Medical Journal of Bakırköy

Med J Bakirkoy 2025;21(3):331-338
DOI: 10.4274/BMJ.galenos.2025.2025.2-7

Research

The Relationship Between University Students' Smoking Attitudes and Depression

Üniversite Öğrencilerinin Sigara İçme Tutumları ile Depresyon Arasındaki İlişki

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ABSTRACT

Objective: It was aimed to investigate the smoking attitudes of the students, their relationship with the family, the reasons that increase smoking, their nicotine addiction levels, and to reveal whether smoking is related to depression and anxiety.

Methods: The population of the study is 412 students at the School of Health Vocational School. For this purpose, 343 (83.25%) students were reached. Data were collected by filling out surveys by students. Fagerström Test for Nicotine Dependence (FTND) was applied to evaluate students' demographic and smoking attitudes.

Results: We found that 76.11% of smoking students wanted to quit smoking within 1 year. We found a FTND total score of 4.17 and a moderate level of nicotine addiction. We found no statistical difference in Beck anxiety and depression scores in smokers between the two groups ($p>0.05$).

Conclusion: As a result, in this study, we found that the smoking rates of Vocational School students are lower than other universities in our country, but the smoking rates are similar compared to developed countries.

Keywords: Beck Inventory, Fagerström Test for Nicotine Dependence, reasons for smoking, smoking

ÖZ

Amaç: Bu çalışmada, üniversite öğrencilerinin sigara kullanımıyla ilgili tutumlarını, aile ilişkilerini, sigaraya başlamada etkili olan nedenleri, nikotin bağımlılık düzeylerini ve sigara kullanımının depresyon ve anksiyete ile ilişkili olup olmadığını incelemeyi amaçlandı.

Gereç ve Yöntem: Çalışmanın evrenini Sağlık Meslek Yüksekokulu'nda öğrenim gören 412 öğrenci oluşturmuş, bunlardan 343'üne (%83,25) ulaşılmıştır. Veriler, öğrenciler tarafından doldurulan anketler aracılığıyla toplanmıştır. Öğrencilerin sigara kullanım özellikleri ve bağımlılık düzeylerini değerlendirmek için Fagerström Nikotin Bağımlılık Testi (FNBT) uygulandı.

Bulgular: Sigara kullanan öğrencilerin %76,11'inin bir yıl içinde sigarayı bırakmak istediği bulundu. Ortalama FNBT puanı 4,17 olup, öğrencilerin orta düzeyde nikotin bağımlılığına sahip olduğu belirlendi. Sigara kullanan ve kullanmayan öğrenciler arasında Beck anksiyete ve depresyon skorları açısından istatistiksel olarak anlamlı bir fark bulunmadı ($p>0,05$).

Sonuç: Çalışma sonuçlarına göre, Sağlık Meslek Yüksekokulu öğrencilerinin sigara kullanma oranlarının ülkedeki diğer üniversitelere kıyasla daha düşük olduğu, ancak gelişmiş ülkelerle benzerlik gösterdiği görülmüştür.

Anahtar Kelimeler: Beck Envanteri, Fagerström Nikotin Bağımlılık Testi, sigara içme nedenleri, sigara içme

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Cite as: Aydın A, Akkuş Z. The relationship between university students' smoking attitudes and depression. Med J Bakirkoy. 2025;21(3):331-338

Received: 20.02.2025
Accepted: 16.05.2025
Publication Date: 03.09.2025

INTRODUCTION

Today, tobacco is the single most important cause of death in the world. According to World Health Organization (WHO) data, tobacco causes the death of more than 5 million people a year. By 2030, this number will exceed 8 million. It is estimated that unless urgent measures are taken, tobacco use will cause the death of 1 billion people during this century (1). Although tobacco is used in the form of chewing, snuff, pipes, cigars, cigarettes, and hookahs, the most common form of consumption is cigarettes (2). Smoking causes diseases such as cancer, heart diseases, stroke, lung diseases, diabetes, and chronic obstructive pulmonary diseases (3). In this sense, although smoking is one of the most harmful habits, it is also considered a serious psychosocial problem in terms of its causes (4). According to the WHO 2018 health statistics report, smoking rates among men over the age of 15 are 65.1%, in Tunisia 53.3%, in Cuba 35.6%, in France 33.7%, in Japan 33.0%, in Germany 33.1%, in Türkiye 41.1% it is reported (5). In our country, 44.8% of men and 18.1% of women smoke (6). Although the age of starting smoking varies from society to society, studies have emphasized that, in general, 90% of smokers started smoking before the age of 18, and 99% started smoking before the age of 26 (7,8). Similarly, in our country, it is observed that the smoking trend begins in adolescence (9,10). There are manyreasons why young people between the ages of 14 and 26 start smoking. Adolescence, which includes the high school and university years, is a time of many stressful situations such as separation from the home environment and family members, adapting to the new environment, choosing friends, preparing for exams, becoming a candidate for a profession, finding a job after graduation, choosing a partner to share life with, economic problems, and improving social relations. It is considered a process in which depression and anxiety are experienced severely (11). In this process, the student starts smoking to cope with the problems he encounters. This attitude later turns into a physiological, psychological, and social addiction (12). For this purpose, there are many studies conducted in the world and in our country, especially on the use of tobacco and its products among university students, and their relationship with anxiety and depression (13,14). Smoking addiction is one of the rare health problems for which a "global epidemic alert" has been given by the WHO (15). For this purpose, many countries have aimed to take various measures. Since young people studying at universities are also the target group of the tobacco industry, the importance of intervention programs for this group is increasing (16). In our country, the "National Tobacco Control Program" was createdin 2006, and the use of tobacco and tobacco products was restricted in many public areas. Smoking was bannedespecially in places where the young population spends time,such as social and cultural venues, sports and entertainment places such as restaurants, coffee houses, cafeterias, beer halls, classrooms, private teaching institutions, and highway, railway, sea, and airline public transportation vehicles. With the adoption and implementation of this law, Türkiye became a country with smoke-free air space (17). In addition, as of 2019, new restrictions have been introduced on the packaging of tobacco products and the use of additives and stimulant compounds to reduce the use of tobacco and facilitate inhalation. It is one of the countries that has implemented all the necessary strategies within the scope of combating tobacco. In this study, we aimed to examine the smoking attitudes of university students studying health in nine different departments and to determine the relationship of these attitudes with anxiety and depression.

METHODS

The study was conducted in accordance with the World Medical Association Declaration of Helsinki and the Guideline for Good Clinical Practice. To conduct this study, approval was obtained from the Dicle University Faculty of Medicine Non-Interventional Clinical Research Ethics Committee (approval no: 64, date: 15.02.2018). This study was conducted as a cross-sectional and descriptiveon students of Dicle University Atatürk Vocational School of Health Services from March to June 2021. The population of the study was 412 first and second year students attending 9 associate degree programs at the School of Health Professions. However, we were able to reach 343 (83.25%) students. Written and verbal consent were obtained from the students who agreed to participate in the study. The questionnaire form consists of 3 parts: demographic questions and information questions about smoke. The Beck Depression Inventory (BDI) was used to evaluate the psychological state of all participants and Fagerström Test for Nicotine Dependence (FTND) used to determine the level of nicotine addiction. In the study, questions were asked about the demographic characteristics of the participating students, such as age and gender, as well as where they stayed, whether their parents smoke, their family income level, the number of smokers at home, and their awareness of the harms of smoking in order to evaluate their living environment and smoking status. If the participating student was a smoker, a survey was also conducted asking the age of starting smoking, the reason, the number of cigarettes smoked per day, whether smoking is harmful or not, andtheir desire to quit smoking. The BDI was used to

evaluate the psychological state of all participants in the last week to assess whether smoking had an impact on their psychological well-being. BDI is used to determine the subject's risk for depression and to measure changes in the level and severity of depressive symptoms. Its purpose is to determine the risk for depression and to measure the level and changes in severity of depressive symptoms. This form, which contains a total of 21 self-rating scales, provides a four-point Likert type measurement. Each item receives increasing points from 0 to 3 and the total score is obtained by adding them up. A high total score indicates a higher severity of depression (18). The adaptation, validity, and reliability of this inventory, which was developed by Beck et al. (18) for the Turkish population, was determined by Hisli (19).

We used the FTND to determine the level of nicotine addiction. FTND consists of 6 questions. Each question is given a score between 1 and 10 points. A high score indicates a high level of addiction. According to the total scores obtained from this test, nicotine addiction is evaluated in three groups as low (0-3 points), medium (4-6 points), and high (≥7 points) (20). In the study, the Turkish version of FTND was used by Uysal et al. (21).

Statistical Analysis

SPSS 25.0 statistical package (IBM Corp., Armonk, NY, USA) was used for analyses. Quantitative variables were presented as mean±standard deviation, and categorical variables were presented as number and percentage (%). The Kolmogorov-Smirnov test was used to check whether the data were normally distributed. Parametric tests were used for normally distributed data, and non-parametric tests were used for non-normally distributed data. The chi-square method was used for categorical variables. By checking whether the data comply with a normal distribution, Student's t-test was used if normal distribution was observed, and Mann-Whitney U test was used if normal distribution was not observed. Hypotheses were bidirectional, and $p<0.05$ was considered statistically significant.

RESULTS

Of the 343 students participating in the study, 54.8% (188) were female and 45.2% (155) were male, while the average age was 20.91±1.894. While 64.7% (222) of the students were staying at home, 35.3% (121) were staying in dormitories. We found that 77.0% (264) of the students smoked at home, while 52.5% (180) had fathers who smoked at home and 25.1% (86) had mothers who smoked at home. Only 31.2% (107) of the participating students had a normal or above family income level. 96.8% (332) of the students thought that smoking was harmful (Table 1). We found that 17.9% (12) of the students who smoked started smoking for the first time under the age of 10, while 35.8% (24) started smoking after the age of 19. We found that while 53.7% (36) of the students were regular drinkers, 46.3% (31) drank occasionally. While 59.7% (40) of the students smoked 10 cigarettes or less per day, only 4.5% (3) smoked . While 83.6% (56) of the students who smoke thought that smoking was harmful, 76.1% (51) stated that they were thinking of quitting smoking (Table 2).

Table 1. Demographic characteristics of students

	Smoker, n (%), (n=67)	Non-smoker, n (%), (n=276)	Total, n (%), (n=343)
Age	21.70+2.153 18/27	20.71+1.777 18/28	20.91+1.894 18/28
Gender			
Female Male	24 (12.8%) 43 (27.7%)	164 (87.2%) 112 (72.3%)	188 (54.8%) 155 (45.2%)
Place of residence			
Home Dormitory	44 (65.7%) 23 (34.3%)	178 (64.5%) 98 (35.5%)	222 (64.7%) 121 (35.3%)
Class			
1. Class 2. Class	28 (41.8%) 39 (58.2%)	122 (44.2%) 154 (55.8%)	150 (43.7%) 193 (56.3%)
Smoking status at home			
Yes No	63 (94.0%) 4 (6.0%)	201 (72.8%) 75 (27.2%)	264 (77.0%) 79 (23.0%)
Does the father smoke?			
Yes No	49 (73.1%) 18 (26.9%)	131 (47.4%) 145 (52.6%)	180 (52.5%) 163 (47.5%)

Table 1. Continued

	Smoker, n (%), (n=67)	Non-smoker, n (%), (n=276)	Total, n (%), (n=343)
Does the mother smoke?			
Yes	19 (28.4%)	67 (24.2%)	86 (25.1%)
No	48 (71.6%)	209 (75.8%)	257 (74.9%)
Number of smokers at home			
0	0 (0.00%)	73 (26.4%)	73 (21.3%)
1	8 (11.9%)	101 (36.5%)	109 (31.8%)
2	34 (50.7%)	48 (17.3%)	82 (23.9%)
3	8 (11.9%)	31 (11.2%)	39 (11.4%)
4	14 (20.9%)	13 (4.7%)	27 (7.9%)
5	3 (4.5%)	10 (3.6%)	13 (3.8%)
Family income level			
0-1400 TL	23 (34.3%)	73 (26.4%)	96 (28.0%)
1401-2800TL	30 (44.8%)	110 (39.9%)	140 (40.8%)
2801-4200 TL	14 (20.9%)	69 (25.00%)	83 (24.2%)
4200TL over	0 (0.00%)	24 (8.7%)	24 (7.0%)
Do you think smoking is harmful?			
Yes	56 (83.6%)	276 (100%)	332 (96.8%)
No	11 (16.4%)	0 (0.00%)	11 (3.2%)

TL: Turkish lira

We found the Fagerström total score to be 4.17 (moderate nicotine dependence). The Beck anxiety total score was 9.22±3.16 in smokers and 8.94±3.33 in non-smokers. The Beck depression total scorewas 6.73±1.95 in smokers and 6.51±3.00 in nonsmokers. We found no statistical difference in anxiety and depression scores between the two groups ($p>0.05$). We found total anxiety and stress scores to be similar and borderline in the two groups (Table 3). While there was no correlation between the FTND and the Beck Anxiety Inventory (BAI), we found a positive correlation between the FTND and the BDI ($p<0.05$) (Table 4). When the demographic characteristics of the students were examined regarding smoking, we found statistically that males smoke more than females, students whose fathers smoke smoke more than those whose fathers do not smoke, and students whose fathers smoke at home smoke more than those who do not smoke at home ($p<0.05$). In addition, we found that Beck depression-anxiety, income level and mother's smoking did not have a statistically significant effect on students' smoking ($p>0.05$) (Table 5). We found that 43.3% of smokers started smoking due to stress and sadness, 82% said smoking calmed them down, and 73.1% had an increased desire to smoke with tea or coffee, and after meals. We found that the factor most strongly associated with smoking was stress, with 50.7% (34) (Table 6).

Table 2. Students' opinions about smoking

	n	%
What age did you smoke for the first time?		
5-10 age	12	17.9
11-15 age	14	20.9
16-18 yaş	17	25.4
19 age and over	24	35.8
Being a regular drinker		
Regular	36	53.7
Sometimes	31	46.3
Number of cigarettes smoked per day		
0-10 piece	40	59.7
11-20 piece	18	26.9
21-30 piece	6	9.0
31 and piece	3	4.5
Changes in smoking amount over the years		
İncreased	27	40.3
Decreased	20	29.9
Not change	20	29.9
Do you think smoking is harmful?		
Yes	56	83.6
No	11	16.4
Do you want to quit smoking within a year?		
Yes	51	76.1
No	16	23.9

Table 3. Addiction, anxiety and depression levels of smoking and non-smoking students

	Smoker	Non-smoker	p-value
FTND	4.17*< 5	0.00	
Beck Anxiety Scale	9.22<10	8.94<10	0.772
Beck Depression Scale	6.73<7	6.50<7	0.811

*Low level of nicotine addiction, FTND: Fagerström Test for Nicotine Dependence

Table 4. Correlation between anxiety-depression and addiction

	FTND
Beck Anxiety Scale	0.071*
Beck Depression Scale	0.044*

*Spearman's rho correlation, FTND: Fagerström Test for Nicotine Dependence

Table 5. Evaluation of smoking status and demographic, clinical, anxiety and depression conditions

	Smoking status (p)
Gender (female-male)	0.000
Father's smoking status (smoker-non-smoker)	0.000
Mother's smoking status (smoker-non-smoker)	0.489
Family income level (smoker or non-smoker)	0.052
Beck anxiety (smoker non-smoker)	0.531
Beck depression (smoker non-smoker)	0.455
Smoking status at home (smoker-non-smoker)	0.000

Pearson chi-square test, Student's t-test

DISCUSSION

In recent years, there has been an increase in smoking rates among university students due to various reasons, and in addition, smoking attitudes among high school and secondary school students have become more positive. The prevalence of smoking among university students in Türkiye has been reported as 18-48%, and in Health Vocational Schools as 37.5-55% (22,23). It was reported that in studies evaluating tobacco addiction among medical faculty students in our country, the smoking rate was between 17% and 52.6%, and in studies conducted in European countries, the smoking rate of medical faculty students was between 11% and 61% (24). In a study conducted in 5 countries (Belarus, Lithuania, Poland, Russia, Slovakia), between 2017-2018, and examining the smoking rates of 14,352 students, including 8,800 medical students, it was found that the overall smoking rate was 66.1%, while the smoking rate among medical students was 68.9%. For students studying in non-medical departments, this rate was determined as 61.8% (25). In a study investigating the smoking rate of nursing students studying in France, United States of America, Spain, Australia, and Italy, the prevalence of current smoking was reported as 26.6% with a confidence interval of (22.9-30.4) (26).

Studies, emphasizing, that individuals typically begin smoking during high school (27). In addition, a study on the age of starting smoking emphasized that male students started smoking at 14.84 years, whilefemale students started at 16.13 years (28). n our study, we found that 64.2% of the participating students started smoking under the age of 18. We also found that 17.9% of individuals started smoking by age 10 or younger. These values we found are parallel to the findings in the literature. The group under the age of 18 in our study represents high school and secondary school

Table 6. Examining the reasons for starting to smoke and increasing smoking

	C	EP	Prove yourself	W	RTB	S-S	F
Reason for starting smoking	20.9% (14)	4.5% (3)	4.5% (3)	14.9% (10)	9.0% (6)	43.3% (29)	32.8% (22)
	Sedation		**Attention gathering**		**Losing weight**	**Relieve loneliness**	
Reason to continue smoking	82.1% (55)		17.9% (12)		4.5% (3)	14.9% (10)	
	Tea	**After meal**	**Stress**		**Coffee**	**Alcohol**	**Friend**
Reasons that increase the desire to smoke	41.8% (28)	47.8% (32)	50.7% (34)		31.3% (21)	3% (2)	13.4% (9)

C: Curiosity, EP: Environmental pressure, W: Wannabe, RTB: Reaction to the ban, S-S: Stress-Sadness, F: Friend

students. Reasons for starting smoking are wide-ranging. In his study, Korkmaz et al. (4) stated that the reasons for starting smoking were 28.6% for social influence, 22% for curiosity, 18.2% for friend encouragement, and 20.4% for other reasons. Another study conducted on university students identified the reasons for starting smoking as 46.3% family problems, 40% school problems, and 33.9% curiosity (29). In another study, it was reported that one of the main reasons for smoking among students was influence from friends, with a rate of 24.4% (30). Similarly, in another study conducted in our country, the first reason why students start smoking is because their close relatives or friends smoke (42.6%), followed by "stress" (24.6%) and "curiosity, wannabe" (18.9%) (23). In our study, we stated that participants could choose more than one option when the reason for starting smoking was questioned. Our study found that the main reason for smoking at 43.3% was stress and sadness. However, we found that 32.8% were close relatives-friends, 20.9% were curiosities, and 14.9% were wannabes.

When the literature is examined, the rate of male students who smoke has been found to be higher than that of female students in many studies (31). In a study of university students, the smoking rate was found to be 18.9% among male students and 5% among female students. In addition, the smoking rate of 504 students, which consists entirely of female students, in the nursing-midwifery department of the vocational school of health was reported to be 12.3% (29). Although these reported findings are similar, the smoking rates of both male and female students were found to be lower than those in our study. In our study, we found the smoking rate to be 27.7% among male students and 12.8% among female students.

The smoking status of role model mothers and fathers in the family can have negative effects on their children who are studying. In this sense, a study showed that children whose parentssmoke 4 times more than those whose parents do not smoke (32). Similarly, in a meta-analysis that included 58 studies, the effect of parental smoking on the child's initiation of smoking was examined, and it was shown that the rate of smoking initiation in children increased by 2.73 times when both parents smoked (33). In our study, we questioned the smoking status of the mother and father separately. We found that 73.1% of the fathers and 28.4% of the mothers of the students smoke, while 47.4% of the fathers and 24.2% of the mothers of the students do not smoke. According to the results of our study, we can say that both mothers' and fathers' smoking have negative effects on other members of the family and that we obtained similarities with the results in the literature. In addition, when the results of the smoking attitudes of mothers and fathers are examined in our study, it can be said that students are more negatively affected by their fathers' smoking.

Contradictory results are obtained when studies examining whether smoking causes a change in anxiety and depression levels are reviewed (34-37). In a study conducted for this purpose, it was shown that there was no significant difference in anxiety, depression, perceived fatigue levels, attention deficit and hyperactivity disorder between smoking and non-smoking university students. However, although high smoking rates have been reported in people with anxiety and depression disorders (35), it has been emphasized that the relationship between smoking and anxiety and depression may be two-way, and that smoking occasionally is used to relieve symptoms; over time, this condition may worsen (38). In other studies, smoking is thought to alleviate the negative effects of smoking and therefore smoking may cause symptoms of anxiety and depression (36,37). In a systematic review including 148 studies, almost half of the studies reported that initial depression/anxiety was associated with some form of later smoking behavior, and more than a third of the studies reported that smoking exposure was associated with subsequent depression/anxiety (34).However, it has also been reported that there are few studies that support a bidirectional model of smoking and anxiety, and the results of these studies are invalid (34). We used the BAI or BDI in our study. According to the data we obtained in our study, we could not find a statistical difference in the levels of anxiety and depression between smoking and non-smoking students. In addition, according to the data of the FTND, which we used to evaluate the addiction levels of smoking students we found the level to be low (4.17<5). One of the two most important outcomes of our study is that 83.6% of the students who smoke think that smoking is harmful; the other is that 76.1% of them want to quit smoking within a year.

CONCLUSION

As a result of our study and the literature we reviewed, we found that smoking is common among university students. University students are seen as the group with the highest risk of exposure to smoke. First of all, it is necessary to produce solutions to prevent all other substance use, especially smoking, throughout the education system. Data from previous studies suggest that some of the measures takenin our country are effective. We believe that compulsory or elective courses covering the harms of tobaccoand other substance use in university curricula can be a protective measure. We also think that meetings, symposiums and

raising awareness for families that emphasize the negative effects of parents who are role models in the family, on students will be beneficial.

ETHICS

Ethics Committee Approval: To conduct this study, approval was obtained from the Dicle University Faculty of Medicine Non-Interventional Clinical Research Ethics Committee (approval no: 64, date: 15.02.2018).

Informed Consent: Written and verbal consent were obtained from the students who agreed to participate in the study.

FOOTNOTES

Authorship Contributions

Concept: Z.A., Design: A.A., Data Collection or Processing: A.A., Analysis or Interpretation: Z.A., Literature Search: A.A., Writing: A.A.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declare that this study received no financial support.

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