

The effect of smoking by family members and friends on the incidence of smoking among high school students

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Abstract

Objective: Smoking is the most important preventable cause of death. According to the global youth tobacco survey (GYTS) presented by WHO, 25% of smokers smoked their first cigarette before the age of 10; hence, it is of great importance to investigate the effect of smoking of family members and friends on smoking incidence of adolescents. **Materials and methods:** This analytic cross-sectional study was conducted on the basis of GYTS questionnaire. The studied population consisted of 3000 high school students who were selected randomly. Data was collected by applying the questionnaires which were fulfilled by students anonymously without supervision of school authorities. The results were analyzed with SPSS 11.5 software employing chi-square test. **Results:** The studied population included 1842 boys (61.4%) and 1158 girls (38.6%) with the mean age of 16.1 years. In terms of smoking habit, 827 students (27.6%) were occasional smokers, 122 students (4.2%) were regular smokers, 518 students (17.3%) used another type of tobacco, and 1533 students (51.1%) were non-smokers. In terms of gender, 77.6% of occasional smokers were males and 22.4% of them were females. At the same time, males and females made up 80.3% and 19.7% of regular smokers, respectively. Also, males and females made up 71.1% and 28.9% of students using another type of tobacco, respectively. In terms of smoker family members and friends, 1860 students (85.6%) of non-smoker students had no smoker in their families and only 313 (14.4%) had at least one smoker in family, while 61.5% of smoker students had at least one smoker family member ($p < 0.001$). Similarly, 50.3% of smoker students had a number of smoker friends, while only 13% of non-smoker students had smoker friends. In terms of economic status this study showed that 22.4% of smoker students and 20.7% of non-smoker ones had high pocket money. **Conclusion:** This study showed that the incidence of smoking among high school students significantly correlated with the incidence of smoking among their friends and family members ($p < 0.001$). This study also showed that the economic status (based on the amount of pocket money) has little or no effect on the incidence of smoking among high school students (p value: 0.863). **Keywords:** smoking, smoker, student, family member, friend, pocket money

Rezumat

Efectul fumatului la membrii de familie sau prieteni asupra incidenței fumatului la elevii de liceu
Obiectiv: Fumatul este cea mai importantă cauză prevenibilă de deces. Conform studiului global al fumatului la tineri (GYTS) prezentat de OMS, 25% din fumători au fumat prima țigară înaintea vârstei de 10 ani; prin urmare, este foarte important să investigăm efectul obiceiului fumatului la familie și prieteni asupra incidenței fumatului la adolescenți. **Materiale și metodă:** Acest studiu analitic transversal a fost realizat pe baza chestionarului GYTS. Populația studiată a fost reprezentată de 3000 de elevi de liceu selectați aleator. Informațiile au fost obținute aplicând chestionarul, care a fost completat anonim de elevi, fără supravegherea autorităților școlare. Rezultatele au fost analizate cu programul SPSS 11.5 folosind testul chi pătrat. **Rezultate:** Populația studiată a inclus 1842 de băieți (61,4%) și 1158 de fete (38,6%) cu vârsta medie de 16,1 ani. În ceea ce privește obiceiul fumatului, 827 elevi (27,6%) erau fumători ocazionali, 122 elevi (4,2%) fumau regulat, 518 elevi (17,3%) foloseau alt tip de tutun și 1533 de elevi (51,1%) erau nefumători. În ce privește genul, 77,6% din fumătorii ocazionali erau băieți și 22,4% fete. Băieții și fetele reprezentau 80,3%, respectiv 19,7% din fumătorii constanți. Dintre consumatorii de alte produse de tutun, 71,1% erau băieți și 28,9% fete. În privința membrilor de familie sau a prietenilor fumători, 1860 din elevii nefumători (85,6%) nu aveau fumători în familie și doar 313 (14,4%) aveau cel puțin un fumător în familie, în timp ce 61,5% din elevii fumători aveau cel puțin un membru de familie fumător ($p < 0.001$). Similar, 50,3% din elevii fumători aveau un număr de prieteni fumători, în timp ce doar 13% din elevii nefumători aveau prieteni fumători. În ce privește statutul economic, acest studiu a arătat că 22,4% din elevii fumători și 20,7% din elevii nefumători aveau mulți bani de buzunar. **Concluzie:** Acest studiu a arătat că incidența fumatului la elevii de liceu se corelează semnificativ cu incidența fumatului între prieteni sau membrii de familie ($p < 0.001$). Acest studiu a arătat și că statutul economic (relevat de suma banilor de buzunar) are puțină sau nici o influență asupra fumatului la elevii de liceu ($p = 0.863$). **Cuvinte-cheie:** fumat, fumător, elev, membru de familie, prieten, bani de buzunar

Introduction

Smoking is the most important health problem in the contemporary world¹. It is a prime factor in heart disease, stroke and chronic lung disease². It can also cause cancer of the lungs, larynx, esophagus, mouth, and bladder, and contributes to cancer of the cervix, pancreas, and kidneys³. Tobacco consumption is one of the most important preven-

table causes of diseases, disability and mortality worldwide¹. When people think of cancers caused by smoking, the first one that comes to mind is always lung cancer. Most cases of lung cancer death are caused by cigarette smoking³. The World Health Organization (WHO) attributes 4.9 million deaths annually to tobacco. That figure could reach to 10 million by 2030⁴. Half of long-term smokers will die from tobacco.

Every cigarette smoked cuts at least five minutes of life on average - about the time taken to smoke it. People who smoke one pack a day die on average 7 years earlier than people who have never smoked⁴. Nearly all first consumption of tobacco occurs before high school graduation and this suggests that if adolescents can be kept tobacco-free, most will never start trying tobacco⁵. Worldwide, one in five adolescents aged 13 to 15 smoke cigarettes⁶. The lungs of a 16 years old adolescent who smokes 20 cigarettes per day is identical to a 28 years old non smoker adult^{5,8}. Communitywide efforts that include tobacco tax increases, enforcement of minors' access laws, youth-oriented mass media campaigns, and school-based tobacco-use prevention programs are successful in reducing tobacco consumption among adolescents⁹, but family and friends education are over standing. The main aim of this study was to investigate the role of family and friends smoking and economic status on cigarette consumption of high school students.

Materials and methods

This study is an analytic cross-sectional study conducted among high school students in Mashhad, the capital city of Khorasan-Razavi province, northeast of Iran, between January 2010 and January 2011. The data was gathered by applying questionnaires prepared according to Global Youth Tobacco Survey (GYTS) questionnaire. At first, the questionnaire was translated and validated considering inconsiderable differences such as commercial brands, currency etc. Afterwards, consent was obtained from Ethic Committee of Mashhad University of Medical Sciences. Then, consent was obtained from the Research Center of the Ministry of Education for data collection among high school students. The questionnaires were distributed among 3000 high school students chosen from 22 randomly selected high schools from 5 education districts of Mashhad which were equal in sex and different socioeconomic status. The questionnaires were distributed among 100 students in different grades of each school. The students fulfilled the questionnaires anonymously and without supervision of school authorities. Written informed consents were obtained from students prior to completing the questionnaires.

The questionnaire included questions regarding demographic information, history and pattern of smoking (daily or occasional), number of smokers among family members and friends and finally amount of pocket money as an index of economic status. The collected data was analyzed by em-

ploying *SPSS software* (version 11.5). In a logistic regression analysis smoking in family members and living with parents were included in the model. Crude and relative frequencies were calculated. To analyze the correlation between the variables, the chi-squared test was employed (with significance at P value < 0.001).

Results

The studied population consisted of 1842 boys (61.4%) and 1158 girls (38.6%) with the mean age of 16.1 years. In terms of smoking habit, 827 students (27.6%) were occasional smokers, 122 students (4.2%) were regular smokers, 518 students (17.3%) consumed another type of tobacco, and 1533 students (51.1%) were non-smokers. In terms of gender, 77.6% of occasional smokers were males and 22.4% of them were females. At the same time, males and females made up 80.3% and 19.7% of regular smokers, respectively. Also, males and females made up 71.1% and 28.9% of students smoking another type of tobacco, respectively.

In order to determine the causes of tendency to smoking, we studied three factors: smoker family members, smoker friends and economic status. Regarding to smoker family members, our study showed that: 85.6% of non-smokers had no smoker in their family and only 14.4% of them had at least one smoker family member. On the other hand, 61.5% of smokers group had at least one smoker family member and 38.5 of them had no smoker family member which was statistically significant ($p < 0.001$). Regarding to the status of smoking among students' friends, 50.3% of occasionally smoker students had a number of smoker friends; by contrast, only 13% of non smoker students had smoker friends ($p < 0.001$, Table I). The last studied variable was the family economic status which was assessed regarding to monthly amount of pocket money (graded into low, average and high). In terms of the amount of pocket money, the results showed that 22.4% of occasional smokers had high amount of pocket money. At the same time, 20.7% of non smokers had high amount of pocket money; hence, it can be concluded that the amount of pocket money was not an effective factor in the incidence of smoking (Table I).

Discussion

According to this study, 27.5% of high school students were occasional smokers and 4.2% were regular smokers. These figures were higher in boys than girls (34.8% versus 16% and 5.3% versus 2% regarding occasional smokers and

Table I The correlation of cigarette smoking with family and friends smoking pattern and pocket money among high school students

	Non-smoker students	Smoker students	P value
No smoker in family	85.6%	38.5%	<0.001
At least one smoker in family	14.4%	61.5%	<0.001
Smoking in friends	13%	50.3%	<0.001
High pocket money	20.7%	22.4%	Not significant
Low pocket money	28%	22.3%	Not significant

regular smokers, respectively); hence, boys were more susceptible to either trying cigarette or become addicted to it. GYTS reported that 9.5% of students were smokers with the highest rate in the European region (19.2%) and the lowest percentage in Eastern Mediterranean region (4.9%). In fact, it was demonstrated that the prevalence of smoking among the adolescents in industrialized countries was higher than the other countries¹⁰. The 2011 National Youth Tobacco Survey (NYTS) reported that the prevalence of cigarette smoking among high school students was 15.8%. During 2000-2011, a linear decline in cigarette consumption rate was observed (from 27.9% to 15.8%)¹³. By contrast, our survey, which was conducted in a middle-east region, showed a higher prevalence of smokers among this range of age in comparison to other countries. In recent years, while smoking rate has declined in most of western countries, the incidence of young female smokers has been increasing in Central and Eastern Europe¹¹. According to a survey conducted in Mexico, 8.8% of adolescents were smokers in 2008, with a percentage of 47.6 for boys and 49.4 for girls. All of them were high school students¹¹. Nevertheless, the sex ratio obtained from our survey is incomparable with the population-based studies from other regions. This study also demonstrated that among high school students smokers, 61.5% had at least one family member who smoke ($p < 0.001$) and 50.3% had a number of smokers friends ($p < 0.001$). Similarly, Warren *et al.* reported that exposure to secondhand smokers in family was an important factor affecting cigarette smoking pattern, as 42.5% of high school students smokers, were exposed to cigarette

smoke at home¹⁰. Moreover, the pattern of cigarette smoking among adolescents was significantly associated with joining a social network with smokers friends¹². NYTS demonstrated several successful precautionary programs such as raising the cigarette prices and taxes, warning about dangers of tobacco consumption, preventive policies and imposing bans on cigarette smoking in public area¹³. In addition, family support seems to play a crucial role in quitting smoking, especially among teenagers. Thus, familial and personal factors have a key role in starting, prevention and cessation of smoking¹⁴. According to our results, there was a close relationship between cigarette smoking and its pattern in friends and family, whereas a meaningful correlation between economic status and smoking was not found. Therefore, in order to achieve the goal of prevention and persistent cessation smoking, considering family and friends habits are of great importance.

Conclusion

Family members and friends have a considerable influence on cigarette consumption in high school students.

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Conflict of Interests

Authors have no conflict of interests. ■

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