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Journal of Family Medicine & Community Health

Research Article

Medical and Nursing Students' Smoking Habits, Nicotine Dependence Levels, and Contributing Factors

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Submitted: 06 June 2015

Accepted: 24 June 2015

Published: 26 June 2015

Keywords
- Smoking
- Fagerstrom Test for Nicotine Dependence
- Medical students
- Nursing students

Abstract

Background: Smoking is one of the world's most prevalent and serious psycho-social problems, one that leads to addiction and is damaging to personal health.

Objectives: The study was performed descriptively in order to determine medical and nursing students' smoking habits, levels of nicotine dependence and the factors that contribute to their smoking.

Methods: The study participants were 741 students from Ege University's Faculty of Nursing and Medicine. The research data were gathered using questionnaires and the Fagerstrom Test for Nicotine Dependence.

Results: It was determined that 25% of medical and nursing students participated in survey were smoking. It was determined that 18% of female students and 40% of male students were smokers. Significant correlations were found between male gender, older age, medical students, low school performance and smoking habits (p=0.000, p=0.050, p=0.006, p=0.011, respectively). Of the students who smoke, 71% were found to have low nicotine dependence levels, 10% had moderate levels and 19% had high levels of nicotine dependence. The study identified statistically significant correlations between nicotine dependence levels and age, years of study, and the smoking habits of both family and friends (p=0.002, p=0.038, p=0.005, p=0.007, respectively).

Conclusions: The percentage of smokers among nursing and medical students, the health care professionals of the future, was found to be high.

INTRODUCTION

Smoking is one of the world's most prevalent and serious psycho-social problems, one that leads to addiction and is damaging to personal health. Today, while in most developed countries smoking rates are falling, cigarette consumption in developing countries is increasing [1-4].

Health care professionals have a major role in the struggle against cigarettes and the protection and enhancement of personal health. The contribution of nurses and physicians to the struggle against cigarettes is substantial; however, the smoking habit is reported to be quite widespread among this group [5-8]. The research of Talay, *et al.,* (2007) showed that nonsmoker physicians advise their patients to quit smoking more often than physicians who smoke [9]. It has been reported that nurses and physicians are unwilling to explain the effects of the smoking addiction to their patients [9,10]. One of the important causes of this unwillingness is cigarette use by physicians and nurses. The countries that have reduced smoking most are those with the lowest percentages of smokers among their health care professionals [11].

In general, the prevalence of smokers among students of medical and nursing vary by country and the duration of studies. To be able to fight with cigarette, first of all, medical and nursing students who will be the medical staff of future must be sufficiently informed regarding the harm caused by cigarettes and the diseases associated with them, furnished with the techniques and supplies needed to break this addiction and imbued with the responsibility to take an active role in the fight against cigarettes [1,3,5]. The World Health Organization's measures

to control cigarette use include recommending the permanent and regular monitoring of smoking by some professional groups (nurses, physicians) due to their professional responsibilities and social roles [2]. In studies performed in our country, it has been determined that 18% of nursing students smoke and are mildly addicted to nicotine, while 30% of medical students are smokers [5,12]. In general, the prevalence and distribution of smokers among students of health sciences vary by country and the duration of studies. For an effective struggle against cigarette, it is important to know about future medical professionals' cigarette addictions and their attitudes toward smoking.

This study aims to examine and describe medical and nursing students' smoking habits, their levels of nicotine dependence and the factors that contribute to their smoking.

MATERIALS AND METHODS

Study design and sample

The study was performed as a descriptive and correlational design in a university in Izmir, Turkey. The studies were enrolled from the medical school 4, 5, 6 classes and the nursing faculty 1, 2, 3, 4 classes. There were a total of about 1500 students at the two faculties. Of them 741 students (50%) were volunteered to participate in the study. This sample included 348 students from the Nursing Faculty and 393 students from the Faculty of Medicine.

Tools

Data were gathered using questionnaires and the Fagerstrom Test for Nicotine Dependence. The questions in the questionnaire were prepared by considering the relevant literature [2-4,6,12]. Introductory information was collected in first part of the three part questionnaire with 10 questions to be completed by all the students (age, gender, economic situation, etc.). The second part asked 20 questions about smoking to determine the attitudes and behaviors of only those students who were smokers (their age when they started smoking, number of cigarettes smoked daily, reason for starting to smoke, etc.). In the third part, the Fagerstrom Test for Nicotine Dependence was used to measure nicotine dependence levels (6 questions). The study used the criterion of smoking a minimum one cigarette per day to identify smokers. The Fagerstrom Test for Nicotine Dependence was developed by Karl O. Fagerstrom in order to determine the physical dependence levels of cigarette addicts. The Fagerstrom Test for Nicotine Dependence consists of 6 questions. These questions are not open-ended. As long as smoking dependence increases, scores on a scale of 0-10 also increase. Those with scores of less than 5 are defined as slightly dependent, those who score 5 or 6 are defined as moderately dependent and those who score 7 or more are defined as highly dependent. The Fagerstrom Test for Nicotine Dependence has been used in many studies [1,12] and this test is also used by many cigarette quitting programs in polyclinics.

Prior to the implementation the students were given information about the study. Answering the questionnaire took approximately 20 min.

Statistical analyses

The data were assessed by number, percentage, and average and chi-square analysis using SPSS 15.0 software.

Ethical approval

The study was approved in situ by the Ege University Faculty of Medicine and High School of Nursing's ethics committee, and the verbal approval of the students who participated in the study was also given.

RESULTS

Our study determined that 25.1% of the 741 nursing and medical students who participated in the study were smokers. It was observed that 18% of female students and 40% of male students were smokers, and that there was a statistically significant correlation between male gender and smoking (X^2=10.02, p=0.000). This study found that 30.4% of the students above 24 years of age were smokers, a higher percentage than other age groups, and a statistically significant correlation was found between age and smoking (X^2=5.98, p=0.050). It was determined that 71% of medical students were not smokers, while 29% of them were smokers. Only 20.7% of the nursing students were smokers, and a statistically significant correlation was found between the two groups (X^2=6.76, p=0.006). It was established that 40.7% of students with poor academic performance were smokers, more than those with good and average school performance, and that there was a statistically significant relationship between these groups (X^2=9.04, p=0.011). This study also determined that sixth year students (30.9%), students whose families live in urban centers (25.8%), those with families of low economic status (30.6%), and those residing in dormitories (26.7%) smoked more than other groups, but it was not found that these relationships were statistically significant (p>0.05) (Table1).

This study determined that the average age of students who smoke was 22.82±1.95, and the average age when smokers began smoking was 15.35±7.43. Smoker had been smoking for an average of 3.68±2.99 years, and the number of cigarettes smoked daily was 10.29±9.31.

It was determined that 53.5% of students began smoking due to curiosity and a desire to imitate others, 48.7%, under the influence of friends. Of the students who smoke, 42.5% stated that they continued to smoke for pleasure and 36.9%, to reduce stress; 30.5% said that increased cigarette prices, and 27.5% said that expanding prohibitions could affect their decision to give up smoking (Table 2).

Our study established that 63.8% of students who smoke had at least one family member and 77.3% of them had close friends who smoke. Of the students who smoke, 28.6% reported having forgone other needs in order to buy cigarettes, 64.4% of them did not want his/her future spouse to smoke, 3.2% of them said they would continue to smoke during pregnancy, and 63.8% were afraid of gaining weight if they quit smoking. It was established that 68.6% of students thought about quitting smoking, and 61.2% had tried to quit smoking at least once (Table 3).

It was found that 71% of 186 students had low levels; 10%,

Table 1: Characteristics of the students of according to their smoking habits.

Characteristics	Nonsmoker		Smoker		X^2	P-value
	n (555)	%	n (186)	%		
Gender						
Female	414	82.0	91	18.0	10.02	**0.000**
Male	141	59.7	95	40.3		
Age						
≤21	197	79.8	50	20.2	5.98	**0.050**
22-23	225	74.3	78	25.7		
≥ 24	133	69.9	58	30.4		
School						
Medical	279	71.0	114	29.0	6.76	**0.006**
Nursing	276	79.3	72	20.7		
Year of Study						
1	60	83.3	12	16.7	27.99	0.197
2	60	70.6	25	29.4		
3	183	77.9	52	22.1		
4	116	74.4	40	25.6		
5	33	75.0	11	25.0		
6	103	69.1	46	30.9		
Academic performance						
High	239	79.9	60	20.1	9.04	**0.011**
Middle	300	72.3	115	27.7		
Low	16	59.3	11	40.7		
Family residence						
City	331	74.2	115	25.8	0.36	0.832
Town	165	76.4	51	23.6		
Village	59	74.7	20	25.3		
Economic status of family						
Upper	20	74.1	7	25.9	0.61	0.735
Middle	510	75.2	168	24.8		
Lower	25	69.4	11	30.6		
Accommodation						
At home	126	74.6	43	25.4	2.46	0.291
At dormitory	304	73.3	11	26.7		
With the family	125	79.6	32	20.4		

Table 2: Students' smoking habits (n=186).

Features	n	%
*__Started smoking due to__		
Unanswered	30	15.7
Curiosity/Desire to imitate others	99	53.5
Influence of friends	92	48.7
In response to the family	13	7.0
Other	30	16.2
*__Continued smoking due to__		
Unanswered	29	12.4
Pleasure	99	42.5
Reducing stress	86	36.9
Increasing concentration while studying	12	5.2
Preventing weight gain	7	3.0
*__What might cause you to quit smoking__		
Increase in cigarette prices	62	30.5
Expanding prohibitions	55	27.5
Smoking addiction treatment clinics	39	19.5
No force can prevent me from smoking	38	18.9
Other	7	3.6

*Multiple answers were given to this question

Table 3: Distribution students' smoking habits and other features (n=186).

Features	Yes		No	
	n	%	n	%
Is there a smoker in the family?	118	63.8	38	20.5
Do you have close friends who smoke?	143	77.3	13	7.0
Have you gone without other needs to buy cigarettes?	53	28.6	103	55.7
Do you want to your wife/husband to smoke?	35	18.9	121	65.4
Will you smoke during pregnancy?	6	3.2	150	81.1
Do you fear you will gain weight if you quit smoking?	38	20.5	118	63.8
Have you thought about quitting smoking?	127	68.6	29	15.7
Have you tried to quit smoking?	114	61.6	42	22.7
30 students did not respond to questions				

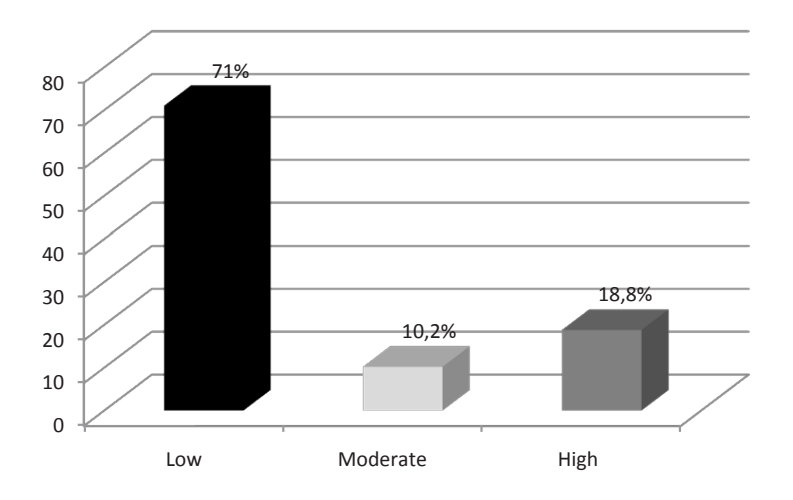

Figure 1 Level of nicotine dependence of the students.

Table 4: Level of nicotine dependence according to students characteristics (n=186).

Characteristics	Low level of dependence		Moderate level of dependence		High level of dependence		Total		P-value
	n	%	n	%	n	%	n	%	
Gender									
Female	67	73.6	7	7.7	17	18.7	91	48.9	p =0.525
Male	65	68.4	12	12.6	18	18.9	95	51.1	X^2=1.28
Age									
≤21	42	84.0	1	2.0	7	14.0	50	26.9	**p=0.002**
22-23	59	75.6	10	12.8	9	11.5	78	41.9	X^2**=**17.29
≥ 24	31	53.4	8	13.8	19	32.8	58	31.2	
School									
Nursing	54	75.0	3	4.2	15	20.8	72	38.7	p=0.094
Medical	78	68.5	16	14.0	20	17.5	114	61.3	X^2=4.73
Grade									
1-2-3	69	77.5	4	4.5	16	18.0	89	47.8	**p=0.038**
4-5-6	63	64.9	15	15.5	19	19.6	97	52.2	X^2=6.56
*Smoker in the family									
Yes	77	65.3	14	11.9	27	22.9	118	63.4	**p=0.005**
No	25	65.8	5	13.2	8	21.1	38	20.4	X^2=14.73
*Smoker in the friends									
Yes	91	63.6	19	13.3	33	94.3	143	76.9	**p=0.007**
No	11	84.6	-	-	2	5.2	13	7.0	X^2=17.80
*30 students did not respond to questions									

moderate levels, and 19%, high levels of nicotine dependence (Figure 1).

The study found that students 24 years of age and older, fourth, fifth and sixth year students, and students whose families and friends smoke had high levels of nicotine dependence, and there were statistically significant correlations between these groups and nicotine dependence (X^2=17.29, p=0.002; X^2=6.57, p=0.038; X^2=14.73, p=0.005; X^2=17.81, p=0.007, respectively). No significant correlations were found between gender, school standing and levels of smoking addiction (p>0.05) (Table 4).

DISCUSSION

The study surveyed 348 nursing and 393 medical students, and was conducted in order to determine their smoking habits, nicotine dependence levels and the factors affecting these. Our study found that 25.1% of nursing and medical students were smokers. Other studies performed with similar groups in our country have reported percentages of 18-42% smokers [2,6,12-15]. In a survey of medical students in 31 countries, it was found that 20% of the students were smokers [16]. It has been reported that the percentage of university students who smoke varies between 28-60% in other departments [17-21]. Health students smoke less than students in other departments. However, while this group's percentage of smokers is lower than that of other groups in Turkey, this percentage is higher than that of other countries.

Our study found that male students who are 24 years of age or older and students studying in the Faculty of Medicine smoke more, and this result was found to be statistically significant. It is known that the percentage of smokers is higher among males than females, and many studies report similar results [6,12,13,21-23]. It has been reported that the percentage of smokers varies with age [6,22,24]. It is notable that a larger percentage of our survey's students who smoke have low academic performance. Others report similarly that the academic performance of students who smoke is lower than that of nonsmokers [20].

We have seen that the average age of students who smoke was 22.82±1.95, and the average age when smokers began smoking began was 15.35±7.43. According to these findings, the smoking addiction begins during secondary education and high school. Other surveys report similar findings [2,12,15,25]. This may be caused by some of the particularities of adolescence: the influence of friends, belonging to peer groups and the need to find acceptance. In our study, it was found that number of cigarettes smoked daily was 10.29±9.31. Similar studies indicate that students smoke 1-15 cigarettes a day [2,15,26].

Half of the students stated that their reasons for beginning to smoke were curiosity, a desire to imitate others and the influence of friends. In Azak's survey (2006), it was reported that environment/circle of friends (46%), imitation and enjoyment (43%) influenced people to start smoking [2]. Similar results are seen in the studies performed in our country [11,12,19]. Almost half of the students stated that they continued to smoke because it gives them pleasure. One study showed that, among the reasons that students keep on smoking, habit was largely responsible [2]. This result is not surprising due to the biochemical and psychosocial effects of cigarette use caused by nicotine.

Half of the students reported that excessive increases in cigarette prices would lead them to give up smoking. In similar studies, measures such as expanding prohibitions, increasing cigarette prices, banning the sale of cigarettes to minors, banning cigarettes from films, and cigarette pack warnings that go beyond "smoking is harmful to your health" to specify precisely which diseases are linked to smoking, etc., are recommended as effective [2,11].

Our study observed that smoking leads students to some negative behaviors (giving up on other needs to buy cigarettes, the desire to smoke during pregnancy, the fear of gaining weight due to quitting cigarettes). This shows that smoking takes precedence in these students' lives. However, although students may be smokers, it is interesting that most of them do think of quitting smoking and do not want their spouse to smoke. Our survey determined that most of the students think about giving up smoking and have tried to quit smoking at least once. These results are similar to those of many other studies [2,12,19]. One study reported that medical students' attempts to quit were affected by conditions such as anxiety, low motivation, personality traits, depression and weight gain [27,28]. Students consider giving up smoking, but do not have sufficient motivation and persistence.

Our study determined that most of the students were low level cigarette addicts, but it is an important finding that 18.8% were nicotine dependent. Çapık and Özbıçakçı's study (2007) determined that 76% of nursing students were slightly dependent, which is similar to our results [12]. In the study of Patkar, *et al.,* (2003), it was reported that cigarette dependence levels of nursing students were low [1]. It is interesting that this group of future health professionals has considerable nicotine dependence. The struggle against cigarettes requires us to determine and consider nicotine dependence levels.

This study showed that students 24 years of age and older, and fourth, fifth and sixth year students whose families and friends smoke had high levels of nicotine dependence. Similarly, the survey of Tamaki, *et al.,* (2010) reported significant correlations between male gender and age (25-29) and nicotine dependence levels [22]. Although cigarette addiction is seen prevalently among males, its influence increases among females with each passing day. Smoking by family members and the close friends of students who smoke has an important influence on their decision to start and continue smoking. Studies show that if any member of their families smokes the smoking behaviors of students will be significantly higher [17,19]. It is thought that the determination of smokers' characteristics is an important step in the struggle against cigarettes.

CONCLUSIONS

As a result, students being trained for the health care professions are the most important target groups in the struggle against cigarettes.

Our study found that 25.1% of nursing and medical students were smokers, and that there are statistically significant correlations between demographical features, age, and gender, year of study, academic performance and cigarette smoking. It was determined that 19% of these students are high levels of

nicotine dependence, and that there are statistically significant correlations between age, year of study, the smoking habits of family and friends and nicotine dependence levels.

REFERENCES

1. Patkar AA, Hill K, Batra V, Vergare MJ, Leone FT. A comparison of smoking habits among medical and nursing students. Chest. 2003; 124: 1415-1420.
2. Azak A. Saglik memurlugu ögrencilerinin sigara kullanimini etkileyen faktörler. Toraks Dergisi. 2006; 7: 120-124.
3. Ljubicic D, Schneider NK, Vrazic H. Attitudes and knowledge of third year medical students in Croatia about tobacco control strategies: results of the Global Health Professionals Pilot Survey in Croatia, 2005. Public Health. 2008; 122: 1339-1342.
4. Lam TS, Tse LA, Yu IT, Griffiths S. Prevalence of smoking and environmental tobacco smoke exposure, and attitudes and beliefs towards tobacco control among Hong Kong medical students. Public Health. 2009; 123: 42-46.
5. Ögüs C, Özdemir T, Kara A, Senol Y, Çilli A. Akdeniz Üniversitesi Tip Fakültesi dönem I ve VI ögrencilerinin sigara içme aliskanliklari. Turkiye Klinikleri Arch Lung. 2004; 5: 139-142.
6. Çaliskan D, Çulha G, Sarisen Ö, Karpuzoglu S, Tunçbilek A. Ankara Üniversitesi Tip Fakültesi ögrenci ve çalisanlarinin sigara içme durumu ve etkili faktörler. Ankara Üniversitesi Tip Fakültesi Mecmuasi. 2005; 58: 124-131.
7. Kutlu R, Çivi S. Konya ili lise ögretmenlerinin sigara içme sikligi ve etkileyen faktörler. TAF Prev Med Bull. 2007; 6: 273-278.
8. Aslan D, Bilir N, Özcebe1 H, Stock, C, Küçük N. Prevalence and determinants of adolescent smoking in Ankara, Turkey. Turk J Cancer. 2006; 36: 49-56.
9. Talay F, Altin S, Cetinkaya E. [The smoking habits of health care workers and their approach to smoking in Gaziosmanpaşa and Eyüp counties of Istanbul]. Tuberk Toraks. 2007; 55: 43-50.
10. Erbaycu AE, Aksel N, Çakan A, Özsöz A. Izmir ilinde saglik çalisanlarinin sigara içme aliskanliklari. Toraks Dergisi. 2004; 5: 6-12.
11. Mayda AS, Tufan N, Bastas S. Düzce Tip Fakültesi ögrencilerinin sigara konusundaki tutumlari ve içme sikliklari. TSK Koruyucu Hekimlik Bülteni. 2007; 6: 364-370.
12. Çapik C, Özbiçakci S. Hemsirelik yüksekokulu ögrencilerinin sigara bagimlilik düzeyleri ve etkileyen etmenler. Uluslararasi Insan Bilimleri Dergisi. 2007; 4: 1-12.
13. Kocabas A, Burgut R, Bozdemir N, Akkoçlu A, Çildag O, et al. Smoking patterns at different medical school in Turkey. Tob Control. 1994; 3: 228-235.
14. Metintaş S, Sariboyaci MA, Nuhoğlu S, Metintaş M, Kalyoncu C, Etiz S, et al. Smoking patterns of university students in Eskişehir, Turkey. Public Health. 1998; 112: 261-264.
15. Akvardar Y, Aslan B. Dokuz Eylül Üniversitesi Tip Fakültesi dönem II ögrencilerinde sigara, alkol, madde kullanimi. Bagimlilik Dergisi. 2001; 2: 49-52.
16. Warren CW, Jones NR, Chauvin J, Peruga A; GTSS Collaborative Group. Tobacco use and cessation counselling: cross-country. Data from the Global Health Professions Student Survey (GHPSS), 2005-7. Tob Control. 2008; 17: 238-247.
17. Alexopoulos EC, Jelastopulu E, Aronis K, Dougenis D. Cigarette smoking among university students in Greece: a comparison between medical and other students. Environ Health Prev Med. 2010; 15: 115-120.
18. Han MY, Chen WQ, Chen X. Do smoking knowledge, attitudes and behaviors change with years of schooling? A comparison of medical with non-medical students in China. J Community Health. 2011; 36: 966-974.
19. Telli Gündüz C, Solak Aytemur Z, Özol D, Sayiner A. Üniversiteye baslayan örgencilerin sigara içme aliskanliklari. Solunum. 2004; 6: 101-106.
20. Tot S, Yazici K, Ertekin Yazici A, Erdem P, Bal N, et al. Mersin Üniversitesi ögrencilerinde sigara ve alkol kullanim yayginligi ve iliskili özellikler. Anadolu Psikiyatri Dergisi. 2002; 3: 227-231.
21. Pederson LL, Koval JJ, Chan SS, Zhang X. Variables related to tobacco use among young adults: are there differences between males and females? Addict Behav. 2007; 32: 398-403.
22. Tamaki T, Kaneita Y, Ohida T, Yokoyama E, Osaki Y, Kanda H, et al. Prevalence of and factors associated with smoking among Japanese medical students. J Epidemiol. 2010; 20: 339-345.
23. Temel A, Dilbaz N, Bayam G, Okay T, Sengül C. Bir egitim hastanesinin saglik personelinde sigara aliskanligi, birakma sikligi ve bagimli kisilik özelliklerinin iliskisi. Bagimlilik Dergisi. 2004; 5: 16-22.
24. Thomas JL, Patten CA, Decker PA, Croghan IT, Cowles ML, Bronars CA, et al. Development and preliminary evaluation of a measure of support provided to a smoker among young adults. Addict Behav. 2005; 30: 1351-1369.
25. Ünlü, M. Orman A, Altug Sen T, Dogan N, Tuncer GZ. Factors affecting the cigarette smoking habits among students in Afyon-Turkey. Akciger Arsivi. 2004; 1: 15-19.
26. Rapp K, Büchele G, Jähnke AG, Weiland SK. A cluster-randomized trial on smoking cessation in German student nurses. Prev Med. 2006; 42: 443-448.
27. Botelho C, Silva AM, Melo CD. Smoking among undergraduate health sciences students: prevalence and knowledge. J Bras Pneumol. 2011; 37: 360-366.
28. Müller-Lissner SA, Kamm MA, Scarpignato C, Wald A. Myths and misconceptions about chronic constipation. Am J Gastroenterol. 2005; 100: 232-242.

Cite this article

Arslan FT, Aksit S, Başbakkal Z (2015) Medical and Nursing Students' Smoking Habits, Nicotine Dependence Levels, and Contributing Factors. J Family Med Community Health 2(4): 1043.