

Smoking behavior, knowledge, attitude, and practice among patients attending primary healthcare clinics in Dubai, United Arab Emirates

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ABSTRACT

Introduction: Tobacco smoking is one of the largest and highly preventable public health threats worldwide. In the United Arab Emirates, around 15.7% adult males and 2.4% adult females are current tobacco smokers. Primary healthcare clinics (PHCs) have an important role in battling the smoking epidemic by raising awareness among patients attending them daily. The aim of our study was to assess the knowledge, attitude, and practice regarding smoking among patients attending PHCs. **Methods:** A cross-sectional descriptive study was conducted on patients attending primary healthcare clinics in Dubai. Data was collected using a pretested self-administered questionnaire developed by the researchers and was adopted from the Global Adult Tobacco Survey. **Results:** Among a total of 500 patients, around 66.4% were never smokers, 23.6% were current smokers, and 10.0% were ex-smokers. The age of first time smoking among current smokers was the highest between 18 and 19 years, with friends being the source of first attempt of smoking (53.4%). Around 53.4% of the current smokers had poor knowledge, while most of never and ex-smokers had a good knowledge level (47.9%, 70.0%), respectively (P value for both <0.05). Majority (71.2%) of current smokers had negative attitude toward anti-smoking statements, while never and ex-smokers had a positive attitude (54.5% and 58.0%), respectively (P value <0.05). **Conclusion:** The majority of never and ex-smokers had good knowledge level and positive attitude toward anti-smoking statements; however, poor knowledge level and negative attitude was found more among current smokers.

Keywords: Attitude, knowledge, practice, primary healthcare, smoking

Introduction

Tobacco smoking is one of the largest and highly preventable public health threats worldwide. It is considered as a modifiable risk factor for several respiratory, cardiovascular, and neoplastic diseases.^[1]

As per the WHO, smoking kills more than 8 million people each year. More than 7 million of those deaths are the result of direct

tobacco use, while around 1.2 million deaths are the result of exposure to second-hand smoking.^[2]

In the United Arab Emirates (UAE), it has been reported that 15.7% adult males and 2.4% adult females are current tobacco smokers, while on the other hand around 11.3% males and 5.0% females from the youth are current tobacco smokers' too.^[3]

Being aware of patients' knowledge, attitude, and practice toward smoking is crucial to establish good prevention and control measures in order to decrease the prevalence of smoking among the population.

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Primary healthcare department has an enormous potential to play a key role in battling the smoking epidemic, as large numbers of patients attend the outpatient clinics daily.

The role of a family physician who is aware of his/her patients' level of knowledge, attitude, and using them in good rapport establishment cannot be dismissed. This is the first step to detect smokers among the population and then to tailor the awareness at individual level.

To our knowledge, a study assessing the knowledge, attitude, and practice among general population attending primary healthcare clinics (PHCs) has not been published before in the UAE or other Gulf countries; we therefore decided to conduct this study, aiming to assess the knowledge, attitude, and practice regarding smoking behavior among patients attending PHCs in Dubai, UAE.

Subjects and Methods

Target population and sample size

The total number of adult patients (18 years and above) attending PHCs in Dubai during the year 2016 was 509,375 patients. A representative sample with a 95% confidence level and 5% margin of error was calculated via an online sample size calculator (Creative Research Systems survey software).^[4] The final sample size was 500 patients.

Inclusion and exclusion criteria

All adult patients (18 and above) attending PHCs were included regardless of their gender, nationality, occupational, or educational level.

Patients lacking basic Arabic/English understanding to fill in the questionnaire by themselves were excluded from the study.

Methods

A cross-sectional descriptive study conducted on patients attending PHCs in Dubai. Data was collected using a self-administered questionnaire developed by the researchers using the Global Adult Tobacco Survey (GATS).^[5]

The questionnaire was evaluated through a pilot study conducted on the same study population prior to the actual data collection to ensure easy understanding and better quality of the questionnaire.

PHCs were divided into two categories based on their location either in Bar Dubai or Deira. Four clinics were selected randomly from each category, total of eight clinics.

Recruitment of patients was based on their availability in the clinic and their agreement to participate in the study.

Patients were informed about the aim of the study, and then asked for their consent and signature to fill in the questionnaire anonymously. Both, the questionnaire and the consent form were available in English and Arabic.

The total 500 completed surveys were achieved in the duration from November to December 2017. The data was then analyzed using IBM SPSS software, version 24. Chi-square test was used for further evaluation with significance level of $P < 0.05$.

Data Collection Instrument

The questionnaire included the following five sections: sociodemographic data, smoking status, knowledge level, attitude level, and practice.

In knowledge level section, the participants were asked questions about the effects of smoking and second-hand smoking and were asked to respond with yes, no, or I don't know. A scoring system similar to one used in a previous study^[6] was applied in our study to assess the responses to knowledge questions, with scores of <50%, 50–74%, and $\geq 75\%$ indicating poor, fair, and good knowledge level, respectively.

In attitude level section, the participants were given some statements that involve smoking or anti-smoking acts and were asked to respond with agree, disagree, or I don't know. The same previously mentioned scoring system was used again to assess the responses to attitude questions, with scores of <50%, 50–74%, and $\geq 75\%$ indicating negative, neutral, and positive attitude level, respectively.

In the practice section, the questions were tailored according to the smoking status of the participant. Some of the questions were designed in a multiple response scheme to help better address the general practice of the participant toward smoking.

Never smokers' and ex-smokers' questions included reasons of not smoking/reasons to quit smoking, allowing smoking in their houses and advising people around them to quit smoking.

Smokers were asked questions related to the smoking tool, frequency, age, and source of first attempt, planning of quitting, the benefit of smoking, and they were asked about whether they declare their smoking status to their health provider or not. Furthermore, they were asked if they have got an advice to quit smoking from healthcare providers. The last question was related to the smoker's perspective regarding the best method to help them quit smoking.

Ethics statement

University Student Research Committee approval for this study was obtained on 31/10/2017. (USREC10-34/UG/2017). Dubai Scientific Research Ethics Committee approval for this study was obtained on 07/11/2017. (DSREC-SR-11/2017_02). Signed informed consent was obtained from all participants prior to filling the questionnaire.

Results

A total of 500 patients with almost equal male to female ratio (237:263) participated in our study. UAE nationals

represented the majority of the participants (63.0%, $n = 315$). Other sociodemographic details are shown in Table 1 below:

Approximately 66.4% of the participants were never smokers ($n = 332$), 23.6% were current smokers ($n = 118$), and 10.0% were ex-smokers ($n = 50$). The majority of smokers (43.9%, $n = 104$) and ex-smokers (17.3%, $n = 41$) were males (P value = 0.000), with male to female ratio of 104:14 in smokers and 41:9 in ex-smokers.

Smoking was found to be more prevalent among non-UAE nationals with a percentage of 31.9% compared to 18.7% among UAE nationals.

An association was shown between increased level of education and a decline in number of current smokers, decreasing from 22.2% with primary school degree up to 8.0% with Master/Doctorate degree (P value = 0.004).

An association was also shown between increased level of education and quitting smoking. Out of the ex-smokers, 5.6%, 8.5%, 10.9%, and 16.0% were with primary school, high school, Bachelor and Master/Doctorate degree, respectively (P value = 0.004).

Knowledge level

Participants were divided into three groups according to their smoking status, and then the previously mentioned scoring system was applied to each group. Figure 1 shows the distribution of participants' level of knowledge among the three groups (P value = 0.000).

The responses regarding the relationship between smoking and cardiovascular/bronchopulmonary effects were generally good (90.8% and 93.6% answered yes, respectively). On the other hand, poor response was noted when asking about the relationship between smoking and sexual effects (impotence, infertility) with around 40.4% answered that they don't know and 8.8% denied the relationship. This could be an area of improvement while

raising awareness rather than stressing on certain complications of smoking and not looking at the big picture.

Attitude level

Participants were divided into three groups according to their smoking status, and then the previously mentioned scoring system was applied to each group. Figure 2 shows the distribution of participants' attitude level among the three groups (P value = 0.000).

Practice

As practice questions were tailored according to the smoking status of the patients, their responses will be discussed accordingly.

Table 1: Sociodemographic characteristics of study participants

Sociodemographic data	Category	n (%)
Age	18-25	125 (25.0%)
	26-33	158 (31.6%)
	34-41	101 (20.2%)
	42-49	56 (11.2%)
	More than 50	60 (12.0%)
Marital Status	Single	173 (34.6%)
	Married	299 (59.8%)
	Divorced	18 (3.6%)
	Widowed	10 (2.0%)
Education	Primary School	18 (3.6%)
	High School	141 (28.2%)
	Diploma	67 (13.4%)
	Bachelor	221 (44.2%)
	Master/Doctorate	50 (10.0%)
Occupation	Others	3 (0.6%)
	Student	73 (14.6%)
	Governmental Sector	184 (36.8%)
	Private Sector	116 (23.2%)
	Self-employed	25 (5.0%)
	Retired	25 (5.0%)
	Unemployed	55 (11.0%)
	Others	22 (4.4%)

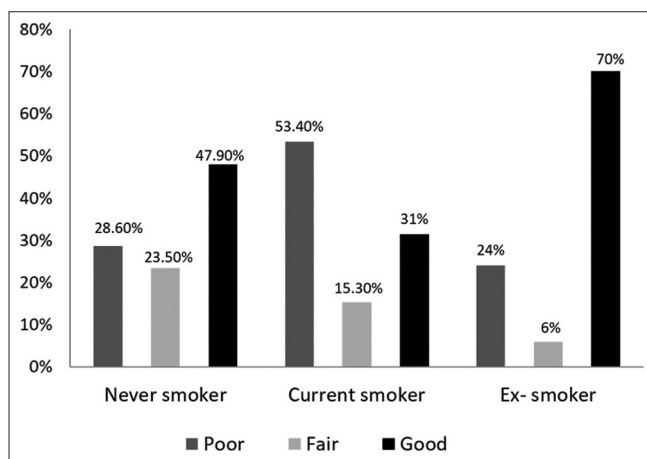


Figure 1: The relationship between knowledge level and smoking status

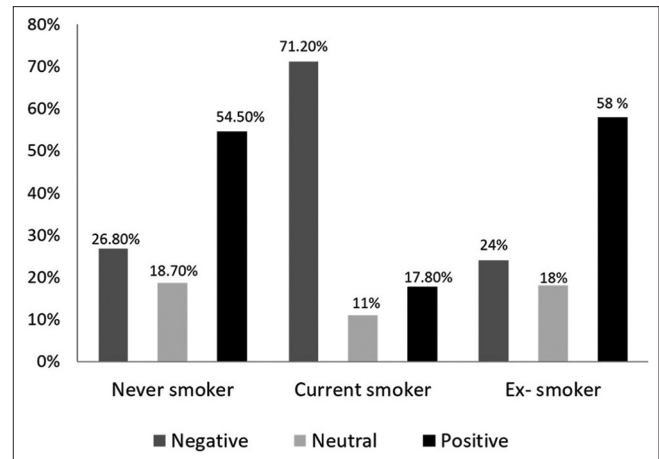


Figure 2: The relationship between attitude level and smoking status

Never smokers and Ex-smokers

The first question for never smokers was about reasons not to smoke and they were given the right to choose more than one reason from the options given. Health-related reason ranked the top 87.9%, followed by disliking the smell at around 50.6%, and the third reason was self-discipline at around 29.2%. Saving money, being unfashionable and others were chosen less frequently compared to the first three reasons mentioned.

On the other hand, the first question for ex-smokers was about reasons to quit and it was also a multiple response question. Health-related reason/problems ranked the top 72.0%, followed by personal reasons at around 42.0%, and the third reason was family or partner advice at around 34.0%.

In summary, it was clear that health-related issue was the main concern behind avoiding smoking or quitting it.

Moreover, in the second question, for both never smokers and ex-smokers they were asked about whether they allow the visitors to smoke inside their houses or not. Around 82.7% (*n* = 316) answered that they don't allow the visitors to smoke inside their houses.

In addition to that, the third question for both categories was about if they advise smokers around them to stop smoking, the majority responded by yes (82.0%, *n* = 313).

Current smokers

They were asked about the smoking tool (s) they use through a multiple response question. Cigarettes were at the top of the list with approximately 82.2%, followed by water pipe/shisha and Medwakh in the second and third place (48.3%, 30.5%), respectively. The electronic cigarette was at the bottom of the list at around 5.9% as shown in Figure 3 below.

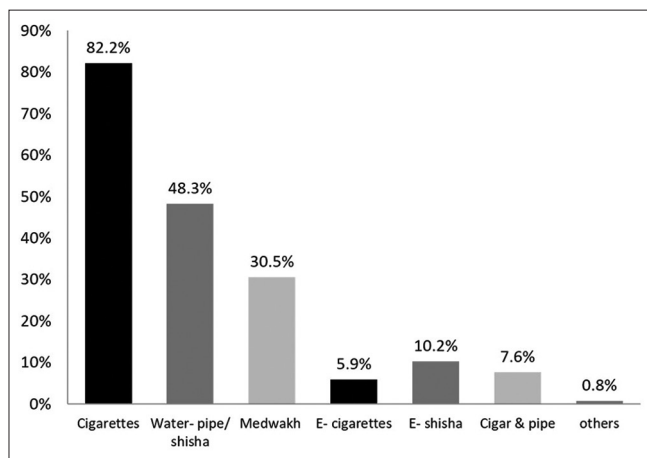


Figure 3: The frequency of usage of different smoking tools among the current smokers. Percentage is not equal to 100% as it is a multiple response question

When asked about the age of first time smoking, only 17.0% started after 20 years of age as shown in Figure 4.

Upon questioning the current smokers about the source of their first attempt of smoking, friends were the source in almost 53.4% of the cases. Followed by self and parents/family (31.4%, 13.6%), respectively.

They were also asked if they are planning to quit smoking in the upcoming 6 months. Almost half of the current smokers (*n* = 59) replied with yes. Furthermore, they were asked if they have ever tried to quit smoking in the past 12 months, and around 52.5% (*n* = 62) of them answered with no. Of those who tried quitting before, 46.4% (*n* = 55) quit smoking only for days. Further details are shown in the Table 2 below:

In a question regarding what they believe are the benefits of smoking (they were allowed to choose more than one choice), relieving stress was the major benefit 64.4%. Next reason was “smoking helps to increase concentration” 28.8%, followed by “protecting against some diseases” in the third place at around 3.4%. Nevertheless, almost 25.4% (*n* = 30) of the current smokers believed that smoking has no benefit.

Only 49.2% (*n* = 58) of the current smokers have always declared that they are smokers to their healthcare provider. And around

Table 2: The participating current smokers who tried to quit and for how long they were able to.

Duration	Total number	Percentage %
<24 h	7	12.5%
Days	26	46.4%
Weeks	11	19.6%
Months	7	12.5%
Years	3	5.5%
Don't know	2	3.6%
Total	56	100%

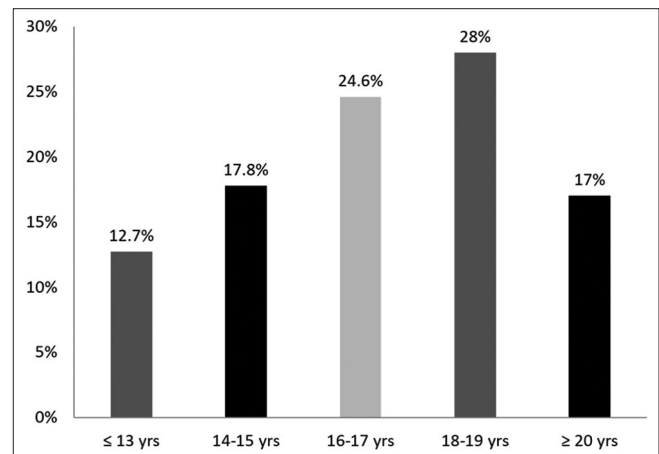


Figure 4: The age of first time smoking among the current smokers

61.0% ($n = 72$) of total current smokers have received an advice to quit smoking from their healthcare provider.

The responses to the question about the best method according to the current smokers to help them in quitting smoking were as follows: 43.2% think it is counseling by a doctor at smoking cessation clinic. While 37.3% think it is the availability of nicotine replacement therapy and finally only 16.1% believe that awareness campaigns and lectures could help them in quitting smoking.

Discussion

Due to the escalating level of tobacco smoking among the population worldwide, the topic itself has gained popularity among many researchers; therefore, many studies have been conducted in this field.

In our study, the percentage of female smokers was 5.3% which is comparatively low to the percentage of male smokers (43.9%) and this was the case with the study conducted at Najran University, Saudi Arabia^[7] as it showed a lower percentage of female smokers in their study (0.5%). This kind of result was anticipated prior to the study as smoking habit among females in Gulf area is prohibited by religious and cultural beliefs, so two possibilities were considered; either the female is not smoking or not reporting her smoking status because of those beliefs. However, the increase in female smoking rate (from 2.4% in WHO report on the global tobacco epidemic to 5.3% in our study) is alarming and represents an area where awareness could be harnessed.

In Najran University's study, the prevalence of shisha smoking among smokers was 28.3%, in comparison to 48.3% in our study, which is double their percentage. However, in another study conducted in Uganda,^[8] the percentage of smokers that smoke shisha was 36.4%. In summary, the three studies revealed that a quite big number of smokers' smoke shisha, which can be attributed to cultural preferences or the public presumption that it is less harmful and less addictive.^[9]

Our study showed that around 47.5% of current smokers did actually try to quit smoking; in contrast to Najran study which stated that almost 72.1% of the smokers tried quitting smoking. This clarifies that a good number of smokers are willing to quit smoking; however, more motivation and effort will be needed from their side in addition to support of both healthcare facilities and the surrounding people.

In comparing the knowledge level between smokers and never-smokers; Dammam study^[10] did not yield any statistically significant difference between the two categories. While on the other hand, our study showed a statistically significant difference between them.

In our study, the age of first time smoking was the highest between 18 and 19 years old, which was almost similar to a study

conducted in Bahrain;^[11] in which the age of starting cigarette and waterpipe tobacco shisha was 16.2 ± 4.0 and 19.3 ± 6.7 years, respectively. On the other hand, a study conducted on newly diagnosed tuberculosis patients, Malaysia,^[12] showed a much younger age group regarding starting smoking (14–15 years).

Almost 53% of the participants in our study indicated that their friends were the source of their first attempt of smoking, which is also the case in the study conducted in Myanmar^[13] among high school students. Based on the previous data, more attention and efforts are required in dealing with the high prevalence tobacco use among the youth population since this age group are more influenced by their peers, therefore, awareness campaigns must be more targeted to this age category, for example, schools and universities.

People should be aware of the dangerous side effects of second-hand smoking as well and know about the effects on the never-smokers health. Health promotion is not only for the smokers, it should target the never smokers as well. The study "Tobacco smoking in Mongolia: findings of a national knowledge, attitudes and practices study"^[14] in 2014 showed that approximately 15.5% of participants did not object people smoking in their house, which was almost the same in our study (17.2%).

Strengths/Limitations of the study

As any other study, our study has several strengths and limitations. The strengths of our study lie in that it is the first one to be done on patients attending PHCs in the UAE and Gulf area. A big sample size was selected with inclusion of a wide range of age groups, education, occupation, and nationality. In addition to that, we had almost equal male to female ratio in our study.

The limitations of this study were that the study was conducted on patients attending PHCs in Dubai only, which do not represent the whole UAE population. The questionnaire was available only in either in English or Arabic, which limited our access to patients who do not speak either of these languages. There is an age group limitation, as only adult participants (18 years old) were included in the study. In addition to that, the KAP survey may underestimate the true prevalence of smoking in PHCs through self-report bias.

Conclusion

In conclusion, our study demonstrates that knowledge affects attitude and practice as the majority of never and ex-smokers had good knowledge level and positive attitude toward anti-smoking statements, while poor knowledge level and negative attitude were found more among current smokers.

Recommendations

1. As the knowledge level was poor among smokers, more awareness against smoking is needed while targeting this

group using their preferred methods to help them quit smoking.

2. As most smokers choose counseling by a physician in a smoking cessation clinic as their preferred method to help them quit, the clinics should be more available and accessible to all people in the community.
3. Since most smokers started at a relatively young age and been influenced by their peers, awareness against smoking should be started as early as school years.

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Declaration of patient consent

The authors certify that they have obtained a signed informed consent from all participants prior to filling the questionnaire. The questionnaire was self filled by participants with maintenance of anonymity (no names or initials were required).

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Medical Education Department, Dubai Health Authority, Dubai, United Arab Emirates. At the time of conducting the study, all authors were final year medical students at Dubai Medical College, Dubai, United Arab Emirates.

Conflicts of interest

There are no conflicts of interest.

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