Prevalence of cigarette smoking among Sulaimani University students

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Abstract:

Background: Tobacco smoking is a global behavior and it is a growing public health problem in the developing countries.

Objectives: The study was carried out to determine the prevalence of cigarette smoking and find out the socio-demographic correlates of smoking among Sulaimani University students.

Subjects and Methods: A cross-sectional study was conducted from October to November 2007 on 2750 students in Sulaimani University. A systematic stratified sampling technique was used. A self-administered questionnaire was used for data collection on age and gender of students, college, years of study, and age of starting smoking.

Results: Out of 2722 respondents, 302 students were smokers giving a prevalence rate of 11.1%. The prevalence of smokers was significantly (P< 0.001) higher in males than females (19% and 1% respectively). The highest rate of smokers was among the age group 23-26 years in both sexes. About 10% of students started smoking at age less than 12 years, 8.2% at age 12-17 year, 50% at 18-22, and 31.7% at 23-26 years.

Conclusions: The prevalence of smoking was moderate. More than half of students started smoking during their study years in the university. Males and students in third and fourth academic years were more likely to smoke. The results provide baseline data to develop an anti-smoking program to limit smoking in the university.

Keywords: *Prevalence, smoking, Sulaimani university, students*

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Introduction:

Cigarette smoking is one of the major public health problems and its the leading preventable cause of morbidity and mortality. Currently, five million and four hundred thousand people die because of cigarette smoking every year in the world, and this number will rise to eight million per year by 2030[1]. Moreover, more than 80% of deaths, caused by smoking, occurred mostly in developing countries[2]. Half of the people start smoking cigarette since their teenage years and still goes on, will be died[3]. Teenage smoking prevalence is around 15% in developing countries and around 26% in the United Kingdom and United States[4]. According to the WHO, in the world, there are almost one billion smoking men and 250 million smoking women. In the year 2000, world inhabitants smoked about 5.5 trillion cigarettes[5]. While cigarette consumption has been declining in high-income countries; it is rising in low-income and middle-income countries. By 2030, approximately 70% of deaths attributable to smoking worldwide are expected to occur in developing countries[6]. The negative health consequences of smoking are considerable and have been well-documented[7]. Epidemiological studies among different university student populations in Arab and Eastern Mediterranean countries demonstrated a marked variation in the prevalence of smoking[8-18].

Studies on smoking habits among university students in Sulaimani are scarce, which focus on a specific group of the university student population [19-21]. The prevalence of smoking reflects the magnitude of the problem, and determining its importance since it provides a basis for the planning of public health actions. The present study was an epidemiological survey to determine the prevalence of smoking and its associated factors among Sulaimani University students in 2007.

Subjects and Methods:

Sulaimani University comprises many colleges. The total number of students at the academic year 2006-2007 was 15329 students distributed in 22 colleges. The researcher categorized colleges of the university in three groups; medical colleges, non medical scientific colleges, and non medical literary colleges. Nine colleges were selected by simple random sampling; three from each group, including college of medicine, dentistry, nursing, engineering, agriculture, fine arts, administration and economic, law and politics, and physical education. The total number of students among the selected nine colleges was 4215.

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Table 1: Smoking status among male, female and total population

Category	Males		Females		Total		Male: female ratio
	No.	(%)	No.	(%)	No.	(%)	
Current smokers	290	96.02	12	3.97	302	11.1	24.2:1
Ex-smokers	109	89.34	13	0.5	12	4.5	8.4:2
Non- smokers	1120	48.74	1178	51.3	2298	84.4	0.9:1
Total	1519	55.80	1203	44.2	2722		1.3:1
Chi, P value	X^2= 6.99, P= 0.008						

This cross-sectional survey was conducted from October to November 2007 in Sulaimani University. All students enrolled in the above 9 colleges (4215), were the population of this study. A self-administered questionnaire was designed by the researcher and pretested by a pilot study. The questions were grouped into categories related to socio-demographics, prevalence of smoking, reasons for smoking, not smoking and quitting attempts. Questionnaires were distributed during the classes by a well trained personnel. The students were informed that the results would be used for the stated research purposes only and their participation was voluntary. No identification was required and confidentiality was assured verbally.

Filled questionnaires were collected and checked for completeness before being entered into a personal computer and analyzed using SPSS version 17. Descriptive statistics and X2 test were used for studying association of smoking and categorical variables. A statistical level of ≤0.05 was considered significant. The outcome variable was smoking status, classified into three categories: current smokers, ex-smokers and non-smokers. Current smokers were defined as those who had smoked cigarettes on one or more days during the previous 30 days. Those who had been smokers before, but had stopped smoking at time of survey, were defined as ex-smokers. Those who had never smoked in his/her lifetime were defined as non-smokers.

Financial level was classified by the average annual income for single Iraqi subject according to the Ministry of Planning and Development, defined as low (<729$), moderate (729-4000$), good (4000-8000$), and very good (>8000$)[22].

Results:

A total of 2722 undergraduate students participated in the study, giving a response rate of 64.6%. The age of the respondents ranged from 17 to 28 years old with a mean ± SD of 21.2 ± 2.7 years. Males constituted 55.8% and females 44.2%.

A total of 302 students out of 2722 reported being current smokers, thus the prevalence of current smokers in this study was 11.1%. The prevalence of current smokers in males, 19.1% was significantly higher than prevalence among females, 1% (p<0.001). The ex-smoking rate was 4.5%. These rates, however, varied significantly between colleges. The male to female ratio among all respondents was 1.3:1; this ratio became 24.2:1 among current smokers. A significantly higher prevalence of current and ex-smoker was found among males (P=0.008) as shown in Table 1. The prevalence of smoking was higher among the age group 24-28 (17.4%) in all colleges in both males and females, followed by age group 21-23 (11.1%) and least prevalence was recorded among age group 18-20 (7.1%) with a statistical significant

Table 2: Age and gender distribution of smokers

Age group (years)	Males			Females			Total		
	No. of participants	Smokers		No. of participants	Smokers		No. of participants	Smokers	
		No.	%		No.	%		No.	%
18-20	550	70	12.7	471	2	0.4	1021	72	7.1
21-23	643	138	21.5	557	5	0.9	1200	143	11.1
24-28	326	82	25.2	175	5	2.9	501	87	17.4
Total	1519	290	19.1	1203	12	1.0	2722	302	11.1

Table 3: Prevalence of current smoking among Sulaimani University students, by demographic and academic characteristics

Variable	Total No.	Smoking		P-value
		No.	%	
Sex				
Male	1519	290	19.1	0.0001*
Female	1203	12	1.0	
Age (years)				
18-20	1021	72	7.1	
21-23	1200	143	11.1	0.0001
24-28	501	87	17.4	
Colleges (Faculty)				
Medical colleges	1000	120	12	
Non-medical scientific colleges	1122	113	10.1	0.001
Non-medical non scientific	600	57	9.5	
Years of study				
1st	700	60	8.6	
2nd	673	65	9.7	0.0001
3rd	850	95	11.2	
4th **	499	82	16.4	
Family income (ID/year)				
< 958,000	549	61	20.2	
958,000- 4,839,000	983	109	36.1	0.997
4,840,000- 9,679,000	714	79	26.2	
≥9,680,000	476	53	17.5	
Marital status				
Single	2403	243	80.5	0.0001
Married	319	59	19.5	
Total	2722	302		

*X^2 test;** 4th + 5th year dentistry and 6th year medical college

variation in the prevalence among different age groups (Tables 2 and 3).

Table 3 shows the prevalence of current smoking by some socio-demographic and academic characteristics. Students of medical colleges recorded significant higher prevalence of 12%, compared to 10.1% in non-medical scientific colleges and 9.5% in non-medical and non medical literary colleges (P<0.001). The lowest prevalence was among students of first year and the prevalence increased in second and third year with highest prevalence of 16.4% among fourth, fifth and sixth year students collectively (P<0.001). Married students showed a significantly lower prevalence of current smoking than single students (P<0.0001). No significant association was found between prevalence of smoking and family income.

Table 4: Some characteristics of smokers

Variable	Current smokers	
	No.	%
Starting age of smoking(years)		
9- 13	47	17.2
14-18	71	25.9
19-22	141	51.5
23-27	15	5.5
Total	274	100
When smoking?		
During stress	166	55
After meal	64	21
At any time	42	14
With alcohol	15	5
Other causes	12	4
No response	3	1
Reason for starting smoking		
Smoking of other member of family	73	24
Having a smoking friend	60	20
For pleasure	55	18
Social problems	33	11
Advertising	33	11
Other causes	48	16
Smoking status(cig/day)		
Light (1-10)	52	17.5
Moderate (11-20)	147	48.5
Heavy (> 20)	103	34
Preference of place of smoking		
Public	88	29
Smoking rooms	214	71
Intention to quit smoking		
Yes	184	60.9
No	118	39.1
Total	302	100

The age of initiation of smoking ranged from 9 to 24 years with mean of 16.3± 3.3 years and was significantly higher in males than in females (16.3±2.8 compared to 14.0±4.4). More than half of current smokers smoked during stress, 21% after meals, 5% with alcohol and 14% liked to smoke at any time. Regarding reasons for starting smoking, 24% reported having another family smoker, 20% reported having a smoking friend and 18% for pleasure. Approximately half of smokers smoked 11-20 cig/day and 34% were heavy smokers. Eighty-eight of smokers preferred to smoke in public places (29%) compared to 214 (71%) in smoking rooms. Regarding quitting smoking, 60.6% had intention to quit smoking (Table 4).

Discussion:

The aim of this study was to evaluate the Sulaimani University students' smoking habits and the associated socio-demographic factors. The main finding of this study was that 11.1% of Sulaimani University students were current smokers.

Prevalence of smoking: This prevalence is lower than that reported previously in Sulaimani University 13.6% in 2005[19], and among students of Hawler Medical University in Erbil in 2007, 12.3%[20]. A much lower prevalence of 9.3% was reported among students of Salahaadin University in Erbil in 2002[21]. The prevalence of smoking in this study is also lower than that reported among participants of the Kurdistan-Iraq Global Youth Tobacco Survey in 2006, 15.3%[23]. A much higher prevalence was reported in Duhok (24.5%) in a house hold survey among those aged 25-65 years in 2004[24].

In 2005 Mousawi reported a slightly lower prevalence among Karbala University Students (10.5%)[25], While another study in Karbala university reported a higher rate (19%) in 2009[27]. Iraq Family Health Survey in 2006 reported a prevalence of 15.5%[26].

The smoking prevalence rate found in this study is consistent with those reported by other studies in Syria and Jordan[28-30]. However, other studies in Jordan [30,13], Syria[32], Iran[33], and Saudi Arabia[34] reported higher rates. While other studies reported lower rates than this rate in Iran[35], Saudi Arabia[36], and Syria[37].

Variations in smoking prevalence in Iraq might be a real difference or may be related to a difference in the methodology, including the characteristics of the population surveyed, sampling, and methods of data collection. The large sample of this study might provide more confident outcomes or that the educational programs about smoking in Sulaimani might be more efficient.

Variations in the prevalence of smoking in neighboring countries may be related to differences in use of different criteria for defining smoking, different age groups studied and different methodologies adopted.

Age of starting smoking: The finding that the most common age for starting smoking was between 19-22 years is consistent with the findings of other studies [11,13].

Years of university education: This study indicates that the prevalence of smoking increased significantly with higher number of years of university education. This may be due to longer exposure to other smokers (friends, teachers) within university environment who may influence their attitude and behavior. These findings are consistent with those of other studies [11,13].

Prevalence by gender: The finding of a significant difference in the prevalence of smoking by gender is in agreement with many studies conducted in Kurdistan, Iraq and Arab countries that reported much higher prevalence among males[19-21]. However, the low prevalence among females might be under estimated due to reporting bias.

Causes of starting smoking: Friends, a smoking member of the family were considered the major causes for starting smoking, followed by stress and pleasure. Other studies had revealed similar results [20,25,31]. This may be due to youth behavior of dealing with stress and the bad influence of friends and family members.

About 60% of smokers expressed a desire to quit smoking in the near future; a finding which is similar to other studies[19,20,32]. This indicates that smokers may respond well to cessation programs.

Weakness and limitations of study include the general weakness of self-administered questionnaires with the possible underreporting among females and the low response rate. Also, as smoking behavior among students was self-reported there could have been a reporting bias. Verification of self-reported smoking behavior could not be verified biochemically.

Conclusions:

The prevalence of smoking among Sulaimani University students was moderate. More than half of students started smoking during their study years in the university. Males and students in advanced years of study were more likely to smoke. The results provide baseline data to develop an anti-smoking program to limit smoking in the university.

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