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Knowledge and attitude of tobacco use and cessation among dental professionals



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KEYWORDS

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Abstract *Aim:* Smoking is the one of the most preventable causes of death worldwide. Dental professionals may play an important role in anti-smoking campaigns. The aim of this study was to evaluate current knowledge of and attitudes toward smoking and its cessation among dental professionals.

Materials and methods: This questionnaire-based study was carried out among general dental practitioners (GDPs) and dental students in Saudi Arabia. The questionnaire was used to collect data on sociodemographic characteristics, knowledge, and attitudes toward tobacco use and cessation. Data were analyzed using SPSS software (version 18.0; IBM) and the Mann–Whitney *U*-test, with a significance level of $p < 0.001$.

Results: A total of 342 participants (130 GDPs, 212 dental students) with the mean age of 24 (standard deviation, 5) years participated in the study. One-third (33.8%, $n = 44$) of GDPs and 30.2% ($n = 64$) of dental students were smokers; small percentages (GDPs, 9.1% [$n = 4$]; dental students, 7.8% [$n = 5$]) were heavy smokers. The majority of participants rated both smoking cessation and prevention together as a very important preventive measure. Families were rated as the most important factor responsible for smoking cessation, whereas general practitioners were rated as the most important factor for providing assistance with cessation.

Conclusion: More meaningful participation of dental professionals in tobacco cessation is needed, with implications for related curriculum changes.

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1. Introduction

Tobacco use is among the most preventable causes of disease and premature death worldwide (USDHHS, 2010). The detrimental effects of tobacco use on oral health have been well documented in studies focusing on changes in the oral mucosa (Warnakulasuriya, 2005; Warnakulasuriya et al., 2005) and periodontal tissues (Johnson and Slach, 2001; Palmer et al.,

2005; Tonetti, 1998). Substantial evidence indicates that tobacco cessation not only reduces the prevalence of a range of diseases, but also limits their progression and improves treatment outcomes (Preshaw et al., 2005).

Dental professionals play a significant role in identifying smokers, as they may notice intraoral signs such as odor, tooth stains, and oral hygiene problems earlier than other healthcare professionals; they are thus in a better position to offer preventive care (Ramseier et al., 2006, 2010). In addition, they have access to protocols that encourage smoking cessation and pharmaceutical support if needed (Wiener and Wiener Pla, 2011). As a result, dentists' knowledge about tobacco use and various methods available for its cessation is crucial, along with increased involvement of dental professionals in anti-smoking campaigns to minimize smoking-related harmful effects (Ehizele et al., 2011).

Patients who visit dental clinics routinely have little interaction with healthcare professionals about tobacco use and related hazardous effects. This factor has been attributed to the lack of practice, time, and resistance on the part of the patients, as well as insufficient knowledge and confidence among oral healthcare professionals in providing preventive measures (Rikard-Bell et al., 2003; Rosseel et al., 2011). To minimize this communication gap, a strategy involving employment of dental professionals in preventive anti-smoking programs and improvement of education and counseling in tobacco cessation should be considered. As a first step, data have been collected from various countries on the knowledge and attitudes of dental professionals, including dental students, regarding tobacco use and cessation (Alomari et al., 2006; Barrieshi-Nusair et al., 2006; Dumitrescu, 2007; Huang et al., 2011; Smith and Leggat, 2007).

In Saudi Arabia, few studies have addressed this problem (Abdulghani et al., 2013; Al-Haqwi et al., 2010; Azhar and Alsayed, 2012; Kujan et al., 2013) and research data related to the role of dental professionals in tobacco cessation interventions are sparse. The aim of the present study was to assess the knowledge and attitudes of Saudi dental professionals regarding tobacco use, specifically smoking, and smoking cessation.

2. Materials and methods

This cross-sectional study was conducted over a 6-month period from March to August 2013 in Riyadh, Kingdom of Saudi Arabia, using a self-administered, two-page structured questionnaire derived from the Global Tobacco Survey (<http://www.cdc.gov/tobacco/global/gats/questionnaire/index.htm> [updated 25 May 2009, accessed June 2009]). The study population comprised dental undergraduate students and general dental practitioners (GDPs). Questionnaires were distributed to students during routine lectures and to GDPs at their workplaces. Each questionnaire was accompanied by a cover letter explaining the purpose of the study and providing specific instructions for questionnaire completion. Standard procedures of informed consent were used, including the protection of participants' anonymity and confidentiality.

Questionnaire items solicited data on participants' sociodemographic characteristics (age, gender, residence type, academic year of study) and knowledge and attitudes regarding smoking and its cessation. Eight questions were used to assess

participants' knowledge about the hazardous effects of tobacco use and attitudes toward the role of dental professionals in smoking cessation campaigns. Nine questions focused on participants' attitudes toward smoking, and five questions were designed to collect data about personal and family smoking habits. The questionnaire was pretested to ensure that all questions were clear and understandable to participants. The institutional research and ethics committee approved this study.

Data were analyzed using SPSS (version 18.0; IBM Corporation, Armonk, NY, USA). Responses were coded numerically to facilitate data entry. Comparison of smoking characteristics among the GDPs and dental students was performed and the data was analyzed using the Mann-Whitney *U*-test, with the level of significance set to $p < 0.001$.

3. Results

A total of 342 subjects with the mean age of 24 (standard deviation [SD], 5) years completed the questionnaire. The response rate was 86.5%. Of the participants, 130 (mean age, 30 [SD, 5] years) were GDPs and 212 (mean age, 21 [SD, 3] years) were dental students. Among the GDPs and dental students, 63.8% and 75.5% of participants, respectively, were male.

3.1. Smoking behavior

One-third (33.8%, $n = 44$) of GDPs and 30.2% ($n = 64$) of dental students reported that they smoked when asked about their personal smoking habits (Table 1). Tobacco users were classified as; Occasional smokers: those who smoked 1–3 days per week; Regular smokers: those who smoked every day; Heavy smokers: those who smoked one pack of cigarette or more a day. Most ($n = 30$) smokers among the GDPs were regular smokers, reporting that they usually smoked on a daily basis; in contrast, most ($n = 50$) dental students who smoked did so less frequently, on average 1–3 days a week. Small percentages (GDPs, 9.1% [$n = 4$]; dental students, 7.8% [$n = 5$]) of these respondents were heavy smokers, smoking one pack of cigarettes or more per day. The majority of participants in both groups were non-smokers, and no significant difference was noted between groups.

GDPs and dental students who smoked reported that they were 15–19 years old when they acquired a smoking habit. However, dental

Table 1 Comparison of smoking characteristics among GDPs and dental students.

Variables	GDPs ($n = 44$)	Dental students ($n = 64$)
Smoking prevalence (in last month)		
1–7 days	8	10
8–20 days	6	50
Every day	30	4
Frequency of smoking (per day)		
1–10 cigarettes	35	54
11–20 cigarettes	5	5
> 20 cigarettes	4	5
Age of initiation of smoking		
< 16 years	4	20
16–18 years	28	40
> 18 years	12	4
Giving up smoking		
Tried at least once	3	5
Never tried	41	59

students started smoking earlier than GDPs. Only 6.8% of GDPs and 7.8% of dental students who smoked reported that they had tried to quit smoking at least once.

3.2. Attitudes toward tobacco use and cessation

Sixty-two percent of GDPs and 67% of dental students rated both smoking cessation and prevention together as a very important preventive measure; others perceived either smoking cessation or prevention as important. Smoking prevention was rated by 32% of GDPs and 23% of dental students.

When asked about the hazardous effects of smoking on general health, the majority of participants identified oral cancer and lung cancer as the most common consequences of smoking (Table 2). Overall, responses were similar in the two groups; dental students, however, rated oral cancer, lung cancer, hypertension, heart attack, and impotence significantly higher than their counterparts. The majority of participants rated stress and social influence as the most important factors influencing smoking initiation, and more than 40% of participants identified peer pressure and substitute activity as such factors (Table 3).

When asked about the role of education in relation to smoking cessation and prevention, 64% of GDPs and 78% of dental students denied receiving any relevant information regarding smoking cessation

Table 2 Smoking-related health risks as reported by the participants.

	All		GDPs		Dental students		Mann–Whitney <i>U</i> test Significance
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	
Oral cancer	303	88.59	107	82.30	196	92.45	0.005
Lung cancer	320	93.56	111	85.38	208	98.11	< 0.001
Heart attack	277	80.99	105	80.76	172	81.13	0.933
Preterm birth	232	67.83	78	60.00	154	72.64	0.015
Gastric cancer	129	37.71	40	30.76	89	41.98	0.038
Periodontal diseases	238	69.59	90	69.23	148	69.81	0.909
Hypertension	216	63.15	71	54.61	145	68.39	0.010
Arteriosclerosis	284	83.04	108	83.07	176	83.01	0.988

Table 3 Main factors influencing smoking initiation.

	Altogether		GDPs		Dental students	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Stress	207	60.52	71	54.61	136	64.15
Risk taking behavior	184	53.80	62	47.69	122	57.54
Social impact	177	51.75	50	38.46	127	59.90
Fashionable to smoke	114	33.33	27	20.76	87	41.03
Leisure activity	208	60.81	76	58.46	134	63.20
Unknown	1	0.29	0	0.0	1	0.47

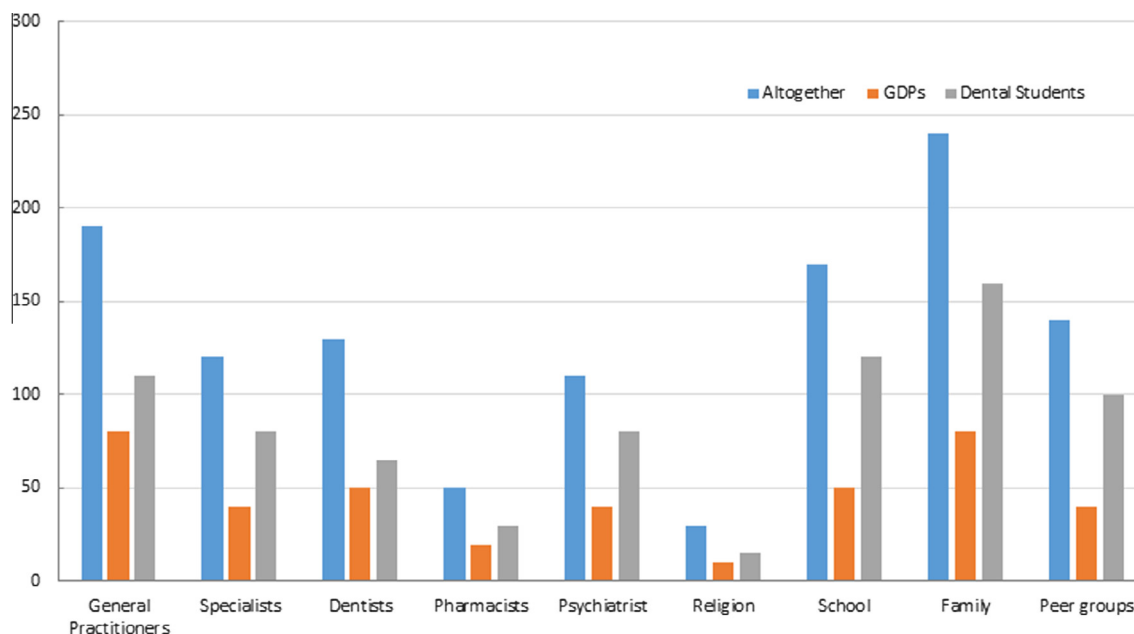


Figure 1 Factors rated by the participants to be responsible for smoking cessation.

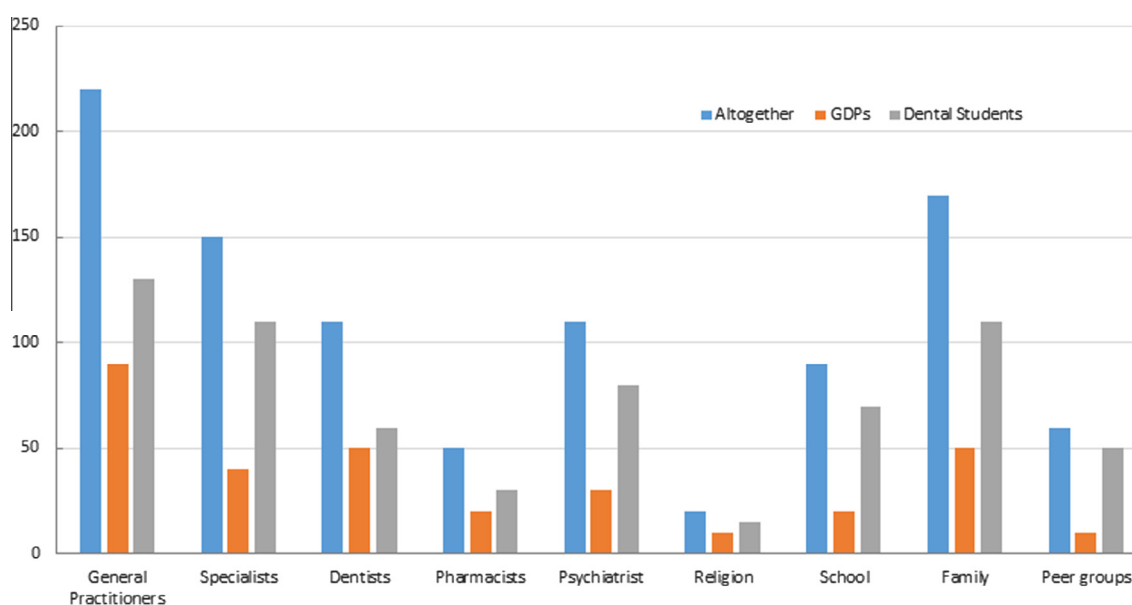


Figure 2 Factors reported by the participants to currently assist in smoking cessation.

during their years of study. However, more than 50% of GDPs and dental students stated that they expected to have received smoking-related information.

Responsibility regarding smoking cessation assistance was enquired in two questions. The first question focused on identifying those responsible for providing it and grading them by importance. The majority of participants rated family as the most important factor. General practitioners, peer groups, and schools were also reported to play a role in smoking cessation (Fig. 1). The second question explored participants' attitudes towards factors that may assist in smoking cessation; respondents in both groups identified general practitioners, followed by family members and specialists, as the primary providers of counseling (Fig. 2).

Lastly, the participants were asked about their readiness to provide assistance to patients who want to quit smoking. Forty-three percent of GDPs and 52% of dental students responded positively in providing the smoking cessation assistance.

4. Discussion

To our knowledge, this study is the first to document the knowledge, attitudes, behavior, and perceived effectiveness and barriers regarding tobacco use and cessation simultaneously among dental professionals in Saudi Arabia. Tobacco use and related health impacts pose a significant problem globally, and tobacco use is among the leading causes of morbidity and mortality. Studies have highlighted the need for involvement of various healthcare professionals in the fight against tobacco use (Murthy and Saddichha, 2010). Dentists can play a pivotal role in providing assistance to patients in terms of smoking cessation and prevention.

The number of smokers in our study was expectedly small, in line with other reports of smoking prevalence among healthcare professionals (Secker-Walker et al., 1994). Given this small number of smokers, any observed significant relationship based on smoking status should be viewed with caution. The majority of participants among the smoker group were male (81.5%, $n = 88$), perhaps reflecting the greater freedom of

males in terms of individual behavior in Arab culture, which may make men more likely than women to indulge in smoking (Ertas, 2007).

We found that the majority of dental students who smoked were occasional smokers, smoking on only a few days per week. These results are in line with international trends; for example, an increase in the number of occasional smokers and decrease in the number of regular smokers in the USA have been reported (Centers for Disease & Prevention, 2011).

In our study, the common age of smoking initiation was 15–19 years among both GDPs and dental students. The 2011 General Lifestyle Survey of adult smokers revealed that almost two-fifths (40%) had started smoking regularly before the age of 16 (Office for National Statistics, 2013). The main reason for the initiation of a smoking habit at this early age could be the common practice among adolescents of imitating the behavior of their friends (Conrad et al., 1992; Tyas and Pederson, 1998; Zahid and Qidwai, 2005). Aggressive marketing of tobacco products, smoking by parents, peer pressure, availability and price of tobacco products, and lack of behavioral skills to resist tobacco offers are other factors that may contribute to smoking initiation at an early age.

Encouragingly, both dental students and GDPs reported favorable knowledge and attitudes regarding the hazardous effects of smoking on general health. Stress was rated as the most important factor contributing to smoking. Other studies have also reported a strong association between stress and smoking, especially during academic examination periods (Dudas et al., 2005; Piko et al., 1996). Although both GDPs and dental students rated family as the main factor responsible for support and assistance in smoking cessation, many believed that significant support and assistance could also come from general practitioners. Unfortunately, only about 50% of GDPs and dental students reported readiness to provide support and assistance in smoking cessation to patients, which emphasizes the need for education and motivation of dental professionals. This is an agreement with results of other studies (Logan et al.,

1992; Clover et al., 1999; Wyne et al., 2006) where the Dentists generally believed that it was part of their responsibility to help patients in smoking cessation.

5. Conclusion

Family and general practitioners play major roles in providing support and assistance to individuals in smoking cessation, but dental professionals are also an important source of support. They frequently provide dental services to adult and adolescent smokers, and are thus positioned uniquely to provide specific and authoritative information to patients about the hazardous effects of tobacco use. Thus, we strongly recommend that dental professionals receive proper training and acquire knowledge and clinical skills for the prevention and cessation of tobacco use, and that education on this issue is included in the undergraduate dental curriculum.

Conflict of interest

The authors declare that they have no conflict of interest.

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