

## Smoking among Health Care Providers, Identification of Associated Factors in Hilla City during the Year 2011

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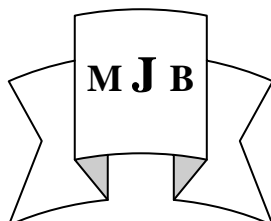
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### Abstract

**Background:** Smoking is an established risk factors for many diseases and is one of the most important public health problems worldwide. The WHO has stated clearly that health professionals can have a significant influence on the smoking habits of a community.

**Objectives:** To determine the prevalence of cigarette smoking among healthcare providers in Al-Hilla city and the association between smoking and different variables.

**Methodology:** A cross-sectional study was done from April, 2011 through May, 2011 in three major hospitals and four primary healthcare centers in Al-Hilla city. Data collection was done using an anonymous, self-administered questionnaire.

**Results:** The study included 545 health care professionals. The mean age and standard deviation of the study group is  $35 \pm 9.7$ . The male:female ratio is 2.2:1. The prevalence of current cigarette smokers among male physicians, pharmacists, and paramedics are 30.9%, 40%, 23.4%, respectively. The overall prevalence among male health professionals is 26%. While the current cigarette smoking rate is 1.6% among female healthcare providers. Sixty four percent of smokers started their cigarette smoking habit at the age range 10-20 years. About 1/3 of them smoke one cigarette pack or more per day (heavy smokers). And half of them smoked for more than 10 years. 1/3 of the study group had participated in seminars or courses against smoking habit.

**Conclusion:** in conclusion, we found that the prevalence rate of cigarette smoking was higher than expected for persons who understand the related problems of smoking.

تدخين السكان لدى مقدمي الخدمات الصحية وتحديد العوامل المرتبطة به في مدينة الحلة

لعام ٢٠١١

### الخلاصة

**خلفية الدراسة:** التدخين هو عامل اختطار للعديد من الامراض وهو مشكلة صحية عالمية. لقد ثبتت منظمة الصحة العالمية ان مقدمي الخدمات الصحية ممكن ان يؤثروا في نقشي عادة التدخين في المجتمع.

**هدف الدراسة:** تحديد معدل نقشي تدخين السكان بين مقدمي الخدمات الصحية في مدينة الحلة - محافظة بابل - العراق وتوضيح المتغيرات المرتبطة بهذه العادة.

**طريقة العمل:** اجريت دراسة مقطعية في شهري نيسان ومايس عام ٢٠١١ وفي ثلاثة مستشفيات رئيسية وأربعة مراكز صحية في الحلة، ويتوزع استمارة استبانة تملأ ذاتياً من قبل المشاركين في هذه الدراسة من مقدمي الخدمات الصحية.

**النتائج:** شملت الدراسة ٥٤٥ مقدم خدمة (طبيب، صيدلي، وعاملين صحيين). وقد كانت نسبة الرجال الى النساء هي ٢,٢:١ وبلغ متوسط العمر لعينة الدراسة هو  $35 \pm 9.7$ .

ظهر ان معدل التفشي للمستمرين على تدخين السكائر بين الذكور من الاطباء والصيادلة والمعاونين الطبيين هي ٣٠,٩% و ٤٠,٠% و ٢٣,٤% على التوالي. ان معدل التفشي العام للمستمرين في التدخين لدى الذكور هو ٢٦,٠% و ١,٦% لدى الاناث. أوضحت الدراسة ان ٦٤,٤% من المدخنين بدأوا التدخين في عمر ١٠-٢٠ سنة. وان ثلثهم يدخن يوميا علبه سكاائر أو أكثر. وان نصفهم كان يدخن لفترة ١٠ سنوات او يزيد على ذلك. وان ثلثهم فقط شارك في ندوة او حلقة نقاشية ضد التدخين.

**الاستنتاج:** أوضحت هذه الدراسة ان معدل تفشي هذه العادة الضارة المدمرة للصحة هي غير متوقعة عند اشخاص يفهمون مشاكل التدخين وتأثيره على الصحة والبيئة.

## Introduction

Smoking is an established risk factor for many diseases and is one of the most important public health problems worldwide [1]. Smoking is a major preventable cause of morbidity and mortality [2]. It is associated with a wide range of diseases: pulmonary, gastrointestinal and cardiovascular diseases and different kinds of cancers [3]. It has been reported that smokers die earlier than nonsmokers [4].

Although many of the adverse health effects of tobacco occur later in life, smoking has health implications for young people [5] and is associated with other high-risk behaviors among young people including abuse of other drugs, fighting and inappropriate social behaviors[6].

The World Health Organization has reported that more than 4 million annual deaths are attributed to tobacco consumption[7]; this is projected to be 10 million annually in 2030, most of the victims being from developing countries [8]. About 80% of the 1.1 billion smokers in the world are living in developing countries[9], and this rate continues to rise [7]. In contrast to the fall in tobacco consumption in most high-income countries that is declining by 1% annually [10], consumption of tobacco-related products is increasing in developing countries by about 3.4% per year [7].

The Global Youth Tobacco Survey reported that the trend for tobacco smoking in the Eastern Mediterranean Region is increasing, along with the

use of other forms of tobacco such as *shisha* (waterpipe); this increase is mostly due to the low price of tobacco in the region and the weak policies of tobacco control [11]. The global tobacco control report, released in 2008, indicated that the prevalence of tobacco use among males in the Eastern Mediterranean Region is ranging from 24.8% to 61.7%, while in females the prevalence ranges from 1.0% to 7.9% [1].

Prevalence of smoking among young people in the Arab countries is widely differing according to the World Health Organization reports, the reports stated that smoking prevalence was: 7% in Oman, 18% in Kuwait, 23% in Iraq, 25% in Saudi Arabia and Jordan, 31% in Syria, 43% in Yemen and 53% in Lebanon [12]. Each day, nearly 4800 adolescents smoke their first cigarette; of these, nearly 2000 will become regular smokers[13]. Smoking-related health problems are related to the duration (years of smoking) and intensity (number of cigarettes per day); most adult smokers began to smoke or were already addicted to smoking before the age of 18 years [14]. While many adolescents want to quit smoking, only a small number of them succeed [15].

There is alarming evidence that smoking rates are increasing among children and women and, unless effective comprehensive and sustained initiatives are implemented to reduce smoking, the prevalence of smoking in women in developed and developing countries has been predicted to rise to 20% by 2025 [16].

The prevalence of smoking among health care providers has been shown to vary widely [17]. The WHO has stated clearly that health professionals can have a significant influence (positive or negative) on the smoking habits of a community [18]. It has been observed that doctors who smoke tend to be more permissive [19]. Health care professionals who smoke are less inclined to advise their patients against tobacco use, are less likely to provide anti-smoking educational materials to their patients, and adopt a passive attitude towards smoking [20]. This happens even though health care professionals are usually more aware of the adverse health consequences of cigarette smoking compared to the general population [21]. Medical sciences students, such as doctors, nurses, pharmacists or health administrators, as future health care professionals, can play a central role in preventive programs due to their appropriate knowledge and attitudes [22].

### **Objectives**

To determine the prevalence of cigarette smoking among healthcare providers in Al-Hilla city and the association between smoking and different variables.

### **Methodology of Data Collection**

#### **Study design & Sample**

This study is an observational descriptive cross-sectional study (prevalence study). This study was conducted from 13th of April, 2011 through May 2011. The study participants included a total of 545 health care providers of both sexes in the 3 major hospitals in Al-Hilla City in Babylon - Iraq which are Merjan Teaching Hospital, Al-Hilla Teaching Hospital, and obstetric & pediatric hospital, and a number of primary health care centers. 131 of the participants were doctors, while 49

were pharmacists, and 365 were paramedical personnel (nurses and other health care staff).

#### **Data collection and procedure**

Data collection was done using an anonymous, self-administered questionnaire. The questionnaire was written in Arabic and included 30 questions. The questions are grouped into 2 sections, the first section comprised general questions directed towards all participants, while the second section comprised questions regarding the smoking habit and directed towards both current smokers and ex-smokers.

A pilot study was done on 24 health care providers in order to assess the appropriateness of the questionnaire in terms of clarity & comprehensiveness, and to have a predictive estimation of the response rate. Among those 24 health care providers, 21 have participated in the pilot study while 3 have refused to participate, giving a response rate of 87.5%. The participants had no problems in responding to the questionnaire, but they had suggested some modifications for clarity. These suggestions were considered in the finalization of the questionnaire. The participants were encouraged to give frank answers by explaining that the survey is anonymous and the privacy of participants will remain protected.

#### **Data analysis**

Data analysis was performed using SPSS for Windows, version 17.0. Descriptive statistics were used to analyze the study variables. Chi-square was calculated. The data were summarized using frequencies and percentages.  $P\text{-value} < 0.05$  was considered significant.

## Results

Table 1 shows the frequency distribution of the study groups by their occupations in which the paramedical staffs constitute 67% while the pharmacists constitute 9% and the physicians constitute 24%. The association between male occupations and their cigarette smoking habit is significant (*Calculated  $X^2 = 5.080$ ,  $df = 4$ ,  $p\text{-value} < 0.05$* ). Figure 1 shows that the overall prevalence rate of cigarette smoking among male health care givers is 26%. About 1 out of 4 are currently smokers, and about 2 out of 5 are either current or ex-smokers.

In table 2 the means and standard deviations of age of males and females are  $36.49 \pm 9.71$  and  $31.65 \pm 8.98$ , respectively. Figure 2 shows that only 3% of female health care givers are smokers.

Table 3 reveals the prevalence rate of cigarette smoking among male participants according to their occupations. The current smokers and the ex-smokers of male physicians are 30.9% and 12.3%, respectively. While the highest prevalence rates of smoking among males is among male pharmacists 40%. The male paramedical staff current smokers is 23.4%.

Table 4 explains that none of the female physicians and pharmacists are smokers. While the highest rates among female current smokers is among paramedical staff which is 3.4% only.

Table 5 shows that the highest rate of cigarette smoking is in the age

group 50-59 which constituted 26.8%, the highest ex-smoker rate is in the same age group and the difference is highly significant (*Calculated  $X^2 = 31.394$ ,  $df = 8$ ,  $p\text{-value} < 0.001$* ).

Table 6 shows that the highest proportion of smokers have started their smoking habit in the age group of 10-20 years.

Table 7 shows that 73.2% of smokers smoke less than one pack a day, while about 1/3 of them smoke more than one pack (heavy smokers).

Table 8 reveals that more than 50% of smokers smoked more than 10 years.

Figure 3 reveals that the majority of smokers had received their first cigarette from their peers.

Figure 4 reveals that the highest proportion of smokers did not know exactly why they started smoking, followed by curiosity and anxiety as second causes of starting this bad habit.

Table 9 shows that there is a positive association between smoking habit and positive history of smoking in their families (*Calculated  $X^2 = 16.546$ ,  $df=2$ ,  $p\text{-value} < 0.05$* ).

Table 10 shows that 2/3 of the population are not attending courses of educations against smoking, and this is significantly important. (*Calculated  $X^2 = 10.480$ ,  $df = 2$ ,  $p\text{-value} < 0.05$* )

Table 11 shows that 20% of physicians smoke in front of their patients without hesitation.

Table 12 reveals that 43.5% of those who were smoking had succeeded in quitting cigarette smoking and became ex-smokers.

**Table 1** Frequency distribution of the study groups by occupations

Sex	Occupation			Total No. (%)
	Physician No. (%)	Pharmacist No. (%)	Paramedic No. (%)	
Male	81 (14.9)	25 (4.6)	278 (51.0)	348 (70.5)
Female	50 (9.2)	24 (4.4)	87 (16.0)	161 (29.5)
Total	131 (24.0)	49 (9.0)	365 (67.0)	545 (100.0)

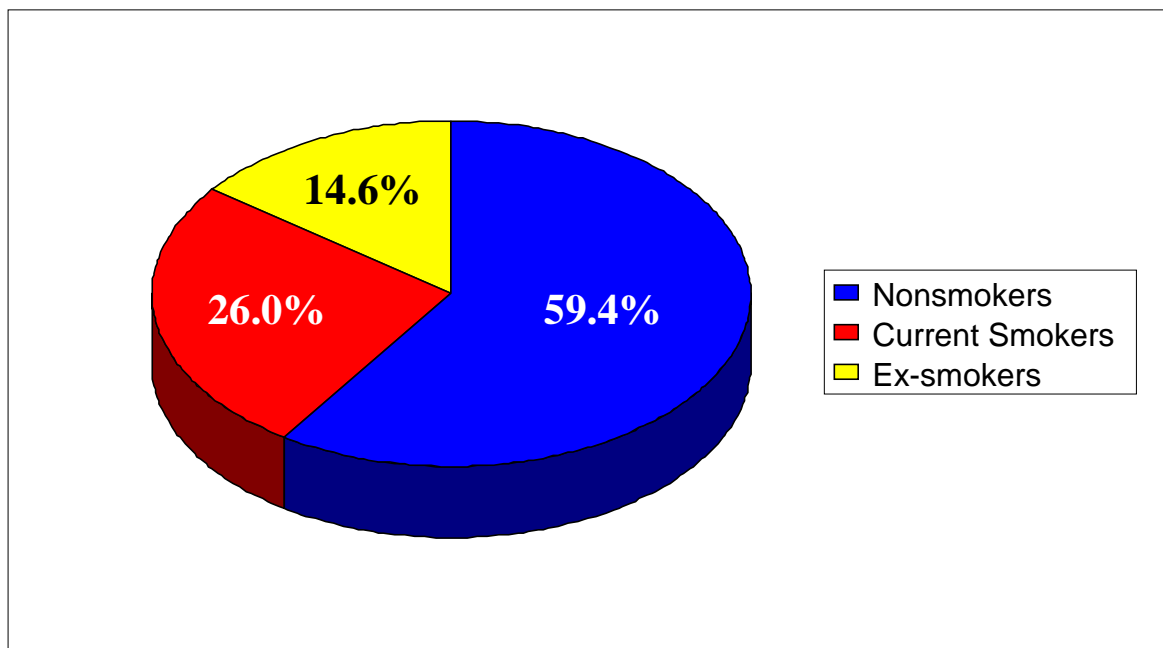
**Table 2** Means, range and standard deviation of participants' age by gender

Sex	Mean	Range	Standard Deviation
Male	36.49	20-63	± 9.71
Female	31.65	20-62	± 8.98
Total	35.06	20-63	± 9.75

**Table 3** Smoking status among males according to their occupations

Occupation	Smoking status			Total No. (%)
	Nonsmoker No. (%)	Current Smoker No. (%)	Ex-smoker No. (%)	
Physician	46 (56.8)	25 (30.9)	10 (12.3)	81 (100.0)
Pharmacist	13 (52.0)	10 (40.0)	2 (8.0)	25 (100.0)
Paramedic	169 (60.8)	65 (23.4)	44 (15.8)	278 (100.0)
Total	228 (59.4)	100 (26.0)	56 (14.6)	384 (100.0)

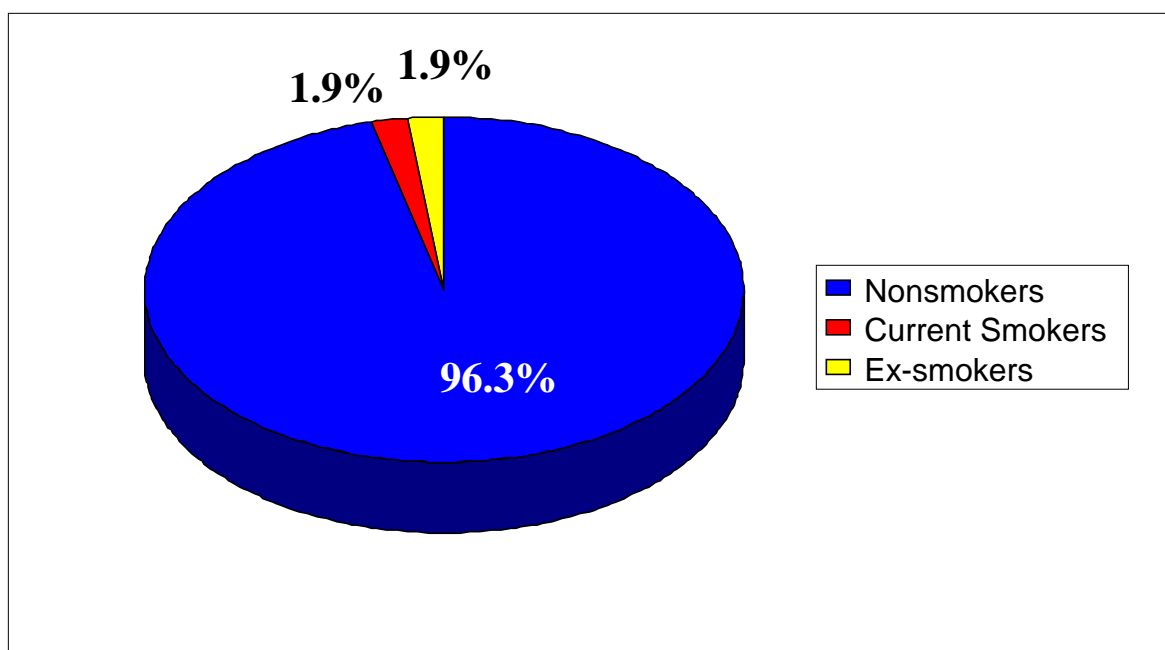
Calculated  $X^2 = 5.080$  df = 4 p-value < 0.05 (SN)



**Figure 1** Cigarette smoking among males

**Table 4** Smoking status among females according to their occupations

Occupation	Smoking status			Total No. (%)
	Nonsmoker No. (%)	Current Smoker No. (%)	Ex-smoker No. (%)	
Physician	48 (96.0)	0 (0.0)	2 (4.0)	50 (100.0)
Pharmacist	24 (100.0)	0 (0.0)	0 (0.0)	24 (100.0)
Paramedic	83 (95.4)	3 (3.4)	1 (1.1)	87 (100.0)
Total	155 (96.3)	3 (1.9)	3 (1.9)	161 (100.0)



**Figure 2** Smoking status among females

**Table 5** Frequency distribution of cigarette smoking status by age

Age (years)	Smoking status			Total No. (%)
	Nonsmoker No. (%)	Current Smoker No. (%)	Ex-smoker No. (%)	
20 – 29	151 (81.6)	25 (13.5)	9 (4.9)	185 (100.0)
30 – 39	117 (68.8)	37 (21.8)	16 (9.4)	170 (100.0)
40 – 49	89 (62.7)	30 (21.1)	23 (16.2)	142 (100.0)
50 – 59	20 (48.8)	11 (26.8)	10 (24.4)	41 (100.0)
≥ 60	6 (85.7)	0 (0.0)	1 (14.3)	7 (100.0)
Total	383 (70.3)	103 (18.9)	59 (10.8)	545 (100.0)

Calculated  $X^2 = 31.394$

df = 8

p-value < 0.001 (SN)

**Table 6** Frequency distribution of smokers according to their age of beginning smoking

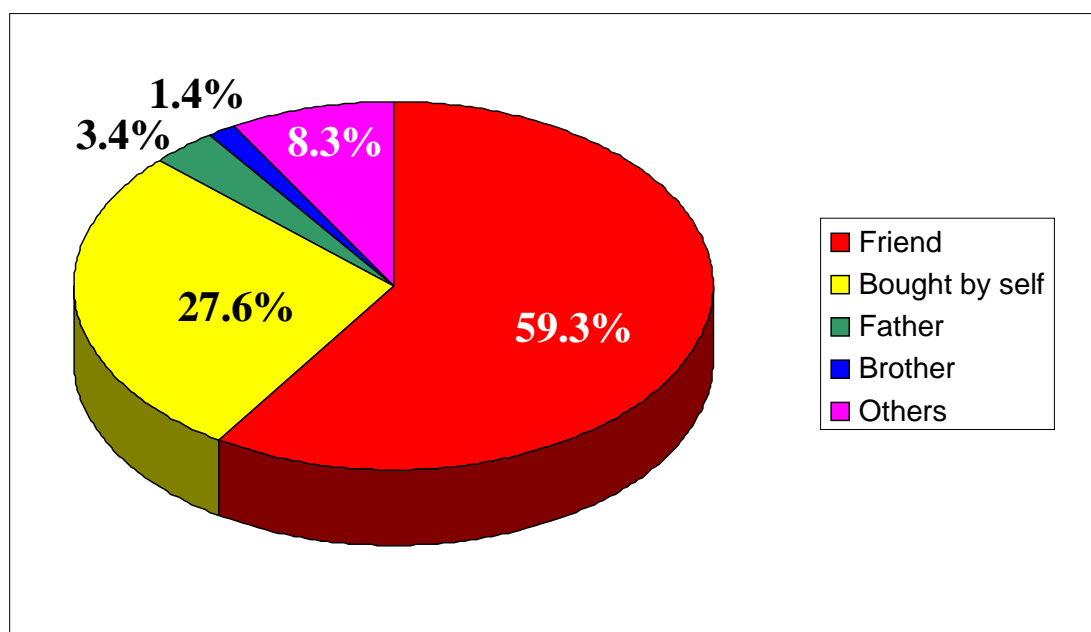
Age (years)	Frequency No. (%)
10 – 19	105 (64.8)
20 – 29	47 (29.0)
≥ 30	10 (6.2)
Total	162 (100.0)

**Table 7** Frequency distribution of the number of cigarettes smoked per day

No. of cigarettes	Frequency No. (%)
1 - 20	116 (73.4)
21 - 40	35 (22.2)
41 - 60	6 (3.8)
> 60	1 (0.6)
Total	158 (100.0)

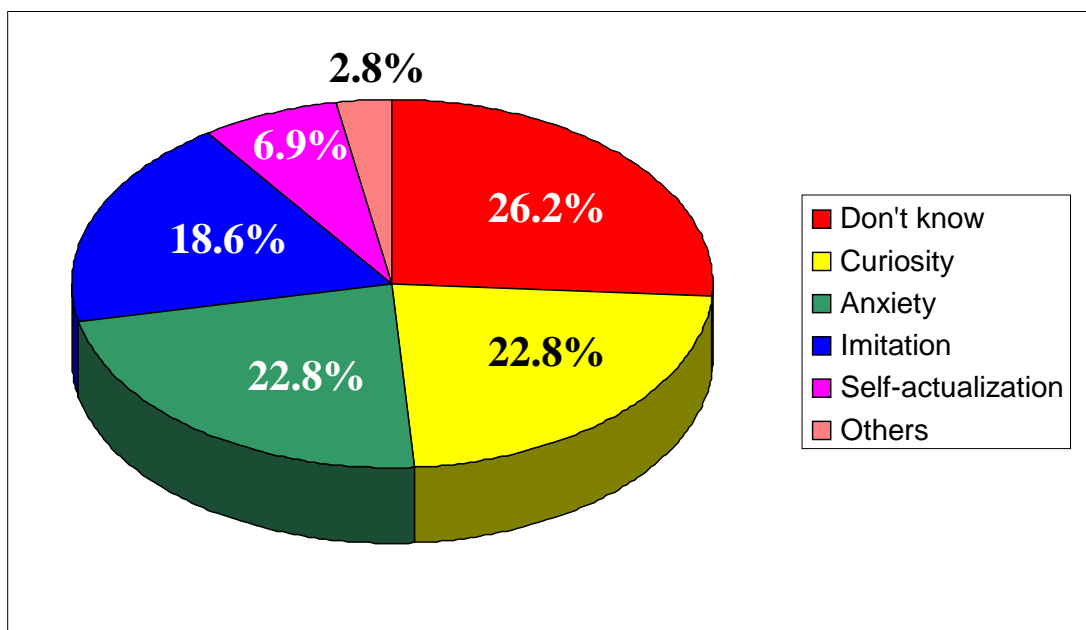
**Table 8** Frequency distribution of the duration of smoking (years)

Duration of smoking (years)	Frequency No. (%)
0 - 9	77 (47.5)
10 - 19	55 (34.0)
20 - 29	24 (14.8)
≥ 30	6 (3.7)
Total	162 (100.0)



**Figure 3** Distribution of cigarette sources





**Figure 4** Distribution of the main causes of starting smoking

**Table 9** Distribution of smokers and non-smokers according to the smoking habit of their close relatives

Family history of smoking	Smoking status			Total No. (%)
	Nonsmoker No. (%)	Current Smoker No. (%)	Ex-smoker No. (%)	
Positive	153 (64.6)	63 (26.6)	21 (8.9)	237 (100.0)
Negative	230 (74.7)	40 (13.0)	38 (12.3)	308 (100.0)
Total	383 (70.3)	103 (18.9)	59 (10.8)	545 (100.0)

Calculated  $X^2 = 16.546$

df=2

p-value < 0.05 (SN)

**Table 10** Frequency distribution of participation in seminars and courses about risks of smoking

Participation	Smoking status			Total No. (%)
	Nonsmoker No. (%)	Current Smoker No. (%)	Ex-smoker No. (%)	
Participated	114 (64.8)	32 (18.2)	30 (17.0)	176 (32.3)
Did not participate	269 (72.9)	71 (19.2)	29 (7.9)	369 (67.7)
Total	383 (70.3)	103 (18.9)	59 (10.8)	545 (100.0)

Calculated  $X^2 = 10.480$ 

df = 2 p-value &lt; 0.05 (SN)

**Table 11** Frequency distribution of smokers in front of patients among currently smoking doctors and paramedical staff

Occupation	Total current smokers	Smokers in front of patients No. (%)
Physician	25	5 (20.0)
Paramedic	67	9 (13.4)
Total	101	14 (13.9)

**Table 12** Frequency distribution of success in quitting cigarette smoking among both smokers and ex-smokers

	No.	Percentage
Succeeded	50	43.5%
Failed	65	56.5%
Total	115	100.0%

**Discussion**

In contrast to what is expected, where people who are responsible for protecting and promoting community health and considered as good educational and socio-cultural standard smoke less because they recognize better the adverse effects of cigarette smoking, but we found the prevalence of smokers among male doctors was very high 30.9%. This might be explained by the fact that doctors' behavior is an important factor in the development of such bad habit among the general population. The total percentage of smokers in this study among male health care providers is 26.0%. And this may not reflect the true or real prevalence of smoking habit among the Iraqi population due to unrepresentiveness, however, it could be used as

preliminary indicator of this problem at the present time. Fortunately, the prevalence rate of cigarette smoking among female healthcare providers is much lower.

Among adult smokers in the United States, approximately 70% see a physician and 50% see a dentist each year [23–25]. Studies show that patients often respond positively to their doctor counseling them about smoking, even after only brief and simple advice [26–30]. However, while doctors have a great opportunity to contribute to smoking prevention and cessation, many fail to counsel their patients about quitting smoking [23,29,31,32]. Lack of training and self-efficacy in patient counseling may explain this.

In this study we found that most of smoking health care providers started

their habit during their teenage and this finding is inconsistent with the findings of other studies [14].

1/3 of smoking health care givers in this study are considered to be heavy smokers (smoke more than 1 pack a day), and this inflect the addiction status of those professionals. This also explains the long duration of smoking among the study group indicating that there are many social and cultural factors that encourages smoking in Iraqi society. Most of the interviewed health care providers said that they received their first cigarette from their peers and high proportion of them said that they don't know why they started to smoke their first cigarette, but other considerable proportion of them said that anxiety and curiosity are the main factors that encouraged them to start smoking.

We found a quite clear and significant relationship between the high prevalence of cigarette smoking among health care providers and the smoking habit among their close relatives. This finding is also inconsistent with a similar trend that was reported by Jawadi, A[33]. While Al-Saleem et al, did not find such a trend[34].

The unexpected high prevalence of cigarette smoking among male health care providers in Hilla may be explained by the finding that was shown in table 10 which reveals that 2/3 of the health care providers were not exposed to education sessions for ceasing cigarette smoking although they are working as health care givers and advisors.

The important finding in this study is smoking in front of patients, where 1 out of 5 doctors did so and this can be considered as a very bad example that can be followed to encourage patients and their companions not to quit tobacco smoking and increase the environmental pollution of the health

care places such as hospitals and primary health care center.

Table 12 shows that 43.5% of those who tried to quit have succeeded in quitting cigarette smoking and this gives us hope to reduce this bad habit among people who are responsible for health promotion in our community.

### **Conclusion and Recommendations**

In conclusion, this study showed that there is unexpected high prevalence rate of cigarette smoking among male pharmacists, physicians, and paramedical staff in Hilla city while this trend is low among female health care providers, and this smoking habit has reached addiction level at least in 1/3 of them who are considered heavy smokers and smoke more than 10 years. Twenty percent of physicians are still smoking in front of patients.

We recommend strict legislations to prohibit cigarette smoking in health care offices, hospitals and primary health care centers and a comprehensive multi-sectorial campaign is needed urgently to overcome this problem. Level of awareness should be raised among health care providers and medical and paramedical student through seminars, symposiums, workshops, cigarette smoking quitting clinics, etc.

Materials about tobacco smoking hazards should be included in the curriculum of medical, paramedical and health technology institutions.

And also we recommend another comprehensive study including physicians from all the country to overcome the drawbacks of small sample size and unrepresentiveness.

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