KNOWLEDGE AND ATTITUDE OF IRANIAN DENTAL STUDENTS ABOUT SMOKING CESSATION COUNSELING

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ABSTRACT

Introduction and Aims: **Today, smoking is recognized as the biggest cause of preventable premature death. dentists can play a very important role in motivating and providing smoking cessation counseling and play this role of line requires gaining sufficient knowledge and education during the student period. Therefore, the purpose of this study is to determine the knowledge and attitude of dental students in Kerman in the field of smoking cessation counseling.**

Methods and materials: **This study was descriptive-analytical and cross-sectional. The study population was fourth, fifth and sixth year dental students. A questionnaire was used to assess participants knowledge and attitude towards smoking cessation, using the 5 As of smoking cessation. Data were collected using a questionnaire and analyzed using SPSS 21, t-test and chi-square software.**

Results: **This study showed that the mean score of students' knowledge was 2.13 ± 14.12. There was a significant relationship between knowledge score, gender (women more than men) and the presence of a smoker in the family (P = 0.01, 0.001, respectively). Also, the mean attitude score was 36.25 41 5.41. There was a significant relationship between attitude score, gender (women more than men) and the presence of a smoker in the family (P = 0.01, respectively).**

Conclusion: **Results of this study showed that the students have good knowledge of the 5As (Ask, Advice, Assess, Assist, Arrange) but that they did not have much information about some parameters under Assess. Also, they have a positive attitude in this regard. Moreover, students believed that time limitations in dental visits and concerns on the effectiveness of smoking cessation consultations are the major obstacle in implementing a smoking cessation plan.**

Keyword: Smoking cessation counseling, Dentistry, Knowledge

INTRODUCTION

Tobacco dependence is a chronic disease known as one of the major risk factors of more than 40 diseases, including cardiovascular diseases, respiratory disease, diabetes, and even death.[1-5]

From 1950 to 2000, nearly 70 million people have died due to tobacco use. In the next 50 years, 450 million deaths may die due to smoking-related diseases. Smoking will be the major cause of mortality in 2030.[6,7,8].

Smoking is a primary risk factor of oral cancer, leukoplakia, periodontitis, and delayed wound healing. Moreover, smoking shows several adverse effects on oral and dental health. The role of smoking is confirmed in several diseases such as pigmentation of the tooth and dental fillings, halitosis, anosmia, salivary changes, dental crown and root decay, soft tissue alterations, necrotizing ulcerative gingivitis, increased risk of bone resorption, tooth loss, pharyngeal cancer, and congenital diseases such as cleft lip and cleft palate. Dental implant failure, wound healing disorder, increased gingival resorption, and failure of periodontal treatments are among the negative impacts of smoking on dentistry treatments.[9]

Present estimations suggest that a total of 10 million smokers are there in Iran, and a total of 70000 smoking-related deaths occur annually in Iran, which will reach 200000 deaths with the present rate in 2025.[10,11]

Dentists and dental team visit patients regularly and can detect the primary effects and complications of tobacco use in the oral cavity as well as the general health status; they may also play a significant role in

motivating patients for smoking cessation as well as the primary prevention of smoking and may provide better consultations in this regard compared with other medical professionals.[11-13]

Dentists' knowledge and awareness regarding preventive treatments such as smoking cessation plans may play an undesirable role in changing patients' attitudes and motivating patients. Available data shows that 5 to 10 percent of smoking cessation clinics are referred from dental clinics.[14] Considering the vast complications of smoking and the statistics, all health care professionals should participate in overcoming this issue.[14-17]

All health care workers, especially dentists, should participate in controlling smoking due to several legal, ethical, scientific, and practical reasons.[18-20]

Hence, the role of dentists in controlling smoking is being considered in many countries, and they are educated in this area[18-21], thus, the present study was conducted to evaluate the awareness and attitude of dental students of Kerman regarding smoking cessation consultation.

METHODS

The present descriptive-analytic cross-sectional study was conducted on year 4, 5, and 6 dental students of dental kerman school using the convenient sampling method. All participants were Iranian. The questionnaire included demographic information such as age, sex, marital status, as well as their knowledge on the steps of smoking cessation and their attitudes regarding the barriers of smoking cessation consultations.[18]

First, a list of dental students was provided by the University, which was used for giving questionnaires to the students. The questionnaire structure, nature, and objectives of the study were explained to the students. Participants were informed that they could voluntarily leave the study at any point. Oral consent was taken from participants. The questionnaire were distributed by student of the last year, study participants completed the questionnaire, and the filled questionnaires were handed over. For analytic comparisons, correct answers were given 2 points, and wrong answers were given no points (based on any validated metric). Moreover, students' attitudes were assessed based on a Likert score ranging from 5 (completely agree) to 1 (completely disagree). Knowledge scores ranged between 0 to 26, and attitude scores ranged between 14 and 70. Data were analyzed using t-test and chi-square tests in SPSS version 21. The significance level was set as P-value<0.05.

RESULTS

A total of 136 questionnaires were distributed, 125 of which were analyzed (response rate=92%). The majority of participants were female (76 vs. 49). In terms of year, 31 participants were year 4, and 56 participants were year 6 students. The rest of the participants were year 5 students. This study showed that 18 (2 females and 16 males) students smoked cigarettes, and 25 (2 females and 23 males) students smoked Hookah. Table 1

Table 1: Demographic information of study participants

Characteristic		No	%
Gender	Male	49	39.2
	Female	76	60.8
Mean Age	Male	22.2 ± 1.43	
	Female	23.1 ± 1.12	
Grade	4	31	24.8
	5	38	30.4
	6	56	44.8
Marital status	Single	110	88
	Married	15	12
Smoker	Yes	18	14.4
	No	107	85.6
Hookah Smoker	Yes	25	20
	No	100	80
Smoker family member	Yes	68	54.4
	No	57	45.6

Dental students believed that 25.3% of smokers are willing to smoke cessation (ranging between 0 to 100%).

Study participants were fairly aware of the 5A steps (Ask, Advise, Assess, Assist, Arrange) of smoking cessation. Though they did not have enough information regarding questions two, three, four, five, and six, which are respectively about the next step in Assess step for smokers. Table 2

This study showed that the knowledge score ranged between 11 and 20 (mean= 14.12 ± 2.13). A significant relationship was found between knowledge score and gender (female superior to male) and presence of smokers among family members (P=0.001 and P=0.01).

The frequency of participants' responses in the attitude section regarding smoking cessation in dental clinics is presented in Table 3.

Results of this study show that the attitude score ranges between 21 and 54 (mean = 36.25 ± 5.41). A significant relationship was found between knowledge score and gender (female superior to male) and the presence of smokers among family members (P=0.01).

Table 2: Distribution of the responses of dental students regarding smoking cessation knowledge

Question	True		False	
	No	%	No	%
Ask is the first step of 5A smoking cessation.	91	72.8	34	27.2
In Assess step, if the patient was not willing, we should encourage them.	62	49.6	63	50.4
In the Assist step, a definite date will be set for smoking cessation.	51	40.8	74	59.2
In the advice step, the patient is encouraged to use a nicotine patch.	45	36	80	64
Advice is the third step of smoking cessation.	42	33.6	83	66.4
A certain date within two weeks should be set for smoking cessation.	71	56.8	54	43.2
The patient should be asked to inform their families and friends, and co-workers and seek help.	112	89.6	13	10.4
The patient should be informed to expect withdrawal symptoms in the first weeks.	120	96	5	4
The patient should be advised to keep tobacco substances out of reach.	120	96	5	4
The patient should be advised not to smoke in the places where they spend most of their time.	110	88	15	12
The patient should be advised not to communicate with smokers, which increases the chance of failure.	120	96	5	4
The patient should be advised to put motivational sentences around (e.g., on the door of the room, fridge, mirror, etc.)	121	96.8	4	3.2
The patient should be advised to consider medical therapies.	120	96	5	4

Table 3: Distribution of the responses of dental students regarding smoking cessation attitude

Question	Strongly Agree		Agree		Neither agree nor disagree		Disagree		Strongly disagree	
	No	%	No	%	No	%	No	%	No	%
In patients who are not willing to quit smoking, we do not plan for smoking cessation.	74	59.2	6	8.8	5	4	0	8	0	0
Dentists are fully aware of the oropharyngeal side effects of smoking.	74	59.2	9	9.2	2	1.6	0	0	0	0
Dentists have the opportunity to affect individuals and their parents for smoking cessation or reducing the frequency of smoking.	24	19.2	9	5.2	3	2.4	5	12	14	11.2
Dentists, compared with the physician, have more time for controlling smoking.	24	19.2	6	4.8	5	4	38	30.4	52	41.6
Dentists may warn the risks of smoking during pregnancy.	54	43.2	41	32.8	3	2.4	22	17.6	5	4
Dentists may effectively motivate smokers for smoking cessation by showing the oropharyngeal side effects of smoking.	54	43.2	41	32.8	3	2.4	22	17.6	5	4
Patient's attitude towards smoking should be asked.	21	16.8	41	32.8	4	3.2	49	39.2	10	8
Patients should be advised to quit smoking.	18	14.4	28	22.4	2	1.6	35	28	42	33.6
Patient's willingness for smoking cessation should be evaluate.	5	4	10	8	0	0	50	40	60	48
Patients who are willing to quit smoking should be helped.	54	43.2	41	32.8	3	2.4	22	17.6	5	4
Time and coordination should be done for regular controlling of patients during smoking cessation.	21	16.8	30	24	5	4	17	13.6	52	41.6
Patients should be informed of the negative impacts of smoking on their dental health.	81	64.8	25	20	0	0	14	11.2	5	4
Patients should be informed of the benefits of smoking cessation.	81	64.8	25	20	0	0	14	11.2	5	4
Patients should be informed of the negative impacts of smoking on their general health.	81	64.8	25	20	0	0	14	11.2	5	4

Table 4: Distribution of the responses of dental students regarding smoking cessation barriers

	Less Important		Important		Highly important	
	No	%	No	%	No	%
Resistance and lack of cooperation of smokers	10	8	20	16	95	76
Smoking is a personal decision, and we should not interfere with personal choices	38	30.4	32	25.6	55	44
Limited time of dentists	5	4	20	16	100	80
Lack of relationship between supporting organizations and dental clinics for smoking cessation	5	4	20	16	100	80
Lack of educational equipment in dental clinics for educating smokers for smoking cessation	5	4	20	16	100	80
Lack of information and unpreparedness of dentists regarding smoking cessation	10	8	35	28	80	64
Lack of communication and consultation skills of dentists	16	12.8	25	20	84	67.2
Preferring dentists activities regarding treatment to prevention	10	8	15	12	100	80
Lack of economic gain for informing, consulting, and follow-up of smoking cessation of patients	0	0	10	8	115	92
Losing patients due to emphasizing and following smoking cessation plans	0	0	10	8	115	92
Patients dissatisfaction of smoking cessation consultation	0	0	15	12	110	88
Lack of education for effective consultation	0	0	15	12	110	88
Limited time during dentistry visits	0	0	5	4	120	96
Concerns regarding the effectiveness of smoking cessation consultation	0	0	5	4	120	96
Inadequate supports by supervising authorities	0	0	10	8	115	92

Table 4 showed the distribution of the responses of dentistry students regarding smoking cessation barriers. Students considered time limitations in dental visits and concerns regarding the effectiveness of smoking cessation consultations as the major limitations of implementing smoking cessation.

DISCUSSION

Long-term addiction to tobacco is the leading behavioral cause of premature mortality and morbidity and seems to become the leading mortality cause in the world by 2030, accounting for 8 million annual deaths.[22] Tobacco use, especially smoking cigarettes, has now turned into a global problem, and despite the implementation of global, regional, and national tobacco control programs, the rate of tobacco use is yet high, while the smoking cessation rate is low, especially in Asia.[23]

In Iran, the prevalence of tobacco consumers among individuals aged 15 to 64 years is 12.5 percent, 23.4% in males, and only 1.4% in females.[24] A recent study on Iranians aged 15 to 64 years showed that 6.2% of men and 0.6% of women were able to smoke cessation[25], which is minimal compared with developing countries, which shows the role of health care professionals in controlling tobacco consumption.

The present study examines the dental students' knowledge and attitudes towards smoking cessation. Results of this study show that participants believed that only 25.3% of smokers are willing to quit smoking (ranging between 0 to 100 %). Participants of this study had fairly sufficient information regarding the first question related to the first step of 5A (Ask, Advise, Assess, Assist, Arrange). Though they did not have enough information regarding questions two, three, four, five, and six, which are respectively about the next step in Assess step for smokers who are not willing for smoking cessation, determining the smoking cessation date for patients in Assist step, administering Nicotine Replacement Therapy (NRT) using the nicotine patch, the third step of 5A steps, and not planning for smoking cessation in patients who were not willing to.

Dentists and the dental team in particular, due to having regular patient visits and the eligibility for initial detection of tobacco oral side effects as well as its effects on the general health, play an effective role as reliable health care providers in motivating patients for smoking cessation and even smoking prevention. Moreover, they can provide better consultations compared with other health care professionals.[32,31]

Recent advancements include five key components of interventions in the centers of patient care, which included asking patients regarding smoking, counseling the patients for quitting smoking, assessing their willingness to quit smoking, helping them to quit smoking using both consultation and treatment, and lastly, planning to quit smoking and follow-up.[32] Interventions to improve smoking cessation consultation supported by supportive medications, including nicotine replacement therapy and bupropion therapy, enabled us to increase the rate of smoking cessation.[33-35] Meanwhile, various barriers are present to implement these measures according to the findings of this study which showed that the limited time during dental visits and concerns regarding the effectiveness of smoking cessation consultation is considered the most important factors for the implementation of the program of smoking cessation.

The proposed smoking cessation program by the dental care team includes factors related to the patient, the dentist, and occupational issues.[36-42]

Mecklenburg[31] and Watt *et al.*[32] studies proved that the dental care team possess a prominent position as health care providers considering patient interaction and may play an effective role through providing 2-3 minutes of consultation for smoking cessation to smokers to facilitate smoking cessation as part of their routine dental activities.

Studies have demonstrated that in different countries, up to 80% of dentists are actively engaged in helping their smoker patients for smoking cessation.[21,20]

Zhang *et al.*[20] studied the patients of smoking dentists and demonstrated that dentists could play a critical role in smoking cessation since they are able to encourage patients for smoking cessation and to take required drugs.

Stassen *et al.*[21] indicated the unique role of dentists in reducing smoking; they also stated that dentists could help decrease mortality and side effects of smoking. Researchers also found that consultation of smoking cessation, even for a few minutes, improved the long-term smoking cessation by 5 percent; moreover, nicotine replacement therapy can increase withdrawal symptoms by 50-70%.

Studies have proved that physicians hardly consult or assist smokers for smoking cessation owing to lack of education, confidence and skills, and other barriers regarding the intervention of smoking cessation.[17-14]

Results of Ibn Ahmadi *et al.*[22] revealed that the majority of students are not familiar with clinical strategies of consultation for smoking cessation due to insufficient education, which is consistent with the findings of studies conducted in the United States, Belgium, and Nigeria.[43-45]

It seems that the inclusion of programs of smoking cessation counseling in the educational curriculum, such as Gelskey *et al.'s* study in Canada, in 2002, improved implementation of the smoking cessation program among students.[46]

Ibn Ahmadi *et al.'s* study[22] showed that lack of patients' cooperation and motivation are considered the most important barriers of smoking cessation consultation services by students. Besides, the majority of the respondents considered consultation and facilitation of smoking cessation as part of dentists' activities, which are consistent with the findings of Rikard-Bell *et al.'s* study.[47]

Ibn Ahmadi *et al.'s* study[22] showed that more than half of the students believed that the priority of activity in the field of therapy is highly important or important, while in Rikard-Bell *et al.'s* study[47], most of the participants opposed by stating that "providing medical services to the patients is enough."

The present study showed that the knowledge and performance of girls were significantly higher than boys, which is consistent with Ibn al-Ahmadi *et al.'s* study[22] and opposed by Vannobergen *et al.*[43] and the Khami *et al.'s* studies.[48]

In this study, students were not fully aware of the steps of smoking cessation consultation, which is consistent with Ibn Ahmadi *et al.'s* study[22] and a similar study by Victoroff *et al.*[49] in the United States, which revealed that most of the dentistry students in the United States are not aware of the techniques of smoking consultation.

The present study showed no significant relationship between the smoking status of the students and their knowledge and attitude towards smoking cessation consultation programs. Yet, Ibn Ahmadi *et al.'s* study[22], despite the very low number of smoker participants, found a significant difference between smokers and non-smokers in terms of sense of responsibility for helping patients smoking cessation, which is similar to the results a study conducted in Greece by Polychonopoulou *et al.*[50] which showed that smoking denta students are less optimistic to the effectiveness of the programs of smoking cessation in dental clinics.

Khami *et al.'s* study[48] showed that students' knowledge and awareness regarding smoking cessation consultation was low, and they were not adequately familiar with this topic. They concluded that this finding highlights the need for including education on the smoking cessation counseling models in the dental clinics, as a study at Tehran University of Medical Sciences[51] found that most students consider it necessary to be educated regarding smoking cessation in dental clinics. The global emphasis on dentists' role in controlling tobacco consumption highlights the importance of this issue. The new dental education program of Iran, being in force since 2012, discussions in the oral health course in addition to the separate optional course on tobacco and its oral side effects.

Ebne *et al.*[52] showed that the resistance and lack of cooperation of patients and lack of cooperation between dental centers and supporting organizations of smoking cessation were the most limitations regarding the implementation of smoking cessation programs. Also, Johnson *et al.'s* study[53] in the UK showed that the most common barriers to implementing such programs were the limited time of the dentist and the lack of training facilities in dental clinics for teaching smoking cessation to smokers.

Khami *et al.'s* study[48] showed the weaknesses of skills of students' on smoking cessation consultation. A study of dental and oral health students at the University of Palermo in Italy in 2010 showed the poor knowledge of 75 % of them regarding smoking cessation skills.[54] Students' knowledge in this regard may be improved using modern educational methods such as the standard patient role.

Finally, it can be stated that among the health care professionals, dentists play the most important role in controlling smoking and smoking cessation consultations due to the following reasons:

- Dentists regularly visit patients of different age groups and have the opportunity to effect or consult the patients or their parents for smoking cessation
- Fairly long duration of dental procedures
- Warning of the adverse effects of smoking on the fetus health to pregnant patients
- Dentists are fully aware of the adverse effects of smoking in the oral cavity
- Unlike the internal organs, patients can completely see their mouths, and the smoking side effects are apparent quickly.

Hence, many countries emphasize the highly important role of dentists in controlling smoking and providing consultations on smoking cessation, and it is advised to be included within their activities. Thus, familiarizing dentistry students with this crucial responsibility and role, and effective education of dentistry students and inclusion of such training in the student educational curriculum and practicing smoking cessation consultation during their educations and improving self-confidence is vital to obtain this important role and develop responsibility in this regard in their future work.

CONCLUSION

According to the results of this study, students' limited dental time, lack of communication between support organizations and dental centers for smoking cessation and lack of educational facilities in dental centers to teach smoking cessation to smokers create the most constraints in implementing smoking cessation program..

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