



Research Article

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Prevalence of Hookah Use among Islamic Azad University Students in the City of Ardabil, Iran

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Abstract

Background: Hookah smoking is becoming a global public health problem, especially in the Eastern Mediterranean region (EMR). The purpose of the present study was to assess the prevalence of hookah use among Islamic Azad University students of Ardabil. **Methods:** We aimed to recruit 22.31% of the students totaling 8414 to have sufficient numbers for sex and smoking method-based comparisons. An anonymous self-administered questionnaire was used after verbal informed consent according to the Review Committee of Ardabil Branch Islamic Azad University approved protocol. **Results:** According to data, 28.9% of students in Islamic Azad University of Ardabil were hookah users. Considerable numbers of students had been exposed to secondhand hookah smoke (48.3% among males and 36.0% among females). Although prevalence of hookah use was still higher among medical students (24.9%), compared with other schools it was lower. The majority of males and females (65.5% in males and 35.8 in females) were café consumer. The major motivation of hookah use among students was recreation (55.4% of males and 76.1% of females). **Conclusion:** Prevalence of hookah use is still high among Islamic Azad University of Ardabil students compared with 5 years ago. It seems educational program to decline hookah use among students was ineffectual. New strategies are required to control hookah use among students.

Keywords: Hookah, Students, Passive Use, café consumer.

INTRODUCTION

Tobacco smoking continues to be the number one preventable cause of morbidity and mortality worldwide [1]. The most common form of tobacco use is cigarette smoking. The World Health Organization (WHO) estimates the number of smoking individuals as 1.1 billion, worldwide [2]. Hookah is the other main ways of tobacco use. Hookah is a tray connected to a bottle half full of water by way of a metal tube. The smokers inhale the smoke through a hose connected to the metal tube. The main part of the hookah is the tobacco called 'tumbeki'. Tumbeki is usually wet, smelly, and sugary and is used by heating it above a piece of charcoal [3, 4]. Hookah use has been spreading, especially among young people after the 1980s [5]. The worldwide prevalence of daily hookah smoking is estimated to be 100 million [6] with alarming increasing popularity among the youth [7]. Social acceptance and being an essential part of gatherings, café, and restaurant culture; internet, mass and social media; low cost; and lack of hookah-specific policy and regulations towards its use, are the main reason of rising of hookah use [8].

Available evidence shows that hookah smoking is harmful, addictive, can provide a gateway to cigarettes, as well as thwart cessation efforts [9]. Hookah is perceived to be safer and less addictive than cigarettes, despite growing evidence that hookah smoke is potentially more harmful than cigarette smoke [10]. A plenty of studies documented presence of harmful toxicants and carcinogens in hookah smoke [11-13]. For example, a single machine-smoked hookah session produces approximately 50 times the quantities of carcinogenic 4- and 5-membered ring polycyclic aromatic hydrocarbons (PAHs) compared to a single cigarette smoked using the Federal Trade Commission (FTC) protocol [14].

In the absence of public health information, students have fallen back on superficial experiences to form views that hookah smoking is less harmful than other forms of smoking and it is currently much more acceptable in student society than other forms of smoking [15].

In our previous study in 2009, we observed high prevalence of hookah use among students of Islamic Azad University in the city of Ardabil [16]. The purpose of the present study is to re-assess the prevalence of hookah use among Islamic Azad University students of Ardabil.

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METHODS

This descriptive investigation was performed in 2014 among students of Ardabil branch, Islamic Azad University in the city of Ardabil at the northwest of Iran.

All students, educating in different schools of Ardabil branch, Islamic Azad University were eligible to participate in this study. We aimed to recruit 22.31% of the students totaling 8414 to have sufficient numbers for sex and smoking method-based comparisons. Accordingly, 1878 students (1058 males + 820 females) were selected using a cluster sampling technique (The sampling unit was the class). An anonymous self-administered standard questionnaire was used after verbal informed consent according to the Review Committee of Ardabil Branch Islamic Azad University approved protocol [17]. The dean of the university was to give consent to the study for the faculty to be selected.

Data collection was conducted in April, May and June 2014. Every student accepted to fill up the questionnaire and handed back the questionnaire after completing it. However, the small number of respondents did not provide answers to one or two questions. Such non-responders were less than one percent.

The questions concentrated gender, hookah smoking status, and students' replies to the following issues: (1) Kind of hookah {Molasses (tobacco with sweetened fruit flavors and mild aromatic smoke) vs. traditional tobacco} (2) Frequency of smoking (3) Motivation of hookah use (4) Place of smoking use (5) and Second-hand exposure to hookah.

Definitions

Smokers (users) were subjects who, at the time of the survey, smoked more than 1 hookah per week.

Statistical Analysis

Analysis was conducted separately for males and females. Kind of hookah, Frequency of smoking, Motivation of hookah use, Place of smoking use, and Second-hand exposure to hookah (Passive Use) was described by using frequency tables and figures.

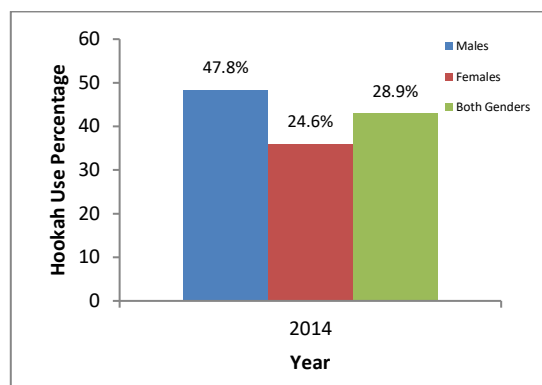


Figure 1: Prevalence of hookah use in different genders

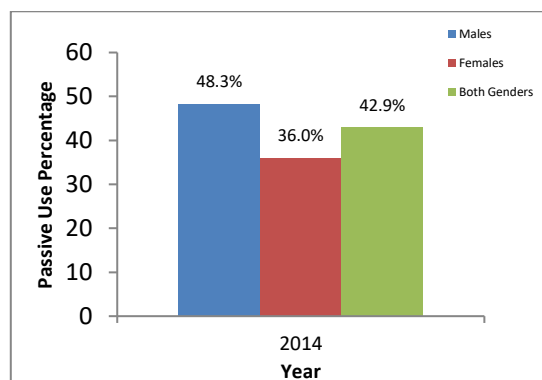


Figure 2: Prevalence of hookah passive use in different genders

Table 1: Prevalence of different kinds of hookah use (%)

Kind of Hookah	Both Genders	Males	Females
Tradition	11.2%	12.5%	8.0%
Molasses	62.5%	57.1%	76.1%
Both Types	26.3%	30.4%	15.9%

Table 2: Prevalence of hookah use in different schools (%)

			Different Colleges						Total
			Engineering School	Literature & Human School	Basic Science School	Medicine School	Physical Education School	Agriculture School	
Hookah Use	Yes	n	221	276	37	75	92	7	708
		%	38.8%	44.7%	27.6%	24.9%	39.3%	33.3%	37.7%
	No	n	349	342	97	226	142	14	1170
		%	61.2%	55.3%	72.4%	75.1%	60.7%	66.7%	62.3%
Total		n	570	618	134	301	234	21	1878
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 3: Prevalence of hookah use in different places (%)

	Café (%)	Own home (%)	Friends' home (%)	Other places (%)
Male	65.5%	19.4%	6.9%	7.9%
Female	35.8%	30.3%	15.4%	18.4%
Total	57.1%	22.5%	9.3%	10.9%

Table 4: Motivation of hookah smoking (%)

	Relaxation (%)	Recreation (%)	Meeting (%)	Other reasons (%)
Male	11.9%	55.4%	22.4%	10.3%
Female	7.0%	76.1%	13.4%	3.5%
Total	10.5%	61.3%	19.8%	8.4%

RESULTS

The age of the students was 24.00 ± 5.62 (mean \pm SD). Prevalence of hookah active and passive use in different genders is listed in figure1 and 2, respectively. Prevalence of different kinds, schools, and places of hookah use, as well as the motivation of smoking are listed in tables 1 to 5, respectively.

DISCUSSION

The aim of this study was to assess the prevalence of hookah use among the students of Islamic Azad University Ardabil branch. According to data, 28.9% of students in Islamic Azad University of Ardabil are hookah users (Figure1). Although it is lower compared with 2009 (28.9% in 2014 versus 35.6% in 2009) ^[16], it is still higher than British students (4.8%) ^[18], and Syrian Medicine University (23.5%) ^[19], but lower than medical students in Lebanon (29.5%) ^[20] and Turkish students (32.7%) ^[2]. Similar to lots of studies, hookah use among males is higher than females (47.8% versus 24.6%). In Iran, this difference is possibly owing to more social opportunities for males compared with females. Males are freer to access hookah at cafés whereas a plenty of cafés do not serve hookah for females ^[21]. Moreover, according to figure2, considerable numbers of students had been exposed to secondhand hookah smoke (48.3% among males and 36.0% among females). A lot of studies reported high exposure to secondhand smoke among students ^[13, 22-25]. There are 3 billion passive smokers in the world ^[26]. In addition, exposure to secondhand smoke from hookah smoke poses a serious health risk to non-smokers ^[27].

According to most relevant investigations, the recent escalation in hookah smoking is due to the introduction of molasses ^[28]. As can be observed in table 1, the majority of smokers use just molasses (62.5%) whereas 11.2% of them use traditional hookah and 26.3% of them use both types of hookah. These data demonstrate the critical role of molasses in the enhancement of hookah use among students. Prevalence of hookah in various schools is interesting. Although prevalence of hookah use is still higher among medical students (24.9%), compared with other schools it is lower, possibly owing to higher knowledge of medical students about harmful effects to human health compared with other schools' students. Unfortunately, the prevalence of hookah use among physical education students is higher than 2009 (39.3% in 2014 vs. 32.1% in 2009). The reason is unclear, but this finding is, indeed, alarming and shows failure of the educational programs of these students in Islamic Azad University, Ardabil branch. It seems instead of spending time in sports arenas, physical education students would rather go to cafés.

According to table 3, majority of addicted males and females (65.5% of males and 35.8% of females) are café consumer. In 2009, females mostly used hookah in their own home (40.3%). It seems social

opportunity for females has increased since 2009 for females, possibly because of café rising in the city of Ardabil, as well as more social acceptance of hookah use in cafés. Same as 2009, the major motivation of hookah use among students is still recreation (55.4% of males and 76.1% of females). The other main reasons are relaxation and meeting of friends (table 3). Like 2009, it seems students still suffer from less recreational times such as limited recreational places, sport facilities and so on.

CONCLUSION

Prevalence of hookah use is still high among Islamic Azad University of Ardabil students compared with 5 years ago. It seems educational programs to decline hookah use among students were ineffectual. New strategies are required to control hookah use among students.

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