ORIGINAL ARTICLE

Level of Smoking Addiction and Affecting Factors in Nursing Students

Hemşirelik Öğrencilerinin Sigara Bağımlılık Düzeyi ve Etkileyen Faktörler

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ABSTRACT

Aim: This study aims to determine the smoking and nicotine addiction levels and their affecting factors among nursing students.

Materials and Methods: The study was conducted between November and December 2019, with 247 nursing students who agreed to participate in the study. The data were collected using an introductory information form and the Fagerström test for nicotine dependence. The data were evaluated using the chi-square test, one of the descriptive and univariate analyses, and analyzed using the Statistical Package for the Social Sciences 20.0 software.

Results: Of the nursing students, 61.9% were female. The males (38.3%) had higher levels of smoking than the females. Those aged 21 years and above (12.1%) had higher levels of smoking than those between 17-20 years of age (p<0.05). In addition, the first-year students (8.0%) had lower levels of smoking than other students. Cigarette use was lower in nursing students who knew the harms of smoking (18.6%) compared to those who did not know (p<0.05). It was higher in those who had retaken a failed course and in those who had a smoker in their family (25.3%) or friend circle (24.9%) (p<0.05). Education and other smoking characteristics had no effect on smoking status (p>0.05). Of the nursing students who smoked, 92.9% had a very advanced level of nicotine addiction.

Conclusion: Smoking status is negatively affected by being male, age, retaking a failed course, having a friend who is a smoker, having a smoker in the family, and considering smoking as harmless to health.

Keywords: Nursing students, smoking, nicotine, tobacco

ÖZ

Amaç: Çalışmanın amacı üniversite öğrencilerinin sigara kullanımı ve nikotin bağımlılık düzeylerini belirlemek, sigara kullanımında ve nikotin bağımlılığında etkili olan faktörleri ortaya koymaktır.

Gereç ve Yöntem: Araştırma Kasım-Aralık 2019 tarihleri arasında bir üniversitenin hemşirelik bölümünde öğrenim gören ve çalışmaya katılmayı kabul eden 247 hemşirelik öğrencisi ile yürütülmüştür. Verilerin toplanmasında tanıtıcı bilgi formu, Fagerström nikotin bağımlılık testi kullanılmıştır. Araştırmada tanımlayıcı analizler ve tek değişkenli analizlerden ki-kare testi uygulanmıştır. Veri analizinde Statistical Package for the Social Sciences 20.0 istatistik paket programı kullanılmıştır.

Bulgular: Araştırmaya katılanların %61,9'u kadındı. Erkek cinsiyette sigara kullanım düzeyi %38,3 ile kadın cinsiyetten; 21 yaş ve üzeri grupta ise %12,1 ile 17-20 yaş aralığındaki öğrencilerden daha yüksekti (p<0,05). Sigara kullanımı oranı birinci sınıf öğrencilerinde %8,0 ile diğer sınıflardaki öğrencilerden, sigaranın zararlarını bilenlerde %18,6 ile bilmeyenlerden daha düşüktü (p<0,05). Alttan dersi olanlarda, ailesinde (%25,3) ve arkadaş çevresinde (%24,9) sigara kullanımının mevcut bulunduğu kişilerde sigara kullanımı daha yüksek bulundu (p<0,05). Eğitim ve sigara içmeye ait diğer özelliklerin sigara kullanım durumu üzerinde etkisi bulunmamaktadır (p>0,05). Sigara kullanan öğrencilerin %92,9'unda çok ileri düzeyde nikotin bağımlılığı bulunmaktadır.

Sonuç: Sigara kullanım durumunu erkek olma, yaş, başarısızlığa bağlı ders tekrar etme, arkadaş çevresinde sigara kullanımı, ailede sigara kullanan bireylerin varlığı, sigaranın sağlığa zarar vermeyeceğini düşünme gibi faktörler olumsuz yönde etkilemektedir.

Anahtar Kelimeler: Hemşirelik öğrencileri, sigara, nikotin, tütün

INTRODUCTION

The behavior of smoking is affected by genetic, neurobiological, demographic, and psychological factors. Childhood experiences can cause this behavior[1,2]. Addiction refers to physiological, cognitive, and behavioral changes that occur after repeated substance use[3]. Nicotine relieves stress and causes a feeling of pleasure. By quitting smoking, dopamine levels decrease, and the desire to smoke appears[4,5]. Most smokers are trying to cope with stress. As stress causes acid production, nicotine withdrawal symptoms occur in the body[2].

Tobacco addiction, which is a social problem, causes the death of one person every six seconds worldwide. In addition, more than 600,000 non-smokers die every year due to passive smoking. There are 1.1 billion tobacco users in the world, and this number is expected to reach 1.6 billion in the next 20 years. Smoking causes lung and heart diseases, sudden death syndrome in infancy, and miscarriage in pregnant women[4,6,7]. However, the prevalence of smoking still increases even though people know its harmful effects. If relevant measures are not taken, the number of smoking-induced deaths is estimated to exceed 10 million by 2030[8,9].

Tobacco use in individuals aged 15 years and over was 26.5% in 2016 and 28% in 2019 in Turkey. The rate of tobacco use by women was 13.3% in 2016 and 14.9% in 2019; 14.9% of women use tobacco every day[10,11]. According to TURKSTAT (2019) data, daily cigarette use by individuals aged 15-24 years has increased to 18.1%[11]. World Health Organization (2018) reported the rate of smoking in males over 15 years of age as 35.6% in France, 33.7% in Japan, 33.1% in Germany, and 41.1% in Turkey[12]. TURKSTAT (2019) reported "peer influence" as the most common cause of starting to smoke in those over the age of 15 years[11].

Smoking in young people is facilitated and reinforced by certain factors such as individual's age, income, acculturation, stress, and environmental factors including tobacco advertising and ease of purchase of tobacco products[13-15]. Starting and continuing to smoke cigarettes in adolescence arises from wanting to feel appreciated, fitting in socially, and through the influence of friends[16].

A person's university years are a period of rapid life changes, new friendships, and social sharing. University students may struggle with several problems accompanying these new life changes and being away from family and relatives[16]. There are several studies on the smoking addiction of university students[17,18]. However, this study is on those students who have a low level of income and need qualified health practices the most[19]. This study aimed to determine the smoking and nicotine addiction levels and affecting factors in nursing students.

MATERIALS AND METHODS

Type of Study

This is a descriptive study.

Place and Time of Study

The study was conducted with nursing students at a university in Turkey between November and December 2019. The sample size was aimed to include 260 nursing students. However, 247 nursing students who were in the nursing faculty during the course of the study and who agreed to participate were included in the study.

Study Inclusion Criteria

Nursing students who did not have any sensory, mental, or physical disabilities or communication problems and signed the informed consent form were included in the study.

Data Collection Tools

The data were collected using a structured questionnaire form prepared by the researcher in line with the literature and the Fagerström test for nicotine dependence (FTND)[20].

Structured Questionnaire Form

The form included questions about nursing students' socio-demographic and family characteristics, university education, and smoking status.

Fagerström Test for Nicotine Dependence

The FTND is used in smoking cessation clinics[21,22]. It was developed by Fagerstrom et al.[23] (1992) and it consists of six questions. There are 2 or 4 answer options for the questions. Three of the questions are in the form of yes-no, and they have two answer options. Point value is zero or one. Three of them are in the form of multiple choice answers, they have four answer options and the point value is between zero and three. As the level of addiction to cigarette increases, the score obtained from the test also increases. The highest score that can be obtained from the test is 10, and the lowest score is 0.24. The FTND scoring is evaluated as low (0-4 points), medium (5-6 points), high (7-8 points) and very high (9-10 points)[24]. The Turkish validity and reliability study of the FTND was performed by Uysal et al.[20] (2004), who found it moderately reliable. The Cronbach's alpha coefficient of the scale was determined as 0.56[20].

Research Variables

The dependent variable was the level of smoking. The independent variables were gender, age, family type, education and employment status of parents, place of residence during university education, grade, status of retaking a failed course,

smoking of family and friends, and the status of knowing the harmful effects of smoking.

Statistical Analysis

The data were evaluated using s descriptive analysis (number, percentage, mean, standard deviation) and chi-square test and then analyzed using the Statistical Package for the Social Sciences 20.0 statistical program. The researchers covered all research expenses. A p value less than 0.05 was considered statistically significant.

Data Collection

The data were collected in the classroom environment by face-to-face interview technique. It was collected within 15-20 minutes. Before starting to collect data, students were informed about the research.

Ethical Considerations

For conducting the study, ethical approval (decision no: E.17798, date: 25.12.2019) was obtained from the Non-Interventional Ethics Committee of the Muş Alparslan University and written permission from the institution where the study was conducted. In addition, an Informed Consent Form was received from nursing students who agreed to participate in the study. Confidentiality of the data was ensured.

RESULTS

Of the nursing students, 61.9% were female, 50.2% were between 17 and 20 years old, 23.1% had extended family, and 31.6% had an income less than their expenses. 49.0% of their fathers and 2.0% of their mothers were employed, and 73.3% of their mothers, and 31.6% of their fathers were illiterate or did not go to school. The males (38.3%) had higher levels of smoking than the females. The students aged 21 years and above (12.1%) had higher levels of smoking than those aged 17-20 years (p<0.05). Other socio-demographic variables had no effect on the level of smoking (p>0.05) (Table 1).

62.8% of the nursing students lived in dormitories during their university education, 35.2% were first year students, 33.6% retook a failed course, 83.0% had smokers in their circle of friends, 67.2% had smokers in their families, and 95.5% knew the harmful effects of smoking (Table 2).

The first year students (8.0%) had lower levels of smoking than those who returned back to school. Cigarette use was lower in nursing students who knew the harms of smoking (18.6%) compared to those who did not know (p<0.05). It was higher in those who retook a failed course and in those who had a smoker in their families (25.3%) or friend circle (24.9%) (p<0.05) (Table 2).

The rate of smoking in nursing students was 20.6%. Of the smokers, 54.9% started smoking in high school and 23.5% in university; 43.1% started smoking to prove themselves adults, 56.9% smoked in stressful situations, and 44.2% did not want to quit smoking (Table 3).

The average FTND score of the nursing students was 12.7±2.6. Of the smokers, 92.9% had a very advanced level of nicotine addiction.

DISCUSSION

University years are one of the most critical periods when individuals start to smoke. This study was conducted in a region where students live mostly in dormitories and have insufficient income. Smoking nursing students reported to have started smoking most frequently during high school years, followed by university years. The age of smoking is gradually decreasing throughout Turkey[25].

Most of the cigarette addicted-adults started smoking before the age of 18 years[6,15,26]. Studies have determined that the age of starting to smoke decreases as low as 13 years[1,27]. This shows that smoking can begin in childhood and that although the sale of tobacco is prohibited, it is easily accessible for children. People who start smoking in childhood become addicted during their university years. Our study found the level of smoking in nursing students as 20.6%. Several studies found the smoking rate ranging from 12.3% to 30.0% in Turkey[1,25,28,29]. Comparable results have been observed in other countries; smoking levels of nursing students in countries such as France, the USA, Spain, and Australia vary between 22.9% and 30.4%[30,31].

In the present study, smoking nursing students started smoking most frequently to prove themselves adults. Studies report that individuals start smoking due to several reasons such as lack of family support, school problems, loneliness, influence from a friend, and curiosity[10,27,30]. In the present study, other reasons for starting smoking in nursing students were academic stress, wanting to be like friends, curiosity, and the presence of smokers in the family. Showing themselves as grown-ups, adapting to their social-school environment, and attracting attention were some of the reasons why these nurses started smoking, many of whom were young when they began[32-35].

In many societies, smoking is a socially accepted behavior in men. The tobacco industry aims to increase men's cigarette consumption by turning this social acceptance into an opportunity. Several studies found higher levels of smoking in males than in females[36-38]. Our study also found higher levels of smoking in male nursing students than in female ones. In recent years, the smoking habit among women has increased rapidly. This is associated with women's more active participation in social life due to their university education. The new target audience of the tobacco industry, which considers that men's cigarette consumption has reached the desired level, has become women. Therefore, tobacco companies have increased their marketing activities encouraging women to start smoking[38].

Table 1. Distribution of sociodemographic variables by smoking status							
	Status of smoking						
	Yes		No				
Characteristics	N	%**	N	%**	%*	χ²	P
Sex							
Female	15	9.8	138	90.2	61.9		
Male	36	38.3	58	61.7	38.1	27.14	**<0.01**
Age							
17-20 years	15	12.1	109	87.9	50.2		
21 years and above	36	29.3	87	70.7	49.8	10.08	**<0.01**
Type of family							
Extended	14	24.6	43	75.4	23.1		
Nuclear	37	19.5	153	80.5	76.9	0.417	0.52
Income level							
Low	11	14.1	67	85.9	31.6		
Balanced	34	22.5	117	77.5	61.1		
High	6	33.3	12	66.7	7.3	4.129[a]	0.13
Father's employment status							
Employed	25	20.7	96	79.3	49.0		
Unemployed	26	20.6	100	79.4	51.0	0.00	1.00
Mother's employment status							
Employed	0	0.0	5	100.0	2.0		
Unemployed	51	21.1	191	78.9	98.0	***	0.59
Mother's education level							
Does not know Turkish	6	24.0	19	76.0	10.1		
Illiterate	17	17.0	83	83.0	40.5		
Literate	13	23.2	43	76.8	22.7		
Primary school	6	17.1	29	82.9	14.2		
Secondary school	8	30.8	18	69.2	10.5		
High school	1	20.0	4	80.0	2.0	3.098[a]	0.69
Father's education level							
Literate	18	23.1	60	76.9	31.6		
Primary school	9	18.0	41	82.0	20.2		
Secondary school	10	16.9	49	83.1	23.9		
High school	10	23.3	33	76.7	17.4		
University and above	4	23.5	13	76.5	6.9	1.252[a]	0.87

*Column percentage, **Row percentage, ***Fisher's chi-square test, ****The group causing the difference, [a]Chi-square test value

Age also affects smoking. In this study, the level of tobacco use increased as the age of nursing students increased. Changes in the social environment and increased stress due to age increase smoking rates[39]. Moreover, after reaching a certain age, it becomes difficult for individuals to quit this habit[26]. As the nursing students progress in their studies, differences in smoking behaviors for the different years of study occur. Studies have shown that senior nursing students are more likely to be smokers[24,40-42]. The present study found the smoking level lower in first-year nursing students than in other classes. This result suggests that health education does not change nursing students' unhealthy habits; as their grade progressed, their tendency to smoke increased. An increased number of people with bad habits like smoking and alcohol use due to extended social circles of higher-year students is effective in smoking behaviors[39]. In particular, the stress of graduation and finding a job increases smoking, especially in senior nursing students.

Having a failed course and low academic success has a significant effect on the stress of nursing students, increasing their tendency to smoke. Our study found higher smoking habits in nursing students who retook a failed course than

Table 2. Distribution of education and smoking variables by smoking status

| Characteristics | Status of smoking | | | | | | |
| | Yes | | No | | | | |
	N	%**	N	%**	%*	χ²	p
Place of residence							
House	9	33.3	18	66.7	10.9		
Dorm	26	16.8	129	83.2	62.8		
Family home	16	24.6	49	75.4	26.3	4.669ᵃ	0.09
Year							
1. year****	7	8.0	80	92.0	35.2		
2. year	10	20.0	40	80.0	20.2		
3. year	11	20.8	42	79.2	21.5		
4. year	23	40.4	34	59.6	23.1	21.95ᵃ	**<0.01**
Status of retaking a failed course							
No	15	9.1	149	90.9	66.4		
Yes	36	43.4	47	56.6	33.6	37.34	**<0.01**
Status of having a smoker in the circle of friends							
Yes	51	24.9	154	75.1	83.0		
No	0	0.0	42	100.0	17.0	11.69	**<0.01**
Status of having a smoker in the family							
Yes	42	25.3	124	74.7	67.2		
No	9	11.1	72	88.9	32.8	5.85	**0.02**
Status of knowing the harmful effects of smoking							
Yes	44	18.6	192	81.4	95.5		
No	7	63.6	4	36.4	4.5	***	**<0.01**

*Column percentage, **Row percentage, ***Fisher's chi-square test, ****The group causing the difference, ᵃChi-square test value

other students. Karabiber et al.[35] (2018) found a similar result, reporting an increase in tobacco use by those who repeated their courses due to failure.

Having a smoker in the family, friends, or peers is a disadvantage in terms of starting smoking[43-47]. In this situation, it causes them to perceive cigarette as a harmless substance. In this study, nursing students who had a smoker in their family or close friend circle smoked more than other students. Several studies have found comparable results, reporting a high level of cigarette addiction in nursing students whose family members or classmates smoked[48-50]. Kutlu et al.[38] (2005) found a significant relationship between one's smoking status and the smoking status of close friends, fathers, and siblings. This may be because they see smoking family members as role models, emulate their circle of smoking friends and do so since childhood.

Knowing the harmful effects of smoking is a key factor that protects people from this habit. This study determined that nursing students who did not know the harmful effects of smoking smoked more than other students. Although the majority of the students know about the harmful effects of smoking, 44.2% of them did not want to quit smoking. This shows that despite their education, they did not have a sufficient level of consciousness about the subject[51]. An early start to smoking and resistance to quitting increases cigarette addiction[52].

One of the principal factors affecting the success of quitting smoking is the severity of nicotine addiction[53]. In the present study, the average FTND score of the nursing students was 12.7±2.6. Of the smokers, 92.9% had a very advanced level of nicotine addiction. These results are well above those in the literature. Battaloğlu İnanç[28] (2015) found that the mean FTND score was 3.08±2.07, and 20.0% of the participants had advanced and 5% had very advanced levels of nicotine addiction. The mean FTND score of the nursing students was found as 3.88±2.34 by Moreno-Coutiñove and Villalobos-Gallegos[54] (2017) and 3.52±2.47 by Evli et al.[16] (2021). The reasons why addiction scores are higher than in the literature can be shown as smokers around, encouragement of friends and feeling of curiosity, staying away from family, seeing family as authority, and the sense of autonomy that comes with university life[55].

Study Limitations

This study has some limitations. Its results are limited to nursing students in the place and time of the study. The data were collected using self-reports of the students. The majority of the nursing students who agreed to participate in the study were women.

CONCLUSION

Smoking status is negatively affected by male gender, age, retaking a failed course, having a smoker in the circle of friends,

Table 3. Descriptive characteristics of smokers (n=51)

Characteristics	N	%
Time when they started smoking		
Primary school or before	1	2.0
Secondary school	10	19.6
High school	28	54.9
University	12	23.5
Reason for starting to smoke		
Wanted to be like a family member	3	5.9
Wanted to be like a friend	10	19.6
Academic stress	10	19.6
Curiosity	6	11.8
An effort to prove something to oneself	22	43.1
Time when they smoke mostly		
Leisurely	16	31.4
While studying	6	11.8
Under stressful situations	29	56.9
Considering quitting smoking		
Yes	29	55.8
No	23	44.2

having a smoker in the family, and considering smoking as harmless to health.

The results suggest revising education on smoking addiction. A fight against tobacco addiction should be highlighted in the curriculum of nursing faculties and continuing education centers. Club activities, certificate programs, and relevant courses are necessary for education on smoking addiction to be effective; alternative techniques, hobbies, or sport activities should be planned. Education and awareness levels of parents should be increased. Strategies to combat smoking should target both individuals and their immediate circles.

Ethics

Ethics Committee Approval: The study were approved by the Muş Alparslan University of Non-Interventional Ethics Committee (decision no: E.17798, date: 25.12.2019).

Informed Consent: Consent form was filled out by all participants.

Peer-review: Externally and internally peer-reviewed.

Authorship Contributions

Concept - Design - Data Collection or Processing - Analysis or Interpretation - Literature Search - Writing: E.B., S.G.

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