

# EVALUATION OF SMOKING STATUS IN MEDICAL STUDENTS



## Tıp fakültesi öğrencilerinde sigara kullanım durumunun değerlendirilmesi

Mustafa ÇAKIR<sup>1</sup>, Cem MALAKÇIOĞLU<sup>2</sup>, Ogün Celal KAVCAR<sup>1</sup>,  
Feyza KUTAY YILMAZ<sup>3</sup>, Hatice İKİŞİK<sup>1</sup>, Hasan Hüseyin MUTLU<sup>4</sup>, Işıl MARAL<sup>1</sup>

### Abstract

The aim of this study is to evaluate the smoking status of medical students. This descriptive research was conducted in a medical school with 544 students from first to sixth terms in Istanbul. Online survey form was used in the research. Statistical analyzes were done using SPSS 22.0 program. The mean age of the students participating in the study was 21.0±2.2, 55.7% of them were women and 55.1% of them were living with their families/relatives. It was determined that 6.4% of the students were smoking before joining university, 10.7% were regular/frequent smokers, the average number of cigarettes smoked daily was 10.2±7.5, and the reason for starting smoking was stress in 39.9 percent. It was determined that 62.9% of the smoking students thought to quit smoking and 66.1% knew the methods of quitting smoking. The frequency of regular/frequent smoking was found to be higher in those living alone or with friends at home, and those whose mothers and siblings smoked regularly/frequently. In our study, it was determined that more than half of regular/frequent smokers started smoking before university and the most common reasons for starting were stress, friend influence, and curiosity. It is recommended that awareness trainings about smoking harms be included in different grades in the National Education curriculum and that students should be trained in stress management and choosing friends.

**Keywords:** Medical student, smoking, tobacco.

### Özet

Araştırmada tıp fakültesi öğrencilerinde sigara kullanım durumlarının değerlendirilmesi amaçlanmaktadır. Çalışma tanımlayıcı tipte olup İstanbul'da bir tıp fakültesinde 1-6. sınıf 544 öğrencide yürütülmüştür. Araştırmada anket formu kullanılmıştır. İstatistiksel analizler SPSS 22.0 istatistik paket programında yapılmıştır. Araştırmaya katılan öğrencilerin yaş ortalaması 21,0±2,2 olup %55,7'sinin kadın olduğu ve %55,1'inin ailesi/akrabalarıyla yaşadığı belirlenmiştir. Öğrencilerin %6,4'ünün üniversite öncesinde, %10,7'sinin şu anda düzenli/sık sigara içtiği, içilen günlük sigara adedi ortalamasının 10,2±7,5 olduğu, %39,9'unun sigaraya başlama nedeninin stres olduğu tespit edilmiştir. Sigara içen öğrencilerin %62,9'unun sigarayı bırakmayı düşündüğü, %66,1'inin sigara bırakma yöntemlerini bildiği belirlenmiştir. Evde yalnız veya arkadaşlarıyla yaşayanlarda ve annesi ile kardeşi düzenli/sık sigara içenlerde düzenli/sık sigara içme sıklıkları daha yüksek saptanmıştır. Düzenli/sık sigara içenlerin yarıdan fazlasının sigara içmeye üniversite öncesinde başladığı ve en yaygın başlama nedenlerinin stres, arkadaş etkisi ve merak olduğu saptanmıştır. Sigara zararlarıyla ilgili farkındalık eğitimlerinin Milli Eğitim müfredatında farklı sınıflarda yer alması ve öğrencilere arkadaş seçimi ile stres yönetimi eğitimlerinin verilmesi önerilmektedir.

**Anahtar kelimeler:** Tıp öğrencisi, sigara kullanımı, tütün.

1-İstanbul Medeniyet University Faculty of Medicine, Department of Public Health. İstanbul, Türkiye

2-İstanbul Medeniyet University Faculty of Medicine, Department of Medical Education. İstanbul, Türkiye

3-Artvin Provincial Community Health Center, Department of Public Health. Artvin, Türkiye

4-Sancaktepe Şehit Prof. Dr. İlhan Varank Training and Research Hospital Department of Family Medicine. İstanbul, Türkiye

**Sorumlu Yazar / Corresponding Author:** Assoc. Prof. Dr. Mustafa ÇAKIR

**e-posta / e-mail:** mustafa-5355@hotmail.com

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**ORCID:** Mustafa ÇAKIR: 0000-0002-4963-5651; Cem MALAKÇIOĞLU: 0000-0002-4200-0936;

Ogün Celal KAVCAR: 0000-0002-2204-6195; Feyza KUTAY YILMAZ: 0000-0002-9575-5291;

Hatice İKİŞİK: 0000-0003-0958-0649; Hasan Hüseyin MUTLU: 0000-0001-8947-711X; Işıl

MARAL: 0000-0001-5234-6108

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## Introduction

All types of tobacco are harmful and there is no safe level of tobacco exposure. Cigarette is the most widely used tobacco product all over the world. There are 1.3 billion tobacco users worldwide (1). Smoking is harmful to most of the organs in the body and causes many diseases (2). Tobacco kills more than eight million people every year. More than seven million people die from direct tobacco use, and about 1.2 million people die from exposure to secondhand smoke (1). More than 480000 deaths occur each year in the United States due to smoking, accounting for one-fifth of all deaths (2). An important preventable cause of premature death and disease is tobacco use (3). Quitting smoking reduces smoking-related diseases and can prevent premature deaths (2). Physicians who smoke are at higher risk in terms of not providing counseling to their patients compared to former smokers and non-smokers (4). Knowing the smoking behaviors of medical students, who will be the physicians of the future, is very important both for their own health and for the advice and guidance they will give to their patients. Some studies show that the

prevalence of smoking among medical students is also high. In a study conducted among medical students in Poland, 1/4 of the participants were reported to smoke (5). Another study conducted in Saudi Arabia showed that smoking among medical students was 17.6%. In the same study, 39.8% of the participants were reported to have smoked before (6). In another study conducted among students of different medical faculties in Western Balkan countries, the prevalence of smoking was reported to vary between 13.9% and 32.3% (7). Doctors can also be active in encouraging and guiding people to quit smoking. It is stated that the long-term success rate of quitting smoking on one's own without any advice is 2-3%. It is possible to increase this value by 1-3% with the advice of a doctor (8). The beliefs, attitudes and practices of physicians, who are in an important position for smoking cessation advice, are also important. In our study, we aimed to evaluate the smoking status of medical students and also to determine their attitudes and knowledge levels in the fight against smoking.

## Material and Method

The research is a descriptive survey study. It was conducted with 1st, 2nd, 3rd, 4th, 5th and 6th term students at a medical faculty in Istanbul between November 2021 and February 2022. Within the scope of the research, 544 students were reached (participation percentage 49.2%): 62.3% of term 1 students, 68.2% of term 2 students, 42.1% of term 3 students, 28.5% of term 4 students, 37.6% of term 5 students and 49.5% of term 6 students were participated voluntarily and their informed consents were obtained in advance. Ethics committee approval of the study was obtained from the Clinical Research

Ethics Committee of Istanbul Medeniyet University Göztepe Training and Research Hospital with the decision number 2021/0541 dated 10/27/2021. A questionnaire form created by the researchers was used in the study. The first six questions of the questionnaire consist of socio-demographic characteristics, and the next 11 questions are about smoking. The questionnaire form was created to be filled online and sent to the students as e-mail and phone message.

Smoking status is graded in terms of frequency. For this purpose, 4 levels were selected in the questionnaire form.

These options were; “never smoked, smoking occasionally, smoking regularly/frequently, smoked but quitte”.

Statistical analyzes were done by SPSS 22.0 statistical package program. In the descriptive findings section, categorical variables were presented as

numbers, percentages, and continuous variables as mean  $\pm$  standard deviation and median (min.-max.). As a statistical analysis, Chi-Square test was used to compare categorical variables. The statistical significance level was taken as  $p < 0.05$  in all analyzes.

## Results

Within the scope of the research, 544 medical students were reached. The mean age of the students participating in the study was  $21.0 \pm 2.2$ , and 55.7% (n=303) were females; 23.3% (n=127) were in the 2nd term, 21.9% (n=119) were in the 6th term. It was determined that 8.3% (n=45) had a chronic disease

and 10.8% (n=59) were using regular medication. 55.1% (n=300) of the students were living with family/relatives, 22.6% (n=123) were at the dormitory, 13.6% (n=74) were at home with their friends, and 8.7% (n=47) were alone at home (Table 1).

**Table 1:** Socio-demographical characteristics of medical students.

<b>Socio-demographical characteristics</b>	<b>n (%)*</b>
<b>Age</b>	
Mean $\pm$ Standard Deviation	21.0 $\pm$ 2.2
Median (Min; Max)	22.5 (12; 29)
<b>Gender</b>	
Males	241 (44.3)
Females	303 (55.7)
<b>Term</b>	
1	121 (22.2)
2	127 (23.3)
3	78 (14.3)
4	44 (8.2)
5	55 (10.1)
6	119 (21.9)
<b>Status of chronic diseases</b>	
Yes	45 (8.3)
No	499 (91.7)
<b>Regular medication usage</b>	
Yes	59 (10.8)
No	485 (89.2)
<b>Place of residence</b>	
Dormitory	123 (22.6)
Home alone	47 (8.7)
Home with friends	74 (13.6)
Home with family/relatives	300 (55.1)

\*(%): column percentage

In the study, it was determined that 10.7% (n=58) of the medical students smoked regularly/frequently, 12.9% (n=70) smoked occasionally; and the average number of cigarettes smoked daily was 10.2±7.5. 6.5% (n=35) of the

students smoked regularly/frequently before university. It was also determined that 10.7% (n=58) mothers, 24.8% (n=135) fathers and 12.7% (n=69) siblings were regular/frequent smokers (Table 2).

**Table 2:** Smoking status of medical students and their families.

<b>Variables</b>	<b>n (%)*</b>
<b>Smoking status</b>	
Never smoked	383 (70.3)
Smoking occasionally	70 (12.9)
Smoking regularly/frequently	58 (10.7)
Smoked but quitted	33 (6.1)
<b>Number of cigarettes smoked per day</b>	
Mean ± Standard Deviation	10.2 ± 7.5
Median (Min; Max)	9.0 (1; 30)
<b>Pre-university smoking status</b>	
Never smoked	428 (78.7)
Smoking occasionally	65 (11.9)
Smoking regularly/frequently	35 (6.5)
Smoked but quitted	16 (2.9)
<b>Maternal smoking status</b>	
Never smoked	379 (69.7)
Smoking occasionally	53 (9.7)
Smoking regularly/frequently	58 (10.7)
Smoked but quitted	54 (9.9)
<b>Paternal smoking status</b>	
Never smoked	185 (34.0)
Smoking occasionally	52 (9.6)
Smoking regularly/frequently	135 (24.8)
Smoked but quitted	172 (31.6)
<b>Siblings' smoking status</b>	
Never smoked	397 (73.0)
Smoking occasionally	60 (11.0)
Smoking regularly/frequently	69 (12.7)
Smoked but quitted	18 (3.3)

\*(%): column percentage

In the study, the reasons of starting smoking were determined as: For 39.9% (n=63) of stress, 23.4% (n=37) of friends influence, 19.0% (n=30) of curiosity, and 0.6% (n=1) of family/relative effect. It was determined that 76.9% (n=319) of the non-smoker students did not use the cigarette because it was harmful to health, and 15.9% did not like the smell and smoke. It has been determined that the most

effective practices for quitting smoking in the community are the raises in prices with 53.9% (n=293), the smoking ban in indoor areas with 28.1% (n=153) and the TV/newspaper public spots with 14.5% (n=79). It was also determined that 62.9% (n=73) of the students thought about quitting smoking, and 66.1% (n=300) knew about smoking cessation methods (Table 3).

**Table 3:** Distribution of some smoking-related characteristics of medical students.

	n (%) <sup>*</sup>
<b>If you have smoked, reasons to start smoking (n=158)</b>	
Curiosity	30 (19.0)
Friend influence	37 (23.4)
Stress	63 (39.9)
Family/relative influence	1 (0.6)
Wannabe	11 (7.0)
Other reasons <sup>**</sup>	16 (10.1)
<b>If you don't smoke, reasons for not smoking (n=415)</b>	
Being harmful to health	319 (76.9)
Dislike of smell and smoke	66 (15.9)
High price	2 (0.5)
Family influence	8 (1.9)
Other reasons <sup>***</sup>	20 (4.8)
<b>The most effective practice for quitting smoking in the community</b>	
Raises of prices	293 (53.9)
Smoking ban indoors	153 (28.1)
Warning captions (text and pictures) on cigarettes	19 (3.5)
TV/newspaper public spots	79 (14.5)
<b>If you are a smoker, considering quitting (n=116)</b>	
Yes	73 (62.9)
No	43 (37.1)
<b>Knowing the methods of quitting smoking (n=454)</b>	
Yes	300 (66.1)
No	154 (33.9)

<sup>\*</sup>(%): column percentage    <sup>\*\*</sup>: Accompanied by alcohol, depression, pleasure, problems, odor-fume liking    <sup>\*\*\*</sup>: Addiction, religious reasons, unnecessary, dislike

It was determined that 16.6% (n=40) of male students and 5.9% (n=18) of females smoking regularly/frequently. In the study, the frequency of regular/frequent smoking was found to be higher in males (p=0.001). 14.9% (n=7) of students living alone at home, 14.8% (n=11) of students living at home with friends, 11.4% (n=14) of students living in dormitories, and 8.7% (n=26) of students living with family/relatives were determined to smoke regularly/frequently. The frequency of regular/frequent smoking was found to be higher in those living alone at home and with friends at home (p<0.001). It was determined that 24.2% (n=14) of students whose mothers smoked regularly/frequently and 9.2% (n=35) of

those whose mothers have never smoked were regular/frequent smokers. Therefore, the frequency of regular/frequent smoking was found to be higher in students whose mothers smoking regularly/frequently (p=0.005). Similarly, it was found that 26.1% (n=18) of students whose siblings smoking regularly/frequently and 7.8% (n=31) of those whose siblings have never smoked were regular/frequent smokers. Thus, the frequency of regular/frequent smoking was found to be higher in students whose siblings smoked regularly (p<0.001). No statistically significant difference was found for the smoking status of the students according to their terms and the smoking status of their fathers (p>0.05) (Table 4).

**Table 4:** Distribution of medical students' smoking status by socio-demographical characteristics.

Socio-demographical characteristics	Smoking status				p
	Never smoked	Smoking occasionally	Smoking regularly/frequently	Smoked but quit	
	n (%) <sup>*</sup>	n (%) <sup>*</sup>	n (%) <sup>*</sup>	n (%) <sup>*</sup>	
<b>Gender</b>					
Male	153(63.5) <sup>a</sup>	33(13.7) <sup>a,b</sup>	40(16.6) <sup>b</sup>	15(6.2) <sup>a,b</sup>	<b>0.001</b>
Female	230(75.9) <sup>a</sup>	37(12.3) <sup>a,b</sup>	18(5.9) <sup>b</sup>	18(5.9) <sup>a,b</sup>	
<b>Term</b>					
1	93(76.9)	12(9.8)	10(8.3)	6(5.0)	0.871
2	86(67.7)	17(13.4)	15(11.8)	9(7.1)	
3	53(67.9)	12(15.4)	9(11.6)	4(5.1)	
4	32(72.7)	3(6.9)	7(15.9)	2(4.5)	
5	41(74.5)	6(10.9)	4(7.3)	4(7.3)	
6	78(65.5)	20(16.9)	13(10.9)	8(6.7)	
<b>Place of residence</b>					
Dormitory	86(69.9) <sup>a</sup>	14(11.4) <sup>a</sup>	14(11.4) <sup>a</sup>	9(7.3) <sup>a</sup>	<b>&lt;0.001</b>
Home alone	18(38.3) <sup>a</sup>	18(38.3) <sup>b</sup>	7(14.9) <sup>b</sup>	4(8.5) <sup>b</sup>	
Home with friends	48(64.9) <sup>a</sup>	10(13.5) <sup>a</sup>	11(14.8) <sup>a</sup>	5(6.8) <sup>a</sup>	
Home with family/relatives	231(77.0) <sup>a</sup>	28(9.3) <sup>b</sup>	26(8.7) <sup>b</sup>	15(5.0) <sup>b</sup>	
<b>Pre-university smoking status</b>					
Never smoked	383(89.5) <sup>a</sup>	27(6.3) <sup>b</sup>	14(3.3) <sup>b,c</sup>	4(0.9) <sup>c</sup>	<b>&lt;0.001</b>
Smoking occasionally	-	36(55.4) <sup>b</sup>	12(18.5) <sup>c</sup>	17(26.1) <sup>b</sup>	
Smoking regularly/frequently	-	2(5.7) <sup>b</sup>	31(88.6) <sup>c</sup>	2(5.7) <sup>b</sup>	
Smoked but quit	-	5(31.2) <sup>b</sup>	1(6.3) <sup>a,b</sup>	10(62.5) <sup>c</sup>	
<b>Mother's smoking status</b>					
Never smoked	277(73.1) <sup>a</sup>	44(11.6) <sup>a</sup>	35(9.2) <sup>a</sup>	23(6.1) <sup>a</sup>	<b>0.005</b>
Smoking occasionally	37(69.8) <sup>a</sup>	9(17.0) <sup>a</sup>	7(13.2) <sup>a</sup>	-	
Smoking regularly/frequently	30(51.7) <sup>a</sup>	8(13.8) <sup>a,b</sup>	14(24.2) <sup>b</sup>	6(10.3) <sup>a,b</sup>	
Smoked but quit	39(72.2) <sup>a</sup>	9(16.7) <sup>a</sup>	2(3.7) <sup>a</sup>	4(7.4) <sup>a</sup>	
<b>Father's smoking status</b>					
Never smoked	132(71.4)	25(13.5)	13(7.0)	15(8.1)	0.556
Smoking occasionally	39(75.0)	4(7.7)	6(11.5)	3(5.8)	
Smoking regularly/frequently	96(71.1)	17(12.6)	17(12.6)	5(3.7)	
Smoked but quit	116(67.4)	24(14.0)	22(12.8)	10(5.8)	
<b>Siblings' smoking status</b>					
Never smoked	302(76.1) <sup>a</sup>	43(10.8) <sup>b</sup>	31(7.8) <sup>b</sup>	21(5.3) <sup>a,b</sup>	<b>&lt;0.001</b>
Smoking occasionally	35(58.3) <sup>a</sup>	11(18.4) <sup>a,b</sup>	6(10.0) <sup>a,b</sup>	8(13.3) <sup>b</sup>	
Smoking regularly/frequently	37(53.6) <sup>a</sup>	13(18.9) <sup>a,b</sup>	18(26.1) <sup>b</sup>	1(1.4) <sup>a</sup>	
Smoked but quit	9(49.9) <sup>a</sup>	3(16.7) <sup>a</sup>	3(16.7) <sup>a</sup>	3(16.7) <sup>a</sup>	

<sup>\*</sup>(%): line percentage



In addition, no statistically significant difference was found for the most effective practice for smoking cessation in the community and the

knowledge of smoking cessation methods according to the smoking status of medical faculty students ( $p>0.05$ ) (Table 5).

**Table 5:** Distribution of smoking cessation-related characteristics of medical students by smoking status.

Variables	Smoking status				p
	Never smoked	Smoking occasionally	Smoking regularly/frequently	Smoked but quitted	
	n (%)*	n (%)*	n (%)*	n (%)*	
<b>The most effective practice for quitting smoking in the community</b>					
Raises of prices	212(55.4)	31(44.3)	31(53.4)	19(57.6)	0.922
Smoking ban indoors	105(27.4)	23(32.9)	17(29.3)	8(24.2)	
Warning captions (text and pictures) on cigarettes	12(3.1)	4(5.7)	2(3.4)	1(3.0)	
TV/newspaper public spots	54(14.1)	12(17.1)	8(13.9)	5(15.2)	
<b>Knowing the methods of quitting smoking</b>					
Yes	193(64.1)	50(76.9)	35(60.3)	22(73.3)	0.140
No	108(35.9)	15(23.1)	23(39.7)	8(26.7)	

\*(%): column percentage

## Discussion

In our study, we first wanted to determine the smoking rates of the students. These rates will provide different comparison opportunities for the other questions of the research. It was determined that 10.7% of the students in this study have smoked regularly/frequently and 12.9% of them have been occasional smokers. These results indicate that the smoking rates of our medical students are high. There are different studies that have shown similar results to our study. In a study conducted by Balogh et al. for international medical students in Hungary in 2018, 13% of Norwegian students, 21.5% of Hungarian students, 29.5% of students in the multinational group, and 34.2% of students from Germany have smoked (9). In a study conducted by Zahedi et al. in Iran in 2019, 24.3% of medical students reported that they have smoked either in the past or currently (10). In a study conducted by Ilic et al. with students of 14 medical faculties in five Western Balkan countries between 2019 and 2020, it was

found that between 13.9% and 32.3% of the students have smoked (11). In the study conducted by Kabbash et al. with medical students in Egypt, it was determined that between 2.8% and 10% of the students have smoked (12). In a study conducted by Samara et al. with health professions' students in Greece in 2016, it was determined that 23.5% of the students have smoked (13). In a study conducted by Vorster et al. with medical students in South Africa, 31.5% of second-term students and 35.1% of third-term students have reported smoking over a 12-month period (14). In a study conducted by Vatansev et al., 11.5% of medical students were still smoking (15). In the study conducted by Pektaş and Mayda with medical students, 11.2% of them have smoked regularly and 14.3% of them occasionally (16). In the study conducted by Dagtekin et al., it was determined that 28.3% of the students smoked (17). It was found that 17.1% of students have smoked in the study conducted by Cilekar et al. (18), and

20.3% of them have smoked in the study of Berberoglu et al. (19). The prevalence of smoking was found to be 12.3% in the study conducted by Kutlu et al. (20). In the study conducted by Kuzucuoglu et al., the rate of smoking among students was found to be 13.8% (21). In the study conducted by Dikmen et al., it was determined that 28% of the students were still smoking (22). In the study conducted by Er and Kurçer, it was found that 16% of the students were smoking every day and 17% of them occasionally (23). The prevalence of smoking was found to be 21% in the study conducted by Aksoy et al. (24). In a study conducted by İkişik et al. 37.1% of the students were shown to be smokers (25). In a study conducted by Bakar et al. among university students, it was reported that the rate of smoking was 24.8% (26). In addition, in a study conducted by Çakır et al. among physicians undergoing specialty training, the rate of smoking was reported to be 20.8% (27). Although it is diverse in the studies, it appears that there is a high frequency of smoking among medical students.

In this study, the average amount of cigarettes smoked per day by the smoker students was determined as  $10.2 \pm 7.5$  (min:1; max:30). The mean number of cigarettes smoked per day was found to be  $11.4 \pm 8.2$  in the study conducted by Vatansev et al. (15). These results show that the smoker students who participated in the study have finished about half a pack a day on average. In order to understand the factors leading to this high rate, it is also important to consider whether smoking started before university. It was determined that 6.4% of the participants have smoked regularly/frequently and 11.9% of them occasionally before university. In a study conducted by Kutlu et al., 68.1% of students either were still smoking or have quit smoking reported that they started smoking before medical school (20). In the study conducted by Er and Kurçer, 54.4% of smokers started smoking before university (23). These studies show that

about half of smoker students started smoking earlier. This situation can be a guide for awareness studies to be carried out.

Understanding the reasons for starting smoking is one of the most important aspects of our fight against smoking. Being able to make various inferences that can link temporal change and different environmental factors will be possible by seeing the root causes. Among the students who participated in the study, it was determined that the reasons for starting smoking were 40% stress, 23% influence of friends, and 19% curiosity. In a study conducted by Vatansev et al., 51.4% of the smoker participants stated that smokers in their close environment (mother, father, friend) and excessive stress for the reasons for starting smoking (15). In the study conducted by Kutlu et al., presence of smokers in the close environment (18.9%) and the feeling of freedom due to smoking (9.8%) were found as major reasons for starting smoking (20). The reasons for starting smoking in the study conducted by Dikmen et al. were as follows: 40% seeing smoking from the environment, 28% stress/exam stress, and 19% wannabe-curiosity (22). In the study conducted by Er and Kurçer, the most common answers given by students as the reason for starting smoking were friends and environment (50.8%), stress (38.3%), and curiosity (33.3%) (23). In the study conducted by Aksoy et al, 42% of students stated that the influence of friends when asked about the reasons for starting smoking (24). In our study and similar other studies, close environment and stress were seen as the primary reasons for starting smoking. Families should be told the importance of this situation and it should be emphasized that the choice of friends and the level of stress are important factors in smoking status.

The attitudes and opinions of doctors will also affect their identity in the role of advisor and solution planner. Therefore, the views of medical students were also examined in this regard. In this



study, it was determined that the most effective practices for quitting smoking in the community were the increase in cigarette prices (53%), the smoking ban in indoor areas (28%), and the TV/newspaper public spots against smoking (14%). In the study by Er and Kurçer, the most effective factors in quitting smoking were 24.5% raises of prices, 21% indoor smoking ban, and 10% public spots against smoking (23). Although the view that price increases are particularly effective in these results comes to the forefront, other methods were also given significant shares. The results show that the methods applied in the fight against smoking in our country have been also adopted by medical students.

The plans and knowledge levels of medical students, who will also be in a position to give advice in the future, are important. In the study, it was determined that 62% of the smoker students thought of quitting smoking and 66% of them knew about smoking cessation methods. In the study conducted by Kutlu et al., 30.3% of smokers stated that they were considering quitting smoking (20). In the study conducted by Dikmen et al., 48% of the participants stated that they tried to quit smoking (22). In the study conducted by Er and Kurçer, 51.9% of smokers thought to quit smoking, while 32.1% tried to quit (23). In the study conducted by Aksoy et al., it was determined that 65.3% of the students wanted to quit smoking (24). Studies show that more than half of smokers think about quitting smoking and a large proportion have tried to do so. This situation may be an important indicator in terms of the high gain in return of the studies to be conducted on the subject.

In the present study, regular smoking habits were found to be higher among males. In the study conducted by Ilic et al., the frequency of smoking was found to be also higher among males (men: 29.5%, women: 20.4%) (11). In the study conducted by Kabbash et al., 10.8% of men and 0.5% of women have smoked, and a statistically significant difference

was found (12). In the study conducted by Vatansev et al., it was determined that 23% of men and 3.9% of women have smoked (15). In the study conducted by Dagtekin et al. it was determined that 33.6% of men and 23.2% of women have smoked (17). In the study conducted by Berberoglu et al., 75% of smokers were males (19). In the study conducted by Kutlu et al., 22.5% of male students and 5.1% of female students have smoked (20). In the study conducted by Kuzucuoglu et al., the frequency of smoking was found to be 8.7% in women and 21.5% in men (21). However, no significant difference was found between the smoking status of male students and female students in the study of Aksoy et al. (24). Studies generally show that smoking is higher in men than in women. Our study also supports this.

When determining the time of onset of smoking, it is also necessary to understand the change over time. Being able to identify this change will be very helpful in identifying causes and aggravating factors. In this study, no difference was found between the smoking status of medical students according to the terms. Similarly, no difference was found for smoking status between students in 1-3 terms and 4-6 terms in the study of Ilic et al. (11). In the study conducted by Kabbash et al., the frequency of smoking among intern students was found to be significantly higher than that of second term students (12). On the other hand, no difference was found between the smoking status of health professions' students according to terms in the study of Samara et al. (13). In a study conducted by Vorster et al., 31.5% of second-term students and 35.1% of third-term students stated that they have smoked for a period of 12 months (14). In the study conducted by Vatansev et al., it was determined that 6% of the first-term students and 19.4% of the intern students smoked and there was a significant difference between two groups (15). In the study conducted by Kutlu et al., the frequency of smoking was found to be higher among intern students

(20). The results of different studies show that smoking prevalence increases in the later years, especially during the internship years. In addition to individual reasons, determining the impact of changing environmental conditions and educational content on this situation may be important for our fight. In our study, no difference was found between the terms. This may be due to the low number of students who smoke among the participants and the difference in the percentage of participation according to terms.

In another section where we examined environmental factors, we aimed to interrogate residential interactions. It was determined that the frequency of regular smoking was higher in those who were living at home alone or with friends in the present study. Kabbash et al. found that the highest prevalence of smoking was among students living alone (20.3%), and it was followed by those living with a relative or friend (9.1%) (12). In the study conducted by Kuzucuoglu et al., it was determined that the smoking frequency of students living with their roommates was higher (21). Taking all into account, the findings of this and similar studies show that staying at home alone or with friends poses a risk in terms of smoking.

Although only one student among the participants stated the family/relative influence among the reasons for starting smoking, it was determined that those whose mothers and siblings smoked regularly had a higher frequency of regular smoking in this study. Ilic et al. found a significant difference for smoking behavior of medical students according to

the smoking status of the parents. According to their findings, 25.1% of smoker mothers, 25.6% of smoker fathers, 31.9% of smoker both parents and 17.8% of non-smoker parents were also smoking (11). Nevertheless, no difference was found between smoking according to the smoking status of the parents by Vatansev et al. (15). When we consider our study and other studies, it is seen that the habits of family members also affect the frequency of smoking among students. Although not examined in our study, the relationship between the age at which students start smoking and the habits of their families can be studied. The temporal change of cigarette use can be compared with the factor of family members setting an example.

This research has some limitations. The important limitations of the study are that the data were collected only from students in one medical school and the participation rate was not very high; especially in the 4th and 5th terms, the participation rate was low compared to the others. In addition, the data were collected online. There may be students who cannot answer questions due to lack of internet connection and other problems. Still another limitation is that the data is based on student self-statements only, it was not possible to verify the data from multiple sources. Despite these, our study provided the opportunity to highlight important points about smoking among medical students. It is recommended that similar studies on the subject be carried out in the future by overcoming the above-mentioned limitations.

## Conclusion

In this study, it was determined that approximately 30% of medical students have smoked in some way. The most prioritized reasons for starting smoking were identified as stress, friend influence and curiosity. Price increases and indoor smoking bans were

determined as the most effective practices for quitting smoking in the community. However, it is understood that public spots and warnings on cigarette packages have not brought about the expected effect. The prevalence of smoking was found to be

higher in those who started smoking in the pre-university period, among males, and in those living alone or with a friend. It is recommended to increase education on smoking and its harms in pre-

undergraduate education, and to provide students with awareness training on choosing good friends, coping effectively with stress and harmful habits.

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