Factors Associated with Smoking Behaviour among University Students in Syria

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Abstract

Cross-sectional study was conducted on 774 students from a Syrian University using questionnaire to estimate the prevalence of smoking among University students and to identify factors related to smoking. Smoking prevalence was 20.75%. Mean age (years) of smokers (25 ± 2.2) was significantly older than non-smokers (21 ± 1.8). Smoking prevalence among males was 26.1%, significantly higher than among females (9.5%). Female students consumed significantly higher number of cigarettes /day (21 ± 5) than the male (9 ± 2). Smoking was significantly higher (27.8%) among students living away from their families than (16.2%) those living with families.

Keywords: smoking, risk factors, youth

1.0 Introduction

Cigarette smoke is a complex mixture of chemicals produced by burning tobacco and the additives. The smoke contains tar, which has more than 4,000 chemicals, including over 60 known to cause cancer. Doll et al. (1994) stated that tobacco smoke contains nicotine and monoamine oxidase (MAO) inhibitor, both combined to result in addictive stimulant and euphoriant properties. American Cancer Society (2007) has confirmed that prolonged smoking causes a wide range of diseases leading to premature morbidity and mortality. According to the American Cancer Society (2007) and United States (US) Surgeon General (2004), its intake also causes fatal diseases such as chronic obstructive lung disease (emphysema and chronic bronchitis), lung cancer, ischemic heart disease, bladder cancer, upper respiratory tract cancers and pancreatic cancer. Tobacco use kills about one-half of all lifetime users. The International Union against Tuberculosis and lung disease (2008) reported 70 million deaths because of tobacco between 1950 and 2000. There are 1.1 billion smokers in the world, 70% of whom are in low-income countries. Over the next fifty years, 450 million may die because of tobacco use. Smoking prevalence around the world has been increasing tremendously. Koushki and Bustan (2006) documented that there are increasing numbers of youths starting to smoke at an earlier age which is a major concern to public health. Today, smoking issue is heated up among different segments of our society. People are more concerned about the health of nation's youth because they are the future leaders. According to the US Department of Health and Human Services (1989), cigarette smoking has been described as the largest preventable cause of premature death. The industrialized countries have focused on this problem and recent large scale efforts have contributed to a substantial decline in cigarette smoking among adults and adolescents as suggested by Brownson et al. (1992). This has not been the case in developing countries, including countries in the Middle East, where prevalence of smoking continues to increase according to Moody, Al-Bustan and Manav (1993).There is a lack of population based data on tobacco use in the Syrian Arab Republic. The aims of this study were to estimate the prevalence of smoking among students of the Syrian International Private University for Science and Technology (SIUST) and to identify factors that may be related to smoking.

2.0 Literature Review

Ershler et al. (1989), Chassin et al. (1990) and Escobedo et al. (1993) have shown that smoking initiation during adolescence increases the likelihood of continued smoking during young adulthood and smoking during young adulthood also decreases the chance of quitting. A national survey based in US observed that high school students who had smoked cigarettes more often and in greater quantity during childhood are at an increased risk of becoming long-term smokers than those who initiate smoking in adolescence. Pierce et al. (1991) reported that the large majority of long-term smokers take up smoking during

the ages 10-25 year. Through smoking, most young people show their power and importance. They smoke ultimately to express the thought that they have moved into adulthood. Escobedo et al. (1993) suggested that some may smoke to adhere to their social group, hence, developing their own social network. Another reason for youth to adopt smoking as a habit is the feeling of insecurity. According to Ershler et al. (1989), Pierce et al. (1991) and Escobedo et al. (1993), they smoke to resolve mental stress and other emotional problems. In spite knowing that tobacco is highly addictive, youths tend to overlook or believe they will never get lung cancer or heart problems because they were relatively young and healthy. The Theory of Triadic Influence stipulates that factors from three different levels of contacts can influence youth smoking onset: individual characteristics (eg age and gender), characteristics in the immediate social environment surrounding youth (eg friends and family members) and characteristics in the broader social environment surrounding youth (eg school community). The Collaborative Funding Program for Southeast Asia Tobacco Control Research (2009) suggested that identifying subgroups of youth who may be at greater risk than others to develop a nicotine habit is an important step forward in preventing smoking initiation, and controlling tobacco use.

3.0 Methodology

A cross-sectional study was conducted in Sahnayah (district of Damascus) in Syria, from 1-30th October 2007. This study was carried out on 1200 students of The Syrian International University for Sciences Technology (SIUST). This newly establishment consists of six faculties: Medicine,Dentistry, Pharmacy, Petroleum Engineering, Business Administration and Computer Engineering and Informatics. Students from Medicine, Dentistry and Pharmacy were categorized as health professional students.

A stratified cluster sampling of three stages was implemented for the sample collection. In the first stage, students from each faculty were stratified according to their level (first, second or third year) of study. Proportional to the number of students in each level, certain number of individual was chosen. In the second stage the individuals were stratified again and collected proportionally according to their sex. In the final stage, the chosen students from all faculties were grouped into clusters of manageable size. A simple random sample of 745 was collected. The selected individuals were informed about the purpose of the study and assured about the anonymity of the questionnaire and that the information will be used only for statistical purposes. A well-constructed questionnaires to be completed by them were distributed to all chosen (745) participants. The questionnaire included the information about the cigarette smoking status (current and non-smoking), average number of cigarettes smoked daily and sociodemographic characters such as age, sex and status of living away or with the family. Morbidity and Mortality Weekly Report (1994) defined current smoker as a person who had smoked at least 100 cigarettes during his/her lifetime and currently smoking. A former smoker was defined as a person who had

smoked at least 100 cigarettes during his/her lifetime but reported to have quit smoking. Individuals reporting either smoking less than 100 cigarettes during their lifetime or having never smoked were categorized as non-smokers. In order to maximize the response rate, the questionnaires were checked daily by trained researchers and if data were missing, the questionnaire was immediately returned to the respective respondent for completion.

Statistical Analysis

The data were analyzed using the available computer software packages of SPSS 16.0 (Statistical Package for Social Sciences Version 16.0). Data were presented in simple measures of frequency (%), the significance of difference between proportions was tested using chi-square test (χ^2) , with p value $\leq$ 0.05 as the level of significance. The strength of association was evaluated through comparing Odds Ratio (OR) and 95% Confidence Interval (CI).

4.0 Results And Discussions

A total of 745 individuals were initially selected to participate in the study. Of them, 583 (394 males, 189 females) returned the completed questionnaires. Only 162 individuals (131 males and 31 females) did not return the questionnaire, or refused to participate, or could not be located during the data collection period. Therefore the response rate was 75.25%. The mean age (±SD) of the participants was 21. ±1.2 years (range 17-28 years).

Cigarette smoking and other forms of tobacco use among children and adolescents is a significant public health concern. Our study revealed that smoking prevalence (20.75%) was high among university students. This rate is higher than reported among Syrian students (10.9%) in Almerie et al.'s study (2008). A similar trend of relatively high and rising smoking prevalence is observed among young people in ASEAN countries according to The Collaborative Funding Program for Southeast Asia Tobacco Control Research (2009). This prevalence is much lower than that in Kuwait (37.1% and 50%) among individuals aged 20 and 30 years respectively according to Moody et al. (1998).

The mean age of non-smoker students was (21 ± 1.8 years) significantly lower than the mean age of smoker students (25 ± 2.2 years). Therefore smokers were significantly older than nonsmoker t = 2.1, p < 0. 025. Most probably the current smokers in the study may have started smoking before their entry to the university. However, the mean age of smokers in our study is older than that (18.6 years)reported by the Institute for Public Health (2008) in Malaysia and Moody et al. (1998) in Kuwait. Weitzman, Gortmaker and Sobol (1992) documented that age was an important factor related to cigarette smoking among university students with older students more likely to be smokers.

Table 1: Prevalence of smoking and its relation to the gender of student

Student gender	Smoker N (%)	Non-Smoker N (%)	Total
Male	103 (26.1)	291(73.9)	394
Female	18 (9.5)	171(90.5)	189
Total	121	462	583

X^2 = 20.4 Yates correction OR = 3.36, p < 0.001

Smoking prevalence is higher among males compared to females and in concordance with the global trend. Jarallah et al. (1999) reported smoking prevalence among males is about four times of females across the world (48% against 12%).Our prevalence of female smokers was lower (9.5%) than reported by Merdad, Al-Zahrani and Farsi (2007) in Saudi Arabia (11%) and American Cancer Society (2007) in US (12%). On the other hand, it was higher (9.5% vs 7.4%) compared to Maziak et al. (2004).

Jarallah et al. (1999) reported significantly more males in Arab countries smoked than females because of social stigma against smoking among women which is seen as shameful. However, several factors are driving the increase in female smoking, especially in developing countries. The most important factors may be; the rise in spending power among girls and women, which is making cigarettes more affordable. Social and cultural norms that have traditionally prevented women in many countries from smoking are weakening, rendering smoking among women more socially acceptable. US Surgeon General (2004) suggested greater female autonomy and changes in women's roles are associated with smoking uptake in countries like US, prompting predictions of similar patterns in developing countries. In respect to the quantity of tobacco consumed, interestingly female student consumed significantly higher quantity (mean number) of cigarettes per day (21 ± 5) than the male (9 ± 2), t = 17.7 p < 0.005. It was also higher than reported from The Collaborative Funding Program for Southeast Asia Tobacco Control Research (2009) among girls and women in ASEAN Countries.

Reason that may explain for the higher mean number of cigarettes among women is related to their body perception. Larsen, Otten and Engels (2009) found that increased weight concern and dieting are associated with both depression and smoking among adolescents, particularly girls. Women are more likely than men to believe that smoking helps to control their weight, and this relationship may be more pronounced in those with eating disturbances, such as eating restraint according to McKee et al.'s (2006) study. In addition, The Collaborative Funding Program for Southeast Asia Tobacco Control Research (2009) suggested that uptake of smoking may be due to the influence of media that promote smoking with images of freedom, emancipation, slimness and glamour.

Table 2: Prevalence of smoking among health and non-health professional students

Students	Smoker N (%)	Non-Smoker N (%)	Total
Health	61	360	421
Non-health	60	102	162
Total	121	462	583

X^2 = 34.8 Yates correction p < 0.001

The prevalence of smoking among non-health professional students (58.8%) was significantly higher than health professional students (16.9%), χ^2 = 34.8, Yates correction, p < 0.001(Table 2). The reason may be due to the higher awareness of smoking hazards among the health professional students compared to non-health professional students.

Table 3: Association of smoking and student living status (with or away of the family)

Living status	Smoker N (%)	Non-Smoker N (%)	Total
Away from the family	63 (27.8)	163 (72.2)	226
With the family	58 (16.2)	299(83.8)	357
Total	121	462	583

X^2 = 10.69 OR = 1.99, 95% CI = 1.03-2.95

The student living status is another indicator of smoking. The prevalence of smoking was significantly higher (27.8%) among students living away from their families than those living with their families (16.2%). Hence, students living away from the family are at risk of becoming a smoker than those living with their family, OR = 1.99, 95% CI =1.03-2.95 (Table 3). Students who lived away from their families were about two times more likely to be smoking than students residing with their families conforming the finding of Moody et al.'s (1998). More smokers (31.6%) vs non smokers (16.2%) reported to be living away from parents and the difference was significant. Hence, this supports the theory that social environment surrounding the youth plays a major role in smoking. Weitzman, Gortmaker and Sobol (1992) and Merdad, Al-Zahrani and Farsi (2007) documented that both parental and peer smoking were important predictors of smoking. Living away from parents may subject the students to a higher degree of peer influences compared to those living with parents. Peers' smoking was associated with current smoking among Syrian university students in Maziak et al.'s (2004) study. Furthermore, living with non-smoking parents provides a smoke free environment that deters the students from smoking. Wechsler, Lee and Rigotti (2001) suggested that a smoke-free environment can also protect students from secondhand smoke as exposure to public areas was reported by Rudatisikira, Siziya and Muule (2010) to be the main form of environmental tobacco exposure among Cambodian adolescents.

5.0 Conclusion

We concluded that smoking prevalence was high among Syrian university students. Smokers were significantly older than non-smoker. The smoking rate was higher among males than females. However, female students consumed higher number of cigarettes per day. The prevalence of smoking among non-health professional students was significantly higher than health professional students. Moreover, the rate of smoking was higher among students living away from their families than students residing with their families. There is a significant risk of becoming a smoker for student living away from families.

6.0 Recommendation

It is important to intervene youths at an earlier age before they begin smoking. The government should treat tobacco use among women as a priority health issue. Social environment of the youth should be monitored by parents and responsible authorities. It is also necessary for the government and academic institution to adopt a comprehensive smoking-control interventions and health education among this target group. Academic institution is encouraged to provide smoke-free college residences.

Acknowledgments

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