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RESEARCH ARTICLE

Smoking cessation counseling in Qatar: community pharmacists' attitudes, role perceptions and practices

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Abstract *Background* Smoking is a major public health problem in Qatar. The potential for community pharmacists to offer smoking cessation counseling in this country can be high. *Objectives* To determine the current smoking cessation practices of community pharmacists in Qatar, to examine their attitudes about tobacco use and smoking cessation, to evaluate their perceptions about performing professional roles with respect to smoking cessation and to assess their perceived barriers for smoking cessation counseling in the pharmacy setting in Qatar. *Setting* Community pharmacies in Qatar. *Methods* The objectives were addressed in a cross sectional survey of community pharmacists in Qatar from June 2010 to October 2010. A phone call was made to all community pharmacists in Qatar (318 pharmacists) inviting them to participate. Consenting pharmacists anonymously completed the survey either online or as paper using fax. Data was analyzed using Statistical Package of Social Sciences (SPSS®) Version 18. *Main outcome measures* Qatar community pharmacists' smoking cessation practices, their attitudes toward tobacco use, smoking cessation and smoking cessation counseling and their perceived barriers for smoking cessation counseling. *Results* Over 5 months, we collected 127 surveys (40 % response rate). Only 21 % of respondents reported that they always or most of the time asked their patients if they smoke. When the patients' smoking status was identified, advising quitting and assessing readiness to quit were always or most of the time performed by 66 and 52 % of respondents respectively. Only 15 % always or most of the time arranged follow-up with smokers and 22 % always or most of the time made smoking cessation referrals. Most respondents (>80 %) agreed that smoking could cause adverse health effects and that smoking cessation could decrease the risk of these effects. In addition, the majority (>80 %) believed that smoking cessation counseling was an important activity and was an efficient use of their time. The top two perceived barriers for smoking cessation counseling were lack of time (65 % of respondents) and lack of patients' interest in smoking cessation (54 %). *Conclusions* Qatar community pharmacists have positive attitudes toward smoking cessation counseling. These attitudes need to be translated into action. Interventions should be implemented to overcome perceived barriers and to improve smoking cessation activities among pharmacists.

Keywords Community pharmacist · Qatar · Smoking cessation counseling · Tobacco addition

Impact of findings on practice

- The majority of community pharmacists in Qatar believe that smoking can cause adverse health effects and that smoking cessation can decrease the risk of these effects
- Most community pharmacists in Qatar believe that smoking cessation counseling is an important activity for pharmacists, is an efficient use of their time, and increases the smokers' likelihood of quitting
- The majority of community pharmacists in Qatar are interested in providing smoking cessation counseling

The study has been orally presented at the 2011 Annual ACCP meeting in Pittsburg, PA, USA (October 16-19 2011).

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Introduction

The leading preventable cause of ill health is cigarette smoking [1]. It is a major risk factor for several causes of death including heart diseases, chronic lung diseases and lung cancer [2]. It kills one in ten adults globally and causes more than four million deaths annually [3]. If present trends continue, the number of smoking related deaths is expected to reach ten million deaths per year by 2025 [4]. Smoking cessation is key to reduce the number of smoking-related diseases and deaths. At any age, quitting confers considerable health benefits including reduced risk of coronary heart disease, stroke and smoking-attributable cancers [5]. The World Bank suggests that if adult tobacco consumption is to decrease by 50 % by the year 2020, approximately 180 million tobacco-related deaths can be avoided [6]. Therefore, smoking cessation promotion can have a great impact in reducing disease burden and improving population health. Health care professionals are in an ideal position to encourage smoking cessation. A short and simple intervention that is delivered by them can increase smoking cessation rate [7]. Of all health professionals pharmacists are the most easily accessed by the public. Therefore, they are uniquely situated to initiate behavior change among patients [8]. Furthermore, they can provide education and advice without prior appointment and with no additional cost to individuals [9]. In addition, the increased availability of pharmacologic smoking cessation aids including some formulations of nicotine replacement therapy over the counter gives community pharmacists a distinct opportunity to serve as front-line health providers in smoking cessation [10]. Moreover, available data supports the provision of smoking cessation services in community pharmacies. Many studies have shown that community pharmacists can be effective providers of tobacco cessation interventions [11–13] and that these interventions can be cost-effective [14–17]. Community pharmacy led smoking cessation services have also been implemented in several countries including United Kingdom (UK). An example of these services was in Bradford (UK) back in January 2008 where trained pharmacists offered structured sessions of behavioral support to smokers. Service evaluation showed that across the 16 participating pharmacies a 45 % four-week quit rate was achieved [18]. Furthermore, there is an extensive support at the professional level for the involvement of pharmacists in assisting their patients in quitting smoking. The Canadian Pharmacists Association developed a Joint Statement on Smoking Cessation, promoting that health care professionals including pharmacists should be involved in prevention, cessation and protection against smoking [7]. The International Pharmaceutical Federation (FIP) issued a statement of policy on the role of pharmacist in promoting a tobacco-free future [19]. The American Society of Health-System Pharmacists' (ASHP) Therapeutic Position Statement on the Cessation of Tobacco Use strongly encourages pharmacists to integrate into their routine patient care identification of tobacco users and delivery of tobacco-cessation interventions. These interventions should address five key elements for comprehensive tobacco cessation counseling (the 5 A's): (1) asking patients about tobacco use, (2) advising users to quit, (3) assessing their readiness to quit, (4) assisting them with quitting and (5) arranging follow-up. If comprehensive tobacco-cessation counseling cannot be provided due to time constraints or practice site logistics, pharmacists can use a truncated 5 A's model whereby they ask about tobacco use, advise tobacco users to quit, and then refer patients to smoking cessation providers or programs [20].

In Qatar, tobacco use is a major public health problem that entails with its related morbidity and mortality a vast burden on health care services in this country. To control tobacco use, Qatar has adopted the international approaches recommended by the World Health Organization (WHO) and Regional plan of Arab countries in the Persian Gulf. These approaches are based on three strategies: (1) imposing tobacco control measures such as banning smoking in enclosed public places (2) providing smoking cessation services free in at least two smoking cessation clinics and (3) implementing anti-smoking public awareness activities [21]. Despite these approaches, 24 % of adult male population smoke according to the WHO report in 2006 and 13.4 % of male school students aged 13–15 years smoke according to the Global Youth Tobacco Survey in 2007 [22, 23]. Furthermore, smoking-related diseases in Qatar are the most prevalent. Ischemic heart disease is ranked as the primary reason of death in Qatar in 2002, and Qatar has the second highest lung cancer age-standardized incidence rate among Arab countries in the Persian Gulf from 1998 to 2001 [24, 25]. In addition, according to a survey done by Weill Cornell Medical College in Qatar at least one billion cigarettes are smoked in Qatar each year, 65 million US dollars (USD) are spent on cigarettes annually, and 150 million USD are used to cover the healthcare costs of smoking-related diseases [26]. The potential for pharmacist-assisted tobacco cessation can have a considerable impact on smoking rates, prevention of tobacco-related diseases and enhancement of public health in Qatar. More than 200 community pharmacies employ 318 pharmacists in Qatar. If each of these pharmacists successfully assisted just one tobacco user in quitting each month, this would result in more than 3,800 quitters annually. To our knowledge, there are no published reports in Qatar examining community pharmacists' smoking cessation attitudes and practices. Moreover, information about their perceptions regarding their professional roles in smoking cessation is lacking.

Aims of the study

To determine the current smoking cessation practices of community pharmacists in Qatar, to examine their attitudes about tobacco use and smoking cessation, to evaluate their perceptions about performing professional roles with respect to smoking cessation and to assess their perceived barriers for smoking cessation counseling in the pharmacy setting in Qatar.

Method

Study design and participants

The study objectives were addressed in a descriptive cross-sectional survey of community pharmacists in Qatar from June 2010 to October 2010. The eligible participants were all licensed pharmacists practicing in community pharmacies in Qatar (318 pharmacists).

Assessment tool

The study investigators designed the study survey based, in part, on previous surveys that were conducted in Australia, Canada, California, Iowa, North Carolina, and Texas to address pharmacist role in smoking cessation counseling [8, 9, 27–31].

The draft survey was distributed to eight faculty members at Qatar University (QU) College of Pharmacy to assess its readability and content validity. It was also pre-tested among a group of five randomly selected community pharmacists in Qatar for clarity, relevance, acceptability and time to completion (i.e.: face validity). Refinements were made as required in terms of language comprehension and questions' organization before distributing the final survey to the study population.

The final structured survey consisted of 24 closed and open-ended questions that could be completed within 15 min. It contained items that addressed the community pharmacists' sociodemographic and pharmacy practice characteristics, their current smoking cessation counseling practices, their interest and confidence in providing smoking cessation counseling, their attitudes toward smoking cessation, their perceptions of their professional roles and their perceived barriers in relation to smoking cessation counseling provision.

Sociodemographic and pharmacy practice characteristics included age, gender, basic qualifications, and other information of relevance (Table 1).

To assess their current smoking cessation practices, pharmacists were asked how often they (a) inquire about the smoking status of their patients (b) discuss with smokers the adverse health effects of smoking, (c) highlight to smokers the benefits of smoking cessation, (d) advise smokers to quit, (e) assess their readiness to quit, (f) assist them in quitting, (g) refer them to smoking cessation programs and (h) arrange follow-up to assess their progress in smoking cessation. In addition, the pharmacists were asked how often they offer smoking cessation counseling to nicotine replacement therapy purchasers and how long the counseling sessions last. Response categories included ''Never'', ''Rarely'', ''Sometimes'', ''Most of the time'', and ''Always'' (Table 2). Moreover, the pharmacists were inquired about the frequency of receiving smoking cessation related questions. Response categories were ''Never'', ''Rarely'', ''Monthly'', ''Weekly", and ''Daily'' (Table 3).

To assess respondents' interest and confidence in undertaking smoking cessation activities, 5-point Likert scales (very interested, interested, neutral, not interested and not interested at all) (very confident, confident, neutral, not confident, not confident at all) were used.

A 5-point Likert scale (strongly agree, agree, neutral, disagree, strongly disagree) was utilized to measure the extent to which pharmacists agreed with statements related to smoking and to their role in smoking cessation counseling (Tables 4, 5).

Perceived barriers to smoking cessation counseling were identified by listing 13 possible barriers and asking the pharmacists to specify the barriers that would impede their provision of smoking cessation counseling. These barriers were extracted from the previous studies indicated above [8, 9, 27–31].

Survey implementation

QU College of Pharmacy developed a database that contained the contact information of all practicing pharmacists in Qatar. This database was derived from several sources including the Supreme Council of Health's database of pharmacists in Qatar. An initial phone call was made to all pharmacists in the database (318 pharmacists). The purpose behind the phone call was to inform the pharmacists about the objectives of the survey, the time needed to complete it, the potential use of the provided information and about the voluntary nature of participation. Pharmacists who orally consented were given the option to complete the survey either online, using a user-friendly internet based commercial survey software, or as paper-based in Arabic or in English. Electronic mails (Emails), containing an internet link to the survey, were sent to the participants who wished to complete the survey online. The participants submitted the survey online without recording their identification information. The paper-based survey was faxed to the other participants. After completing the survey, the participants were asked to fax the survey back to the principal

Table 1 Sociodemographic and practice characteristics

Characteristic	Frequency (%)
Age (years) (N = 97)	
<30	20 (21)
30–39	63 (65)
40–50	11 (11)
>50	3 (3)
Gender (N = 124)	
Male	81 (65)
Female	43 (35)
Country awarding highest degree (N = 124)	
Egypt	54 (43)
India	36 (29)
Philippines	17 (13)
Jordan	10 (8)
Pakistan	2 (2)
Other African countries	2 (2)
Other European countries	2 (2)
Other Middle Eastern (ME) countries	1 (1)
Number of years since pharmacy graduation (N = 124)	
<5	22 (18)
6–10	50 (40)
11–15	29 (23)
16–20	11 (9)
>20	12 (10)
Number of practice years in Qatar (N = 124)	
<5	64 (52)
6–10	37 (30)
11–15	12 (9)
16–20	6 (5)
>20	5 (4)
Previous practice (N = 127)	
Egypt	41 (32)
India	27 (21)
Philippines	11 (9)
Jordan	9 (7)
Other ME countries	6 (5)
Other East Asian countries	1 (1)
Other African countries	4 (3)
More than one ME country	11 (9)
More than one ME and East Asian/African countries	14 (11)
No previous practice	3 (2)
Average number of adult patients seen per day (N = 123)	
<50	25 (20)
50–100	45 (37)
>100	53 (43)
Average number of working hours per week (N = 124)	
<20	1 (1)
20–39	7 (6)
40–59	91 (73)
60–79	22 (18)
>80	3 (2)
Average number of pharmacists in the pharmacy at any one shift (N = 124)	
1	95 (77)
>1	29 (23)
Average number of pharmacy technicians in the pharmacy at any one shift (N = 124)	
None	25 (20)
1	71 (57)
>1	28 (23)
Position (N = 126)	
Employee pharmacist	74 (59)
Pharmacy manager/supervisor	48 (38)
Pharmacy owner	4 (3)
Pharmacy setting (N = 119)	
Independent pharmacy	47 (38)
Supermarket or shopping mall pharmacy	36 (29)
Polyclinic pharmacy	19 (15)
Gas station pharmacy or other setting	23 (18)

investigator office. No identification information regarding the pharmacist or the pharmacy fax number was collected by the investigator.

Two reminders were sent at 6-week interval to all community pharmacists via email/fax/telephone to complete the survey. After 5 months of data collection, the survey was closed and the data was entered into the online survey software.

Data analysis and confidentiality

Online survey data was downloaded to an Excel spreadsheet and imported into Statistical Package of Social Sciences (SPSS®) Version 18 for analysis. Incomplete surveys were included in the analysis if they contained basic demographic information and partial responses to some of the questions. Accordingly, the number of respondents for each question may vary. To minimize any potential for bias and to protect the participant's confidentiality, the survey was anonymously completed; no participant or pharmacy identification information was recorded by the investigators.

Ethical considerations

Participation in the study did not pose any risk to participants and was voluntary. Pharmacists who completed the

Table 2 Smoking cessation activities

Question	Frequency (%)				
	When meeting patients who smoke, how often do you				
	Always	Most of the time	Sometimes	Rarely	Never
Discuss the effects of smoking on health (N = 114)	19 (17)	33 (29)	47 (41)	12 (10)	3 (3)
Highlight the benefits of quitting smoking (N = 115)	21 (18)	44 (38)	39 (34)	9 (8)	2 (2)
Ask patients about their smoking status (N = 117)	1 (1)	23 (20)	75 (64)	14 (12)	4 (3)
Advise them to quit (N = 115)	30 (26)	46 (40)	30 (26)	7 (6)	2 (2)
Assess their readiness to quit (N = 114)	11 (10)	48 (42)	34 (30)	15 (13)	6 (5)
Assist them in quitting by giving them educational materials related to quitting smoking (N = 113)	4 (3)	18 (16)	36 (32)	37 (33)	18 (16)
Assist them in quitting by counseling them on behavioral techniques for quitting (N = 114)	8 (7)	40 (35)	42 (37)	17 (15)	7 (6)
Assist them in quitting by advising them about the use of nicotine replacement gums and patches (N = 114)	17 (15)	58 (51)	28 (25)	6 (5)	5 (4)
Assist them in quitting by suggesting to them to obtain a prescription for Buproprion from a physician (N = 115)	4 (3)	9 (8)	29 (25)	31 (27)	42 (37)
Arrange follow up with them to assess their progress in quitting smoking (N = 114)	4 (4)	13 (11)	35 (31)	42 (37)	20 (17)
Refer them to a physician or to a smoking cessation program (N = 113)	12 (11)	12 (11)	28 (25)	34 (30)	27 (23)
Offer NRT purchasers smoking cessation counseling (N = 116)	12 (10)	43 (37)	46 (40)	9 (8)	6 (5)

Table 3 Frequency of receiving smoking related questions

Topic	Frequency (%)				
	How frequently do you receive questions regarding the following topics?				
	Daily	Weekly	Monthly	Rarely	Never
Smoking cessation (N = 114)	20 (18)	54 (47)	13 (11)	23 (20)	4 (4)
Smoking cessation aids such as nicotine replacement therapy (NRT) (N = 113)	22 (20)	50 (44)	16 (14)	18 (16)	7 (6)
Bupropion (N = 106)	2 (2)	6 (6)	10 (9)	48 (45)	40 (38)

Table 4 Attitudes to smoking and smoking cessation

Topic	Frequency (%)				
	To what extent do you agree with the following statements related to your attitudes to smoking and smoking cessation in general?				
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Smoking can cause many adverse health effects (N = 111)	94 (85)	15 (13)	2 (2)	0 (0)	0 (0)
Quitting smoking can decrease the risk of smoking induced adverse health effects (N = 111)	88 (79)	22 (20)	0 (0)	1 (1)	0 (0)
When a person has been smoking for many years there is always a point in helping him or her to quit (N = 107)	61 (57)	39 (36)	5 (5)	2 (2)	0 (0)
Most smokers can quit if they really want to (N = 110)	71 (65)	29 (26)	4 (4)	6 (5)	0 (0)

Table 5 Attitudes to pharmacist's role in smoking cessation

Topic	Frequency (%)				
	To what extent do you agree with the following statements related to the role of pharmacists in smoking cessation counseling?				
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
It is important for me as a pharmacist to ask patients if they smoke (N = 111)	35 (32)	57 (51)	16 (14)	2 (2)	1 (1)
It is important for me as a pharmacist to offer smoking cessation counseling to smokers (N = 110)	36 (32)	59 (54)	14 (13)	1 (1)	0 (0)
Counseling for smoking cessation is an efficient use of my time (N = 105)	33 (32)	53 (50)	18 (17)	0 (0)	1 (1)
Smoking cessation counseling provided by me as a pharmacist will increase the patient's likelihood of quitting (N = 111)	42 (38)	52 (46)	14 (13)	3 (3)	0 (0)
Smoking cessation counseling improves my relationship as a pharmacist with patients (N = 110)	46 (42)	55 (50)	6 (5)	3 (3)	0 (0)
I should discuss smoking cessation with smokers in my pharmacy even if they do not raise the subject (N = 109)	16 (14)	29 (27)	50 (46)	13(12)	1 (1)
Patients appreciate it when I provide tobacco cessation counseling (N = 110)	22 (20)	49 (45)	32 (29)	7 (6)	0 (0)

survey were considered to have given the consent for participation in the study. The study procedures and instrument were exempted from full ethics review by Qatar University Institutional Review Board.

Results

Over a 5-month period, we collected 127 surveys. This represented approximately 40 % of the population of licensed community pharmacists in Qatar.

Respondent sociodemographic and practice characteristics

The sociodemographic and practice characteristics of participants are summarized in Table 1. Most respondents were male (65 %, n = 81) and were less than 40 years old (86 %, n = 83). The respondents had a mean age of 34 years (SD ± 6 years) with a range from 25 to 58 years.

When asked about their previous smoking cessation training and education, 99 respondents (89 %) indicated that they did not receive any kind of education or training about smoking cessation counseling in the past.

Concerning the participants' smoking status, 94 respondents (75 %) said that they never smoked.

Smoking cessation counseling current practices

Table 2 summarizes the community pharmacists' smoking cessation related activities. Only 24 respondents (21 %) responded that they always or most of the time asked their patients about their smoking status. When the patients' smoking status was identified, 56 % of respondents (n = 65) always or most of the time highlighted to patients the benefits of smoking cessation and 66 % (n = 76) always or most of the time advised them to quit. For patients willing to quit, 66 % of respondents (n = 75) always or most of the time recommended the use of nicotine patch or gum compared to 42 % (n = 48) who always or most of the time counseled the patients on behavioral techniques for smoking cessation, 19 % (n = 22) who always or most of the time provided written smoking cessation educational materials and 11 % who always or most of the time suggested getting a prescription for Bupropion (n = 13).

In addition, only 55 respondents (47 %) reported that they always or most of the time offered smoking cessation counseling to NRT purchasers with 88 % spending less than 5 min in the counseling session.

Furthermore, more than 60 % of respondents said that they received questions about smoking cessation and about NRT at least weekly (Table 3).

Confidence and interest in providing smoking cessation counseling

Ninety-eight respondents (84 %) reported that they were interested or very interested in providing smoking cessation counseling

When asked about their confidence level in smoking cessation counseling provision, more than 50 % of respondents (n > 57) reported that they were confident or highly confident in performing the different elements of smoking cessation counseling.

Community pharmacists' attitudes toward smoking cessation and toward their role in smoking cessation counseling

Table 4 summarizes the community pharmacists' attitudes toward smoking and smoking cessation. Most respondents (>80 %) agreed or strongly agreed that smoking could cause adverse health effects and that smoking cessation could decrease the risk of these effects.

Table 5 describes the community pharmacists' attitudes toward their role in smoking cessation counseling. The community pharmacists' views were overwhelmingly in favor of smoking cessation counseling. Most respondents (>80 %) believed that smoking cessation counseling was an important activity for pharmacists, was an efficient use of their time, and improved the pharmacist patient relationship. However, only 41 % agreed or strongly agreed that the pharmacists should discuss smoking cessation counseling with smokers even if they did not raise the subject.

Perceived barriers for smoking cessation counseling provision

Highly perceived barriers for providing smoking cessation counseling included lack of time (65 % of respondents, n = 75), lack of patients' interest in discussing smoking cessation counseling (54 %, n = 62), and lack of smoking cessation educational materials (53 %, n = 61). Lack of pharmacist interest in smoking cessation counseling was perceived as a barrier by only 10 % of respondents (n = 11).

Discussion

To our knowledge, this is the first study in Qatar and probably in the Middle East that evaluates community pharmacists' practices and attitudes in relation to smoking cessation.

The study results showed that only a minority of community pharmacists in Qatar (21 %) always or most of the time asked their patients about their smoking status. These findings are consistent with those of previous studies done outside Qatar [8, 9, 29–32]. Identifying tobacco users is vital for the treatment of tobacco use and dependence. If pharmacists wait for patients to ask them about smoking cessation, they will only be capable of assisting patients who are ready to quit. This approach will overlook other smokers who are not considering quitting. By following the 5 A's—Ask, Advise, Assess, Assist, Arrange—pharmacists can assist more smokers in quitting [20]. Currently, patients' medical records are not kept in Qatar community pharmacies. If community pharmacists are to play an important role in smoking cessation counseling, computer system software should be implemented in Qatar pharmacies to record patients' medical information and smoking status. Documenting the smoking status of patients will act as a reminder for the pharmacists to get involved in smoking cessation activities [33]. Many pharmacy organizations including the American Society of Health System Pharmacy (ASHP) and the International Pharmaceutical Federation (FIP) recommend routinely recording the smoking status in all patients' records including pharmacy information technology systems [19, 20].

The study also found that once patients who smoke were identified, more than 50 % of the pharmacists always or most of the time highlighted to them the benefits of smoking cessation, advised them to quit, assessed their readiness to quit and recommended the use of nicotine replacement therapy. These results indicate that Qatar pharmacists are to some extent contributing to the prevention of smoking related harm. However, there is much room for greater pharmacist involvement in smoking cessation activities including counseling smokers on behavioral techniques for smoking cessation, suggesting the use of Bupropion, providing written smoking cessation educational materials, and arranging referrals and follow-ups.

The nicotine replacement therapies (NRT) available over-the-counter in community pharmacies in Qatar offer pharmacists the opportunity to serve as frontline healthcare providers with smokers prior to or during their quit attempts. Yet, the study results indicated that less than 50 % of community pharmacists in Qatar always or most of the time offered smoking cessation counseling to NRT purchasers. Thus, Qatar community pharmacists are not taking advantage of the available therapies and are missing opportunities for providing smoking cessation counseling to smokers. A number of factors underlie the failure of community pharmacists to counsel NRT purchasers including insufficient time and educational preparation. Lack of pharmacist time was perceived as a barrier for smoking cessation counseling by 65 % of respondents and only 11 % indicated that they received any kind of education about smoking cessation counseling in the past.

The majority of community pharmacists in Qatar (>50 %) reported that they were interested in providing smoking cessation counseling and had very strong positive attitudes toward smoking cessation counseling. Furthermore, they did not associate unfavorable factors such as lack of management support, lack of interest in smoking cessation counseling, and lack of remuneration with their inability to offer smoking cessation counseling. These results are very encouraging considering the goal to promote smoking cessation in Qatar. Because of their easy accessibility, their unique position in the community, and

their ability to serve all populations, community pharmacists are ideally situated to initiate behavior change among patients [34]. However, an interesting question to pose would be: ''are Qatar pharmacists sufficiently prepared to offer smoking cessation counseling?''. Although the majority of pharmacists indicated that they were confident in providing smoking cessation counseling, only 11 % reported receiving smoking cessation related education or training. Furthermore, in a recent survey conducted by Qatar University College of Pharmacy to assess community pharmacists' smoking cessation knowledge, the mean percent score on the knowledge questions was 61 % with only 15 % of pharmacists scoring more than 80 % [35]. To improve the delivery of smoking cessation counseling, we support the development of smoking cessation education and training programs for community pharmacists in Qatar. Research suggests that receiving training for smoking cessation counseling increases the pharmacists' likelihood of providing smoking cessation counseling and advocates better patient satisfaction with the counseling sessions [9, 36, 37]. These programs must focus on behavior modification counseling strategies in addition to the five comprehensive tobacco cessation counseling elements (the 5 A's). Furthermore, we suggest that smoking cessation would be incorporated into the curricula of pharmacy schools in the Middle East to educate future pharmacists on smoking-cessation counseling.

Lack of time was the most perceived barrier for smoking cessation counseling. This finding is consistent with other previous smoking cessation studies [9, 29, 38]. Only 23 % of pharmacists in our study stated that more than one pharmacy technician is available on duty in the pharmacy at any particular shift. Thus, for pharmacists to adequately provide smoking cessation counseling to patients, without important disruption to their daily activities, more pharmacy technicians need to be hired and better demarcation should exist between the role of pharmacy technicians and that of pharmacists in this country. If pharmacists are less involved in medication dispensing, they will have more time to spend in patient oriented activities [39]. To overcome the time barrier, the pharmacists can also offer brief smoking cessation interventions. A brief intervention of 3 min can be effective in helping patients to quit smoking. The pharmacists can use a truncated 5 A's model whereby they identify smokers, advise them to quit, and then refer them to smoking cessation providers or programs [20]. This decreases the time needed for pharmacist patient interaction.

The second perceived barrier was the lack of patients' interest in discussing smoking cessation. This barrier has also been reported by other health care providers in previous studies [40, 41]. This lack of interest could be due to patients' unreadiness to change and to their low motivation to quit. To overcome this barrier, behavior modification counseling strategies and the transtheoretical model of behavior change should be incorporated in the smoking cessation education programs that will be offered to community pharmacists in Qatar [42]. The transtheoretical model guides smokers to change their behavior through five stages: precontemplation, contemplation, preparation, action, and maintenance. Using this model, pharmacists will be able to assist smokers in identifying their stage of change and in moving from one stage to another using proper smoking cessation strategies.

Another perceived barrier was the lack of smoking cessation related educational materials in the pharmacy. These results suggest the need for national evidence-based clinical practice guidelines for treating tobacco use and dependence in Qatar. These guidelines would stress that all health care providers including pharmacists make systematic efforts to identify tobacco users, to advise them to quit and to assist them in quitting and would outline for them how to obtain updated smoking cessation resources and materials. Moreover, to overcome this barrier a computer driven software system can be implemented in Qatar pharmacies. This software would provide individually tailored smoking cessation intervention strategies to pharmacy patients and matching reports to the pharmacist to guide the smoking cessation counseling [43].

In addition, to further enhance the role of Qatar community pharmacists in smoking cessation counseling, the general public should be alerted to the availability of smoking cessation services at the pharmacy: as an initial step, community pharmacists can have a sign posted in the pharmacy advertising their smoking cessation services. Furthermore, efforts should be exerted nationwide to highlight the role of pharmacists in smoking cessation and to prepare them for this responsibility.

Limitations

We acknowledge that our study has its limitations. The information was self-reported by pharmacists. Consequently, the responses may have contained some inaccurate data resulting from intentional deception, poor information recall, or misunderstanding of the question and may be biased by a disposition to provide social desirable responses. Another limitation is that the survey reliability was not tested among the population of community pharmacists in Qatar. In addition, the survey response rate was less than optimal. However, we believe that the low response rate would not prevent generalizing the study results as the sociodemographic characteristics of the study participants mirror those of the population of community pharmacists in Qatar and those of participants of other surveys conducted in community pharmacies in Qatar [44,

45]. Furthermore, obtaining a complete picture about the smoking cessation practices of community pharmacists in Qatar is not possible in one survey. More qualitative and observational studies could be done to complement our quantitative results. Despite its limitations, this study provided baseline data against which pharmacist progress in the provision of smoking cessation counseling in Qatar can be assessed.

Conclusion

The study findings indicated that Qatar community pharmacists have positive attitudes toward smoking cessation counseling. The majority of respondents agreed that it was important for them to counsel their patients about smoking cessation. These positive attitudes need to be transformed into actions. However, lack of educational preparation in addition to other perceived barriers can prevent pharmacists from providing smoking cessation counseling. Perceived barriers included lack of time, lack of patients' interest in discussing smoking cessation counseling, and lack of adequate supply of smoking cessation related educational materials. Efforts should be exerted to offer community pharmacists smoking cessation education and training programs and to overcome all perceived barriers, as community pharmacists are uniquely situated to make an important contribution to smoking cessation in Qatar.

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