

Evaluation of the Frequency and Affecting Factors of Smoking Among University Students

Üniversite Öğrencileri Arasında Sigara İçme Sıklığı ve Etkileyen Faktörlerin Değerlendirilmesi

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ABSTRACT Objective: Smoking prevalence among young people is an important public health problem. The aim of this study was to determine the prevalence of smoking in university students and to analyze the smoking-related behaviours. **Material and Methods:** This study was performed by using according to faculties, classes and gender by using 10% sampling among 4.504 university students who were selected from 17 faculties of Selçuk University in 2005-2006 academic years. Prevalence of smoking status, socio-demographic characteristics, smoking-related habits, smoking-related behaviours, opinions related to smoking cessation, family characteristics were examined. Statistical analyses were performed using the software packages SPSS version 13.0. **Results:** Of the students in this study (56.4%, n= 2.540 male, and 43.6%, n=1964 female) 36% (n= 1621) were ever-smokers 13.6% (n= 613) were ex-smokers, 50.4% (n= 2270) were never smokers. 89.4% of smokers were smoking less than one pack of cigarettes per day. In the majority of smokers (97.7%) the initiation age of smoking was below 21 years. The reason to start smoking in 41.7% of smokers was social factors (environment, friend groups, etc). **Conclusion:** Smoking continues to be an important public health problem. Although the causes of smoking are multifactorial, social environment, friend groups and presence of a smoker in the family are important risk factors. Therefore, to prevent and reduce tobacco use in the young, further research should be carried out to develop more effective smoking cessation programs.

Key Words: Smoking; academic medical centers; students

ÖZET Amaç: Gençler arasında sigara kullanmak önemli bir halk sağlığı problemidir. Bu çalışmanın amacı üniversite öğrencileri arasında sigara içme sıklığını belirlemek ve sigara ile ilişkili davranışları analiz etmektir. **Gereç ve Yöntemler:** Bu çalışma 2005-2006 öğretim yılında Selçuk Üniversitesinin 17 fakültesinden %10 örneklem kullanılarak fakülteler, sınıflar ve cinsiyetlere göre çok aşamalı örneklem ile seçilen 4.504 öğrencide yapıldı. Sigara içme prevalansı, sosyodemografik özellikler, sigara ile ilişkili alışkanlıklar, sigara içme davranışı, sigara bırakma ile ilgili düşünceler, aile özellikleri araştırıldı. İstatistik analizler SPSS 13.0 bilgisayar programı kullanılarak yapıldı. **Bulgular:** Bu çalışmadaki öğrencilerin (%56.4 n= 2.540 erkek, %43.6 n= 1.964 kadın) %36 (n= 1.621)'si sigara içici, %13.6 (n= 613)'sı bırakmış, %50.4 (n= 2.270)'ü hiç sigara içmemişti. İçicilerin %89.4'ü günde bir paketten az sigara kullanıyordu. Sigara içenlerin çoğunluğu (%97.7) 21 yaş altında içmeye başlamıştı. İçicilerin %41.7'sinde sigaraya başlama nedeni çevre, arkadaş grupları gibi sosyal faktörlerdi. **Sonuç:** Sigara içiciliği önemli bir halk sağlığı problemi olmaya devam etmektedir. Sigara içme nedenleri çok faktörlü olmasına rağmen, sosyal çevre, arkadaş grupları, ailede bir içicinin bulunması önemli risk faktörleridir. Bu yüzden gençlerde sigara kullanımını önlemek ve azaltmak amacıyla; daha etkili sigara bırakma programları geliştirmek için daha ileri araştırmalar yapılmalıdır.

Anahtar Kelimeler: Sigara içen; akademik tıp merkezleri; öğrenciler

Smoking is the most important preventable cause of morbidity and mortality worldwide.^{1,2} Despite public health efforts to influence smoking and cessation in the USA, young women and men continue to begin smoking at increasingly earlier ages.^{3,4} The World Health Organization (WHO) estimates that there are about 1.100 million smokers in the world.^{5,6} Because of this worldwide problem, further research has been carried out to develop more effective smoking cessation methods.¹

Adolescents especially smoke for various reasons such as social norms, advertising, social pressure and curiosity. However, once smoking behaviour is established, 73% of adolescents become addicted smokers and they smoke for pleasure.³

The strong risk factors for smoking were lower parental socioeconomic status, the presence of close friends, siblings, or teachers who smoked, performing poorly in school and not believing that smoking is harmful to health.⁷⁻⁹ The role of tobacco advertisements and promotional activities on smoking are very important. Although smoking among the adult population in many western countries has declined in the last two decades, the tobacco industry has been aggressively expanding its market in Asia and undeveloped countries.^{7,10}

Turkey is a developing country with a population of over 70 million. The population is predominantly young, with 40.6 million above 15 years of age. In Turkey, smoking prevalence among the adult population (above 15 years of age) is 62.8% in men and 24.8% in women.¹¹ The initiation age of smoking is considerably lower in Turkey and smoking prevalence among adolescents has increased recently.

The purpose of this study is to describe the prevalence of smoking among the university students and to analyze the relationship between ever-smoking experience and various risk factors, including demographic factors, knowledge, attitudes, smoking in family members, close friends who smoked.

MATERIAL AND METHODS

This study was performed on 4.504 subjects by using stratified random sampling among university students who were selected from 17 faculties of Selcuk University in 2005-2006 academic year. There were 63.000 university students in this period. In this study, we only selected faculties which had 45.000 students. Vocational high schools were not included. Before beginning this research, ethical consideration was approved by the ethical committee of Meram Medical Faculty of Selcuk University. All of the participants were volunteers and approval was obtained from them. We used stratified random sampling. Participants were first divided into faculties, after that classes and then gender. We randomly selected from every strata by using 10% sampling. Consequently we reached 4.504 students. A standardized questionnaire was designed. Data were obtained via this questionnaire form by interviewing. The questionnaire included 44 items and revealed the sociodemographic characteristics of the students, results of smoking-related habits, smoking-related behaviours and the role of media on smoking, perception of tobacco control strategies and motivational factors to stop smoking. Ever-smokers were defined as those who had smoked 100 cigarettes and now smoked either every day (i.e., daily smokers) or some days (i.e., some-day smokers). Ex-smokers had smoked at least 100 cigarettes in their lives but did not currently smoke. The minimum quitting period for the ex-smokers was accepted as 6 months. Never-smokers were defined as those who had never smoked.¹²

Participants answered questions about their smoking experiences. The following factors were examined in relation to ever-smoking experience:

1- SOCIODEMOGRAPHIC CHARACTERISTICS

Gender, marital status, age, place of living, place of residence, participation in sport activities, the use of another addictive substance.

2- SMOKING-RELATED HABITS

Smoking status, daily cigarette consumption (number of), the initiation age of smoking, duration of

smoking (years), and the reason to start smoking.

3- SMOKING-RELATED IDEAS

Smoking is a pleasure, smoking is a habit, smoking relieves and relaxes, life is meaningless without a cigarette, time is passing quickly while smoking, I don't believe the hazards of smoking, I believe smoking is not an addict for me, I don't believe I disturb anyone else by smoking, I don't ever want my children smoke, I am under the effect of the advertorial related smoking, effective TV programs related with harmful effects of smoking are lacking.

4- COMMON OPINIONS RELATED TO SMOKING CESSATION

The questions such as; what is your opinion of smoking cessation?, have you ever tried to stop smoking?, would you attend free smoking-cessation program?, what are the effects of TV programs on smoking-cessation?, what are your reactions to TV programs related smoking while watching TV.

5- FAMILY CHARACTERISTICS

The status of smoking in family, father's occupation, mother's occupation, father's and mother's education level.

ETHICAL CONSIDERATIONS

The study protocol was approved by the Ethics Committee of Meram Medical Faculty of Selcuk University and an informed written consent was taken from parents of all included subjects.

DATA ANALYSIS

The university student smoking status was defined as never-smoker, ever-smoker and ex smoker. The SPSS 13.0 statistical software package was used in data entry and analysis. The statistical analysis and evaluations were conducted by the authors. Chi-square and analysis of variance were used to test for baseline differences in demographic and smoking-history variable. Statistical significance was defined as $p < 0.05$.

RESULTS

The sample population consisted of 4.504 students, among whom 2.540 (56.4%) were male, and 1.964

TABLE 1: Sociodemographic characteristics of the participants (n= 4504).

Characteristics	n	%
Gender		
Female	1.964	43.6
Male	2.540	56.4
Marital status		
Single	4.261	94.6
Married	243	5.4
Age (years)		
17-19	806	17.9
20-22	2.671	59.3
23-25	802	17.8
26 and over	225	5.0
Place of living		
Village	491	10.9
Town	1.090	24.2
City	2.923	64.9
Place of residence		
Home with family	1.234	27.4
Home with friends	1.585	35.2
Dormitory	1.685	37.4
Participation in sportive activities		
One day in a week	1.135	25.2
Two-three days in a week	1.076	23.9
One day in two weeks	703	15.6
Never	1.590	35.3
The using of another addictive substance		
Alcohol	351	7.8
Illegal drug	23	0.5
Gambling	67	1.5
Never	4.063	90.2

(43.6%) were female. The age interval of respondents was 17-31 years. The base-line demographic characteristics of study subjects were shown in Table 1.

The student's smoking status was defined as never-smoker, ever-smoker, and ex-smoker. Prevalence of ever-smoker was 36% (n= 1621), never smoker was 50.4% (n= 2.270), ex-smoker was 13.6% (n= 613). Approximate daily cigarette consumption was half of one pack of cigarette, per day (44.1%). In the majority of smokers (87.5%, n= 1.418) the initiation age of smoking was between 14-21 years. The reasons to start smoking in 41.7% of smokers were social factors (environment, friend groups, etc). Smoking-related habits were shown in Table 2.

More than 90 percent of ever smokers (n= 1.448) were thinking of quitting smoking. Approximately, 76% of ever-smokers had tried to stop

TABLE 2: The evaluation of smoking-related habits.

Habits	n	%
Smoking status		
Ever-smoker	1621	36.0
Ex-smoker	613	13.6
Never-smoker	2270	50.4
Daily cigarette consumption (number of)*		
1-10	734	45.3
11-20	715	44.1
20 and more	172	10.6
The initiation age of smoking *		
0-9	18	1.1
10-13	148	9.1
14-17	762	47
18-21	656	40.5
22-25	32	2
26 and over	5	0.3
Duration of smoking (years) *		
1 month -2	315	19.4
3-5	757	46.7
6-8	369	22.8
9-11	120	7.4
12 and more	60	3.7
The reason to start smoking*		
Social factors (environment, friend groups, etc.)	676	41.7
Distress and anxiety	467	28.8
Pleasure and fun	248	15.3
Emulation and enthusiasm	230	14.2

* Only ever-smokers were included.

smoking. Never smokers had opinions that the effects of TV programs on smoking cessation were statistically effective ($p < 0.001$), and they never watched TV programs related to smoking while watching TV ($p < 0.001$). Table 3 showed the common opinions related to smoking cessation.

According to smokers, smoking was a pleasure (63.4%) and a habit (71.8%). Smokers also believed the hazards of smoking (75.2%). The majority of smokers (73.5%) had not ever wanted their children to smoke. The other smoking-related behaviours were shown in Table 4. Fathers' and mothers' education and occupation were similar in three groups (ever, never, ex- smokers). The family characteristics were shown in Table 5.

When the sample was analyzed by gender separately, males (43.1%) were heavier smokers than females (26.9%) ($p < 0.001$). Ever smoking was more prevalent among medical students (49.5%) than social (32.5%) and science students (39.7%) ($p < 0.001$). Ever smoking prevalence varied between classes from 30.8% to 39.3%. Among the ever-smokers group, the rate of using another addictive sub-

TABLE 3: Common opinions related to smoking cessation.

Opinions	Ever- smokers (n= 1.621)		Never-smokers (n= 2.270)		p
	n	%	n	%	
Thoughts of smoking cessation					
Always	575	35.5	-		
Occasionally	903	55.7			
Never	143	8.8			
Have you ever tried to stop smoking?					
Yes	1.232	76			
No	389	24			
Would you attend free smoking-cessation program?					
Certainly	598	36.9			
Perhaps	809	49.9			
Never	214	13.2			
Effect of TV programs on smoking-cessation					
Effective	420	25.9	740	32.6	
No idea	355	21.9	411	18.1	
Ineffective	846	52.2	1.119	49.3	($p = 0.001$)
Reactions to TV programs related smoking while watching TV					
Watching completely, interested	582	35.9	913	40.2	
Never	295	18.2	254	11.2	
Uninterested	744	45.9	1.103	48.6	($p = 0.000$)

Note: Ex-smokers were not included.

TABLE 4: Smoking-related ideas of the ever-smokers (n= 1.621).

	Yes (%)	No (%)	No idea (%)
Smoking is a pleasure	63.4	25.2	11.4
Smoking is a habit	71.8	29.8	8.4
Smoking relieves and relaxes	29.6	54.9	15.5
Living is meaningless without cigarette	24.9	61.2	13.9
Time is passing quickly while smoking	31.5	54.9	13.6
I don't believe the hazards of smoking	18.4	75.2	6.4
I believe smoking is not an addict for me	38.6	48.3	13.1
I don't believe I disturb someone else by smoking	28.7	59.6	11.7
I don't ever want my children smoke	73.5	18.4	8.1
I am under effect of the advertorial related smoking	26.4	61.3	12.3
Effective TV programs related harmful effects of smoking are lacking	53.5	30.2	16.3

TABLE 5: Family characteristics of the participants (n= 4.504).

	Ever - smoker		Never-smoker		Ex-smokers	
	n	%	n	%	n	%
Father's occupation						
Retired	379	25.9	512	24.5	145	25.4
White-collar	378	25.9	514	24.6	130	22.7
Blue-collar worker	575	39.2	863	41.4	242	42.4
Tradesmen	131	9	198	9.5	54	9.5
No answer	159				42	
Mother's occupation						
Housewife	1.113	82.6	1754	88.4	456	85.2
Retired	84	6.2	74	3.7	25	4.7
White-collar	119	8.8	130	6.6	46	8.6
Blue-collar worker	32	2.4	26	1.3	13	1.5
No answer	273				78	
Father's education						
Illiteracy	30	1.9	44	1.9	28	4.6
Literacy	131	8	198	8.7	61	10
Primary school	480	29.6	747	32.9	179	29.2
Middle and high school	564	34.8	758	33.4	215	35.1
University	416	25.7	523	23.1	130	21.2
Mother's education						
Illiteracy	58	3.6	92	4.1	47	7.7
Literacy	186	11.5	253	11.1	71	11.6
Primary school	814	50.2	1.266	55.8	303	49.4
Middle and high school	419	25.8	521	22.9	144	23.5
University	144	8.9	138	6.1	48	7.8

Note: Participants who did not answer the questions were not included.

stance (alcohol, illegal drug etc.) was higher than among the never-smokers ($p < 0.001$). The smoking prevalence (43%) was higher among the students who shared their homes with friends. The ratio of not smoking of the parents of ever-smokers was

31.5%. Conversely, the ratio of not smoking of the parents of never-smokers was 68.5%. There was a significant difference between ever-smokers and never-smokers ($p < 0.001$). Table 6 shows smoking status according to different parameters.

TABLE 6: Comparison of smoking status at different parameters.

	Ever - smoker (%) (n= 1.621)	Never - smoker (%) (n= 2.270)	p
Gender			
Female	26.9	73.1	
Male	43.1	56.9	(p= 0.000)
Faculty			
Science	39.7	60.3	
Social	32.5	67.5	
Medical	49.5	50.5	(p= 0.000)
Class			
First year	30.8	69.2	
Second year	37.1	62.9	
Third year	39.1	60.9	
Final year	39.3	60.7	(p= 0.000)
The using of another addictive substance			
Alcohol	69.7	30.3	
Illegal drug	57.1	42.9	
Gambling	47.8	52.2	(p= 0.000)
Never	32.7	67.3	
Place of residence			
Home with family	35.6	64.4	
Home with friends	43.0	57.0	(p= 0.000)
Dormitory	27.4	72.6	
The status of smoking in family			
Only father	37	63	
Only mother	43.6	56.4	
Both parents	44.1	55.9	(p= 0.000)
Brothers or sisters	37.5	62.5	
None of parents smoke	31.5	68.5	

Note: Ex-smokers were not included.

DISCUSSION

Smoking among young people is an important public health problem.^{7,13,14} Smoking prevalence among adolescents has increased recently.^{2,15,16} Smoking was much more prevalent among the Turkish than among American, Australian, European, and African students.¹⁷ Smoking-related risk by age, gender and socioeconomic level are important.^{3,10} We found the prevalence of ever smoking to be 36%. Similar rates have been reported for the same age group in the other European countries (Denmark, Netherlands, and Poland etc).⁶

In this study, approximately, 45.3% of ever-smokers were consuming 1-10 cigarettes per day, 44.1% of smokers were consuming 11-20 cigarettes per day. This ratio was quite high for adolescent smokers.

Cigarette smoking predominantly begins in one's adolescence.^{18,19} Among the majority of smokers (87.5%) the initiation age of smoking ranged from age 14 to 21 years. These figures are similar to those reported by Peters et al. for Hong Kong.²⁰ Despite the reason to start smoking was multifactorial, social factors (environment, friend groups) 41.7% were profound. It is well recognized that children who smoke tend to have friends who smoke.^{7,8,14} This study illustrates the social environment's role in adolescent tobacco experimentation and prolonged use.^{9,17} Adolescent smoking is thus a communicable disorder, and may be preventable by measures that reduce exposure to other smokers.^{14,21} Furthermore, among ever-smokers, the rate of using another addictive substance was higher than never-smokers.

Approximately, 91.2% of smokers were thinking to quit smoking, 76% of smokers had attempted to stop smoking and 86.8% of smokers were willing to attend free smoking-cessation programs. A smoker's own willingness and motivation to quit is important. If a smoker has been thinking of giving up, advice from health care professionals can encourage them to stop smoking.²¹ Smokers need support and positive feedback in order to quit smoking.¹⁰ If an effective motivation to stop smoking is given, the rate of quitting smoking will be high.

Unfortunately, 52.2% of ever-smokers believed that TV programs on smoking cessation were ineffective. Never-smokers said that TV programs on smoking cessations had statistically important effect (p< 0.001). According to ever-smokers, TV programs related with smoking while watching TV were more uninteresting than it was for never-smokers (p< 0.001). The difficulties in smoking cessation are suggested to be related to nicotine. Addiction to nicotine involves the interaction of psychological, physical, behavioural, and social factors. On account of this research, more effective smoking cessations programs must be carried out immediately.

According to a smoker, smoking is hoped to relieve anxiety, and this makes the hazards of smo-

king acceptable in order to achieve psychological balance.¹⁰ But, once smoking behaviour is established, adolescents become regular smokers and because they are addicted. Participants found smoking helpful to calm their nerves, anxiety, or other moods.²² In our study, according to smokers, smoking was a habit (71.8%), a pleasure (63.4%) and living was meaningless without a cigarette (24.9%). Approximately, 73.5% of smokers did not want their children smoke, 75.2% of smokers believed in the hazards of smoking, and 59.6% of smokers had an opinion that they disturb someone else by smoking. The majority of smokers (53.5%) believed that TV programs related with harmful effects of smoking were insufficient. On account of these findings, to prevent and reduce tobacco use among adolescents, multiple supply-and demand-focused strategies are needed.

Smoking-related risks by age, family, gender and socioeconomic level were important.³ In this study, the rate of none of parents smoke was 68.5% in the never-smokers groups. This rate was significantly higher than ever-smokers ($p < 0.001$). Children tend to emulate their parents. If a parent smokes on a frequent basis, the child will consider the habit as acceptable and even "a must do".²⁰ Parents play a more important role in progression rather than experimentation.²³ To protect the children from active and passive smoking, special smoking cessation program for parents who smoke should be prepared.²⁴

Saatcı E. et al. reported that the prevalence of daily smoking among the first year university students was 21.4%, with the predominance of men (25%) over women (12.9%).²⁵

Also, there was a considerable relation with smoking and gender in our study. Smoking has significantly remained higher among males (43.1%) higher than females (26.9%) ($p < 0.001$). Another study revealed that male adolescents tend to have

a higher affinity for experimentation of cigarette smoking than female adolescents.^{23,26}

In medical schools, smoking rates (49.5%) was significantly higher than non-medical schools ($p < 0.001$). The daily smoking rate in the first year was 30.8%, and in the final year was 39.3%. This ratio was significantly important ($p < 0.001$). In this study, because of traditional culture, family control and the rules of dormitories, staying with family at home (35.6%) and residence at a dormitory (27.4%) has better than staying with friend at home (43%). There was a significant difference between ever-smokers and never-smokers ($p < 0.001$). From this data, we observed that being female, attending a social faculty, being in the first grade, non-using addictive substances, living in dormitory and with family, neither of parents smoke significantly reduced smoking ($p < 0.001$). As you can see, the social environment is quite large, it surrounds us not simply as a physical environment that we can see, but rather as complex and dynamic movements and changes over time that affect all aspects of our lives.¹⁷⁻²³

CONCLUSION

Smoking among young people is an important public health problem. The lack of anti-tobacco organizations, the subtle efforts of international tobacco cartels to increase market share, and the addictive nature of nicotine are responsible for the high levels of epidemic in many developing countries. To prevent or reduce tobacco use among the young, special smoking-cessation programs must be organized. If an effective anti-smoking campaign were carried out at the initiation of adolescent smoking, smoking behaviours could be changed.

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