
Assessment of smoking behaviors of 2509 Turkish university students and its correlates: a cross-sectional study

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ÖZET

2509 Türk üniversite öğrencisinin sigara içme davranış ve ilintilerinin değerlendirilmesi: Kesitsel bir çalışma

Çalışmamızın amacı, eğitim fakültesi öğrencilerinde sigara içme davranışı ve bu davranışla ilişkili durumları ortaya koymaktır. Toplam 3200 öğrenciden 2509'u, 2007 eğitim yılı başlangıcında Celal Bayar Üniversitesi Eğitim Fakültesinde uyguladığımız sigara anketini doldurarak araştırmamıza katılmıştır. Genel sigara içme oranı %45.9'du. Günlük içilen paket sayılarına göre değerlendirdiğimizde, 186 (%16.2) öğrenci yarım paketten az, 330 (%28.6) öğrenci yarım ile bir paket arası, 636 (%55.2) öğrenci ise günde bir paketten fazla sigara içiyordu. Sigara içme davranışı aylık aile gelirleri ile ters orantılıydı ($p= 0.003$). Lineer regresyon analizine göre alkol içme davranışı sigara içme davranışıyla tahmin edilebilmektedir ($r= 0.081$). Yani tüm sigara içenler, alkol de içmekteydi. Çalışmamız sigara içmeye başlama yaşının 10'lu yaşlara indiğini göstermektedir. Son 10 yıl içinde batılı ülkelerde sigara içme prevalansı azalmaktayken, gelişmekte olan ülkelerde artmaktadır. Slovak Çalışmasında sigara içme prevalansı %21.6, Fransız Çalışmasında %34.6, İsrail Çalışmasında %24.1 olarak bulunmuştur. Dolayısıyla, üniversite öğrencilerine sigara içmenin zararlarıyla ilgili daha fazla eğitim verilmelidir.

Anahtar Kelimeler: Sigara içme, üniversite öğrencisi, gelişmekte olan ülkeler.

SUMMARY

Assessment of smoking behaviors of 2509 Turkish university students and its correlates: a cross-sectional study

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The aim of our study is to determine smoking behavior and its correlates among the faculty of education students. 2509 students, out of 3200, participated in the smoking questionnaire survey in the Faculty of Education of Celal Bayar University, in Manisa, Turkey at the beginning of 2007 educational year. General smoking percentage in school was 45.9%. Regarding daily smoked packet numbers, 186 (16.2%) students smoked less than a packet per day, 330 (28.6%) students between half and one packet, and 636 (55.2%) students more than one packet per day. Monthly familial income found inversely related with smoking ($p= 0.003$). According to Linear Regression Analysis, drinking behavior could be guessed by smoking behavior ($r= 0.081$) so that all of smokers had drunk also. Our study indicates also that the starting age to smoking has decreased to as low as 10 years. In past 10 years while smoking prevalence in western countries decreased, it is increased in developing countries. In a Slovakian study, smoking prevalence was 21.6%, in French 34.6% and in Israeli 24.1%. Therefore, more education on the burdens of smoking must be given to university students.

Key Words: Smoking, university students, developing countries.

Worldwide, cigarette smoking is one of the major public health problems and it is 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 (1). With this velocity, number will rise to eight million per year by 2030. Moreover, more than 80% of deaths, caused by smoking, occurred mostly in developing countries. Half of the people smoking cigarette since their teenage years and still goes on, will be died. Half of these deaths will occur in middle age group (35-69 years) and each will lose an average of 20-25 years of non-smoker life expectancy (2). Teenage smoking prevalence is around 15% in developing countries and around 26% in the United Kingdom and United States (3). The prevalence of cigarette smoking worldwide among high school students increased during the 1990s, peaked between 1996-1997, and then declined (4). Turkey is a developing country with a population of 72 million and the population is predominantly young, with 40.6 million above 15 years of age.

Cigarette smoking can affect human body in different ways. It is responsible from chronic obstructive lung disease, oral cavity, esophagus, stomach, pancreas, larynx, lung, bladder, liver, kidney cancer, leukemia (especially acute myeloid), cardiovascular diseases (ischemic heart disease, myocardial infarct, stroke, aortic aneurysm), pneumonia and cirrhosis (5,6).

Smoking is a psychosocial problem and in recent years, initiation age for smoking had decreased under 16 years. Approximately 80% of tobacco users initiate using before age 18 (4). When we take account that Turkey's population is predominantly young, we can imagine the importance of smoking for our country.

In Turkey, over 1.5 million high school graduates, students are accepted to the universities according to National Selection Examination (OSS) (7). Within them, only 70.000 students find chance to be accepted for a license program. Faculty of education is a highly preferred program by the students. Minimum entrance score is quite high (e.g., in this year, faculty of medicine required the highest score in the examination and faculty of education was only a little bit lower). Faculty of education is constituted from four educational programs, which are hard sciences teaching, primary school teaching, social sciences teaching and Turkish language teaching.

Celal Bayar University Faculty of Education is located in a mountainous small town, Demirci, far distant to the main campus situated in the city (approximately 160 km distant). Meanwhile, it has 3200 students in total. State had builded some youth hostels with a capacity of 2000 persons. However, psychosocial and health needs were never met and it had been always labeled as a deprived region. Therefore, in a settle where many controversies lied, we decided to emphasize the smoking problem of university students with a greatest number of participants.

MATERIALS and METHODS

We performed this study in Celal Bayar University Faculty of Education, Demirci, Turkey in June 2005. Turkey is a country of over 70 million habitants. In addition; we had students from all over Turkey. Faculty of Education in Celal Bayar University had 3200 students. Of the 3200 university students, 2509 participated in the study voluntarily. Response rate was 78.4%. 54.8% ($n= 1375$) of them were male and 45.2% ($n= 1134$) were female. Number of participants

(n= 2509) in this study is the highest in Turkey among studies on university students.

To emphasize the importance of prevention from smoking that begins at younger ages; we tried to describe cigarette smoking behaviors and sociodemographic characteristics of the students in Educational Faculty of Celal Bayar University by performing a questionnaire survey, which they have filled out on their own. Students are informed about full concealment and confidentiality of their responses. To perform the study group homogenous; we included students from four different educational programs of the educational faculty.

A packet of cigarette contains 20 cigarettes. Smoking levels are classified as “less or equal to 1/2 packets per day”, “between 1/2 of packet and 1 packet” and “more than 1 packet”. Smoking duration also classified as “less or equal to 1 year”, “between 1 to 3 years”, “3 to 5 years”, “3 to 5 years”, “5 to 8 years” and “8 to 10 years”. Alcohol drinking amount was questioned as “a glass per week”. Data were tabulated by SPSS 11.00 software. Statistical analysis was done by using Student’s t-test, bivariate and multivariate analysis. Linear regression test was used to assess the correlation between smoking and alcohol drinking behaviors. p value less than 0.05 was considered statistically significant.

RESULTS

11.6% (292/2509) of them were student in hard sciences teaching, 65.6% (1645/2509) in elementary school teaching, 11.1% (278/2509) in social sciences teaching and 11.7% (294/2509) in Turkish language teaching program.

General smoking percentage for university students was 45.91% (1151/2509). Among smokers, 55.1% (634/1151) were male, 44.9% (517/1151) were female. Mean age was 20.9 ± 1.7 (SD). Males smoked more frequently than females (p< 0.01).

Regarding with daily smoked packet numbers, 186 (16.2%) students smoked less or equal to 1/2 packets per day, 329 (28.6%) students between 1/2 of packet and 1 packet, and 636 (55.2%) students more than one packet per day (Table 1).

Smoking durations for students were as; 131 (11.4%) students smoked less than one year, 192 (16.7%) students between 1-3 years, 352 (30.6%) students between 3-5 years, 421 (36.6%) students between 5-8 years, 55 (4.7%) students between 8-10 years (Table 2).

Monthly familial income found inversely related with smoking (p= 0.003, Somer’s correlation coefficient d=

Table 1. Distribution according to the numbers of smoked packets per day.

Number of smoked packets per day	Number of persons	%
≤ 1/2 packets	186	16.2
Between 1/2 and 1 packet	329	28.6
> 1 packet	636	55.2

Table 2. Distribution of cigarette smoking according to smoking durations.

Smoking duration	Number of persons	%
≤ 1 year	131	11.4
1-3 years	192	16.7
3-5 years	352	30.6
5-8 years	421	36.6
8-10 years	55	4.7

-0.117). Heavy smokers had much more siblings than light smokers (p= 0.000).

More the students promoted in higher grades, more the smoking rate, the smoked packet number and the smoking duration increased (respectively, p= 0.000, p= 0.007 and p= 0.000). Between drinking alcohol and smoking cigarette, there was a low correlation (p= 0.003). According to Linear Regression Analysis, drinking behavior could be guessed by smoking behavior (r= 0.081) so that all of the smokers also drunk.

The number of smoked cigarette packets and smoking duration found significantly related to smoking behavior (all p= 0.000). In one way-ANOVA post-hoc Bonferonni analysis, social sciences students smoked more packets than those in hard sciences (p= 0.040). Social sciences students smoked for a duration longer than the students in hard sciences (p= 0.000) and in Turkish Language students (p= 0.001). Primary school teaching students smoked for a duration longer than hard sciences students (p= 0.006).

DISCUSSION

In our study, smoking ratio detected as 55.1% (634/1375) for male and 44.9% (517/1134) for female. According to WHO 2008 Statistics, reported smoking ratio was 51.6% in males, 19.2% in females and

35.5% in both sexes in Turkey (8). Despite the reduction in smoking in the western countries in the last decade, a serious prevalence of smoking in developing countries, especially in female teenagers is observed (9). In Turkey, in a similar study, prevalence of smoking for 1474 students in Eskisehir Osmangazi University was found to be 42.5% (2). This study was similar to our study regarding the number of subjects, population origin, male dominant prevalence and lower educational level impact on smoking. Another study on 3304 high school students in Mersin city of Turkey, showed the smoking rate as 38% with male dominance over females (10). Again, in the study performed among medical school students and physicians in Turkey, lifetime smoking ratio was found as high as 50% (11). In another study fulfilled among 500 physicians in a Turkish medical faculty, overall smoking ratio was found to be 28.7% (12). In one more Turkish University, overall smoking ratio was found 45.8% among educational faculty students with male dominance (53.8%) which was similar to our finding (55.1%) (13).

Moreover, we aimed to compare our findings with the ones in undeveloped, developing and developed countries. In a trial performed in Senegal among university students, cigarette smoking prevalence was found as 34.6% (14). While smoking prevalence was higher for males than our (76.4%), smoking prevalence for females was apparently much higher in our study. This finding was supported by the data about smoking prevalence of females in a different study performed at Istanbul University, Turkey (15).

Nevertheless, both our and Senegalese trial show that starting age to smoke is as low as 10 years old (16). In Spain, as a developed European country, in a survey done among university students, prevalence of smoking was established as 44% and students' starting age to smoke was found 15 ± 2 (7,17). Previous researches exposed that 80% to 90% of adult smokers had started smoking before 18 years old (18). Indonesian study demonstrated that smoking ratio was increased from 8.2% to 38.7% among 11 and 17 years old pupils (19). In our study, 118 students were also smoking for 8 to 10 years. While considering mean age of our subject group was 20.9, we can rule out that an enormous number of students (4.7%) started to smoke early in their childhood. Dramatically, this issue is an important general population health problem, which must be resolved. In two Saudi Arabian studies, heavy smoking ratio was found 39.5% among students of faculty of education (20,21). In the Croatian study, overall currently smo-

king prevalence was found 36.6% (22). In the Slovakian trial, this prevalence was found as 21.6% among university students (22). In the Pakistani comprehensive trial, current smoking prevalence was found 24% among college students (23). A similar trial carried out among students of Faculty of Medicine in France showed a prevalence of 32.1% (24). The Myagaki trial in Japan among women university students denoted that smoking ratio was only 16% (25). This ratio is a much less value than 44.9% of female students in our study. Smoking percentage in Israel was found as 24.1% (26). In the study participating 30 Pacific Northwest colleges and universities in USA, overall smoking ratio was 17.2% with male dominance (27). These findings indicate that developed countries have taken much more precaution and performed effective anti-tobacco campaign. In media, we hear about many suits of billion dollars sued against tobacco companies in USA. The effects of education level, consciousness and common sense of the population. Interestingly; in another study performed in Tanzania, the prevalence of cigarette smoking was only 3.0% for males and 1.4% for females and this situation was association with having money or not (28). However, social exchange could be a way of supply for obtaining cigarette between teens themselves as a type of solidarity (29).

We also found that; lower education level was associated with heavy smoking. At the same time; higher smoking ratio was found in the 3rd and 4th year students rather than 1st and 2nd years students in our study. In Turkey, hard sciences teaching departments in faculty of education are accepting their students with higher minimum requirement score than social sciences teaching departments in National Student Selection Examination. We also found that social sciences students smoked higher numbers of cigarettes for higher period than hard sciences students. Also, the study that demonstrates the inverse relationship between smoking and education level, was interesting (30). However, we think that difference in smoking percentages of two educational programs in our study was related to rather academic performance than educational level. In addition, in Brazilian study of participating 1341 university students, overall smoking ratio was found 14.7% with no gender difference but higher percentages in the geology, communication and history programs rather than other programs (31). These similar results in social sciences support our findings.

Another finding in this study is that increase in smoking ratio was correlated with the increase in household size. This could explain why increasing sibling

numbers, increase the smoking ratio. No literature found regarding smoking and household size.

Co-existence of alcohol drinking and cigarette smoking was shown in most of the studies (14). Whilst this finding correlates with our data, correlation found between smoking and alcohol drinking was very small (Pearson $r=0.081$). Despite privacy of the subjects, students were anxious about reporting their drinking status and only 11.6% of them reported that they drink alcohol 1 glass per week.

Another important topic is smoking cessation. We achieved stop smoking in some patients. Nevertheless, this effort remained limited. In a study, a peer-led Tobacco Prevention Program fulfilled to randomly selected 84 students of 6th Class in 16 schools by Southern California University (32-34). This program provided many improvements on the attitudes of students towards smoking ($p < 0.01$) and improvement on self-efficacy ($p < 0.01$) and decreased the intention to smoke ($p < 0.05$). It is estimated that peer-led technique is the best way to prevent smoking. Future studies may improve this technique to aid its use in other settings (32).

In developed countries, especially in the United States of America, many health promotion efforts encourage smokers to quit and to use effective cessation treatments. Schools provide a route for communicating with a large proportion of young people and more school-based programmes for smoking prevention are developed (35-38). Cognitive and pharmacological therapy used for tobacco cessation among youth. However, no one has any superiority on the other (3).

As a conclusion, prevalence of cigarette smoking seems to be increasing among university youth in western region of Turkey. Age for initiation to smoke has lessened and hence duration of smoking has prolonged. Majority of the students (71.9%) have begun to smoke for more than three years. Approximately one-half of the students have smoked more than one packet of cigarettes. These findings must alert us to take preventive measures as a national policy. Therefore, more educational programs must be provided to students at all levels regarding the burdens of smoke.

For our country, more smoking cessation programs should be initiated among university students to reduce the number of smokers. In addition, continuing educational programs should be instituted for university students by school-based health polyclinics. By this way, this risky and unwilling behavior can be prevented.

CONFLICT of INTEREST

None declared.

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