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The Effect of Gender Difference on Smoking Cessation

Cinsiyet Farklılığının Sigara Bırakma Üzerine Etkisi

***Neslihan OZCELIK*[1]** **Songul OZYURT[1]**

ÖZ

Amaç: Tütün kullanımı son yüzyıla kadar erkek cinsiyete ait bir davranış olarak algılansa da özellikle gelişmekte olan ülkelerde kadınlarda tütün ürünleri kullanımı gittikçe artmaktadır. Bu çalışma sigara bırakma polikliniğimize başvuran hastalarda cinsiyetin sigara bırakma üzerinde rolünün araştırılması amacı ile yapılmıştır.

Araçlar ve Yöntemler: Ocak 2019-Ocak 2020 tarihleri arasında sigara bırakma polikliniğimize başvuran kişilerden çalışmaya katılmayı kabul edenlere uygulanan anketten elde edilen veriler analiz edildi. Analizlerde SPSS 17.0 kullanıldı. p<.05 anlamlılık düzeyi olarak kabul edildi.

Bulgular: Bir yıllık süre içerisinde toplam 322 başvuru olmuştu. Bu hastaların yaş ortanca değeri 40 yaş olup minimum 17 maksimum 82 yaş idi. Olguların %64'ü (n=206) erkek, %36'sı (n=116) kadın idi. Toplam 322 başvurunun %46'sının (n=148) çalışmaya katılmayı kabul etmediği, %54'ünün (n=174) ise çalışmaya katıldığı saptandı. Sigara bırakmak amacıyla başvuran kadınların ailelerinde sigara içme oranı, erkeklerinkinden anlamlı yüksek bulundu (%85.2 vs. %45.1; p<0.001). Poliklinik devamlılığı sorgulandığında erkek hastaların devamlılık oranı kadınlara göre daha fazlaydı. Bir yıl sonunda sigara bırakma oranı erkeklerde anlamlı olarak daha fazlaydı.

Sonuç: Başlangıçta sigara bırakma niyeti ile başvuran erkek hasta sayısı kadınlardan fazlaydı. Aynı zamanda istatistiksel olarak erkekler daha fazla poliklinik devamlılığı ve sigara bırakma oranına sahipti. Bu sonuçlar kadınların tütünle mücadele konusunda yeterli farkındalıkta olmadığını göstermektedir. Sonuç olarak kadınlara yönelik sigara bırakma konusunda bilgilendirilmeler artırılmalıdır.

Anahtar Kelimeler: cinsiyet; sigara; sigara bırakma kliniği

ABSTRACT

Purpose: Although tobacco use is generally perceived as a male gender behavior, the use of tobacco products among women is gradually increasing, especially in developing countries. This study was conducted to investigate the role of gender in smoking cessation.

Materials and Methods: The data used in this study were obtained from a survey conducted among patients registered at the smoking cessation outpatient clinic between January 2019 and January 2020. The survey was conducted with those who agreed to participate in the study. All the collected data were analyzed by using SPSS 17.0. The significance level was accepted as p<.05.

Results: 322 admissions were registered at the clinic within a year (median age 40 years). 54% (n=174) of the total 322 admissions participated in the study, and 64% (n=206) of the cases were male. The smoking rate in the families of women was significantly higher than that of men (p<0.001). When the polyclinic attendance rate of the participants was questioned, the male patients' attendance rate was higher than that of the female patients, and the rate of quitting smoking was also significantly higher for men.

Conclusion: The number of male patients who presented the intention to quit smoking was higher than the number of women. Men had statistically higher clinic continuity and smoking cessation rates. These results show that women do not have sufficient knowledge about the fight against tobacco; therefore, information on smoking cessation should be made widely available to women.

Key Words: gender; smoking; smoking cessation clinic

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[1] Recep Tayyip Erdogan University, Department of Chest Diseases, Rize, Turkey.

Corresponding Author: Dr. Neslihan Özçelik, Recep Tayyip Erdogan University, Department of Chest Diseases, Rize, Turkey.
e-mail: ozcelik.nesli@gmail.com

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INTRODUCTION

Undoubtedly, one of the biggest disease epidemics in the last century is consuming tobacco products. The World Health Organization (WHO) initiated several campaigns against tobacco products after the relationship between lung cancer and tobacco was determined in the 1970s. Although anti-tobacco campaigns and drives continue without interruptions in many countries, the consumption of tobacco products continues to increase over the years.[1,2]

Although tobacco use was perceived as a male gender behavior until the last century, tobacco product usage among women has gradually increased, especially in developing countries. The widespread campaigns of the tobacco industry that targeted to influence women pandered to their psychological needs. Quotes such as "to be a strong woman", "to be a free woman", and "to be equal with men" were used as marketing techniques to entice women who were trying to gain a place in the male-dominated society.[3] Smoking is often portrayed as a symbol of lighting the torch of freedom in these campaigns. For example, a cigarette company poster of the 1950s had the theme "Believe in Yourself" which implies that a smoking woman is strong and independent.[4] As a result of the increase in the number of women smokers over the years, smoking-related health problems, such as chronic obstructive pulmonary disease, lung cancer, and cardiovascular diseases, which used to be more common in men, started to increase among women. Nevertheless, due to the anti-smoking campaigns launched targeting women, the number of female patient admissions to smoking cessation clinics has increased. However, it is still not at the desired and targeted level.

According to the "Health Research in Turkey" data compiled by the Turkish Statistical Institute every three years, the last of which was published in June 2020, the number of 15-year-old and older individuals who smoke every day increased from 26.5% in 2016 to 28% in 2019. This rate was 41.3% for males and 14.9% for females. The rate of individuals who do not use tobacco (quitters and those who never used) decreased from 69.4% in 2016 to 68.7% in 2019 (Figure 1).[5] Considering the given data, an increase in the frequency of smoking in both genders is observed. It is also noteworthy that the increase in smoking frequency among women becomes more pronounced by years.

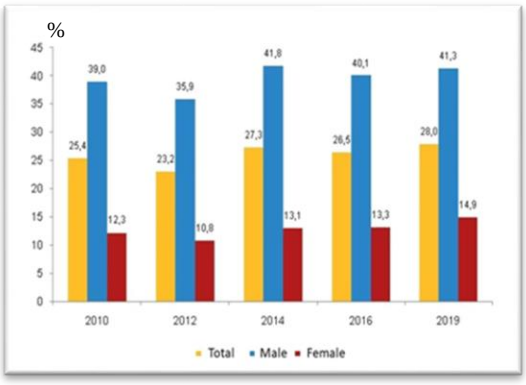

Figure 1. Distribution of daily tobacco users by gender (%), 2010–2019.[5]

Some studies have emphasized that the dopaminergic response to nicotine addiction may differ in women and men.[6] It has been demonstrated that differences in the hormonal structure can change the addiction development potential, and the importance of considering this information during counseling for smoking cessation has been noted.[6,7] In line with these results, we aimed to investigate whether there was a gender difference in the patients referred to the smoking cessation clinic and, if so, determine the effect of this gender difference on smoking cessation behavior.

MATERIALS and METHODS

For our study, we called people who had registered at the smoking cessation clinic of Recep Tayyip Erdogan University Training and Research Hospital between January 2019 and January 2020. We administered a questionnaire to those who agreed to participate in the study.

Demographic data (age, gender, place of residence, educational level, and profession), medical history (presence of comorbidities), and the family history of smoking were questioned. The data of the applicants to the smoking cessation clinic, including whether they visited the clinic regularly or not, the reason for not visiting, if relevant, the treatment they received, whether they covered the cost of the treatment or not, whether they are currently smoking or not, if they quit smoking and started again, the duration

they quit in months, and the reason for starting back if they restarted after quitting, were recorded.

Statistical Analysis

The data were evaluated by the "Statistical Package for Social Sciences (SPSS) v.17.0 (Chicago Inc., 2008) program. Continuous variables were presented in median, minimum, and maximum values. Kolmogorov-Smirnov test was used for determining the compliance of continuous variables to the normal distribution, and Mann-Whitney U test was used for comparison of continuous variables. Categorical variables were expressed as frequency (n) and percentage (%) and were compared by using the Pearson chi-square test. A p-value of 0.05 was accepted as the significance level.

The study's ethics committee approval was obtained from the Ethics Committee of Recep Tayyip Erdogan University (Ethics Approval No: 2019-209).

RESULTS

322 patients were registered at the smoking cessation clinic between January 2019 and January 2020. We called these patients by phone, and they voluntarily agreed to participate in the study. Of the 322 applicants, 46% (n=148) did not agree to participate and 54% (n=174) agreed to participate in the study.

Questions were asked to the participants by phone. 64.9% (n=113) of the 174 patients were male, and 35.1% (n=61) were female. The median age was 40 years, with a minimum of 17 years and a maximum of 82 years.

The male and female groups were compared in our study, and no difference was found in terms of age, educational level, place of residence (urban/rural), and the presence of comorbid diseases (p>0.05, Table 1).

The smoking rate in the families of women who registered at the smoking cessation clinic was significantly higher than that of men (85.2% vs. 45.1%; p<0.001). Considering the distribution of smokers in the family of the female patients, it is seen that 39.6% were partners, 22.6% were parents, 20.8% were siblings, and 17% were children.

Table 1. Analysis of 174 cases that were referred to the smoking cessation clinic and accepted to participate in the study; by gender

Parameters	Total (Median (Min-Max) n = 174	Female (Median (Min-Max) n = 61	Male (Median (Min-Max) n = 113	p
Age (years)a	40 (17-82)	40 (17-82)	40 (19-71)	0.432
Age group n (%)				0.085
17–29-year-olds	41 (23.6)	12 (19.7)	29 (25.7)	
30–54-year-olds	101 (58.0)	42 (68.9)	59 (52.2)	
55 years and older	32 (18.4)	7 (11.5)	25 (22.1)	
Educational level, n (%)				0.087
High school and lower	113 (68.5)	46 (76.7)	67 (63.8)	
University	52 (31.5)	14 (23.3)	38 (36.2)	
Place of residence, n (%)				0.222
Rural region	24 (13.8)	11 (18.0)	13 (11.5)	
Urban region	138 (79.3)	48 (78.7)	90 (79.6)	
Missing	12 (6.9)	2 (3.3)	10 (8.8)	
Comorbid disease, n (%)				0.456
No	109 (75.2)	35 (71.4)	74 (77.1)	
Yes	36 (24.8)	14 (28.6)	22 (22.9)	
Smoking history in the family, n (%)				<0.001
Yes	103 (59.2)	52 (85.2)	51 (45.1)	
No	61 (35.1)	7 (11.5)	54 (47.8)	
Missing	10 (5.7)	2 (3.3)	8 (7.1)	
Smokers in the family, n (%)				0.106
Spouse	31 (29.0)	21 (39.6)	10 (18.5)	
Mother and/or father	28 (26.2)	12 (22.6)	16 (29.6)	
Siblings	23 (21.5)	11 (20.8)	12 (22.2)	
Children	23 (21.5)	9 (17.0)	14 (25.9)	
Other elders	2 (1.9)	0	2 (3.7)	

Varenicline was administered to 59.1% of the patients, nicotine replacement treatment to 30.1%, and bupropion to 1.3%. Cognitive behavioral therapy was given to only 15.1% of the patients. 5.1% of the patients were consulted with psychiatry clinic, and a smoking cessation treatment was not deemed appropriate. 12.1% of the patients who received the varenicline treatment covered the treatment fee

themselves, whereas the others had free treatment from the outpatient clinic.

When the patients' clinic admission and attendance status were examined, the clinic attendance and smoking cessation rates of the male patients were significantly higher than those of the women ($p < 0.005$). When the patients were asked the reasons for their discontinuation with their treatments at the smoking cessation clinic, the most common answer was "... because I could not spare time." Other answers given by the patients include "... because I quit smoking," "... because the recommended medical treatment is not given free of charge and I could not afford it," "... because I did not benefit from the treatment," and "... because the consulted physician did not consent to medical treatment." 1.4% of the patients stated that they did not continue coming to the clinic because they developed side effects due to the medical treatment. No significant difference was found between genders regarding the reasons for treatment discontinuation at the clinic. The distribution of these data according to gender is presented in Table 2.

Table 2. Reasons for patients' discontinuation to visit the clinic

Variables	Total	Female	Male	p
	n = 174	n = 61	n = 113	0.597
Patients who discontinued to visit the polyclinic	130	45	85	0.597
Reason for discontinuation*	n (%)	n (%)	n (%)	
Lack of time	48 (37)	17 (38)	31 (36.5)	
Quit smoking	38 (29.3)	11 (24.4)	27 (31.8)	
Inability to afford the given treatment	18 (13.8)	5 (11.1)	13 (15.2)	
Ineffective treatment	15 (11.5)	6 (13.3)	9 (10.6)	
Lack of the consulted doctor's approval	7 (5.4)	3 (6.6)	4 (4.7)	
Development of a side effect	2 (1.5)	1 (2.2)	1 (1.2)	
Pregnancy	2 (1.5)	2 (4.4)	-	

(*Percentage values of patients who discontinued are given in parentheses)

When the patients' smoking cessation status was questioned, it was found that 29.9% of the patients (24.6% F, 32.7% M) had completely quit using tobacco products. 23% of the patients quit smoking but then restarted (21.3% F, 23.9% M). The duration of cessation time was 1.5 months (0.25-36) for women and 2.5 months (0.25-36) for men. The reasons for restarting smoking were examined, and the most common reason was found to be stress (47.8% of the total patients, including men and women, stated the same factor, and a total of 60% of the female patients stated stress as the reason). However, 17.4% stated that they restarted without any specific reason. Whereas 15.2% expressed that they could not resist their addiction, 8.7% stated that they did not benefit from the given treatment, and another 8.7% indicated that they finished using medication and the prescribed drug was no longer available to them. 2.2% stated that they restarted smoking because they gained weight.

DISCUSSION

From the result of our study, we can conclude that the number of male patients who presented an intention to quit smoking was higher than that of women. At the same time, men had statistically higher clinic continuity and smoking cessation rates. These results show that women might be lacking sufficient knowledge about the fight against tobacco and the need to quit smoking.

Existing literature on the topic reveals that the smoking rate is generally higher in men, while the rate of smoking cessation attempts is higher in women.[8] However, in our study, the number of male patients' applications was higher than that of women. Besides, our study, as also found in other existing literature, revealed that women's smoking cessation success rate was lower than that of men.[8,9]

The exact cause of low cessation rates in women is unclear, but it is thought that women develop add"iction soon after their first tobacco use, and hormonal changes deepen the withdrawal syndrome.[7,10] Additionally, women may experience different stress factors and cessation barriers, including a greater likelihood of depression, more significant weight control anxiety, more non-pharmacological urges to smoke (e.g., socialization), and conclusions of educational differences. In our study, stress was the main factor responsible for restarting smoking in women, with a rate

of 60%. However, no difference was found in the educational level and weight control factors between women and men.

In recent years, people have become more aware of the specific harms of smoking on women. Smoking has gender-specific consequences such as changes in menstrual function, early menopause, infertility, ectopic pregnancy, decreased bone density, and cervical cancer.[11] Also, women are at a greater risk of developing smoking-related diseases such as lung cancer and heart diseases. Moreover, it has been reported that the chemicals found in tobacco reach the breast tissue in female smokers, and tobacco products may have a role in the development of breast cancer.[12] The detection of cigarette compounds in the nipple aspiration fluid and the presence of tobacco-related DNA damage residues in breast epithelial cells found in breast milk support that the compounds in tobacco reach the breast tissue.[13-15]

Gender-specific methods should certainly be tried in the treatment of smoking cessation, where the reasons and results differ according to gender. In a study conducted by Smith et al. in 2016, in which the gender differences in smoking cessation pharmacotherapy were analyzed, placebo and medical treatment (varenicline, nicotine patch, bupropion) were compared. According to the result of the study, varenicline was 41% more effective than nicotine patches and 38% more effective than bupropion for women. For men, the results for those treated with the nicotine patch and bupropion were similar to those treated with varenicline. No significant difference was found in efficiency when bupropion and nicotine patch were compared.[16] In another study conducted with bupropion, no difference was found between men and women, but women's cessation rates were found to be lower than man's cessation rates.[17] In our study, the efficiency of the treatments recommended for smoking cessation behavior resulted in no gender dependency.

Limitations, Suggestions for Future Research

This study had some limitations that should be taken into account during the evaluation of the findings. Firstly, since our study is a single-centered, cross-sectional study with a clinical sample, its results cannot be generalized. Secondly, the number of patients in our study was limited because only the information of patients who quit smoking for one year was obtained. Surveys conducted in larger communities can reveal different results on this topic.

Although the reasons have not been clarified yet, many genetic, hormonal, psychiatric, and sociological factors underlying nicotine addiction in women are different from the ones affecting men. As a result of our study, we observed that women had lower knowledge of tobacco's harms, and the stress factor negatively affects their attempts to quit smoking. According to these results, developing a unique and focused approach to fighting against women's tobacco consumption is required.

Conflict of Interest

The authors declare that there is not any conflict of interest regarding the publication of this manuscript.

Authors' Contributions

Concept/Design: NO, SO. Data Collection and/or Processing: NO, SO. Data analysis and interpretation: SO, NO. Literature Search: NO, SO. Drafting manuscript: NO, SO. Critical revision of manuscript: SO, NO. Supervision: SO.

REFERENCES

1. Bilir N. Dünyada ve Türkiye'de Tütün Kullanımı Epidemiyolojisi, Aytemur ZA, Akçay Ş, Elbek O. Tütün ve Tütün Kontrolü Kitabı, Toraks Kitapları, Birinci Basım, Türkiye. 2010;1(1):21-35.
2. Bilir N, Özcebe H. Tobacco control activities in Turkey. Turk J Public Health. 2013;11(2):96.
3. Amos A. How women are targeted by the tobacco industry. In: World health forum. 1990;11(4):96-103.
4. Stanford Research Into the Impact of Tobacco Advertising(SRITA),http://tobacco.stanford.edu/tobacco_main/images_body.php?token1=fm_img3828.php. Access Date: 22 October, 2020.
5. Türkiye İstatistik Kurumu (TÜİK), Türkiye Sağlık Araştırması.http://tuik.gov.tr/PreTablo.do?alt_id=1095, 2020. 33661. Access Date: 22 October, 2020.
6. Allen AM, Oncken C, Hatsukami D. Women and smoking: the effect of gender on the epidemiology, health effects, and cessation of smoking. Curr. Add. Rep. 2014;1(1):53-60.
7. Smith PH, Bessette AJ, Weinberger AH, Sheffer CE, McKee SA. Sex/gender differences in smoking cessation: a review. Prev Med. 2016;92(1):135-140.
8. Jayakumar N, Chaiton M, Zhang B, Selby P, Schwartz R. Sex Differences in Use of Smoking Cessation Services and Resources: A Real-World Study. Tob. Use Insights. 2020;13(1):1-8.

9. Wetter DW, Kenford SL, Smith SS, Fiore MC, Jorenby DE, Baker TB. Gender differences in smoking cessation. J Consult Clin Psychol. 1999;67(4):555.
10. Jarvis M. Gender and smoking: do women really find it harder to give up? Br. J. Addict. 1984;79(4):383-387.
11. Fiore MC. Treating tobacco use and dependence: 2008 update. Rockville, MD: US Dep.of Health and Human Services. 2008.
12. Kispert S and McHowatJ. Recent insights into cigarette smoking as a lifestyle risk factor for breast cancer. Breast Cancer. 2017; 9(1):127-132.
13. Petrakis NL, Gruenke LD, Beelen TC, Castagnoli N, Craig JC. Nicotine in breast fluid of nonlactating women. Science. 1978;199(4326):303-305.
14. Thompson PA, DeMarini DM, Kadlubar FF, et al. Evidence for the presence of mutagenic arylamines in human breast milk and DNA adducts in exfoliated breast ductal epithelial cells. Environ. Mol. Mutagen. 2002;39(2-3):134-142.
15. Alataş Ö. Tütün ve İçerdiği Zararlı Kimyasalların İnsandaki Etkileri. STED. 2018;27:51-54.
16. Smith P.H, Weinberger AH, Zhang J, Emme E, Mazure CM, McKee SA. Sex differences in smoking cessation pharmacotherapy comparative efficacy: a network meta-analysis. Nicotine Tob. Res. 2017;19(3):273-281.
17. Scharf D, Shiffman S, Are there gender differences in smoking cessation, with and without bupropion? Pooled- and meta-analyses of clinical trials of Bupropion SR. Addiction. 2004;99(11):1462-1469.