

RESEARCH ARTICLE

DOI: 10.19127/mbsjohs.1346240

Evaluation of the Fagerström Nicotine Dependence Test and the Situation of Smoking Patients Wishing to Stop Smoking in the Family Medicine Polyclinic

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Received: 19 August 2023, Accepted: 8 October 2023, Published online: 29 October 2023

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Abstract

Objective: According to the results of the Türkiye Health Survey; While the rate of individuals aged 15 and over who use tobacco products every day was 28.0% in 2019, it increased to 28.3% in 2022. According to the World Health Organization (WHO), smoking is the cause of death for more than 8 million people each year. The use of tobacco and tobacco products is an important health problem that harms individuals and societies, has attracted attention all over the world in recent years, and needs to be treated. In our study, it was aimed to evaluate the addiction status of individuals applying to our outpatient clinics, to determine what measures should be taken for the treatment of smoking and to determine if there is a regional awareness in the addiction score.

Methods: Our study, which was planned as a cross-sectional, descriptive and prospective study, included 184 people over the age of 18, who were active smoking and who accepted to participate in the study, who applied to Ordu University Medical Faculty Family Medicine Polyclinic between 12.10.2021 and 15.01.2022 for any reason. The Fagerström Nicotine Dependence Test was used in the analysis of the addiction score. In the study, chi-square analysis was used to determine whether the Fagerström Nicotine Addiction Test Questions of Smoker Patients in the Family Medicine Outpatient Clinic changed according to the gender and age of the patients. The SPSS 21.0 V. statistical package program was used for all statistical calculations. It was considered that the research findings were significant at the $P<0.05$ level by expressing as n, percentage.

Results: 74.5% (n=137) were male, 25.5% (n=47) were female. 51.6% (n=95) were single, 46.7% (n=86) were university graduates. 21.7% (n=40) were not working, 49.5% (n=91) had income more than their expenses. 89.1% (n=164) did not have any disease, 25.0% (n=46) used alcohol. 40.8% (n=75) lived in metropolitan cities. 48.4% were smoking 1-9 pack/year, 54.9% had not tried to quit smoking 53.3% of them started smoking in the friend environment, 32.1% of them started to smoke because of stress and 14.6% of them were curious and pretentious. The mean test score of FNBT was 6.30 ± 2.77 . There were 38 (20.6%) people with high addiction scores, 48 (26.1%) people with moderate and 98 (53.3%) people with low addiction scores. There was no statistically significant difference in terms of gender, marital status, employment and education status according to the level of addiction. Moderate-high level of dependence was significantly higher in alcohol users ($p<0.001$).

Conclusion: Individuals who want to quit smoking should be evaluated within the framework of a biopsychosocial approach and this demand should be supported by medical treatment if necessary. For this reason, it is important to support the units that provide smoking cessation outpatient clinics, especially in primary care.

Keywords: Rational Antibiotic Use, University Student, Antibiotic Resistance, Numeracy in Health Literacy

Suggested Citation: Çoruh Akyol B, Kaya M, Özdemir M, Yıldırım Ö.U, Özdemir C, Enginyurt Ö, Çankaya S. Evaluation of The Fagerström Nicotine Dependence Test and the Situation of Smoking Patients Wishing to Stop Smoking in the Family Medicine Polyclinic Mid Blac Sea Journal of Health Sci, 2023;9(4):669-678.

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Note: This study was presented as an oral presentation at the 7. International Health Science and Family Medicine Congress held in İzmir - Türkiye on 10-12 February 2022

INTRODUCTION

Considered among the etiological factors of many death-related diseases, cigarettes are one of the products that health professionals struggle with the most, since they are used legally in our country. Different tobacco products, especially cigarettes, are used in tobacco products. These include hookah tobacco, cigars, heated tobacco, pipe tobacco. According to the results of the Türkiye Health Survey carried out in 2022; While the rate of individuals aged 15 and over who use tobacco products every day was 28.0% in 2019, it increased to 28.3% in 2022. It has been determined that this rate is 41.3% for men and 15.5% for women in 2022. The rate of individuals who do not use tobacco products (quit and never use) decreased from 68.7% in 2019 to 68.0% in 2022 (1). According to the

World Health Organization (WHO), smoking is the cause of death for more than 8 million people each year. While more than 7 million of these deaths were observed in direct smokers, 1.3 million were observed in passive smokers. The Framework Convention on Tobacco Control, adopted by WHO member states in 2003, was adopted to address the smoking epidemic. A total of 182 countries, including our country, are parties to this agreement (2). While there is no gender difference in smokers in developing countries where access to information and professional support options in case of need are increasing, this behavior is more common in men in developing countries where smoking rates continue to increase (3). Noncommunicable diseases (NCDs) kill more than 40 million people each year. It is possible to define these diseases, which correspond to approximately 75% of the deaths on earth, as “chronic diseases”. Subgroups of this title include cardiovascular diseases, cancers, chronic respiratory diseases and diabetes. Although it is generally associated with advanced age, smoking is the main age-independent risk factor among NCDs (4). The definition of WHO on this subject is “There is a way of transmission in all epidemics and there

is a means of spreading disease and death. In the case of the tobacco epidemic, this tool is not a virus, bacteria or other microorganism – it is an industry and a working strategy.” is in the form (5).

The substance that causes addiction in tobacco is nicotine in its composition, and nicotine addiction is often blamed for unsuccessful quit attempts and continued use of tobacco (6). Smoking creates a sense of pleasure and smokers want to smoke again and again because they seek this sense of pleasure.

Smoking is a safety hazard. Opposing smoking in the workplace should be considered a scientific necessity and a duty, not a luxury (7). Tobacco habit is defined by the American Psychiatric Association as a psychiatric disorder that includes cognitive, behavioral and physiological symptoms (8). In the case of addiction, people continue to use the substance in question despite experiencing health or non-health problems resulting from the subject. Addiction is a health problem that needs to be treated. Treatment is difficult but not impossible (9).

The use of tobacco and tobacco products is an important health problem that harms individuals and societies, has attracted attention all over the world in recent years, and needs to be treated. A number of methods such as Fagerstrom Nicotine Dependence Test (FTND), carbon monoxide in respiratory air, determining the number of cigarettes smoked in

24 hours are used to help guide the treatment process by determining the addiction level of individuals. These methods include some scales in which the daily cigarette consumption of the person is questioned or the person evaluates his own addiction. The most widely used of these scales is the Fagerstorm Nicotine Dependence test (10). For this reason, a questionnaire study was preferred in order to evaluate the FTND score results and willingness to quit smoking in our patients over the age of 18 who applied to our outpatient clinic. “Assessment of tobacco product use and exposure status” is specified as recommendation level A in the United States (USA) Preventive Services Working Group (USPSTF) recommendation rating table (11). As a requirement of preventive medicine, the smoking status of individuals who apply to family medicine polyclinics is questioned in many of them. For all these reasons, in order to contribute to the goal of a smoke-free society, which is one of the requirements of a healthy society, this study aimed to contribute to the requirements for a healthy society both regionally and universally with the results obtained by evaluating the Fagerström nicotine dependence test and the desire to quit smoking in patients applying to family medicine.

METHODS

Our study, which was planned as a cross-sectional, descriptive and prospective study, included 184 people over the age of 18, who were active smoking and who accepted to

participate in the study, who applied to Ordu University Medical Faculty Family Medicine Polyclinic between 12.10.2021 and 15.01.2022 for any reason. A questionnaire form, in which the sociodemographic characteristics of the participants and their knowledge of cigarette consumption were analyzed by the researcher, and FNBT were applied to the participants by face-to-face survey method. The sample calculation was made with the Gpower program. When the power was 95%, $d=0.5$, $\alpha=0.05$, the minimum sample size was found to be 100.

Developed in 1991, FNBT consists of 6 questions and the answers are scored (12). FNBT results were graded in 3 groups as nicotine addiction low (0-3 points), moderate (4-6 points), and high (≥ 7 points) (13). The Turkish validity and reliability study of the test was conducted by Uysal et al. It was found to be moderately reliable and it was concluded that it can be used as a measurement method in the evaluation of nicotine addiction in smoking cessation outpatient clinics (14).

Statistical Analysis

In the study, chi-square analysis was used to determine whether the Fagerström Nicotine Addiction Test Questions of Smoker Patients in the Family Medicine Outpatient Clinic changed according to the gender and age of the patients. The SPSS 21.0 V. statistical package program was used for all statistical calculations. It was considered that the research findings were

significant at the $P<0.05$ level by expressing as n, percentage. Ethics committee approval for this study Ordu University Received from the Clinical Research Ethics Committee of the University Clinical Research Ethics Committee (Ethics committee date and no: 31.12.2021 , 281)

RESULTS

In our study, which included 184 people, 74.5% (n=137) male and 25.5% (n=47) female, the mean age of the participants was 33.8 ± 12.06 (min:18-max:71) detected. 95 people were single (51.6%) and 89 people (48.4%) were married. 32.6% (n=60) were high school graduates and 46.7% (n=86) were university graduates. 21.7% (n=40) were not working, nearly half (49.5%, n=91) of the participants had more income than their expenses. 89.1% (n=164) did not have any disease. 46 people (25.0%) were using alcohol. While 75 people (40.8%) lived in the metropolitan center, 71 people (38.6%) lived in the district. When the smoking status was calculated as (packs/year), grouping was done in 10-year periods and according to this, 89 people smoked 1-9 pack/year at the most with 48.4%, followed by 20.4% (n=43) with 10-year periods. It was tracking 19 packs/year usage. 54.9% (n=101) had not tried to quit smoking 98 people (53.3%) started smoking in the friend environment, 59 people (32.1%) started smoking due to stress, 27 people (14.7%) started smoking because of curiosity and

wantonness. The mean test score of FNBT was 6.30 ± 2.77 . There were 38 (20.6%) people with high addiction scores, 48 (26.1%) people with moderate and 98 (53.3%) people with low addiction scores. There was no statistically significant difference in terms of age, gender, marital status, employment and education status according to addiction level ($p > 0.05$). The distribution of the participants' FNBT questions according to the age variable is given

in Table 1. Moderate-high level of dependence was significantly higher in alcohol users ($p < 0.001$). Statistical significance was determined in the distribution of answers in the addiction test score, as well as in the amount of cigarettes consumed daily in the sub-assessments of the questions and in the questions of smoking more cigarettes in the morning. ($p = 0.016$, $p = 0.022$) The variation of the test score by gender is shown in Table 2.

Table 1. Distribution of Fagerström Nicotine Addiction Test Questions of Smoking Patients in the Family Medicine Polyclinic by Age Variable

	Under [n(%)]	20 [n(%)]	21-30 [n(%)]	31-40 [n(%)]	Over 40 [n(%)]	χ^2 - value	P- value
How soon after waking up do you smoke your first cigarette of the day?							
after 1 hour	12(40)		16(29,6)	17(34,7)	17(33,3)	6,837	0,654
within 31-60 minutes	4(13,3)		12(22,2)	8(16,3)	12(23,5)		
within 6-30 minutes	6(20,0)		17(31,5)	9(18,4)	10(19,7)		
within the first 5 minutes	8(26,7)		9(16,7)	15(30,6)	12(23,5)		
Do you find it difficult not to smoke in places where smoking is prohibited?							
Yes	6(20)		17(31,5)	17(34,7)	15(29,4)	2,011	0,570
No	24(80)		37(68,5)	32(65,3)	36(70,6)		
Which cigarette of the day is more difficult for you to give up?							
First cigarette in the morning	10(33,3)		18(33,3)	23(46,9)	24(47,1)	3,531	0,317
Cigarettes smoked at other times	20(66,7)		36(66,7)	26(53,1)	27(52,9)		
How many cigarettes do you smoke per day?							
10 and less	11(36,7)		18(33,3)	10(20,4)	11(21,6)	15,220	0,077
11-20 units	17(56,7)		23(42,6)	18(36,7)	25(49,0)		
21-30 units	1(3,3)		10(18,5)	13(26,5)	10(19,6)		
31 and more	1(3,3)		3(5,6)	8(16,4)	5(9,8)		
Do you smoke more in the morning than at any other time of the day?							
Yes	7(23,3)		8(14,8)	10(20,4)	12(23,5)	1,510	0,680
No	23(76,7)		46(85,2)	39(79,6)	39(76,5)		
Do you also smoke when you are sick enough to require bedtime?							
Yes	9(30)		14(25,9)	20(40,8)	15(29,4)	2,882	0,410
No	21(70)		40(74,1)	29(59,2)	36(70,6)		
After this evaluation, would you consider getting professional support for smoking cessation (Smoking cessation polyclinics)							
Yes	22(73,3)		38(70,4)	27(55,1)	31(60,8)	4,003	0,261
No	8(26,7)		16(29,6)	22(44,9)	20(39,2)		

Table 2. Distribution of Fagerström Nicotine Addiction Test Questions of Smokers in the Family Medicine Outpatient Clinic by Gender

	Male[n(%)]	Female[n(%)]	χ^2 -value	<i>P</i> -value
How soon after waking up do you smoke your first cigarette of the day?				
after 1 hour	43(31,4)	19(40,4)	5,359	0,147
within 31-60 minutes	31(22,6)	5(10,7)		
within 6-30 minutes	28(20,5)	14(29,8)		
within the first 5 minutes	35(25,5)	9(19,1)		
Do you find it difficult not to smoke in places where smoking is prohibited?				
Yes	41(29,9)	14(29,8)	0,001	0,986
No	96(70,1)	33(70,2)		
Which cigarette of the day is more difficult for you to give up?				
First cigarette in the morning	58(42,3)	17(36,2)	0,551	0,458
Cigarettes smoked at other times	79(57,7)	30(63,8)		
How many cigarettes do you smoke per day?				
10 and less	31(23)	18(38)	10,323	0,016
11-20 units	61(45)	23(49)		
21-30 units	28(20)	6(13)		
31 and more	17(12)	0(0)		
Do you smoke more in the morning than at any other time of the day?				
Yes	33(24,1)	4(8,5)	5,285	0,022
No	104(75,9)	43(91,5)		
Do you also smoke when you are sick enough to require bedtime?				
Yes	45(32,8)	13(27,7)	0,436	0,509
No	92(67,2)	34(72,3)		
After this evaluation, would you consider getting professional support for smoking cessation (Smoking cessation polyclinics)				
Yes	86(62,8)	32(68,1)	0,429	0,512
No	51(37,2)	15(31,9)		

DISCUSSION

Smoking, which has been identified as a modifiable risk factor in the etiology of many fatal diseases, is a costly and global public health problem. Early recognition and initiation of treatment of smoking addiction plays a key role in the prevention of many chronic diseases

and is considered one of the most cost-effective prevention methods.

In the study of Örsel et al., groups with very low, low, moderate, high and severe levels of nicotine dependence were determined according to the score obtained from the nicotine addiction test, and they were grouped into three groups in order to perform statistical

analysis (15). While a significant difference was found between the three groups in terms of gender ratios; No difference was found in terms of variables such as education, age, marital status, employment, age of starting smoking. It is stated that men show more severe levels of nicotine dependence (16). Esen and Arica determined the addiction status of men as 60.40% and for women as 54.70% in their study with 415 people (10). Although the majority of our participants were male, no significant difference could be found between gender in our study according to the scores obtained from the addiction test. However, in the sub-score evaluations of the test, "How many cigarettes do you smoke per day?" and "Do you smoke more in the morning than at any other time of the day?" There was statistical significance in the answers given to the questions. This may be due to the addiction score results of our study.

In a study conducted among pulmonologists, the rate of non-use was 74% for women and 60% for men, ($p=0.001$) (17). In a study conducted by Tezcan et al. on Hacettepe University Faculty of Medicine academicians, 38.0% of physician academic staff had never smoked. 15.8% have drunk before and quit. It was determined that 37.2% of the three hundred and seventy-one physician academic staff smoked during the study (37.9% for men, 36.3% for women). Smoking is statistically significantly higher in males ($\text{Chi-square}=9.96$, $p=0.007$) (18). In the study conducted by Sezer

et al., which included all physicians and dentists working in Elazığ, when physicians and dentists were evaluated together, the smoking size of males was %. It was determined that the smoking dimension of women was 54.9 and 39.5% ($\text{SD}=1.75$, $p>0.05$) (19). Gorin and Heck, who made a meta-analysis of 37 studies on smoking cessation counseling, reported that the greatest effect in smoking cessation counseling was provided by nurses after doctors (20). Tobacco use of health workers; it primarily threatens their own health, but also causes a serious contrast in the fight against tobacco addiction. The validity of the suggestions of a health professional who is known to smoke about his patient not smoking is unknown. However, the fact that smoking cannot be prevented even by a physician has been proven once again with these rates.

Studies conducted among workers working in various sectors in our country have shown that the rates of nicotine addiction are high (21, 22). In a community-based study investigating socioeconomic variables in nicotine addiction in rural southwestern China, more nicotine addiction was observed in males and the highest addiction rate was reported in the 35-44 age group (23). In the studies of Esen and Arica, no difference was found between working and not working status (10). In our study, there was no difference between the addiction score and whether the individuals had an active working life or not. The difference between the studies

may be due to the differences in the regions where the studies were conducted.

In our study, it was determined that the most common reasons for students to start smoking were “environment-friend environment” (47.0%). In a similar study conducted at Yeditepe University, the most common reasons for starting smoking were “affected by friends” (32.1%) and “stress” (24.6%); Düzce University Faculty of Medicine students answered as “environment and friend environment” (43.5%) and “stress” (17.4% (23,24,25). In our study, friend environment and stress were found to be the causes of smoking, respectively, in line with the literature. According to this, it can be said that cigarettes are used as a tool for socialization.

Individuals can benefit from the smoking cessation program effectively only if the person feels willing, determined and ready. Studies have shown that smoking cessation levels are unfortunately not at the desired rates and one of the important reasons for this situation is that individuals are not ready to quit smoking (26).

In the study of Benegal et al., nicotine addiction was found to be high in those with medium and low education levels (27), while no difference was found in the study of Esen and Arica (10). In our study, there was no difference between education status and addiction score, and the difference and similarity between the studies may be due to the different or similar

grouping according to education level during the analyses.

CONCLUSION

As the design of our study was conducted in an outpatient clinic where undifferentiated patients applied, it may have resulted in different results from the sources available in the literature with the social data. After filling out the questionnaire, the majority of the participants wanted to get information about smoking cessation methods from us. Just as it is impossible to leave a substance with a potential for addiction alone, this also applies to unilateral medical support. Individuals who want to quit smoking should be evaluated within the framework of a biopsychosocial approach and this demand should be supported by medical treatment if necessary. For this reason, it is important to support the units that provide smoking cessation outpatient clinics, especially in primary care..

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Author Contributions: Concept: BÇA, ÖE, SC, Design: BÇA, ÖE, MK, MÖ, CÖ Data Collection and Processing: MÖ, ÖUY, CÖ, MK; Analysis and Interpretation: SC, BÇA, MK; Writing: BÇA, ÖE, MÖ, SC, CÖ, ÖUY,

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

Financial Disclosure: The authors declared that this study has not received no financial support.

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