KNOWLEDGE, ATTITUDES, AND CAPABILITIES FOR SMOKING CESSATION COUNSELLING IN DENTAL PRACTICE

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Abstract. The Malaysian National Oral Health Plan (2011-2020) recommends dentists advise their patients to stop smoking. Dentists' attitudes and behaviors can be influenced by variations in clinical practice, whether public or private. We evaluated public and private dentists' knowledge, attitudes and capabilities for providing smoking cessation counselling in their practices and identify barriers to providing counselling. We conducted a cross sectional study using a self-administered questionnaire among dentists registered in the Dental Practitioners' Management Information System. Two hundred eighty-five dentists [158 public (53.6%) and 127 private (43.1%) dentists] completed the questionnaire. Significantly more (p<0.35) public (65.1%) than private (51.2%) dentists believed promoting tobacco abstinence is an important part of their professional duty. Significantly more (p<0.001) public dentists (62.0%) than private (37.8%) dentists believed that smoking cessation counselling is an efficient use of clinic time. Significantly more (p=0.006) public (38.6%) than private (21.3%) dentists knew how to assess the patient's smoking status to formulate a plan to assist the patient in stopping smoking. Significantly more (p=0.04) public (65.8%) than private (74%) stated their clinic has no system to prompt providers to counsel against tobacco use. Significantly more (p<0.001) private (84.3%) than public (51.9%) dentists had no tobacco-related self-help patient education materials in their dental clinic. Public dentists had more knowledge, skills and a positive attitude about providing smoking cessation counselling than private dentists. More public dentists felt they had inadequate time and lack of a support system to follow-up on smoking cessation counselling than private dentists.

Keywords: smoking cessation, dentists, attitudes, barriers, knowledge, capabilities

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INTRODUCTION

The policy statement of the Fédération Dentaire Internationale (FDI) on non-communicable diseases (NCDs) emphasizes the common risk factors for oral diseases and NCDs, particularly tobacco use (Beaglehole and Benzian, 2005). The "common risk approach" states chronic

NCDs, such as obesity, heart disease, stroke, cancers, diabetes, mental illness and oral diseases, share common risk factors (Watt, 2005).

Lack of training or knowledge and insufficient time to conduct smoking cessation counselling in dental clinics in Malaysia has been reported as reasons why Malaysian dentists say they do not provide smoking cessation counselling (Yahya and Croucher, 2005; Vaithilingam *et al*, 2012; Amer Siddiq *et al*, 2014). A study from Sweden reported despite barriers to providing smoking cessation counselling by dentists, such as the lack of reimbursement, lack of knowledge, time constraints, and a feeling of inadequacy, dentists have the potential to provide tobacco cessation counselling (Helgason *et al*, 2003). A study from Japan found in addition to lack of training and knowledge about smoking cessation counselling among dentists, other barriers to providing smoking cessation counseling reported included lack of a support system and lack of educational materials (Hanioka *et al*, 2013). One study found training dentists about how to provide smoking cessation counselling improved smoking cessation counselling rates (Rankin *et al*, 2010). One study found incorporating an oral examination by a dentist in smoking cessation programs, increased tobacco cessation rates (Carr and Ebbert, 2012).

The Faculty of Dentistry, the National University of Malaysia (UKM) has included tobacco dependence treatment in the dental student undergraduate curriculum since 2006 (Yahya *et al*, 2012). Training in smoking cessation counselling is also part of the continuous professional development program for dentists in Malaysia (Oral Health Division, 2005; Amer Siddiq *et al*, 2013). The Division of Disease Control at the Ministry of Health, Malaysia has established a clinical practice guideline (CPG) for tobacco dependence by enlisting the help of experts from various medical fields related to tobacco use cessation (Ministry of Health Malaysia, 2003). All health professionals in Malaysia use this CPG as a guideline for treating tobacco dependence using the 5A's approach which is: ask the patient if he or she uses tobacco, advise him or her to quit smoking, assess their willingness to make a quit attempt, assist those who are willing to make a quit attempt, and arrange for follow-up contact to prevent relapse (Fiore *et al*, 2008). The 5A's approach to smoking cessation interventions is the gold standard for assisting in smoking cessation (Fiore *et al*, 2008). However, individual and environmental factors influence adoption and practice of smoking cessation counselling at both public and private dental practices (Kengne Talla *et al*, 2016). McGlone *et al* (2001) emphasized the importance of performing research on changing professional practice in the dental field in order to understand the mechanisms underlying the adoption of research findings in everyday dental care.

Amemori *et al* (2011) developed a theoretical domain questionnaire (TDQ) covering 10 domains of the theoretical domain framework (TDF) to understand dentists' attitudes about smoking cessation counselling implementation and identify barriers to implementation of the CPG by dentists. TDF is an integrative framework developed from a synthesis of psychological theories to help apply theoretical approaches to interventions aimed at behavior change (Phillips *et al*, 2015). The 10 domains are: 1) professional role and identity; 2) emotion; 3) motivation and goals; 4) social influences; 5) beliefs about consequences; 6) knowledge; 7) skills; 8) beliefs about capability; 9)

memory, attention and decision-making processes; and 10) environmental context and resources. We used the TDQ to evaluate Malaysian public and private dentists to determine their knowledge, attitudes and capabilities for providing smoking cessation counselling in their practices and identifying barriers to providing counselling.

MATERIALS AND METHODS

We conducted a cross sectional study using the TDQ. Subjects were recruited from dentists registered in the Dental Practitioners' Management Information System (DPMIS) (Malaysian Dental Council, 2014). The sample size was calculated based on a 5% margin of error and a 95% level of confidence (Raosoft, 2011); given a total of 4,253 dentists from private and public practices (Malaysian Dental Council, 2012), 353 subjects was determined to be the minimum sample size for our study. A systematic random sampling method was used to select those to be recruited into the study: we selected every tenth dentist on the DPMIS list as potential subjects. A questionnaire was sent to each potential subject followed by a telephone call 2 weeks later and a second telephone call 2 weeks after the first call. A questionnaire was sent again if the first one got lost.

We developed the TDQ used for this study in English. Three dentists checked the validity of the questionnaire and then it was pilot tested on 20 dentists not included in the main study. Pretesting did not show any significant problems with the instrument. The Cronbach's alpha testing for internal consistency was 0.615.

Descriptive statistics were used to describe the data. Chi-square analysis was used to evaluate differences in response between dentists from public and private dentists. The Mann-Whitney *U* test was used to compare two independent conditions for nonparametric data. Statistical analysis was conducted with SPSS, version 23.0 (IBM, Armonk, NY).

Ethical approval for this study was obtained from the Faculty of Dentistry, University of Malaya Research Ethics Committee (Ethics Committee/IRB Reference Number: DF CO1301/003[P]) and the Ministry of Health, Malaysia, Medical Research Ethics Committee (MREC; reference number: KKM/NIHSEC/P13-551). This study was registered with the National Medical Research Register (NMRR), Ministry of Health, Malaysia (registration number: NMRR-13-406-15721).

RESULTS

Sociodemographic characteristics

A total of 285 dentists [public: n=158 (53.6%); private: n=127 (43.1%)] were included in the study. Table 1 shows the sociodemographic characteristics of the participants. The participants had a mean (±SD) age of 37.1 (±10.3) years. Sixty-three point seven percent were females, 56.9% were Malay, 66.4% were married, and 88.8% were non-smokers. The participants had worked as dentists for a mean (±SD) length of time of 11.0 (±9.1) years.

Motivation in smoking cessation counselling

Table 2 shows the motivating factors for providing smoking cessation counselling by study subjects.

Significantly more (p<0.05) public (65.1%) than private (51.2%) dentists believed promoting tobacco cessation was an important professional duty. Significantly more (p<0.001) public (62.0%) than private (37.8%) dentists disagreed

Table 1
Sociodemographic characteristics of study subjects.

Characteristics	Mean (± SD)	No. (%)
Age (years)	37.1 (± 10.3)	
Gender[a]		
Male		95 (32.2)
Female		188 (63.7)
Ethnicity[a]		
Malay		168 (56.9)
Chinese		83 (28.1)
Indian		26 (8.8)
Others		7 (2.4)
Marital status[a]		
Single		88 (29.8)
Married		196 (66.4)
Years in practice	11.0 (± 9.11)	
Types of practice[a]		
Public practice		158 (53.6)
Private practice		127 (43.1)
Smoking status[a]		
Never smoked		262 (88.8)
Ex-smoker		17 (5.8)
Smoker		4 (1.4)

[a]Denominators vary due to missing values.

with the statement providing smoking cessation counselling is not an efficient use of their clinic time. Significantly more (p<0.001) public (79.7%) than private (59.8%) dentists disagreed with the statement they were unwilling to improve tobacco cessation services.

A fair percentage of both public (41.1%) and private (50.4%) dentists agreed they received insufficient reimbursement for promoting tobacco cessation services. Significantly more (p=0.049) public (70.3%) than private (57.5%) dentists disagreed with the statement their role as dentists does not involve assisting patients to stop using tobacco. Significantly more (p=0.009) public (41.8%) than private (38.6%) dentists believed providing smoking cessation counselling would increase a patient's likelihood of quitting smoking.

Capability of providing smoking cessation services

Table 3 shows the dentists' self-reported capability of providing smoking cessation services.

Significantly more (p<0.001) public (60.1%) than private (26.8%) dentists were aware of the meaning and objectives of the 5A's found in the Malaysian CPG on tobacco dependence. Significantly more (p=0.038) public (41.8%) than private (30.7%) dentists felt they had sufficient therapeutic knowledge about pharmaceutical products used to assist with tobacco use cessation. Significantly more (p<0.001) public (74.1%) than private (51.2%) dentists knew how to promote a tobacco-free lifestyle among youth.

Significantly more (p=0.016) public (53.2%) than private (37%) dentists knew appropriate questions to ask patients when providing tobacco cessation counselling. Significantly more (p=0.011) private (20.5%) than public (8.2%) dentists knew how to prescribe pharmaceutical products to assist with smoking cessation. Significantly more (p=0.006) public (38.6%) than private (21.3%) dentists knew how to assess a patient's smoking status and to formulate a plan to assist the patient stop smoking. Significantly more (p=0.004) private (40.2%) than public (23.4%) dentists were not confident in their abilities to convince patients not to use tobacco products.

Environment and resources to offer smoking cessation services

Table 4 shows the environment and resources available in their dental clinic by the studied dentists to offer smoking cessation services.

Table 2
Motivation for providing smoking cessation counselling by type of dentist.

Statements	Public practice $n = 158$	Private practice $n = 127$	χ^2 p-value
	No. (%)		
Domain: Professional role and identity.			
Most of my colleagues in this clinic believe promoting tobacco abstinence is an important part of their professional duty.			
Strongly agree/agree	103 (65.1)	65 (51.2)	0.049
Not sure	28 (17.7)	35 (27.6)	
Strongly disagree/disagree	26 (16.5)	26 (20.5)	
Total	157 (100)	126 (100)	
Counselling for smoking cessation is not an efficient use of my time.			
Strongly agree/agree	40 (25.3)	50 (39.4)	<0.001
Not sure	20 (12.7)	29 (22.8)	
Strongly disagree/disagree	98 (62.0)	48 (37.8)	
Total	158 (100)	127 (100)	
Domain: Motivation and goals			
I am unwilling to work on improving my smoking cessation services.			
Strongly agree/agree	18 (11.4)	21 (16.5)	<0.001
Not sure	13 (8.2)	30 (23.6)	
Strongly disagree/disagree	126 (79.7)	76 (59.8)	
Total	157 (100)	127 (100)	
Improving patient health outweighs the problems of having inadequate training to provide smoking cessation services and lack of reimbursement for those services.			
Strongly agree/agree	119 (75.3)	84 (66.1)	0.054
Not sure	32 (20.3)	30 (23.6)	
Strongly disagree/disagree	5 (3.2)	12 (9.4)	
Total	156 (100)	126 (100)	
Domain: Motivation and goals			
I receive insufficient reimbursement for promoting tobacco abstinence.			
Strongly agree/agree	65 (41.1)	64 (50.4)	0.087
Not sure	48 (30.4)	42 (33.1)	
Strongly disagree/disagree	41 (25.9)	20 (15.7)	
Total	154 (100)	126 (100)	
I have insufficient time to promote tobacco abstinence.			
Strongly agree/agree	83 (52.5)	63 (49.6)	0.773
Not sure	20 (12.7)	15 (11.8)	
Strongly disagree/disagree	53 (33.5)	48 (37.8)	
Total	156 (100)	126 (100)	
Domain: Emotions			
Helping my patients stop using tobacco makes me feel useful.			
Strongly agree/agree	141 (89.2)	105 (82.7)	0.156
Not sure	14 (8.9)	17 (13.4)	
Strongly disagree/disagree	2 (1.3)	5 (3.9)	
Total	157 (100)	127 (100)	
I find counselling patients about smoking cessation is frustrating.			
Strongly agree/agree	51 (32.3)	37 (29.1)	0.464
Not sure	46 (29.1)	46 (36.2)	
Strongly disagree/disagree	60 (38.0)	44 (34.6)	
Total	157 (100)	127 (100)	

Table 2 (Continued).

Statements	Public practice $n = 158$	Private practice $n = 127$	χ^2 p-value
	No. (%)		
Burnout prevents me from providing smoking cessation counselling.			
Strongly agree/agree	53 (33.5)	38 (29.9)	0.765
Not sure	56 (35.4)	49 (38.6)	
Strongly disagree/disagree	47 (29.7)	40 (31.5)	
Total	156 (100)	127 (100)	
Domain: Social influences			
At least one individual in our dental clinic is committed to providing smoking cessation services.			
Strongly agree/agree	48 (30.4)	31 (24.4)	0.359
Not sure	39 (24.7)	29 (22.8)	
Strongly disagree/disagree	70 (44.3)	67 (52.8)	
Total	157 (100)	127 (100)	
My role does not include smoking cessation counselling.			
Strongly agree/agree	28 (17.7)	37 (29.1)	0.049
Not sure	18 (11.4)	17 (13.4)	
Strongly disagree/disagree	111 (70.3)	73 (57.5)	
Total	157 (100)	127 (100)	
Our dental clinic supports providing smoking cessation services.			
Strongly agree/agree	105 (66.5)	76 (59.8)	0.110
Not sure	36 (22.8)	27 (21.3)	
Strongly disagree/disagree	16 (10.1)	24 (18.9)	
Total	157 (100)	127 (100)	
Most patients do not want to receive smoking cessation counselling.			
Strongly agree/agree	68 (43.0)	59 (46.5)	0.722
Not sure	52 (32.9)	43 (33.9)	
Strongly disagree/disagree	37 (23.4)	25 (19.7)	
Total	157 (100)	127 (100)	
Domain: Beliefs about consequences			
My counselling will increase a patient's likelihood of quitting smoking.			
Strongly agree/agree	66 (41.8)	49 (38.6)	0.009
Not sure	80 (50.6)	54 (42.5)	
Strongly disagree/disagree	11 (7)	24 (18.9)	
Total	157 (100)	127 (100)	
Patients appreciate it when I promote smoking cessation.			
Strongly agree/agree	83 (52.5)	59 (46.5)	0.434
Not sure	51 (32.3)	43 (33.9)	
Strongly disagree/disagree	23 (14.6)	25 (19.7)	
Total	157 (100)	127 (100)	
Smoking cessation is a low priority among our clinic patients.			
Strongly agree/agree	100 (63.3)	72 (56.7)	0.353
Not sure	31 (19.6)	34 (26.8)	
Strongly disagree/disagree	26 (16.5)	21 (16.5)	
Total	157 (100)	127 (100)	

Table 3
Capabilities of providing smoking cessation services by type of dentist.

Statements	Public practice $n = 158$	Private practice $n = 127$	χ^2 p-value
	No. (%)		
Domain: Knowledge			
I am unaware of the meaning and objectives of the 5A's as part of the Malaysian Clinical Practice Guidelines on tobacco dependence treatment.			
Strongly agree/agree	44 (27.8)	69 (54.3)	<0.001
Not sure	19 (12.0)	23 (18.1)	
Strongly disagree/disagree	95 (60.1)	34 (26.8)	
Total	158 (100)	126 (100)	
I have sufficient therapeutic knowledge of the pharmaceutical products for tobacco cessation.			
Strongly agree/agree	66 (41.8)	39 (30.7)	0.038
Not sure	47 (29.7)	34 (26.8)	
Strongly disagree/disagree	45 (28.5)	54 (42.5)	
Total	158 (100)	127 (100)	
I do not know how to promote a tobacco-free lifestyle among youth.			
Strongly agree/agree	22 (13.9)	39 (30.7)	<0.001
Not sure	19 (12.0)	23 (18.1)	
Strongly disagree/disagree	117 (74.1)	65 (51.2)	
Total	158 (100)	127 (100)	
Domain: Skills			
I know the appropriate questions to ask patients when providing tobacco cessation counselling.			
Strongly agree/agree	84 (53.2)	47 (37)	0.016
Not sure	39 (24.7)	36 (28.3)	
Strongly disagree/disagree	34 (21.5)	43 (33.9)	
Total	157 (100)	126 (100)	
I know how to prescribe pharmaceutical products for those ready to quit smoking.			
Strongly agree/agree	13 (8.2)	26 (20.5)	0.011
Not sure	47 (29.7)	32 (25.2)	
Strongly disagree/disagree	98 (62.0)	69 (54.3)	
Total	158 (100)	127 (100)	
I am unsure how to assess patients in their efforts to stop tobacco use.			
Strongly agree/agree	66 (41.8)	72 (56.7)	0.006
Not sure	31 (19.6)	28 (22.0)	
Strongly disagree/disagree	61 (38.6)	27 (21.3)	
Total	158 (100)	127 (100)	
Sufficient opportunities are available to learn about promoting a tobacco-free lifestyle.			
Strongly agree/agree	71 (45.5)	55 (43.3)	0.690
Not sure	28 (17.9)	28 (22.0)	
Strongly disagree/disagree	57 (36.5)	44 (34.6)	
Total	156 (100)	127 (100)	
Domain: Beliefs in capabilities			
I am confident in my abilities to prevent patients from using tobacco products.			
Strongly agree/agree	43 (27.4)	35 (27.6)	0.004
Not sure	77 (49.0)	41 (32.3)	
Strongly disagree/disagree	37 (23.6)	51 (40.2)	
Total	157 (100)	127 (100)	

Table 3 (Continued).

Statements	Public practice $n = 158$	Private practice $n = 127$	χ^2 p-value
	No. (%)		
I am able to make decisions about the risks/benefits of the appropriate use of nicotine replacement therapy.			
Strongly agree/agree	37 (23.4)	35 (27.6)	0.107
Not sure	66 (41.8)	38 (29.9)	
Strongly disagree/disagree	54 (34.2)	54 (42.5)	
Total	157 (100)	127 (100)	
I have the skills to monitor and assist patients throughout their attempt to quit.			
Strongly agree/agree	34 (21.5)	20 (15.7)	0.426
Not sure	44 (27.8)	36 (28.3)	
Strongly disagree/disagree	79 (50.0)	71 (55.9)	
Total	157 (100)	127 (100)	
Domain: memory, attention and decision-making process			
Deciding whether to promote tobacco abstinence is sometimes difficult.			
Strongly agree/agree	90 (57.0)	69 (54.3)	0.095
Not sure	13 (8.2)	21 (16.5)	
Strongly disagree/disagree	54 (34.2)	37 (29.1)	
Total	157 (100)	127 (100)	
Reinforcing tobacco abstinence is easy for me to remember.			
Strongly agree/agree	80 (52.5)	62 (48.8)	0.063
Not sure	58 (36.7)	37 (29.1)	
Strongly disagree/disagree	19 (12.0)	28 (22.0)	
Total	157 (100)	127 (100)	

Significantly more (p<0.001) private (84.3%) than public (51.9%) dentists had no tobacco-related self-help materials to distribute to patients. Significantly more (p=0.04) public (65.8%) than private (74%) dentists reported that their clinic had no system to prompt providers to counsel against tobacco use. Significantly more (p=0.045) private (69.3%) than public (55.7%) dentists reported their dental clinic provided insufficient reimbursement for promoting tobacco abstinence.

DISCUSSION

In the present study, the participants were mainly middle-aged, female, married Malay dentists who had never smoked. More public dentists felt positively about their role in assisting patients with smoking cessation and believed their counselling would increase the patient's possibility to stop smoking. A positive perception about the role of dentists in assisting their patients in smoking cessation has also been reported in other studies (Saito *et al*, 2010; Vaithilingam *et al*, 2012; Hanioka *et al*, 2013; Amer Siddiq *et al*, 2014).

More public dentists in our study were motivated to improve tobacco cessation services, but a lack of time and no remuneration for the services may have reduced their enthusiasm for providing them. A lack of time to provide smoking cessation counselling has also been

Table 4
Environment and resources to offer smoking cessation services by type of dentist.

Statements	Public practice $n = 158$	Private practice $n = 127$	χ^2 p-value
	No. (%)		
Domain: Environment and resources			
My dental clinic has no tobacco-related self-help materials to distribute to patients.			
Strongly agree / agree	82 (51.9)	107 (84.3)	<0.001
Not sure	11 (7.0)	5 (4.0)	
Strongly disagree / disagree	65 (41.1)	15 (11.8)	
Total	158 (100)	127 (100)	
My dental clinic has a system of providing follow-up support between clinic visits.			
Strongly agree / agree	35 (22.2)	35 (28.0)	0.527
Not sure	22 (14.0)	16 (12.6)	
Strongly disagree / disagree	101 (64.0)	74 (58.3)	
Total	158 (100)	125 (100)	
My dental clinic has a system to prompt providers to counsel against tobacco use.			
Strongly agree / agree	29 (18.4)	10 (7.9)	0.040
Not sure	25 (15.8)	22 (17.3)	
Strongly disagree / disagree	104 (65.8)	94 (74.0)	
Total	158 (100)	126 (100)	
The management staff of my clinic has taken actions to remove barriers to the provision of tobacco cessation counselling.			
Strongly agree / agree	34 (22.0)	17 (13.4)	0.090
Not sure	54 (34.2)	37 (29.1)	
Strongly disagree / disagree	70 (44.3)	70 (55.1)	
Total	158 (100)	124 (100)	
At my dental clinic, I receive no feedback regarding promoting tobacco abstinence.			
Strongly agree / agree	98 (62.0)	88 (69.3)	0.471
Not sure	29 (18.4)	20 (16.0)	
Strongly disagree / disagree	30 (19.0)	19 (15.0)	
Total	157 (100)	127 (100)	
My dental clinic provides insufficient reimbursement for promoting tobacco abstinence.			
Strongly agree / agree	88 (55.7)	88 (69.3)	0.045
Not sure	46 (29.1)	23 (18.1)	
Strongly disagree / disagree	24 (15.2)	15 (11.8)	
Total	158 (100)	126 (100)	

reported by other studies along with lack of training, lack of knowledge, lack of patient interest, lack of confidence and fear of damaging the dentist-patient relationship (Yahya and Croucher, 2005; Vaithilingam *et al*, 2012; Amer Siddiq *et al*, 2014).

In our study, more public than private dentists knew about the 5A's in smoking cessation included in the Malaysian CPG on tobacco dependence and treatment. Hu *et al* (2006) reported lack of training was a major reason for non-adherence to the smoking cessation guidelines. The sig-

nificant differences seen in our study for the knowledge and skills between public and private dentists about provision of smoking cessation services may be due to different job priorities and public health needs. It is obligatory for public dentists to attend courses on smoking cessation. However, private dentists usually focus on income generating services. However, in the United Kingdom, private dentists have been reported to deliver more smoking cessation services and report fewer barriers to them than their National Health Services (NHS) counterparts or mixed practices (Csikar *et al*, 2009). Amer Siddiq *et al* (2014) stated dentists have the potential to provide smoking cessation services if they are adequately trained.

In our study, significantly more private dentists claimed they did not have self-help materials regarding smoking cessation to distribute to patients. Public dentists have the advantage of having direct access to smoking cessation materials produced by the Ministry of Health Promotion Board.

In our study, more public dentists stated there was no system to allow follow-up of smoking cessation counselling. Both public and private dentists in our study complained there was insufficient reimbursement for providing smoking cessation counselling. For a public dentist, providing smoking cessation services is included in their annual key performance index (KPI). Private dentists provide service for a fee; the customer chooses the service they want. It may be that customers will not want to pay for a service they did not request. Reimbursement for smoking cessation counselling can increase interest in provision of smoking cessation counselling (British Dental Association, 2015). The evaluation and tailoring of appropriate smoking cessation services and prescribing appropriate medicines need to be included as a part of routine dental care (Watt *et al*, 2006).

This study had several limitations. There were several factors identified as possible causes of the poor response rates: some dentists did not wish to participate and requested to be excluded after a follow-up phone call was made; some dentists could not be contacted by telephone; calls; some dentists had a change in workplace; some dentists had multiple workplace addresses and had not received the questionnaire or it was late; the questionnaire got lost in the post on its way back to the researcher; and some dentists received the questionnaire but did not respond to it. However, our results still provide useful data regarding dentists' behavior and challenges for implementing smoking cessation services in Malaysia.

In our study, more public than private dentists had some knowledge and skills in providing smoking cessation counselling. More public than private dentists had a positive attitude about improving smoking cessation services, although they have limited capabilities to do so. More public dentists felt that lack of time and no support system to allow follow-up of smoking cessation counselling were barriers to provide smoking cessation counselling. More private dentists felt insufficient reimbursement and not having self-help materials regarding smoking cessation were their barriers to provide smoking cessation counselling.

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