about health issues within their communities.

In Morocco, some studies have evaluated tobacco use among university students, especially among pharmacy and medical students [10]. However, to the best of our knowledge, no previous studies have assessed tobacco use and knowledge among dental students in Morocco. The purpose of the present study was to evaluate tobacco use, attitudes, knowledge, and perceptions about tobacco control policies and smoking cessation counseling among dental students in Morocco.

Material and Methods

This is a descriptive cross-sectional study that was conducted at the Faculty of Dentistry at the Mohammed VI University of Health Sciences in Casablanca between 6 April and 6 June 2021. The inclusion criteria in the current study consisted of all students regularly enrolled in the Faculty of Dentistry at the time of the study regardless of their academic year. We collected data using a self-administered survey during the practical training sessions for students in year levels 2, 3, 4, and 5. For students in the year level 1, a survey was sent through the school email and was completed online using Google forms. The survey was developed based on the Global Health Professional Students Survey (GHPSS) [11]. Thirty-six items were selected from the GHPSS, translated into French. The survey included the following sections: socio-demographic characteristics, tobacco use, exposure to secondhand smoke, attitude towards smoking policies, behavior towards quitting, and understanding of curriculum and training. The latter section was assigned to students in the 3rd year level 3 and above, as they are supposed to have learned it already. In this study, an active smoker was defined as someone who smoked at least once during the past 30 days preceding the survey.

Data were analyzed and tabulated. Descriptive analyses were conducted. The qualitative variables were presented in numbers and proportions, while the quantitative variables were presented in means and standard deviations. The chi-square test or Fisher's exact test were used to compare the qualitative variables. Data analysis was performed using SPSS, version 20 software. In all statistical analyses, p values were two-sided and considered statistically significant if lower than 0.05.

Results

Among 526 students regularly enrolled in the Faculty of Dentistry, a total of 426 students completed the survey. The participation rate in this study was 80.9%. The mean age of participants was 21 years with a standard deviation of 2.1 years. A total of 66.2% of participants identified as female.

Experience with Tobacco and Tobacco Use

Table 1 presents students' previous experience with tobacco use and exposure to secondhand smoke. One hundred and thirty-three (31.2%) students declared having experimented with cigarette smoking at least once. The prevalence rate was higher among males (48.6%) compared to females (22.3%) ($p < 0.001$). Most participants (38.3%) reported having their first experience with cigarette smoking at the age of 16–17. The main source of influence identified was that from friends and colleagues (13.8%).

When it comes to current use of tobacco and tobacco derivatives, sixty-seven (15.7%) of the participants were active smokers, and male students smoked more frequently than females ($p < 0.001$). Only a minority of students (3.1%) declared having smoked cigarettes on university premises in the last 30 days. Regarding other forms of tobacco, 22.8% of students were actively using chewed tobacco, snuff, narguilé,

Table 1 Experience with tobacco use and exposure to secondhand smoke

Question	Gender			
	Total *N* (%)	Male *N* (%)	Female *N* (%)	*p* value
Have you ever tried or experimented with cigarette smoking?				
Yes	133 (31.2)	70 (48.6)	63 (22.3)	0.640
No	293 (68.8)	74 (51.4)	219 (77.7)	
How old were you when you first tried a cigarette? (years)				
10 or less	4 (3.0)	2 (2.9)	2 (3.2)	0.640
11–15	27 (20.3)	17 (24.3)	10 (15.9)	
16–17	51 (38.3)	28 (40.0)	23 (36.5)	
18–19	35 (26.3)	16 (22.9)	19 (30.2)	
20–24	16 (12.0)	7 (10.0)	9 (14.3)	
Did you have any influence when you started smoking?				
I have never smoked cigarettes	293 (68.8)	74 (51.4)	219 (77.7)	< 0.001
I had no influence	62 (14.6)	28 (19.4)	34 (12.1)	
Influence of family members	7 (1.6)	6 (4.2)	1 (0.4)	
Influence of friends/colleagues	59 (13.8)	33 (22.9)	26 (9.2)	
Influence of the media	5 (1.2)	3 (2.1)	2 (0.7)	
How many days have you smoked cigarette during the last 30 days? (days)				
0	359 (84.3)	102 (70.8)	257 (91.1)	< 0.001
1 or 2	16 (3.8)	9 (6.3)	7 (2.5)	
3 to 5	11 (2.6)	4 (2.8)	7 (2.5)	
6 to 9	2 (0.5)	2 (1.4)	0 (0.0)	
10 to 19	7 (1.6)	2 (1.4)	5 (1.8)	
20 to 29	9 (2.1)	7 (4.9)	2 (0.7)	
All 30	22 (5.2)	18 (12.5)	4 (1.4)	
Current tobacco use				
Yes	67 (15.7)	42 (29.2)	25 (8.9)	< 0.001
No	359 (84.3)	102 (70.8)	257 (91.1)	
Have you smoked cigarettes on school premises/property during the last 30 days?				
I have never smoked cigarettes	336 (78.8)	93 (64.6)	243 (86.2)	< 0.001
Yes	13 (3.1)	9 (6.3)	4 (1.4)	
No	77 (18.1)	42 (29.2)	35 (12.4)	
Have you ever used chewing tobacco, snuff, narguilé, cigars, or waterpipes?				
Yes	97 (22.8)	60 (41.7)	37 (13.1)	< 0.001
No	329 (77.2)	84 (58.3)	245 (86.9)	
During the past 30 days (1 month), on how many days did you use chewing tobacco, snuff, narguilé, cigars, or waterpipes? (days)				
0	381 (89.4)	111 (77.1)	270 (95.7)	< 0.001
1 or 2	19 (4.5)	13 (9.0)	6 (2.1)	
3 to 5	4 (0.9)	4 (2.8)	0 (0.0)	
6 to 9	9 (2.1)	6 (4.2)	3 (1.1)	
10 to 19	2 (0.5)	1 (0.7)	1 (0.4)	
20 to 29	1 (0.2)	1 (0.7)	0 (0.0)	
All 30	10 (2.4)	8 (5.6)	2 (0.7)	
Current use of other forms of tobacco				
Yes	45 (10.6)	33 (22.9)	12 (4.3)	< 0.001
No	381 (89.4)	111 (77.1)	270 (95.7)	
During the past 7 days, on how many days have people smoked where you live or in your presence?				
0	302 (70.9)	88 (61.1)	214 (75.9)	0.013
1 to 2	39 (9.2)	17 (11.8)	22 (7.8)	
3 to 4	30 (7.0)	13 (9.0)	17 (6.0)	
5 to 6	7 (1.6)	5 (3.5)	2 (0.7)	

Table 1 (continued)

Question	Gender			
	Total *N* (%)	Male *N* (%)	Female *N* (%)	*p* value
All 7	48 (11.3)	21 (14.6)	27 (9.6)	
During the past 7 days, on how many days have people smoked in your presence, in places other than where you live?				
0	215 (50.5)	56 (38.9)	159 (56.4)	< 0.001
1 to 2	90 (21.1)	29 (20.1)	61 (21.6)	
3 to 4	48 (11.3)	19 (13.2)	29 (10.3)	
5 to 6	20 (4.7)	10 (6.9)	10 (3.5)	
All 7	53 (12.4)	30 (20.8)	23 (8.2)	
Did you know that it is strictly forbidden to smoke in public spaces?				
Yes	231 (54.2)	72 (50.0)	159 (56.2)	0.211
No	195 (45.8)	72 (50.0)	123 (43.6)	
Is the official ban on smoking in premises/buildings enforced at your university?				
Yes	350 (82.1)	121 (84.0)	229 (81.2)	0.472
No	76 (17.9)	23 (16.0)	53 (18.8)	

cigars, or water pipes. The highest prevalence was observed among male students ($p < 0.001$).

Exposure to Secondhand Smoke and Smoking Ban

Forty-eight (11.3%) students reported having daily exposure to secondhand smoke during the past 7 days where they live. Concerning exposure in other environments, 50.5% of students reported not having been exposed to tobacco smoke in the last 7 days. Among these are 56.4% women ($p < 0.001$). Among the students, 11.3% declared having been exposed to secondhand smoke in places other than where they live; males were almost three times as exposed as females ($p < 0.001$).

For knowledge about tobacco control policies, almost half of the study participants (45.8%) were not aware that it was strictly forbidden to smoke in public spaces, with no significant difference between males and females. Most students (82.1%) also agreed that the official smoking ban was enforced in their university with no significant difference between the sexes.

Perceptions and Attitudes of Dental Students

Table 2 shows the attitudes of dental students towards tobacco control measures. When asked about whether tobacco advertising should be completely banned, the majority of students (80.7%) responded affirmatively. Among the participants, 87% agreed that sale of tobacco to adolescents should be prohibited. A higher rate was found among individuals with no previous smoking experience (91.8%) ($p < 0.001$) compared to those who have previously experimented with cigarettes. Furthermore, when asked about whether tobacco taxes or prices should be increased to reduce consumption, the majority of students (72.8%) responded positively. These findings were significantly more prevalent among individuals with no previous smoking experience (78.8%) and who were not active smokers (77%).

The participants were asked about their opinion on the role of health professionals in smoking cessation. Table 2 shows that regardless of smoking status, a vast majority of the participants (96%) felt that health professionals should have specific training on cessation techniques. About 90.8% also stated that health professionals should regularly advise patients to quit and felt that advice offered to patients by health professionals increases the chances of their success (77%).

Behavior and Cessation

As shown in Table 3, about 45% of students stated that they smoked during the first hour after they wake up. When asked whether they wanted to quit cigarettes, a majority (76%) of participants responded positively. In fact, over 70% have tried quitting in the past year, but only 41.7% had help provided. Among students who quit, only 1% have been clean for over 6 months. Over 70% of students believed that health professionals serve as role models to their patients, and over 50% disagreed with the statement that health professionals who smoke are less likely to give information about cessation to their patients.

Training and Curriculum

As presented on Table 3, a majority of study participants (92.3%) declared that they had learned about the dangers of tobacco during their training. About 55.7% said that they had not discussed the reasons why people resort to smoking. While 80% of students stated that they learned about

Table 2 Attitudes towards tobacco control measures and opinions about the role of health professionals in tobacco cessation

Question	Gender				Experience with cigarettes			Current use		
	Total = 426	Male	Female	*p* value	Yes	No	*p* value	Yes	No	*p* value
In your opinion, should the sale of tobacco to adolescents (under 18) be prohibited?										
Yes	374 (87.8)	116 (80.6)	258 (91.5)	0.001	105 (78.9)	269 (91.8)	< 0.001	53 (79.1)	321 (89.4)	0.018
No	52 (12.2)	28 (19.4)	24 (8.5)		28 (21.1)	24 (8.2)		14 (20.9)	38 (10.6)	
Should there be a complete ban on the advertising of tobacco products?										
Yes	344 (80.8)	109 (75.7)	235 (83.3)	0.069	101 (75.9)	243 (82.9)	0.090	54 (80.6)	290 (80.8)	0.972
No	82 (19.2)	35 (24.3)	47 (16.7)		32 (24.1)	50 (17.1)		13 (19.4)	69 (19.2)	
Should tobacco taxes/prices be increased in order to reduce consumption?										
Yes	310 (72.8)	91 (63.2)	219 (77.7)	0.002	79 (59.4)	231 (78.8)	< 0.001	31 (46.3)	279 (77.7)	< 0.001
No	116 (27.2)	53 (36.8)	63 (22.3)		54 (40.6)	62 (21.2)		36 (53.7)	80 (22.3)	
Should health professionals get specific training on tobacco cessation methods?										
Yes	409 (96.0)	133 (92.4)	276 (97.9)	0.006	124 (93.2)	285 (97.3)	0.049	62 (92.5)	347 (96.7)	0.163
No	17 (4.0)	11 (7.6)	6 (2.1)		9 (6.8)	8 (2.7)		5 (7.5)	12 (3.3)	
Health professionals serve as role models for their patients and the public?										
Yes	313 (73.5)	103 (71.5)	210 (74.5)	0.516	88 (66.2)	225 (76.8)	0.021	46 (68.7)	267 (74.4)	0.331
No	113 (26.5)	41 (28.5)	72 (25.5)		45 (33.8)	68 (23.2)		21 (31.3)	92 (25.6)	
Should health professionals regularly advise smokers to quit?										
Yes	387 (90.8)	133 (92.4)	254 (90.1)	0.438	124 (93.2)	263 (89.8)	0.250	63 (94.0)	324 (90.3)	0.325
No	39 (9.2)	11 (7.6)	28 (9.9)		9 (6.8)	30 (10.2)		4 (6.0)	35 (9.3)	
Do health professionals have a role in giving advice or information about smoking cessation to patients?										
Yes	416 (97.7)	139 (96.5)	277 (98.2)	0.316	126 (94.7)	290 (99.0)	0.012	64 (95.5)	352 (98.1)	0.197
No	10 (2.3)	5 (3.5)	5 (1.8)		7 (5.3)	3 (1.0)		3 (4.5)	7 (1.9)	
Patients, if advised by health professionals, are more likely to quit smoking?										
Yes	330 (77.5)	112 (77.8)	218 (77.3)	0.912	103 (77.4)	227 (77.5)	0.994	52 (77.4)	278 (77.6)	0.975
No	96 (22.5)	32 (22.2)	64 (22.7)		30 (22.6)	66 (22.5)		15 (22.4)	81 (22.6)	

the importance of recording smoking history as part of a patient's medical history, only 20% reported that they have received formal training on smoking cessation during their university education. A majority of the participants said that they have heard about nicotine replacement therapy (63.4%), but only a minority (27.9%) knew about the use of antidepressants as a cessation aid.

Discussion

The current study tried to evaluate tobacco use, attitudes, knowledge, and perceptions about tobacco control policies and smoking cessation counseling among dental students in Morocco.

In this study, 15.7% of participants were active smokers. This prevalence is higher than that of the general population in Morocco, which was 14.7% in 2018 [12]. It is also higher than the average in the EMRO Region which was 13% among dental students. The highest prevalence was recorded in European countries where 40% of dental students are smokers [13]. The higher prevalence among males found in this study has been observed in other similar studies conducted in several universities in Arab and Mediterranean nations such as Palestine, Yemen, Bahrain, Jordan, Egypt, Tunisia, United Arab Emirates, and Saudi Arabia [14]. This difference could be attributed to societal norms and the socio-cultural landscape in Morocco in which women who smoke are frowned upon [15].

In our study, most participants had their first experience at the age of 16–17, which is similar to the results of other studies [16, 17]. In this survey, almost half of those who tried smoking remained active smokers, which is high compared to some studies where only one third of those with a previous smoking experience became regular smokers [18]. Therefore, evidence-based interventions aimed at tobacco use prevention and cessation must be applied to this age group in order to reduce smoking prevalence among youth and improve health outcomes in adulthood.

The main source of influence reported in this study was from friends and colleagues. Several other studies provided evidence that peer pressure is one of the strongest indicators for smoking initiation among teenagers, alongside with exposure at home and other environments [19]. The vulnerability of this age group calls for comprehensive tobacco control policies aimed at reducing the social

Table 3 Smoking habit, cessation behavior,and training about cessation methods

Question	Gender			
	Total $N=60$ (%) Missing = 7	Male (%)	Female (%)	p value
How long after you wake up do you smoke?				
< 10 min	6 (10.0)	3 (7.5)	3 (15.0)	0.666
10–30 min	10 (16.7)	8 (20.0)	2 (10.0)	
31–60 min	11 (18.3)	7 (17.5)	4 (20.0)	
> 60 min	33 (55.0)	22 (55.0)	11 (55.0)	
Do you want to quit smoking cigarettes now?				
Yes	46 (76.7)	30 (75.0)	16 (80.0)	0.756
No	14 (23.3)	10 (25.0)	4 (20.0)	
In the past year, have you ever tried to quit smoking cigarettes?				
Yes	44 (73.3)	32 (80.0)	12 (60.0)	0.099
No	16 (26.7)	8 (20.0)	8 (40.0)	
Have you ever received help or advice to help you quit smoking?				
Yes	25 (41.7)	19 (47.5)	6 (30.0)	0.195
No	35 (58.3)	21 (52.5)	14 (70.0)	
If you are a former smoker, how long has it been since you quit smoking cigarettes?				
< 1 month	10 (50.0)	5 (41.7)	5 (62.5)	0.242
1–5 months	9 (45.0)	7 (77.8)	2 (25.0)	
6–11 months	1 (5.0)	0 (0.0)	1 (12.5)	
≥ 12				
Do health professionals who smoke give less advice or information about smoking cessation to patients?				
Yes	26 (44.1)	16 (40.0)	10 (52.6)	0.361
No	33 (55.9)	24 (60.0)	9 (47.4)	
During your university training, did you learn about the dangers of tobacco?				
Yes	275 (92.3)	91 (91.9)	184 (92.5)	0.869
No	23 (7.7)	8 (8.1)	15 (7.5)	
During your university education, did you discuss in any of your classes the reasons why people smoke?				
Yes	132 (44.3)	40 (40.4)	92 (46.2)	0.34
No	166 (55.7)	59 (59.6)	107 (53.8)	
During your university education, did you learn the importance of recording smoking history as part of a patient's general medical history?				
Yes	263 (88.3)	89 (89.9)	174 (87.4)	0.534
No	35 (11.7)	10 (10.1)	25 (12.6)	
During your university training, have you already received formal training on smoking cessation approaches to offer to patients?				
Yes	60 (20.1)	24 (24.2)	36 (18.1)	0.212
No	238 (79.9)	75 (75.8)	163 (81.9)	
During your university education, did you learn the importance of providing educational materials to support patients who wish to quit smoking?				
Yes	134 (45)	57 (57.6)	77 (38.7)	0.002
No	164 (55)	42 (42.4)	122 (61.3)	
Have you ever heard of the use of nicotine replacement therapy in smoking cessation programs (e.g., nicotine gum)?				
Yes	189 (63.4)	70 (70.7)	119 (59.8)	0.066
No	109 (36.6)	29 (29.3)	80 (40.2)	
Have you ever heard of the use of antidepressants in smoking cessation programs (e.g., bupropion or Zyban)?				
Yes	83 (27.9)	33 (33.3)	50 (25.1)	0.137
No	215 (72.1)	66 (66.7)	149 (74.9)	

acceptability of tobacco use and the overall exposure to the habit of smoking at home and educational institutions, as well as in other settings.

The results from this study reported that the majority of students had positive attitudes towards tobacco control policies such as banning advertising, prohibiting sales to adolescents, and increasing taxes to reduce consumption. However, the results varied depending on the smoking status of the respondent. Those who have experimented with cigarette smoking and current smokers were less supportive of these measures. In a national survey conducted on the Moroccan population, support for tobacco control measures and preventive regulations was dangerously low [20] compared to surveys conducted in Germany [21] and Pakistan [22], which showed significant support for radical measures even by smokers. Similarly, a limited support for these measures was reported among healthcare personnel who smoke in Spain [23]. The ban on tobacco sales to adolescents generated the most support by participants in the present study compared to other measures. Similar observations were reported by other studies. This may be explained by the tendency to support actions that directly affect the tobacco industry as opposed to those that increase the financial burden on the consumer.

In the present study, about half of participants were unaware of the smoking ban in public places in Morocco. This low level of knowledge indicated that the efforts undertaken to enforce existing laws remain insufficient and that more needs to be done to increase public awareness. Although Morocco was among the first countries in the region to issue a ban on smoking in public places in 1991, the laws are not entirely respected by the general public. In 2004, Morocco signed the Framework Convention on Tobacco Control (FCTC), the fundamental instrument in tobacco control. However, Morocco remains one of the only two countries in the EMRO Region that has yet to ratify the convention [24]. Consequently, the absence of strong and effective legislation that complies with FCTC guidelines leads to the lack of enforcement of tobacco control measures and their non-respect by the Moroccan population.

A majority of the students in this study had positive attitudes towards the role of health professionals in smoking cessation. Most of them believed that healthcare workers are role models to their patients. Similar results were observed in Poland (89.6%) and Germany (77.7%). Italy (57.2%) and Spain (54.4%) also showed the same perceptions, but at a lower rate than the current study [25]. Our results also showed that most students reported having received training in tobacco cessation approaches as part of their university curricula. In fact, 90% of dental students in the Eastern Mediterranean countries had received cessation training, which is the highest compared to all the other regions [13]. However, this was countered by other findings in the present study that highlighted a severe lack of knowledge about cessation aids such as the use of antidepressants. The curriculum in Moroccan dental schools — both private and public — includes didactic education about tobacco-induced oral diseases. Courses about etiological factors of periodontal disease highlight tobacco as a fundamental risk factor of periodontitis and give a brief overview of tobacco cessation methods and counseling. This is often taught during the 3rd year of dental studies. Additional modules are taught during the 4th and 5th year about tobacco as a risk factor to OCCs, namely, lip, tongue, and oropharynx cancer. The results in this study, however, reflect deep shortcomings in the curriculum of dental students and may lead to their subsequent failure in helping their future patients quit. Previous studies attempted to identify barriers to dental education regarding tobacco prevention and cessation (DENTUPAC), those included lack of confidence in own knowledge and skills, time constraints, and skepticism about the efficacy of counseling but also low confidence of faculty members in their ability to deliver DENTUPAC. Transitioning from a didactic to a clinical model, faculty development, and e-learning were shown to significantly improve DENTUPAC in both Europe and the USA and remove the above mentioned barriers. These findings should serve as valuable lessons for improving dental school curriculums and training in Morocco.

To the best of our knowledge, this is the first study assessing tobacco use, knowledge, attitudes, and perceptions towards tobacco control policies and smoking cessation among dental students in Morocco. However, this study has some limitations. First, the collected data were self-reported; therefore, there is a risk of memory bias and the risk of underreporting due to the negative social connotation of smoking, especially among the female students. Second, some participants, albeit a minority, received the online version of the questionnaire and therefore had access to Internet search which may have influenced their responses.

Conclusion

The current study provides evidence of the need for more initiatives to address smoking among university students. The similarity between the prevalence of tobacco use among dental students and the national prevalence presents this major call to action. It is therefore crucial that education and public health officials join efforts to plan and carry out programs aimed at training dental students in evidence-based cessation counseling methods, in order to assist their future patients in changing their smoking behavior and in changing their own behaviors as well. Improving dental school curriculums with regard to tobacco use prevention and cessation is also a powerful means of alleviating the national burden of cancer.

Acknowledgements We would like to thank all dental students who participated in the study.

Author Contribution Conceptualization, Mohamed Khalis; methodology, Mohamed Khalis, Latifa Elmouden, and Asmaa Hatim; formal analysis and investigation, Jonathan Muhunga Wa Tembo and Imad El Badisy; writing— original draft preparation, Jonathan Muhunga Wa Tembo and Oumnia Bouaddi; writing— review and editing, Mohamed Khalis, Latifa Elmouden, Asmaa Hatim, Hafida Charaka, Bouchra Assarag, Imad El Badisy, Don Eliseo III Lucero-Prisno, Amr Soliman, and Chakib Nejjari; supervision, Mohamed Khalis and Chakib Nejjari.

Declarations

Ethics Approval The study protocol was approved by the ethics committee of the Cheikh Khalifa Ibn Zaid University Hospital of Casablanca. All participants of this study completed an informed consent form. Data collection was anonymous, and confidentiality was guaranteed.

Competing Interests The authors declare no competing interests.

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