

Attitude of Smoker and Non-Smoker Libyan Dentists Towards Smoking Cessation



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ABSTRACT

Background:

Smoking is one of the most addictive habits and the most preventable cause of death and disease. For many years, smoking has been linked to lung disease, cancer, cardiovascular disease, and poor pregnancy outcomes. Cigarette smoking is a risk factor for oral cancer, pre-disposing factor in periodontal disease and implant failure. The present aim of this research is to compare the attitudes of smoker to non-smoker Libyan dentists towards smoking cessation.

Methods:

A total of 500 of dentists from throughout the Libya were included in this cross-sectional study with response rate of 94.26%. Participants were asked to complete a self-reported questionnaire to assess their attitudes and knowledge towards smoking cessation.

Results:

Our results demonstrated that more than one-quarter of participants were smokers, 43% of them were males. Around two-thirds of dentists had general knowledge regarding smoking cessation, while only 0.8% had taken a course in smoking cessation. About one-third of the dentists did not discuss smoking cessation with their patients, whereas the majority (61%) of them spent 1-5 minutes in this respect. Non-smoker dentists spent higher time than smoker dentists

counseling their patients regarding smoking cessation. Smoker dentists had lower extent of responsibility, effectiveness, and confidence providing smoking cessation advice in comparison with non-smoker dentists.

Conclusion:

It's concluded that the majority of dentists had lack of training in smoking cessation strategies. Non-smoker dentists had more knowledge, positive attitude and practicing habit regarding smoking cessation.

Key words: Dentist, Dentists counseling, Libya, Smoking cessation, Tobacco, Smoker & non smoker.

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INTRODUCTION

Tobacco use is the most important cause of serious morbidity and death worldwide. In a recent report, the World Health Organization (WHO 2008) estimated that 500 million people alive today will die as a result of smoking habit. Apparently 100 billion people could be killed as a consequence if current trends continue. For many years, smoking has been linked to lung disease,

cancer, cardiovascular disease, and poor pregnancy outcomes, such as miscarriage and low birth weight.¹ Smokers are between 20 and 30 times more likely to develop lung cancer compared to those who are not exposed to tobacco smoke.² Cigarette smoking is also an independent risk factor in the development of congestive heart failure.³ Smoking and tobacco consumption is on the increase in countries of the Eastern Mediterranean Region.⁴ The same trend is expected to be occurring in Libya, which suggests that the number of Libyans who will die or be disabled as a result of tobacco-related diseases will increase.

A national survey in Libya which conducted in 1996 found that smoking prevalence among people aged 25 years and over was 23.7% (48% among males and 12% among females).⁵

Smoking prevalence among adults of 25 years of age and older was 31.7% for males and 6% for females. A newer study in 1999 found that 21% of school students were smokers.⁶ The increase of tobacco use in Libya could be the result of several factors: growing population, rising income, increasing interest in smoking on the part of girls and women, relentless tobacco campaigns, and the lack of awareness of the dangers and hazards of smoking.⁷ Furthermore, cigarette smokers have risk of oral cancer two to five times than of non-smokers. Smoking has been acknowledged as a pre-disposing factor in implant failure, particularly in multiple failures in the same individual.⁸ Failure rates were 15% in current smokers, 9.6% in former smokers, and 3.6% in non-smokers.⁹ Second to bacterial plaque, smoking is the strongest of the modifiable risk factors for periodontal disease including chronic, aggressive and refractory periodontitis^{10,11}, gingival inflammation¹² and gingival recession.¹³ The rate of bone loss in smokers was almost four times greater than that of non-smokers.¹⁴ Plaque and calculus score were significantly higher in smokers than in nonsmokers.¹⁵ Smokers have a higher prevalence and severity of furcation involvement as well as greater tooth loss than non-smokers.¹⁶

The main aim of this study was to compare the attitudes of smoker to non-smoker Libyan dentists towards smoking cessation and assess the dentists' knowledge and their practice regarding

smoking cessation. Identify the barriers that prevent dentists to discuss tobacco use with patients.

MATERIAL AND METHODS

Design of the Study & Participants

The present study is a cross-sectional study. A convenient sample of 540 dentists (about 10% of Libya Dental Association Members) was selected from various Libyan governorates: (280 from Tripoli, 124 from Zliten and 136 distributed from the other governorates including: Misurata-Qusar Ahmad, Yeder, Magoba, Magasba, Zliten, Al Khomas). Participants were selected simply from those dentists who were available at the time of the study in the private dental clinics, centers or hospitals, in addition to the public service clinics: University, Ministry of Health (MOH), and Royal Medical Services (RMS) in the above mentioned governorates. Among the selected dentists, 289 were interviewed to explain the objectives of the study and given the questionnaire for completion. While the other 251 dentists were busy or out of their clinics, therefore they were delivered the questionnaire and then revisited twice to check whether they filled out the questionnaire. Out of the 540 participants, nine did not complete the questionnaire and thirty-one did not participate for various reasons.

Instruments

Participants were asked to complete a self-reported questionnaire to assess their attitudes and knowledge towards smoking cessation. The questionnaire utilized in this study was designed based on reference to various types of questionnaires that were developed in other countries.¹⁷⁻²² The survey questions were added, modified or dropped to suit the objectives of the study. Forward translation from the original English version into Arabic language was performed, and then backward translation into English language was carried out to verify the translation validity. To assess the reliability of the questionnaire, internal consistency was performed and found to be adequate with Cronbach's alpha = 0.8. Also, the questionnaire was piloted among a number of private and public dental practitioners, and appropriate modifications were made. The questionnaire consisted of seven parts; the first part was related to personal data including: age, gender, number of years in

practice, and place of work. The second part included information about their smoking status (smoker, non-smoker, and ex-smoker). Smokers and ex-smokers were asked about the duration of smoking, quantity of smoked cigarettes per day, and the most common reason for tobacco consumption. The third part contained questions about the source of education, tools used at clinic, and the time spent with patients in case of smoking cessation counseling. The fourth part investigated dentists' knowledge about the risk of smoking and whether it can cause respiratory or cardiovascular disease, oral cancer, implants failure, and an increase in the existing periodontal disease. Also, it explored their attitudes towards supporting some ideas (smoking should be banned in all closed places, tobacco sales to adolescent should be forbidden, and advertisement of tobacco in the media should be prohibited). Furthermore, inquiry was done on, whether they smoke or allow smoking at their clinics or not; and if they think that the dental office is a suitable place to give information about harmful effect of smoking, or promote referring smoker dental patients to a smoker cessation counseling expert. The fifth part included their behaviors (responsibility, effectiveness, and confidence) with smoking cessation counseling. The sixth part investigated dentists' practice in smoking cessation advice at their clinics and applying the "5 A's". How often they ask patients about smoking status, inform of general and oral effect of tobacco, advice to quit, assess willingness to stop smoking, assist by providing helpful hints to motivate patients to quit, involve the dental team in helping, prepare the patient for withdrawal symptoms, discuss the use of nicotine replacement therapy with patients, arrange and follow-up with patients on their progress in giving up, and refer patients to appropriate service. Last part focused on barriers that prevent dentists from smoking cessation counseling which included: time consuming, limited educational and training for dentists, insufficient services, resources and organizational supports, lack of referral options, prefer to diagnose and treat patients rather than preventive advice, feeling embarrassed asking about tobacco use, patients may take a negative attitude, lack of effectiveness, lack of knowledge of smoking cessation, and lack of remuneration.

Variables

- **Age** (in years): It was kept open, then divided

into three strata as the following: (≤ 30 , 30-41, > 40 years).

- **Gender:** Male or female.
- **Number of experienced years:** It was kept open, then stratified into the following categories: (≤ 5 , > 5 years).
- **Place of work:** Divided into four categories as the following: University, Ministry of Health, Royal Medical Services and Private Sector. Then re-categorized for purpose of logistic regression analysis into two categories (public and private).
- **Smoking habit among dentists:** Non-smoker, smoker and ex-smokers. Then re-categorized into: (non-smoker, smoker).
- **Number of cigarettes consumed:** It was divided into three strata [< 10 (light), 10 - 20 (moderate), > 20 (heavy) cigarettes/day].
- **Duration of smoking:** (< 5 , 5-10 and > 10 years).
- **Most common reason for tobacco consumption:** As a habit, social event, friend, company, boredom, as a mean to relieve tension, influenced by media, movies and others.
- **Source of education regarding smoking cessation:** No education in tobacco cessation, general knowledge, only read education material on tobacco cessation, and taken a course in tobacco cessation.
- **Time spent with patients in case of smoking cessation:** divided into the following categories: I don't discuss, 1-2, 3-5, 6-10, and > 10 minutes. Then re-categorized into two groups, no discussion and discussion.
- **Tools of smoking cessation:** Guidelines about smoking cessation, posters or pamphlets about smoking, web-based smoking programs, and none.

Questions related to dentists' knowledge and attitude towards smoking and smoking cessation

- ❖ **Behaviors with smoking cessation:** Including (responsibility, effectiveness and confidence): divided into four categories as the following: not at all, a little bit, considerable and great extent. Then re-categorized for purpose of logistic regression analysis into two categories: (no, yes).
- ❖ **Application of smoking cessation counseling in practice**
 - 5 A's (Ask, Advise, Assess, Assist, and Arrange) behaviors: Initially categorized into four groups: never, sometime, often

and always, then re-categorized for purpose of logistic regression analysis into two categories (no and yes).

- Inform, involve dental team, prepare for withdrawal symptoms, discuss (NRT), and refer: categorized into four groups: never, sometimes, often and always.

- ❖ **Barriers to discussing tobacco use with patients:** including time factor, educational and training courses, remuneration and resources factors, referral options, behavior factor etc.

Statistical Analysis

Data were entered into a personal computer and analyzed using the Statistical Package for Social Sciences (SPSS) software version 11.0 (SPSS®: Inc., Chicago, IL, USA).

RESULTS

Socio-Demographic Variables

A total of 500 out of 540 participants were included in the study with response rate of 94.26%. The mean age of the participants was (31.9) years with an age range between 22-70 years. About 59% of the subjects were under 30 years, while 27% were between 31-40 years and 14% were over 40 years. Males were nearly 58% of the study sample. Fifty per cent of dentists had > 5 years in practice. Among the participants, about 59% worked at private clinics, while the rest worked at public services including University, Ministry of Health (MOH) and the Royal Medical Services (RMS) clinic (Table 1).

Table 1. Socio-demographic variables of the study population(N=500).

Variable	Total N (%)
Age (years)	
≤30	296(59.2)
31-40	136(27.2)
>40	68(13.6)
Gender	
Female	212(42.4)
Male	288(57.6)
Number of practical years	
≤5	250(50.0)
>5	250(50.0)
Place of work	
University	59(11.8)
MOH	84(16.8)
RMS	64(12.8)
Private	293(58.6)

Smoking Habits among dentists

More than one-quarter of participants were smokers (27%), 43% of them were males, while 6% were females. There were significantly more male smokers (42%) than female smokers (6%) (P=0.000). About 40% of smokers consumed 10-20 cigarettes per day, while 28% and 31% consumed <10 or >20 cigarettes per day, respectively. However, higher proportions of males consumed 10-20 or >20 cig/day, with a significant variations than females (P=0.046). Around 45% of smokers consumed smoking cigarettes for more than 10 years, while 35% had 5-10 years duration, and 20% have been smokers for less than 5 years. No significant differences were found in the duration of smoking among gender (P=0.464). More than one-half (52%) of smokers smoked as a habit, while the rest had other reasons: such as social events (3.7%), friend company (11.2%), boredom (9.7%), relieve tension (16%), and others (6.7%). Higher proportions of males (54%) than females (33%) explained their smoking as a habit, while the most common reason for smoking among 33% of females was “friend company” (Table 2).

Table 2. Association between smoking variables and gender (N=500).

Variable	Total N (%)	Female N (%)	Male N (%)	P-value (χ^2 -test)
Smoking status				0.000
Non-smokers	334(66.8)	194(91.5)	140(48.6)	
X – smokers	32(6.4)	6(2.8)	26(9.0)	
Smokers	134(26.8)	12(5.7)	122(42.4)	
No. of cigarettes / day				0.046
< 10	38(28.4)	7(58.3)	31(25.4)	
10-20	54(40.3)	2(16.7)	52(42.6)	
>20	42(31.3)	3(25.0)	39(32.0)	
Duration of smoking (Years)				0.464
< 5	27(20.1)	4(33.3)	23(18.9)	
5-10	47(35.1)	4(33.3)	43(35.2)	
>10	60(44.8)	4(33.3)	56(45.9)	
The most common reason for tobacco consumption				0.119
As a habit	70(52.2)	4(33.3)	66(54.1)	
Social event	5(3.7)	1(8.3)	4(3.3)	
Friend company	15(11.2)	4(33.3)	11(9.0)	
Boredom	13(9.7)	0(0.0)	13(10.7)	
To relieve tension	22(16.4)	2(16.7)	20(16.4)	
Others (Pleasure)	9(6.7)	1(8.3)	8(6.6)	

Smoking Cessation knowledge and practice among dentists

Around two-thirds of dentists reported that they have general knowledge regarding smoking cessation, while only 0.8% had taken a course in smoking cessation.²⁵ Only 12% of the dentists had no education in this respect. Less variation was noticed among smoker and non-smoker dentists in regard to the source of education towards smoking cessation. Therefore, there were no significant difference (P=0.177). About one-third of the dentists did not discuss smoking cessation

with their patients, while the majority (61%) of them spent 1-5 minutes in this respect. However, only 5.6% of them spent ≥ 6 minutes discussing smoking cessation. An obvious difference was noticed between smoker and non-smoker dentists in regard to time spent with patients. Such variations is statistically significant among these groups ($P=0.000$).

Regarding smoking cessation tools at the practice, more than two-thirds of all dentists did not have any guidelines, posters or pamphlets, or web-based programs. Of them, 74% were smokers compared to 66% of non-smokers. No significant variations were found regarding smoking cessation tools (guidelines, posters or pamphlets, or web-based programs) between smokers and non-smokers ($P=0.294$) (Table 3).

Table 3. Comparison of smoking cessation knowledge and practice by smoking status (N=500).

Variable	Total N (%)	Smoker N (%)	Non-smoker N (%)	P-value (χ^2 -test)
Source of education / knowledge				0.177
No education	60(12.0)	16(11.9)	44(12.0)	
General knowledge	336(67.2)	97(72.4)	239(65.3)	
Read education material	100(20.0)	19(14.2)	81(22.1)	
Taken a course	4(0.80)	2(1.5)	2(0.5)	
Time spent with patient (minutes)				0.000
Don't discuss	167(33.4)	79(59.0)	88(24.0)	
1-2	196(39.2)	35(26.1)	161(44.0)	
3-5	109(21.8)	14(10.4)	95(26.0)	
6-10	18(3.6)	2(1.5)	16(4.4)	
>10	10(2.0)	4(3.0)	6(1.6)	
Presence of smoking cessation tools				0.294
Guidelines	58(11.6)	14(10.4)	44(12.0)	
Posters or pamphlets	92(18.4)	18(13.4)	74(20.2)	
Web-based program	8(1.6)	2(1.5)	6(1.6)	
None	342(68.4)	100(74.6)	242(66.1)	

Dentists' knowledge about the risk of smoking

Most of dentists (93% - 99%) had an excellent knowledge about the risk of smoking and whether it can cause respiratory or cardiovascular disease, oral cancer, implants failure, and an increase in the existing periodontal disease.²⁴ Non-smoker dentists were more knowledgeable about the side effects of smoking compared to smoker dentists. Such variations among them were found to be significant ($P=0.000-0.004$) (Table 4).

Table 4. Knowledge about side effects of smoking between smokers and non-smokers who answered with yes.

Variable	Total N (%)	Smoker N (%)	Not-smoker N (%)	P-value (χ^2 -test)
Do you think that smoking can?				
Harm the respiratory system	496(99.2)	130(97.0)	366(100.0)	0.001
Cause cardiovascular diseases	492(98.4)	127(94.8)	365(99.7)	0.000
Cause oral cancer	481(96.2)	121(90.3)	360(98.4)	0.000
Cause implant failure	463(92.6)	115(85.8)	348(95.1)	0.000
Increase an existing periodontal diseases	487(97.4)	126(94.0)	361(98.6)	0.004

Attitudes towards Smoking and Smoking Cessation

Most of participants (89% - 96%) reported that smoking should be banned in closed places. Also, tobacco sales for adolescents and advertisements to tobacco in media should be prohibited. Higher proportions of smoker dentists were less likely to support the ideas previously mentioned compared to non-smokers.²⁵ Such variation were found to be statistically significant ($P=0.00 - 0.02$). Only 19% of dentists reported that they permit smoking at their dental offices. 34% of them were smokers compared to 14% of non-smokers, with a significant variation ($P = 0.000$). About one-half of smoker dentists (48%) smoke at their dental office. Higher proportions of non-smokers than smokers agree that the dental office is a suitable place to give information about harmful effect of smoking and promote referring smoker dental patients to a smoking cessation counseling expert as well. The variations among both groups were statistically significant ($P = 0.00$ & $P = 0.03$) (Table 5).

Table 5. Attitudes of dentists towards smoking and smoking cessation.

Variable	Total N (%)	Smoker N (%)	Non-smoker N (%)	P-value (χ^2 -test)
Support the idea that smoking should be banned in closed places (Yes)	475(95.0)	119(88.8)	356(97.3)	0.000
Support the idea that tobacco sales to adolescents should be banned (Yes)	477(95.4)	123(91.8)	354(96.7)	0.020
Support the idea that advertisement of tobacco in the media should be prohibited (Yes)	445(89.0)	110(82.1)	335(91.50)	0.003
Permit smoking in your dental office(Yes)	96(19.2)	45(33.6)	51(13.9)	0.000
If you are smoker, do you smoke in your dental office (Yes)	64(47.8)	64(47.8)	0(0)	-
Think that dental office is a suitable place to give information about harmful effect of smoking(Yes)	310(62.0)	67(50.0)	243(66.4)	0.001
Think it is better to refer smoker dental patients to a smoker cessation counseling expert(Yes)	357(71.4)	86(64.2)	271(74.0)	0.031

Behavior of dentists toward smoking cessation counseling

About 41% of respondents had a “little bit” of responsibility as dentists to provide smoking cessation advice. Higher proportions of non-smokers (86%) than smokers (14%) were responsible towards smoking cessation counseling to a “great extent”. The majority of

dentists (83%) believed that they have a “little bit” to a considerable extent of the effectiveness of smoking cessation counseling. Around 87% of non-smokers had a “great extent” of effectiveness regarding smoking cessation advice compared to 13% of smokers. More than one-half of the dentists had a “little bit” of confidence in regard to smoking cessation counseling. High proportions of non-smokers (94%) were more confident in offering smoking cessation counseling to a “great extent” than smokers (6%). Such variations between smoker and non-smoker dentists in regard to these variables were found to be statistically significant ($P=0.000$) (Table 6).

Table 6. Dentists' behaviors towards smoking cessation counseling (N=500).

Variable	Not at all N (%)	A little bit N (%)	Considerable extent N (%)	Great extent N (%)	P-value (χ^2 -test)
Responsibility as a dentist to provide smoking cessation counseling					0.000
Total	16(3.2)	207(41.4)	183(36.6)	94(18.8)	
Smoker	12(75.0)	70(33.8)	39(21.3)	13(13.8)	
Not-smoker	4(25.0)	137(66.2)	144(78.7)	81(86.2)	
Effectiveness of smoking cessation counseling provided by dentist					0.000
Total	19(3.8)	263(52.6)	151(30.2)	67(13.4)	
Smoker	9(47.4)	85(32.3)	31(20.5)	9(13.4)	
Not-smoker	10(52.6)	178(67.7)	120(79.5)	58(86.8)	
Dentist confidence that he/she able to effectively offer smoking cessation counseling					0.000
Total	32(6.4)	258(51.6)	159(31.8)	51(10.2)	
Smoker	16(50.0)	83(32.2)	32(20.1)	3(5.9)	
Not-smoker	16(50.0)	175(67.8)	127(79.9)	48(94.1)	

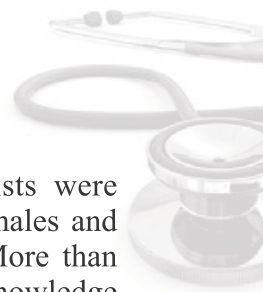
Application of smoking cessation counseling in practice

About 47% of participants always asked their patients about their smoking status, while 6% never asked about smoking. Of them, 78% were non-smokers compared to 22% of smokers. Also, 21% and 30% of dentists reported that they “always” inform their patients about the general effects as well as the oral effects of the smoking habit, respectively. Smokers were less likely to notify their patients about the risk of smoking. Such variations were statistically significant in regard to these respects ($P=0.00$). Nearly 32% of dentists “always” advise their patients to stop smoking. Higher proportions of non-smokers (87%) were “always” give advice to their patients to quit smoking than smokers (13%) do so, with a significant difference ($P=0.00$). In regard to assessing patients' willingness to quit smoking, 44% of dentists were doing so occasionally. The majority of non-smoker dentists (92%) were “always” assessing patients' willingness to stop

smoking compared to smoker dentists (8%). About 43% of dentists assisted their patients to quit smoking occasionally. Nearly 86% of non-smokers had “always” provided their patients with helpful hints to quit smoking in comparison with 14% of smokers. Such variations among smokers and non-smokers were found to be statistically significant ($P=0.00$). Approximately 56% of all dentists did not involve their dental team in helping patients regarding smoking issue. While only 3% of dentists “always” involve in the helping patients regarding smoking issues. The majority of non-smoker dentists (90%) reported that they “often” involve their dental teams helping patients regarding smoking cessation compared to 10% of smoker dentists. More than one-half of dentists did not prepare their patients for withdrawal symptoms or discussed nicotine replacement therapy (NRT) with their patients.²⁶ About 90% and 83% of non-smokers had “often” prepared patients for withdrawal symptoms as well as discussed (NRT) compared to 10% and 17% of smokers, respectively. Nearly 54% of dentist did not follow up with patients in their progress in giving up smoking at all, while only 3% “always” do so. Higher proportions of non-smoker dentists (86%) informed that they “often” follow up with patients in their progress in giving up smoking than smoker dentists (14%). More than two-thirds of participants (67%) did not refer patients to appropriate service helping them to stop smoking at all. Nearly 84% of non-smokers were “often” refer their patients to appropriate service helping them in to stop smoking, compared to 16% of smokers. Such variations between smokers and non-smokers were found to be statistically significant in regard to above mentioned variables ($P=0.00-0.06$) (Table 7).

Table 7. Comparison of smoking cessation counseling application between smokers and non-smokers.

Variable	Never N (%)	Sometime N (%)	Often N (%)	Always N (%)	P-value (χ^2 -test)
Ask patients about their smoking status					0.012
Total	29(5.8)	82(16.4)	153(30.6)	236(47.2)	
Smoker	14(48.3)	21(25.6)	47(30.7)	52(22.0)	
Not-smoker	15(51.7)	61(74.4)	106(69.3)	184(78.0)	
Inform patients about general effects of smoking					0.001
Total	59(11.8)	143(28.6)	193(38.6)	105(21.0)	
Smoker	24(40.7)	44(30.8)	47(24.4)	19(18.1)	
Not-smoker	35(59.3)	99(69.2)	146(75.6)	86(81.9)	
Inform patients about oral effects of smoking					0.000
Total	27(5.4)	110(22.0)	211(42.2)	152(30.4)	
Smoker	16(59.3)	34(30.9)	57(27.0)	27(17.8)	
Not-smoker	11(40.7)	76(69.1)	154(73.0)	125(82.2)	



Advise patients to stop smoking					
<i>Total</i>	55(11.0)	142(28.4)	145(29.0)	158(31.6)	0.000
<i>Smoker</i>	27(49.1)	54(38.0)	32(22.1)	21(13.3)	
<i>Not-smoker</i>	28(50.9)	88(62.0)	113(77.9)	137(86.7)	
Assess patient's willingness to stop smoking					
<i>Total</i>	131(26.2)	221(44.2)	112(22.4)	36(7.2)	0.000
<i>Smoker</i>	50(38.2)	67(30.3)	14(12.5)	3(8.3)	
<i>Not-smoker</i>	81(61.8)	154(69.7)	98(87.5)	33(91.7)	
Provide helpful hints to motivate patients to quit smoking					
<i>Total</i>	109(21.8)	214(42.8)	134(26.8)	43(8.6)	0.000
<i>Smoker</i>	44(40.4)	65(30.4)	19(14.2)	6(14.0)	
<i>Not-smoker</i>	65(59.6)	149(69.6)	115(85.8)	37(86.0)	

Dentists barriers to discuss tobacco cessation with patients

Approximately 82% of dentists reported that insufficient services, resources, and organizational support, as well as the lack of smoking cessation counselors are the major barriers to discuss tobacco cessation. While around two-thirds (66%) of dentists complained about the limited educational and training on smoking cessation intervention as a barrier in this respect. More than 55% of dentists did not feel that they could effectively help patients to quit smoking. Nearly 47% of dentists believed that smoking cessation counseling is too time consuming. While 44% of subjects felt that they have lack of knowledge regarding this respect. About 43% of dentists preferred to diagnose and treat patients rather than give the prevention advices about smoking effects (Table 8). Lower proportions of dentists (13% - 21%) felt embarrassed asking patients about smoking habit, patients may take negative attitudes after giving them smoking cessation advice, and lack of remuneration as barriers prevent dentists from smoking cessation counseling.²⁷

Table 8. Dentists' barriers to discussing tobacco cessation with patients (with yes answer)

Barriers	Total N (%)
Insufficient services, resources and organizational support	409(81.8)
Lack of referral options	399(79.8)
Limited educational and training on smoking cessation intervention	328(65.6)
Don't feel that dentist could effectively help patient to quit	276(55.2)
Too time consuming	237(47.4)
Lack of knowledge about smoking cessation	220(44.0)
Prefer to diagnose and treat rather than preventive advices	212(42.4)
Feeling embarrassed asking about tobacco use	66(13.2)
Patient may leave if counseling to give up smoking	106(21.2)
Lack of remuneration	105(21.0)

DISCUSSION

Among study sample, 27% of dentists were current smokers. About 42% of the males and 5.7% of the females were smokers. More than two-thirds of dentists had general knowledge regarding smoking cessation, while less than 1% have taken a course in smoking cessation. Smoker dentists spent fewer time counseling their patients to quit smoking in comparison with non-smoker dentists. Smoker dentists had lower extent of responsibility, effectiveness, and confidence providing smoking cessation advice than non-smoker dentists. The majority of dentists appear to be engaged with the first two components of the 5 A's smoking cessation models: Ask and Advise. Non-smoker dentists were greater than smoker dentists in applying the 5 A's: (Ask, Advise, Assess, Assist, and Arrange) and other behaviors in their practice. The most common barriers that prevented dentists from discussing smoking cessation with patients arranged according to their importance: insufficient services, resources, and organizational support, lack of smoking cessation counselors, limited educational and training on smoking cessation interventions, and lack of effectiveness.

CONCLUSIONS

The results of this study provided important information about students' attitudes toward smoker and non-smoker cessation promotion in the dentistry setting. The family and general medical practitioner still play the major role in support for the individual's decision to quit smoking but dental professionals in Libyan are assumed to represent another increasingly important source of support for giving up smoking. The latter may be achieved by promotion of the knowledge among dentists and students about tobacco use and related health hazards and including methods and guidelines for assisting tobacco cessation both in the stomatological and undergraduate medical education curriculum. As participants have shown a great interest in assisting their current or future patients in cessation, and because of the evidence on the connection between periodontal health, oral health and tobacco use, conclusions made in this study can be used for evaluating and developing the dentistry curriculum.

Conflict of Interest

The authors humbly declare no conflicts of interest regarding publishing this research.

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