The Relationship Between Desire to Smoke and Smoking Cessation Fatigue in Patients Applying to the Smoking Cessation Outpatient Clinic

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Original Article

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ABSTRACT

Objective: Smoking is one of the most important causes of preventable morbidity and mortality all over the world. This study aimed to examine the relationship between smoking cessation fatigue and desire to smoke in patients admitted to the smoking cessation outpatient clinic, to evaluate the scales that can guide treatment in this process, and to determine the sociodemographic characteristics and smoking habits of the patients.

Methods: A total of 605 patients, 302 males and 303 females, who applied to Istanbul Medeniyet University Goztepe Training and Research Hospital, Family Medicine Department, Smoking Cessation Polyclinic between May and November 2019, were included in the study. Sociodemographic data, smoking, Fagerstrom Nicotine Dependence Test (FNDT), Hospital Anxiety Depression Scale (HADS), Desire to Smoke and Smoking Cessation Fatigue Scales were recorded from the patients' files.

Results: The mean age of the patients was 39.1 ± 11.8 years, the mean age of starting smoking was 17.9 ± 4.7 years, and the daily cigarette consumption was 24.5 ± 10.3 cigarettes (median = 20). 33.1% of the participants had a chronic disease. The mean Beck Anxiety Inventory score was 7.59 ± 4.11, the mean Beck Depression Inventory score was 6.32 ± 3.79, the FNDT mean score was 6.44 ± 2.42, the Desire to Smoke mean score was 39.2 ± 15.6, and among the Smoking Cessation Fatigue sub-dimensions, emotional exhaustion mean score was 16.8 ± 6.2, pessimism was 8.3 ± 3.2, and devaluation was 18.1 ± 3.8.

Conclusion: The high level of nicotine dependence complicates the smoking cessation process. Regular use of scales and tests used in smoking cessation treatments can increase patient compliance and cessation success by guiding the treatment process.

Keywords: Smoking cessation, nicotine dependence, anxiety, depression, desire to smoke, smoking cessation fatigue.

INTRODUCTION

Smoking remains one of the leading preventable causes of morbidity and mortality worldwide (1,2). According to the World Health Organization, tobacco use results in millions of deaths each year and continues to pose a major public health burden, particularly in developing countries (1,2). In Türkiye, smoking prevalence remains high, and tobacco-related diseases lead to substantial healthcare expenditures and productivity losses (4,5). Despite advances in tobacco control policies, long-term smoking cessation success rates remain limited (6).

Smoking cessation is a complex process that cannot be explained solely by nicotine dependence; psychological and behavioral factors also play a critical role (7). Anxiety, depression, and stress-related coping behaviors have been shown to negatively affect smoking cessation outcomes, whereas even brief physician counseling can significantly improve quit rates (8,9). Despite pharmacological and

behavioral interventions, many individuals experience repeated unsuccessful quit attempts, which may eventually lead to motivational decline and emotional exhaustion (10).

"Smoking cessation fatigue" is a concept describing the emotional and motivational burden that arises from repeated quit attempts and prolonged cognitive engagement with quitting (11). This condition may manifest as pessimism, emotional exhaustion, or devaluation of cessation efforts and has been associated with an increased risk of smoking relapse (11,12). Importantly, smoking cessation fatigue is not limited to individuals who have already quit smoking; it may also be observed among active smokers at baseline, particularly those with a history of multiple quit attempts (12).

Another key component of the smoking cessation process is the desire to smoke, which reflects the intensity of nicotine craving and motivational conflict. The Questionnaire on Smoking Urges (QSU) has been widely used to assess smoking desire and has been shown to predict cessation failure and relapse risk (13). However, studies simultaneously examining the relationship between smoking cessation fatigue and the desire to smoke are limited, especially in clinical populations applying to smoking cessation outpatient clinics.

Understanding the interaction between smoking cessation fatigue and the desire to smoke may contribute to the development of individualized cessation strategies. Therefore, the present study aimed to examine the relationship between smoking cessation fatigue and the desire to smoke in patients applying to a smoking cessation outpatient clinic. In addition, we evaluated the associations of these constructs with sociodemographic characteristics, nicotine dependence, anxiety, and depression to better understand the psychological dynamics influencing the smoking cessation process.

METHODS

The Study Design

Our study has a cross-sectional design and was conducted in Istanbul Medeniyet University Goztepe Training and Research Hospital, Family Medicine Clinic, Smoking Cessation Polyclinic between May 1, 2019 and November 1, 2019. Patients who applied for smoking cessation were informed, and the questionnaire on smoking urges and the smoking cessation fatigue scale were applied. In addition, the information in the patients' file records was also included in the study. A total of 302 male and 303 female patients participated in the study.

Inclusion criteria

Being a patient over the age of 18 who applied to the Smoking Cessation Polyclinic and gave verbal or written consent. Exclusion criteria: using active psychiatric medication, major depressive disorder, bipolar disorder, having one of the diagnoses of psychotic disorder according to DSM-V, and having recently experienced a traumatic process.

Collected Data

By examining the file data, sociodemographic characteristics of the patients (age, gender, marital status, education level, occupation), smoking behaviors and attitudes (age of starting smoking, number of cigarettes smoked per day, previous quitting experiences, presence of other smokers at home, factors triggering smoking, etc.), reasons for quitting smoking, comorbidities, nicotine addiction levels, and anxiety and depression status were evaluated. In addition, data were recorded by applying the questionnaire on smoking urges and smoking cessation fatigue scales. The materials used are: Smoking Cessation Polyclinic Patient Form, Anxiety and Depression Status Scale, Fagerstrom Nicotine Dependence Test, Questionnaire on Smoking Urges, and Smoking Cessation Fatigue Scale.

Fagerström Test for Nicotine Dependence

Nicotine dependence levels were assessed using the Fagerström Test for Nicotine Dependence (FTND), a widely used six-item questionnaire developed to evaluate the intensity of physical nicotine addiction. Total scores range from 0 to 10, with higher scores indicating greater nicotine dependence. The Turkish validity and reliability of the test have been established by Uysal et al. (2004).

Hospital Anxiety and Depression Scale (HADS)

Anxiety and depression levels were assessed using the Hospital Anxiety and Depression Scale (HADS), a 14-item self-report instrument developed by Zigmond and Snaith in 1983. The Turkish version of the scale was validated by Aydemir et al. (1997) and includes established cut-off values for both subscales.

Questionaire on Smoking Urges and Smoking Cessation Fatigue Scale

Smoking desire and resistance to smoking cessation were assessed using the Questionnaire on Smoking Urges (QSU) and the Smoking Cessation Fatigue Scale (SCFS). The QSU, developed by Toll et al. in 2006, is a validated instrument measuring the intensity of smoking urges, with higher scores indicating stronger desire to

smoke. The Turkish validity and reliability of the QSU were established by Demirezen and Kurcer (2016).

Smoking cessation fatigue was evaluated using the Smoking Cessation Fatigue Scale (SCFS), developed by Mathew et al. in 2017. The Turkish adaptation of the scale was validated by Ozturk et al. in 2018. The SCFS consists of three subdimensions: emotional exhaustion, pessimism, and devaluation, reflecting emotional and motivational aspects of repeated smoking cessation attempts.

Ethical Approval

This study was approved by the Clinical Research Ethics Committee of Istanbul Medeniyet University Goztepe Training and Research Hospital (Decision No: 2019/176, Date: 17.04.2019). Informed consent was obtained from all patients who agreed to participate in the study. The study was conducted in accordance with the principles of the revised Declaration of Helsinki.

Statistical Analysis

In the evaluation of the data obtained in the study, the SPSS (Statistical Package for the Social Sciences) package program version 23.0 and the GraphPad Instat demo version were used for statistical analysis. The conformity of the data to the normal distribution was estimated with the Kolmogorov-Smirnov test. Data of continuous variables were expressed as mean, standard deviation, median, and range values; data of categorical variables were expressed as frequency and percentage. The Mann-Whitney U test was applied in two-group comparisons, and Kruskal-Wallis test (then Dunn's test for pairwise comparisons) was applied in analyses comparing more than two groups. The relationships between the variables were evaluated with the Spearman correlation test. The statistical significance level was accepted as $p<0.05$.

RESULTS

A total of 605 individuals between the ages of 18–75, with a median age of 39.1 years, were included in the study. 50.1% (n=303) of the participants were female and 49.9% (n=302) were male. 64.6% (n=391) of the patients were married, and the most common education level was higher education with 36.2% (n=219). 66% (n=399) of the participants were actively working. In addition, at least one chronic disease was found in 33.1% (n=200) of patients; these diseases were distributed as lung (11.1%), endocrine (10.9%), cardiovascular system (9.3%), and other (9.3%) diseases, in descending order. Some participants reported more than one chronic disease.

91.6% (n=554) of the patients voluntarily applied to the smoking cessation outpatient clinic. The most common reason for starting smoking was reported to be peer influence (43%, n=260). 20.3% (n=123) of the participants stated that they had received professional support before, and the most commonly used pharmacological treatment was varenicline with a rate of 9.9% (n=60). In addition, it was determined that 46.4% (n=281) of the patients had a smoker at home and 59.7% (n=361) at work; the balcony or the area in front of the window was found to be the most frequently preferred smoking area at home (81%, n=490).

According to the smoking status of the parents, 36.4% (n=220) of the patients did not have a smoker in the family; among the remaining participants, only the father of 38.2% (n=231) smoked, only the mother of 6% (n=36) smoked, and both the mother and the father of 19.5% (n=118) were found to smoke.

The mean age of the patients to start smoking was 17.9 ± 4.7 (median = 17) years, and their daily cigarette consumption was 24.5 ± 10.3 cigarettes (median = 20). The mean duration of smoking was 20.7 ± 11.7 (median = 19) years. The mean number of smoking cessation attempts of the participants was 2.0 ± 2.5 (median = 1), and the longest duration of abstinence achieved was 173.3 ± 567.7 (median = 14) days.

The mean scores of anxiety, depression, nicotine dependence, desire to smoke, and smoking cessation fatigue of the patients are shown in Table 1. The mean and median values of all corresponding scales and subdimensions are presented in Table 1.

The Beck Anxiety Inventory score was significantly higher in women than in men ($p<0.001$). The Beck Depression Scale score was higher in married individuals than in single patients ($p=0.039$). Those who started smoking due to stress had higher anxiety scores than those who started smoking due to peer influence or curiosity ($p=0.029$ and $p=0.022$). In addition, anxiety scores were significantly higher in patients who did not receive professional support than in those who received support ($p=0.023$)

Table 1: Scale, Test, and Questionnaire Scores

Scale / Test / Questionnaire	Mean	SD	Median	Min	Max
Beck Anxiety Scale	7.59	4.11	7	0	20
Beck Depression Scale	6.32	3.79	6	0	19
Fagerström Test for Nicotine Dependence	6.44	2.42	7	0	10
Questionnaire on Smoking Urges	39.20	15.61	40	10	70
Smoking Cessation Fatigue – Emotional Exhaustion	16.85	6.22	17	6	30
Smoking Cessation Fatigue – Pessimism	8.29	3.18	8	3	20
Smoking Cessation Fatigue – Devaluation	18.11	3.82	20	3	20

The Beck Anxiety Scale score was higher in those with chronic diseases compared to those without (p=0.044). Both anxiety and depression scores were significantly higher in patients with lung disease (p=0.006 and p<0.001).

The Fagerström Test for Nicotine Dependence score was significantly higher in individuals who smoked in the living room at home compared to those who smoked on the balcony or near the window (p = 0.015) (Table 2).

Table 2: Fagerström Test for Nicotine Dependence Scores According to Smoking Location in the Home

Groups	Mean	SD	Median	p
Balcony-Window	6.31	2.44	7	**0.015**
Living Room	7.00	2.18	7	
Both	7.10	2.49	8	

The Questionnaire on Smoking Urges score was significantly higher in women than in men (p<0.001). This score was higher in individuals who did not have a smoker in the workplace than those who did (p=0.046) (Table 3)

Table 3: The Questionnaire on Smoking Urges Scores According to the Characteristics of the Patients

Variable	Groups	Mean	SD	Median	p
Gender	Female	41.59	15.74	41	**<0.001**
	Male	36.81	15.13	38	
Smoker in the Workplace	No	40.82	15.93	41	**0.046**
	Yes	38.11	15.31	39	

The SCFS-Emotional Exhaustion score was found to be significantly higher in women than in men (p<0.001). In contrast, the SCFS-Pessimism score was significantly higher in men than in women (p=0.001).

The Smoking Cessation Fatigue Scale-Pessimism score and Smoking Cessation Fatigue Scale- Devaluation score were found to be statistically significantly higher in individuals who tried to quit smoking compared to those who did not (p = 0.025 and p = 0.018, respectively).

The SCFS-Emotional Exhaustion score was found to be higher in those who did not have a smoker in the workplace (p=0.020). In contrast, the SCFS-Devaluation score was significantly higher in those with smoking colleagues in the workplace (p=0.005) (Table 4)

DISCUSSION

Smoking is an important public health problem, and both active and passive smoking contribute to serious morbidity and mortality. According to the World Health Organization, smoking-related deaths are expected to increase in the coming years, particularly in developing countries (4). In the present study, a significant association was identified between the desire to smoke and smoking cessation fatigue, indicating that the desire to smoke increased as the level of cessation fatigue increased. This finding emphasizes that psychological processes, in addition to physical nicotine dependence, should be taken into account in smoking cessation interventions.

Table 4: Smoking Cessation Fatigue Scale Scores According to the Characteristics of the Patients

Variable	Groups	Emotional Exhaustion Mean±SD (Median)	p	Pessimism Mean±SD (Median)	p	Devaluation Mean±SD (Median)	p
Gender	Male	17.76±6.10 (18)	**<0.001**	7.85±2.96 (8)	**0.001**	18.03±3.91 (20)	0.684
	Female	15.95±6.22 (16)		8.74±3.32 (9)		18.20±3.74 (20)	
Trying to Quit Smoking	No	16.52±6.01 (16)	0.436	7.87±3.27 (8)	**0.025**	17.63±4.20 (20)	**0.018**
	Yes	16.97±6.30 (17)		8.45±3.13 (9)		18.29±3.86 (20)	
Smoker in the Workplace	No	17.57±5.82 (17.5)	**0.020**	8.06±3.02 (8)	0.113	17.74±4.14 (20)	**0.005**
	Yes	16.37±6.44 (16)		8.45±3.27 (9)		18.36±3.58 (20)	

In our study, the mean age of the patients was 39.1 ± 11.8 years. In the study by Yasar et al. (2016), this value was reported as 42.6 ± 13.5 years (19). This difference may be related to the cumulative adverse effects of long-term smoking exposure. In our sample, 64.6% of the participants were married, and 46.4% had at least one smoker at home. Argüder et al. (2013) reported that marital status did not have a direct effect on smoking cessation success; however, smoking within the household may increase the risk of relapse among married individuals. Regarding education level, higher education was the most common category (36.2%). Sahbaz et al. (2007) reported that a higher education level positively affected smoking cessation success (20). In our study, the most common reason for smoking initiation was peer influence (43%), which is consistent with the findings reported by Mayda et al. (2010) (21) and Sahin et al. (2012).

In the study conducted by O. Kılıc et al., it was reported that the mothers of 65.1% of the smoking students smoked, and the fathers of 44.3% of the smoking students smoked (22). In our study, the father was identified as the smoker in 38.2% of the participants, the mother in 6%, and both parents in 19.5%. These findings suggest that smoking behaviors within the family may contribute to increased exposure to passive smoking and may be associated with a greater tendency to initiate smoking.

In our study, 64.6% of the patients were married, and 46.4% had at least one smoker at home. Argüder et al. (2013) reported that marital status had no direct effect on smoking cessation treatment. However, shared smoking behaviors within the household, particularly among spouses, may be associated with an increased risk of relapse after smoking cessation.

In our study, Beck Anxiety scores were significantly higher in women than in men. Similarly, Isıktas et al. (2019) reported higher anxiety levels among female students (23). These findings indicate that anxiety symptoms may be more prevalent in women, and smoking may be used as a coping strategy rather than a causal relaxation mechanism. Esen et al. (2018) also reported higher anxiety scores in working individuals (24), which is consistent with our findings. In addition, peer influence as the reason for smoking initiation was found to be associated with anxiety scores. In the study by Fidan et al. (2003–2004), peer influence was reported as the most common reason for smoking initiation, and individuals with higher anxiety levels were found to require more professional support (25).

Lok et al. (2017) found that depression scores were higher in single individuals than in married individuals (26); similarly, in our study, depression scores were higher among single patients. This finding is consistent with previous literature reporting a higher prevalence of depression in individuals who are single, widowed, or living apart (27). In addition, Kutlu et al. (2012–2013) reported significantly higher depression scores in individuals with lung disease (28), which is also in line with our results.

Hezer and Karalezli (2018) found no significant difference between women and men in terms of the Questionnaire on Smoking Urges scores. In contrast, Demirezen and Kurçer (2005) (29) reported higher smoking urge scores in women, which is consistent with our

findings. Liu et al. (USA, n=1307) (30) demonstrated that smoking cessation fatigue was higher in women. Similarly, in our study, women had higher scores on the SCFS–Emotional Exhaustion subdimension.

In the study by Heckman et al. (n=301), smoking cessation fatigue scores were shown to increase over time and were associated with an increased risk of smoking relapse (31). These findings suggest that the Smoking Cessation Fatigue Scale (SCFS) may be a useful tool in smoking cessation and underscore the importance of regular patient follow-up.

Limitations of the Study

This study has several limitations. The cross-sectional design limits causal inference, and the use of self-administered, retrospective self-report data may have increased the risk of reporting bias. Additionally, the lack of structured psychiatric interviews and the single-center design may limit the generalizability of the findings.

CONCLUSION

Smoking is a major public health problem that causes significant physical and psychological harm due to its addictive and toxic components. Patients applying to smoking cessation outpatient clinics should be carefully evaluated and supported through psychotherapy and regular follow-up. Family physicians play a key role in preventive medicine by addressing tobacco control, assessing active and passive smoking, and providing appropriate counseling. Expanding smoking cessation clinics and training specialized healthcare professionals are also essential.

Further comprehensive, multicenter, and prospective studies conducted in smoking cessation outpatient clinics are needed to identify factors influencing treatment outcomes. The scales used in this study may contribute to treatment planning by improving the predictability of smoking cessation processes.

DECLARATIONS

Ethical Consideration: This study was approved by the Clinical Research Ethics Committee of Istanbul Medeniyet University Göztepe Training and Research Hospital (Decision No: 2019/176, Date: 17.04.2019). Written informed consent was obtained from all participants prior to participation in the study.

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Conflicts of Interest Statement: The authors declare no conflicts of interest related to this study.

Data Availability Statement: The data supporting the findings of this study are available from the corresponding author upon reasonable request.

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