Prevalence of Current Smoking among Students in University of Kerbala

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Abstract

Background: Tobacco use is the leading preventable cause of death and it is prevalent among college students.
Objective: To determine the prevalence and to study the determinants of smoking habit and its associated factors among college students together with their level of knowledge about the health effects of smoking and attitudes towards cessation.
***Design*:** A cross-sectional study.
Setting: University of Kerbala, Kerbala, Iraq.
***Subjects and Methods*:** During December 2008 and January 2009, a sample of 1132 students (603 male and 529 female), between17 and 28 years of age, selected randomly from 8 colleges, was taken. Each subject was questioned about his/her past and present experience and attitude towards smoking, according to a modified Arabian version of the World Health Organization (WHO) standard questionnaire, and the data was analyzed using the Statistical Package for the Social Sciences (SPSS) 16.0, *P*-value greater than 0.05 was considered as statistically insignificant.
Results: Two hundred twenty students were smokers and 912 were nonsmokers. Of the smokers 201 smokers were males and 19 were females, fifty percent were light smokers, 37.7% were moderate smokers, and 12.3% percent were heavy smokers, and the mean number of cigarettes smoked daily among the regular smokers was 14 cigarettes.
***Conclusions*:** The prevalence of cigarette smoking was 19.4%, and half of the smokers were "light smokers". The majority of the smokers were aware of the bad effects of smoking and two thirds had a favorable attitude towards cessation.
Key words: Prevalence; Smoking habit; Students; Questionnaire.
***Abbreviations*:** WHO, World Health Organization; GYTS, Global Youth Tobacco Survey; SPSS, Statistical Package for the Social Sciences 16.0.

الخلاصة

خلفية البحث: : التدخين هو السببُ القياديُ للموتِ القابل للمنعُ وهو سائدُ بين طلبةِ الكليات.
الهدف: دِراسَة معدل الإنتشار والعوامل المرتبطةِ بعادةِ التدخين بين طلبةِ كليات جامعةِ كربلاء وتحديد مستويات المعرفةِ لتأثيراتِ التدخين والمواقفِ نحو التوقفِ عنه.
التصميم: دراسة مقطعية
المكان : جامعة كربلاء، كربلاء، العراق
اشخاص وطريقة الدراسة: أثناء كانون الاول 2008 وكانون الثاني2009 تمَ أخذ عيّنة مكونة مِنْ 1132 طالبِ (603 ذكر و529 أنثى) تتراوح اعمارهم بين 17- 28 سنةً بشكل عشوائي مِنْ ثمانية كُليّاتِ ضمن الجامعةِ. استبين كل شخص عما اذا كان لهِ او لها تجربة قديمة أوحديثة مع التدخين وعن المعرفة بمضاره و الموقف من تركه، طبقاً للنسخةِ العربيةِ المُعَدَّلةِ مِنْ استمارة الإستبيان القياسي للشبابِ لمنظمة الصحة العالميةِ ، تم تحليل البيانات بإستعمال الرزمةِ الإحصائيةِ للعلوم الإجتماعية (إس بي إس إس) 16.
النتائج: كان مائتان وعشرون طالبا من المدخنين و912 كَانوا غير مدخنينَ. كان 201 من المدخنينْ ذكورا و19 كن من الإناث, خمسون بالمئة كَانوا يدخنون أقل من 10 سجائر يوميا ، 37.7 % كَانوا يدخنون بين 10- 20

سيجارة يوميا ، و12.3 % بالمائة كانوا يدخنون أكثر من20 سيجارة يوميا وكانَ معدل عدد السجائر المدخنة يومياً بين المدخنين المنتظمين 14 سيجارة.
الاستنتاجات: نسبة إنتشار تدخين السجائر لدى طلبة الجامعة كانت 19.4 %، ونِصْف المدخنين كانوا "خفيفي التدخين". أغلبية المدخنين كانتْ مدركة للتأثيراتِ السيئةِ للتدخين وكان لدى ثلثين َ منهم موقف مناسب نحو التوقفِ عنه.

Introduction

Tobacco use is the leading preventable cause of death in the world and one of the biggest public health threats the world has ever faced. Smoking is currently referred to as a 'silent epidemic' [1]. In the 20th century the tobacco epidemic killed 100 million people worldwide, It kills 5.4 million people a year with an average of one person every six seconds, and accounts for one in 10 adult deaths worldwide- Unchecked, the death toll could increase to more than 8-10 million a year by 2030, and 70-80% of those deaths will occur in the developing world [2, 3, 4].

There are about 1.3 billion smokers in the world; about 80% of them live in the developing countries, According to World Health Organization (WHO) estimates, approximately 47% of men and 12% of women smoke worldwide, in developing countries, 48% of men and 7% of women smoke, while in developed countries 42% of men smoke as compared to 24% of women [5].

Globally, the use of tobacco products is increasing, although it is decreasing in high-income countries, the epidemic is shifting to the developing world, for More than 80% of the world's smokers live in low- and middle-income countries. Tobacco kills up to half of all users. It is a risk factor for six of the eight leading causes of deaths in the world [6].

The most recent WHO information for tobacco uses in the Middle East is from surveys conducted around 10 years ago in 19 countries of the Eastern Mediterranean Region (EMR). They revealed that Yemeni men were the biggest smokers in the region, with 77 percent smoking, and Lebanese women topped the female category with 35 percent smoking.

Overall, the richer Gulf States (Saudi Arabia, the United Arab Emirates, Bahrain, Qatar, Kuwait and Oman) had the lowest prevalence of smokers, with Oman faring best, and the poorer Levant countries (Lebanon, Syria, Palestine and Jordan) and Yemen had the highest [7].

Years of research in developed countries has identified certain factors that commonly play a role in initiation of tobacco use. These include exposure to tobacco marketing efforts, role modeling by parents/ other adults, peer pressure, collateral addiction to other drugs, inadequate knowledge about injurious effects of tobacco use, etc. Numerous studies throughout the world have examined the risk factors for cigarette smoking. Some of these include: genetic and demographic factors, social norms, peer influences and parental attitudes and behaviors [8].

Several factors have been attributed to the use of tobacco products by students. These are the perceptions that smoking enhanced one's image, relieved boredom and helped in easing tension [9].

The Global Youth Tobacco Survey (GYTS) (a school-based survey of students aged 13-15 years) conducted between 1999 and 2005 in 131 countries which surveyed 750,000 students found that approximately 9% of students were current smokers while 11% currently used tobacco products other than cigarettes [10]. It was launched to create a baseline that can help in measuring trends in tobacco use among young people, and to provide

information for intervention development and evaluation. In Iraq it was first conducted in the Kurdistan region in 2006 (11), and then the Iraq-Baghdad GYTS conducted in 2008 [12].

Information on tobacco use among adolescents is limited in Iraq. In 2008, Iraq's parliament ratified the World Health Organization Framework Convention on Tobacco Control (WHO FCTC) which obligates participants to establish tobacco use monitoring, surveillance, and evaluation systems [13]. The results from the Baghdad GYTS point to a number of challenges facing Ministry of Health tobacco control efforts. First, the use of shisha is two-fold higher than cigarette smoking; this is a concern because the harmful health effects of shisha can exceed those of cigarette smoking [14]. .Based on GYTS results, 7.4% of students aged 13–15 years reported having ever smoked cigarettes, 12.9% had ever smoked shisha, 3.2% currently smoked cigarettes, and 6.3% currently smoked shisha [15].

The Global Adult Tobacco Survey (GATS) (a nationally representative household survey of all non-institutionalized, men and women age 15 years old and older) launched in February 2007, is designed to produce national and sub-national estimates on tobacco use, exposure to second hand smoke, quit attempts among adults across countries and indirectly measure the impact of tobacco control and prevention initiatives using a standard protocol. An estimated, 20.8% of all adults (45.3 million people) smoke cigarettes in the United States. Initially, the GATS will be established in the following 16 low- and middle-income countries where more than half of the world's smokers live and that bear the highest burden of tobacco use: Bangladesh, Brazil, China, Egypt, India, Indonesia, Mexico, Pakistan, Philippines, Poland, Russian Federation, Thailand, Turkey, Ukraine, Uruguay and Vietnam [16].

Concern has been expressed that college students ages 18-24 show the highest rates of cigarette smoking today, as well as lesser declines in cigarette smoking over the last 25 years, compared to younger teens and older adults [17]. A recent study that examined smoking habits among university students in 23 countries covering Europe, the Americas, Asia, and Africa, but not Australasia showed that the age-adjusted prevalence ranged from 2% in Thailand to 46% in Spain among women and from 14% in Thailand to 47% in Portugal among men [18, 19]. Epidemiological studies among different university student populations in Arab and Eastern Mediterranean countries demonstrated a marked variation in the prevalence of smoking, Prevalence ranged from 13.0% to 42.5%, being the highest in Turkey (42.5%) and Kuwait (42.2%) [20-30].

An increasing trend is expected to occur among university students and this could be related to alleviation of stress, life problems, peer pressure, social acceptance, family history of smoking, lower educational level of parents and the desire to attain high personality profile, in contrast, religion, negative health effects, bad taste and smell, adverse physiological responses and issues related to family are considered good reasons for not smoking [31, 32].

According to the WHO the prevalence of current tobacco use among adults (>=15 years) in Iraq during 2005 was 25.8 % for male and 2.5% for female. [33]. Little is known about the prevalence and dynamics of smoking habits among university students in Iraq, and their association with other lifestyle parameters and biological markers.

The WHO has produced a first comprehensive analysis of global tobacco use and control: The WHO Report on the Global Tobacco Epidemic, 2008. The report confirms that the global tobacco epidemic is one of the greatest public health threats of modern times that, left unchecked, could result in one billion deaths in the 21st century. The epidemic is shifting towards the developing world, where 80% of tobacco-related deaths will occur within a few decades. The shift is caused by a global tobacco industry strategy to target young people and adults in the developing world. The report concludes that although there has been progress in recent years, virtually every country needs to do more, currently only 5% of the world s population is fully covered by any one of the key interventions that have significantly reduced tobacco use in the countries that have implemented them. In addition, it identifies as powerful response to the epidemic a set of the six key proven strategies to drive down tobacco use -the MPOWER package- whose implementation provides the best chance for saving millions of lives devastated by tobacco:

1. Monitor tobacco use and prevention policies.
2. Protect people from tobacco smoke.
3. Offer help to quit tobacco use.
4. Warn about the dangers of tobacco.
5. Enforce bans on tobacco advertising, promotion and sponsorship.
6. Raise taxes on tobacco.

The MPOWER strategy for global tobacco control provides a clear roadmap to help countries fulfill and build on their WHO FCTC obligations and save many millions of lives by the middle of this century [4]. WHO has included prevalence of tobacco use among subgroups such as physicians, nurses, other health workers, etc among the indicators which should be monitored by each country [34], and it has been suggested that the most effective strategy in tobacco control is preventing youths from taking up smoking [35].

Determining the prevalence of smoking reflects the magnitude of the problem, and is important since it provides a basis for the planning of public health actions. Against this background, and although studies on smoking habits among university students in Iraq are scarce, the present study was carried out to estimate the prevalence and determinants of smoking habit and its associated lifestyle factors among college students of University of Kerbala and to determine of the levels of knowledge about the health effects of smoking and attitudes towards cessation.

Materials and Methods

A cross-sectional, university based study was conducted in the University of Kerbala in Kerbala governorate in Iraq during December 2008 and January 2009, Approval of the study protocol and written consent was obtained from the Authority of the University of Kerbala prior to data collection. The preliminary version of the questionnaire (a modified Arabic version of the WHO standard questionnaire for young people),was finalized for application after being pretested in a pilot study on 20 medical students; after which minor modifications were made to the original questionnaire by eliminating confusing items. The final analysis did not include the results of the pilot survey. The 26 item structured questionnaire included items such as age, sex, family income, family size, educational levels of parents,

occupation of parents, current and previous use of any tobacco product, duration and frequency of smoking, number of cigarettes smoked per day, age when first started smoking, reasons and source of the idea of cigarettes smoking, knowledge about the harmful effects of smoking, and idea of quitting smoking.

The questionnaire was administered outside the classroom, clarifications and basic orientation on the objectives of the study were given beforehand, and students were free to decide whether they would participate or not. The responses were anonymous and participants were assured of the confidentiality of their responses (Informed verbal consent), and they were briefed on the importance of giving an honest response, Assistance was provided for respondents who requested clarification on any of the questions. To enhance honest disclosure of information, each participant had privacy in responding to the questionnaire

The total number of the university students at the time of the study was 6305. Accepting a 95% confidence interval of 2.64, the calculated sample size was 1131. The data were collected by 40 forth year medical college students from 1132 randomly selected students attending 8 colleges of the university (representing 17.95% of the total students attending the University of Kerbala at that time). They were 529 female and 603 male students. The subjects ranged between 17-28 years of age. All students (n = 1132) completed the questionnaire which was a 100% response rate.

Smokers were defined as students who smoked any amount of tobacco either regularly or occasionally, daily Smokers as those persons who are currently smoking at least one cigarette per day, whilst non-smokers were defined as those who never smoked and ex-smokers as those who had ever smoked a cigarette but who had stopped and not smoked within the last month. For the sake of analyses, ex-smoker and nonsmoker were combined together. Smoking of any of the tobacco products were asked about including cigar, pipe or water pipe smoking in addition to cigarette smoking.

Smokers were recorded as one of three categories light smokers (1-10 cigarettes/day), moderate smokers (11-20 cigarettes/day), and heavy smokers (>20 cigarettes/day) (36).

Five items in the survey were used to measure various aspects of family socioeconomic status (SES) (i.e. family income, level of, parental education and parental occupation). An overall family SES indicator was created by summing the dichotomous responses to the five items as to whether their father and mother had college level of education, and whether their father and mother had a professional job, whether they had an above-average monthly family income. The composite index ranged from 5 to 10 with a higher score indicating a higher family SES.

Data was entered into an Excel spreadsheet and Analysis was performed by using SPSS version 16, and all statistical analysis was done at 95% confidence level. Statistical significance was accepted when $p \leq 0.05$.

There were a number of missing responses for some items of the questionnaire. But no questionnaire contained more than two missing responses therefore they were considered satisfactory.

Descriptive statistics included mean (± standard deviation) for continuous and proportion for categorical variables were computed. To identify the factors associated with smoking among college students, associations between outcome variable (smoker & non-

smoker) and independent variable were sought.

Results

A total of 1132 students completed the questionnaire, with a response rate of 100%. The study included 602 (53.2%) males and 530 (46.8%) females. The mean age of the students was 20.94 ± 1.78 years (range 17-28), the majority of them (74.9%) were 19 -22 years old. Most of the students (62%) were current students from 2 faculties, the College of Education (34%) and the College Science (27.8%). More than half (51%) were second and third year students (32.2% and 29.3% respectively). About two-thirds (63.6%) of the responders to the question about the total monthly family income had a monthly income above the mean which was 930,155± 829,747 (range 100,000 – 9,300,000) Iraqi dinars (ID). The mean number of households who are more than 18 years old was 5.53 ± 1.76, and the median was 5 (range 3-15), more than half (52.1%) of the students were from families of 4 and 5 households (25% and 27.1% respectively). The demographic and academic characteristics of the study subjects are shown in Table 1.

Prevalence of current cigarette smoking among university students by selected categorical variables is shown in Table 2. The majority (912), constituting 80.6% of the sample population, declared themselves to be nonusers of any tobacco product. All the rest (220) were current cigarette smokers, constituting a prevalence of current cigarette smoking among this sample of university students of 19.4%, the overall median rate for current use of other tobacco products was 2.3% (in addition to cigarette smoking, narghile and cigar smoking were reported by 23 (2 %) and 3 (0.3%) of the students respectively and none reported smoking pipe). My findings indicate that males tend to smoke more than females; the prevalence of current smoking among males was 33.4% and 8.6% among females ($P < 0.0005$).

One hundred sixty eight (75.7%) of smokers were daily regular smokers and 52 (24.3%) were occasional smokers; their prevalences among the studied group were 14.8% and 4.6% respectively. Of the male students, 26.1% % were regular smokers, 7.3 % occasional smokers and 66.6 % nonsmokers, of the females, 2.1 % smoke regularly, 1.5 % smoke occasionally and 96.4 % did not smoke.

Among smokers 50% (110) were light smokers, 37.7% (83) were moderate smokers, and 12.3% (27) were heavy smokers. The prevalence of light, moderate, and heavy smokers among the sample subjects were 9.7%, 7.3% and 2.4% respectively. An average 14.41 ± 12.42 cigarettes were smoked per day and a median of 11 (range 1-60), it was not dependent neither on the age of the student nor on the duration of smoking ($P>0.05$).

Prevalence increased significantly with age, being highest (36.3%) within the age group 23-28 years ($P < 0.05$). Second year and 4th year students were more likely to smoke (24.7% and 19.6% respectively) than others.

There was a significantly lower prevalence among the students who attended biology related faculties, whereby students from the faculty of Medicine, Pharmacy and Science were less likely (14.6%,15.3%, and17.1%.respectively) to smoke compared with students who attended other faculties law, Management, and Engineering (76.9%, 28.8%, and 19.3% respectively) ($P < 0.05$).

The prevalence of smoking was highest (44.5%) among those from

families with monthly income between 300000 and 750000 ID

Those students whose fathers had university degree of education were more likely to smoke as compared to those whose fathers didn't have such degree (20% vs. 18.7%) but this difference was insignificant, the same can be applied to those students whose mothers had university degree of education being more likely to smoke as compared to those whose mothers didn't have such degree (23.8% vs. 18.0%) and this difference was also insignificant.

Table 1: Demographic and academic characteristics of the study subjects

Variable	Frequency (%)	Gender	
		Male	Female
Age (years)			
17–19	227 (20.1)	96	131
20 –22	693 (61.2)	347	346
23 -28	212 (18.7)	159	53
Faculty			
Medicine	130 (11.5%)	57	73
Education	387 (34.2)	219	168
Management	170 (15%)	123	47
Science	315 (27.8%)	114	201
Engineering	57 (5%)	39	18
Agriculture	1 (0.1%)	1	0
Pharmacy	59 (5.2%)	36	23
Law	13 (1.1%)	13	0
Year of study			
First	161 (14.2%)	100	61
Second	364 (32.2%)	207	157
Third	332 (29.3%)	158	174
Fourth	265 (23.4%)	136	129
Fifth	10 (9%)	1	9
Family income			
Below mean	689 (60.9%)		
Above mean	394 (34.8%)		
No response	49 (4.3%)		
Households			
≤ 5	643 (56.8%)		
> 5	489 (43.2%)		
Total	1132 (100%)	602	530

Table 2. Prevalence of current smoking among students by demographic and academic characteristics

Variable	N	Smokers (%)	Non smokers (%)	*P*-value
Gender				
Males	602	201 (33.4%)	401 (66.6%)	< 0.0005
Females	530	19 (3.6%)	511 (96.4%)	
Age (years)				
17–19	227	27 (11.9%)	200 (88.1%)	< 0.05
20 –22	693	116 (16.7%)	577 (83.3%)	
23 -28	212	77 (36.3%)	135 (63.7%)	
Year of study				
First year	161	24 (14.9%)	137 (85.1%)	> 0.05
Second year	364	90 (24.7%)	274 (75.3%)	
Third year	332	53 (16%)	279(84%)	
Fourth year	265	52 (19.6%)	213 (80.4)	
Fifth year	10	1 (11.1%)	9 (88.9%)	
Monthly income (ID)				
Up to -300000	188	36 (16.4%)	152 (83.6%)	> 0.05
300000-750000	492	98 (44.5%)	394 (55.5%)	
750000-3000000	309	59 (26.8%)	250 (73.2%)	
3000000 and over	121	22 (10%)	99 (90%)	
Missing	22	5 (2.3%)	17 (97.7%)	
SES index				
5	277	56 (20.2%)	221 (79.8%)	> 0.05
6	338	46 (13.6%)	292 (86.4%)	
7	219	46 (21%)	173 (79%)	
8	83	15 (18.1%)	68 (81.9%)	
9	11	2 (18.2%)	9 (81.8%)	
Missing	204	55 (27%)	149 (73%)	
No. of households				
≤ 5	643	129 (20.1%)	514 (79, 9%)	> 0.05
> 5	489	91 (18.6%)	398 (81.4%)	
Total	1132	220 (19.4%)	912 (80.6%)	

Those students whose fathers had professional work or were skilled workers were less likely to smoke as compared to those whose fathers didn't have such occupation (16.3% vs. 22.5%) but this difference was insignificant. Also there was no significant difference in prevalence of smoking between students whose mothers were housewives as compared to students with working mothers (19.7%% vs. 19%) .

Excluding 55 smokers whose SES index couldn't be estimated because of none response to the question about the monthly family income and/or death of one or both parents, 61.8% (102) of the smokers were from families with lower SES index 5 and 6 (33.9% and 27.9% respectively). Excluding 204 students whose SES index couldn't be estimated for the same reasons listed above, the prevalence of smoking was highest within those of SES index 7 (21%) and lowest within those of SES index 6 (13.6%). The prevalence of smoking was higher within those of higher SES index (7- 9) when

compared with those from families with lower SES index (5- 6) (20.1% vs. 16.6%)

The mean family members more than 18 years of age was 5.53 ± 1.73 and the median was 5 (range 3-15); there was a non- significant difference in the percentage of smokers versus non-smokers in families with households above the mean as compared with those below the mean.

A total of 13 (1.1%) of the students were classified as former smokers (ex-smokers), a higher number of female students [9] described themselves as ex-smokers. There was no significant difference between the mean number of past smokers who stopped smoking before or after the age of 18 (the mean age of entering the university (P >0.05) (Table 3).

Table 3: Distribution of former smokers according to age o f abstinence

Age of abstinence (years)	N	%
17	1	7.7%
18	6	46.2%
19	4	30.8%
20	2	15.4%
Total	13	100%

The mean declared age at which the smoking habit was acquired was 17.02 ± 2.43 (range 9-22) years; there was no significant difference between males and females regarding the age of onset of smoking, it was 16.95 ± 2.449 (range 9-22) years for males and 17.79 ± 2.097 (range 13-22) years for females. Of current smokers 73.6 % started smoking by reaching the age of 18 years. Only 3 students smoked their first cigarette before age 10 years (1.4%).

The mean duration of smoking was 4.7 ± 2.9 years (range=1-15 years), the mean duration for light, moderate, and heavy smokers were 4.43±3.161, 4.81±2.496, and 5.52±2,901 years respectively

Among the reasons that led interviewees to start smoking, curiosity was the most often reported, accounting for 23.2 % (51) of the responses, followed by social causes and psychological stress (20% (44) for each). Personal problems were claimed by 17.7% (39) of respondents, and 12.3% (27) did not know why they started smoking. Only 1.8% (4) reported that they were succumbed to peer-group pressure and none claimed had influenced by parents. About two thirds of the respondents (66.4%) claimed that they learn the smoking habit from friends, 8.6% and 2.3% from family member and relative respectively.

More than Ninety-eight percent of smokers claimed knowing that smoking is harmful, only 3 of the smokers claimed that they were not aware of the bad effects of smoking as compared to the 12 of the non smokers. There was a non- significant difference in the percentage of smokers versus non-smokers who reported that they were not aware of the bad effects of smoking (1.36% versus 1.32%, respectively).

The majority of cigarette smokers (67.3%) would like to stop smoking, 26.8% wouldn't, and 5.9% didn't report any response .There was no statistical difference in the desire to stop smoking between boys and girls. Distribution of smokers according to different smoking variables is shown in table 4.

Discussion

The prevalence of current tobacco smoking concluded in this study (19.4%) is lower than that reported by National Survey for non-communicable diseases risk factors in 2006 for adults (21.9%) Iraq [4]. It was the same as that of the current cigarette smoking (19.4%) because all current user of other tobacco products were current cigarette smokers, no similar finding was concluded by other studies in Iraq or other countries. It was higher than that reported by WHO for Iraqi adults (>=15 years) during 2005 (14.2%), [33].

The prevalence of current cigarette smoking is higher than that of the Chronic Non-Communicable Diseases Risk Factors Survey in Iraq 2006 which was 16.5% for those 25-34 years old (37), and that of the Iraq - Kurdistan Region Global Youth Tobacco Survey (GYTS) 2005 which was 15.3% (38) and that of the Global Youth Tobacco Survey (GYTS) in Baghdad in 2008 (3.2%) (12), probably because of the difference in the mean age of the studied groups

The prevalence of current use of other tobacco product is lower than the overall median rate found by GYTS (2002), (8.8%) (3), a finding that might be explained by the fact that this study is concerned with university students only, but still it is lower than that found by similar studies in nearby countries; Maziak W et al (2004) in their study among university students in Syria found that narghile smoking was seen among 62.6% of men and 29.8% of women) (39), and Khader YS and Alsadi AA (2008) among university students in Jordan (19.3% were waterpipe smokers and 0.4% were pipe or cigar smokers) (26).

Taking gender into consideration, the prevalence of current cigarette smoking for males is lower than that reported from WHO global status report 1990 for those above 16 years old in Iraq (40%) (40), and that of the Final report on non-communicable diseases risk factors survey in Duhok District Year: 2004 for those above 25 years old (46.8%) (41), while that for females is lower than that reported in the former (5%) and higher than that in the later survey (2.2%), and that of the Chronic Non-Communicable Diseases Risk Factors Survey in Iraq 2006 (1.4%) which showed a higher prevalence of (36.3% for males (37). It is higher than that of the Iraq Family Health Survey 2006/7 for both males and females (20.1% and 0.5% respectively) (42), and also It was higher than that of males and females found in the Iraq - Kurdistan Region Global Youth Tobacco Survey (GYTS) 2005 (25.1 and 2.7% respectively) (38).The difference can't be explained accurately because only university students were covered in the present study, and also the different age groups included.

Compared to other countries the prevalence is lower than that reported among university students in some nearby countries (Atatürk University in Erzurum, Turkey, Six other universities in Turkey (Ankara University , Baskent University , Gazi University , Acettepe University , Middle East Technical University and Atilim University), Yarmouk University students and University of Science and Technology (JUST) in Irbid, Jordan, King Saud University, Riyadh, Saudi Arabia, ((42.0%, 33.4 %, 35.0% 28.7% and 29%, respectively)(23,26,28,43,44,45), or foreign countries (Medical Students in India, college students in Karachi, New Zealand university in New Zealand (46,%. 24%, 20% respectively) (5, 19, 45), while it was higher than that among university students in other nearby countries (King Saud university

students in Abha, Saudi Arabia (17.5% for medical students and 13.6% for those in College of Education) .(46), and that among university students in Lebanon (7.6%) (25). or foreign countries (Undergraduate Students in Japan, University of Brasilia in Brazil, and Birmingham University in U.K (14.7%., 12.1%, 9.4% respectively) (47, 48, 49). However, this variation may be partly due to demographic and social characteristics of the population, therefore a comparison of data between reports is difficult. The prevalence was almost similar to that concluded by a study among secondary-school students in Aden, Republic of Yemen (19.6%) (50).

Table 4. Distribution of smokers according to smoking variables

Variable	N	%
Smoker category		
Light smokers	110	50%
Moderate smoker	83	37.7%
Heavy smoker	27	12.3%
Age at acquisition (years)		
9-12	14	6.4%
13-15	36	16.3%
16-18	112	50,9%
19-22	58	26.4%
Reason for smoking		
Personal wish	51	23.2%
Personal problem	39	17.7%
Social causes	44	20%
Psychological problems	44	20%
Family problems	6	2.7%
Death of a relative	2	.9%
Peer pressure	4	1.85
To spend time	2	.9%
To relieve toothache	1	.5%
None	27	12.3%
Predictor		
Friend	146	66.4%
Family member	19	8.6%
Relative	5	2.3%
None	50	22.7%
Knowledge of the harmful effects		
Yes	217	98.6%
No	3	1.36%
Cessation wish		
Yes	148	67.3%)
No	59	26.8%
No response	13	5.9%
Total	220	100%

The significantly higher prevalence of current tobacco use among males is consistent with that reported in Iraq among adults (>=15 years) during

2005 (.25.8 % for males, and 2.5 % for females) (33, and that found in the Kurdistan-Iraq Global Youth Tobacco Survey (2006) (25.1% versus 2.1%) (11), this result is different from that reported by Centers for Disease Control and Prevention (CDC).among youth of 13-15 years old, in Baghdad during 2008 that showed no gender difference for current cigarette smoking among students [12]. Those results might show that boys are more affected by different factors that attract them to smoking as they grow older than girls.

The significantly higher prevalence of smoking among males is in agreement with many studies conducted in nearby countries (like The study by Maziak W et al (2004) conducted in Syria and Erdogan N and Erdogan (2009) I in Turkey [39, 44], and in Asian countries (like Tetsuhisa K et al (2003) in Japan [48], it may be due to the social acceptability of the smoking habit among men. However, the lower prevalence of smoking among women may be due to family values and traditional and/or cultural norms and might be underestimated because of reporting bias; however De Andrade A.et al (2006) in their study among youth attending the University of Brasília 2006 observed no significant difference in the prevalence of smoking in terms of gender [47]. Siemińska A and Dubaniewicz A (1992) in their study in Poland and Valdivia Get al (2004) in their study in school age children, in Chile concluded higher prevalence of smoking in females than males [51, 52].

The prevalence of current smoking for males was higher than that found among male university students in Syria (25.5%) (39), among high school students in Syria (15.9%) [53], and among college male students in Karachi, Pakistan (24%) [5], the prevalence of current smoking for females was higher than that found among female university students in Syria (4.9%) [39].

The prevalence rates of daily (regular) cigarette smoking among the students were higher than the general rates reported by the WHO (2008) among Iraqi population for both males and females (8.8 % vs. 0.6%) [4], this might be explained by the fact that only university students were included in this study. The overall prevalence of daily smokers is lower than that reported by Khader YS and Alsadi AA (2008) for university students in Jordan (30.2%) [26]. Valdivia G et al (2004) among school age children, in Chile (18%) (52 but is higher than that reported by Kypri K and Baxter J (2004) among New Zealand university student (10%) [19]. De Andrade A et al (2006) among youth attending the university of Brasilia in Brazil (9%),(47), Yang G et al (1998) Among Adolescents In China(5.2%) [54].

Compared to this study, Lower prevalence for males and higher prevalence for females were concluded by Abollfotouh M.A et.al (1998) among students of two colleges in King Saud University (17.5% vs. 13.6 %;) [46].

The higher prevalence of current smoking in male than female students is in agreement with many earlier studies but the prevalence of daily regular smoking was higher in some studies and lower in others for both genders. Higher prevalences were concluded by Erdogan, N, and Erdogan I (2009) in their study among Turkish University students, (39.5 % vs. 27.8 %) [44], Lower prevalences were concluded Veryga A and Stanikas T (2005) in their study in a similar study among students in Kaunas University of Medicine in Lithuania,(19.4% vs. 4.2%) [55].

The high prevalence of daily smoking give an additional strength to the

smoking prevalence as an indicator of the magnitude of the problem among students and the importance of conducting antismoking program in the university.

The proportions for light, moderate, and heavy smokers in this study is similar to that concluded by Hashim TJ (2000) in his study among students in College Of Applied Medical Science, Saudi Arabia (50%,40%, and 10 % respectively) [28]. The proportion of light and heavy smokers among smokers in this study (50% and 12.3%) is lower than that in university students in Jordan (56% and 22.5% respectively), while that of moderate smokers is higher (37.7% vs. 21.5%) [26], the proportion of heavy smokers is lower than that among students of two colleges in King Saud University in Saudi Arabia (39.5% and 27.8%) [46].

Mean consumption of cigarettes per day was higher than that concluded by De Andrade AP (2006) in their study among youth attending the university of Brasilia in \brazil (7.5 cigarettes per day) [47].

There was a statistically non significant association between duration of smoking and the quantity of cigarettes smoked per day, Kasikç M et al (2008) concluded that the longer the duration of the smoking habit, the larger the quantity of cigarettes smoked per day, a correlation which was statistically significant ($p < 0.05$) [56].

The increasing prevalence of current smoking with age is almost similar to an earlier finding of Shafquat R et al (2007) in their study among college students in Karachi, Pakistan which was 19.2% in 15–17 years, 26.5% in 18–20 years and 65% in 21 years and above [5].

There was no significant effect of the year of study on the prevalence of smoking which is consistent with the finding of earlier studies of De Andrade A.P et al (2009) among students of university of Brasília and Erdogan, N, and Erdogan I (2009) among Turkish university students [44,47].

The significant difference in smoking prevalence among the students, who attended different faculties, is in agreement with the finding of De Andrade A.P et al (2009) although the faculties were different [47].

Although the prevalence of smoking was highest among those with middle monthly family income no significant effect could be concluded for this factor on the prevalence of smoking ($P>0.05$).

The number of households has a non-significant effect the percentage of smokers in the families probably the smoking habit of the households, which was not included in the questionnaire, rather than their number is the important factor as proved by some studies.

The findings indicate an association between higher socio-economic status and smoking, as students belonging to families with high resources were more likely to obtain tobacco products. The educational level of the parents could not be one of the reasons, for the parents with higher educational level are assumed to be aware of the ill-effects of smoking; therefore, they are more likely to advise their children against smoking, and also the higher prevalence among those students whose fathers had professional work or were skilled workers cannot be explained except by the high family resources.

The low percent of former smokers in this study and the absence of a significant difference between the mean number of past smokers who stopped smoking before or after the age of 18 (the mean age of entering the university) might indicate a less desire to quit smoking and /or the

insignificant effect of the present state of schools and university education against smoking. De Andrade A.P et al in their study among youth attending the university of Brasilia in Brazil (2006) found that 4.5% of the students former smokers (47). The WHO reported that roughly 90% of adult smokers were established smokers before the age of 18 years, meaning that prevention of youth smoking translates into prevention of adult smoking and its adverse health effects [1]. My finding is consistent with that report and the results of other studies reporting that the most common age for starting smoking was between 15 and 19 years among all ever-smokers [23, 26, 47]. Other studies reported that the age of onset of smoking was mainly between 14 and 21 years [56]. The lower age of onset of smoking suggests that anti-smoking education should be introduced as early as possible even at the primary and high school level and reinforced throughout the students' education. The prevalence of students who smoked their first cigarette before age 10 years (1.4%) is lower than the overall median per cent reported by GYTS for students who ever smoked cigarettes, who smoked their first cigarette before age 10 years, and that concluded by Barzani D et al (2005) in their study among students aged 13-15 Years-Kurdistan Region, Iraq, (23.9%.and 10% respectively) [3, 57].

Curiosity was the main reason for starting smoking which is similar to the result concluded by Abollfotouh M.A et al (1998) during his study among King Saud university students in Abha, Saudi Arabia [46], while it was concluded as the forth main cause in the study of Khader YS .and Alsadi AA (2008) during his study of Smoking habits among university students in Jordan [26]. Stress was also reported by previous studies as a common cause for starting smoking [26, 56]. A good percent (22.1%) of those respondents who did not know why they started smoking similar result was also concluded by an earlier study of Kasikç M et al (2008) during their study at Atatürk University in Erzurum, Turkey [56]. Influence of friends was common reason given for the smoking behavior concluded by earlier studies in nearby countries [26, 46, 53].

It can be concluded that our students and because of their personality cannot resist their desire to smoke and use the undesirable behaviour of smoking as a strategy to cope with stress and social anxieties rather than beneficial pastimes such as reading books or playing sport.

Major factors influencing the smoking prevalence were the smoking habits of peers, family members and relatives. The strongest predictor of regular smoking was peer influence which is in accordance with the results concluded by most similar studies in other countries [28, 45, 46, 53,, 54, 58, 59, 60]. The peer influence at the median age of starting smoking concluded (17 years) can be explained by the possibility that at this age, adolescents are influenced more by their friends and are generally less affected by the lifestyles of their parents or relatives.

The majority of the respondents answered that they were aware of the hazards of smoking, which is consistent with the results of all previous similar studies [28, 46, 54, 61]. Most students were knowledgeable about smoking and had favorable attitudes against it and would like to stop smoking, similar results were reported by Talal JH (2000) in his study in among college students in Saudi Arabia [28]. The GYTS data showed that over two thirds of current smokers want to stop smoking [3]. The study result may be related to respondents' fears of the harmful effects of smoking upon their health

and may indicate that a high proportion of smokers may respond well to smoking cessation programs if these were made available in the university. Consideration should be given to ways to try and help the majority of current students who smoke and wish to quit.

Conclusion

The reported prevalence of current smoking was 19.4% (33.4% for males and 3.6% for females).

All were cigarettes smokers of whom 2.3%.were current user of other tobacco products in addition. The majority (75.7%) of smokers smoked daily.

Most of the smokers appeared to be "Light Smokers" Male sex, middle income, and higher academic attainments of parents were associated with increased prevalence of smoking. Those in the faculty of faculty of Medicine, Pharmacy and Science were less likely to smoke compared to those in other faculties.

Curiosity was the main factor for smoking initiation and friends were the main predictor for smoking, More than Ninety-eight percent of smokers were aware of the hazards and (67.3%) would like to stop smoking.

Recommendations

The high prevalence of smoking observed in the present indicates the need for smoking control policies in university environments, and together with the young age of initiation suggest a need for the development of an effective antismoking program among students in earlier years of study to discourage smoking and raise awareness of the adverse health effects of smoking.

I recommend that the factors identified in this study should be taken into consideration in the programs to make them more effective and better able to influence the attitudes and behaviours of smokers.

The Ministry of Education and the Ministry Higher Education and Scientific research should apply antismoking program in all primary and secondary schools and universities. In addition, the media can assist by disseminating the message of quitting smoking to the whole population.

Smoking should be banned from public places, and even aantismoking law imposing taxes on cigarette import or manufacture and bans on tobacco advertizing might be considered in order that the antismoking program to be executed.

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