

# Effect of Smoking Cessation on the Anxiety and the Urge for Smoking

## Sigara Bırakmanın Sigara İçme Arzusu ve Anksiyeteye Etkisi

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### ABSTRACT

**Objective:** Research into the comorbidity between emotional psychopathology and cigarette smoking has often focused upon anxiety. The aim of this study is to show the effect of smoking cessation on anxiety and the desire for smoking.

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**Method:** In this experimental design, the voluntary sociodemographic data form, FNBT, Smoking Desire Inventory of Turkish (QSU) version and Hospital Anxiety-Depression Scale (HAD) scale were asked to leave the smoking. The first day was applied after three hours of deprivation. Smoking cessation treatment was started between the 8.-10. days. After 4 weeks, the patient was called to control and the QSU and HAD scales were repeated.

**Results:** When the relation between smoking desire and anxiety was examined, it was found that the anxiety level of those who had a high desire for smoking was high.

**Results:** The level of anxiety was high in those who had a high desire for smoking. Anxiety scores were found significantly lower than those who could not leave the cigarette at the end of the first month.

**Conclusion:** QSU should be recommended for smoking cessation outpatient clinics.

**Key Words:** Smoking cessation, Smoking desire, anxiety.

### ÖZET

**Amaç:** Bu çalışmanın amacı Sigara İçme Arzusunun anksiyete üzerine etkisini ortaya koymaktır.

**Yöntem:** Bu deneysel tasarımda sigara bırakma polikliniğine başvuran sigarayı bırakmak isteyen gönüllü hastalara sosyodemografik veri formu, FNBT ve HAD ölçeği yönlendirilmiştir. Birinci gün üç saatlik yoksunluktan sonra SİAÖ uygulanmıştır. 8-10. günler arasında sigara bırakma tedavisine başlanmıştır. Bir aylık yoksunluk sonrası sigara içme arzusunu HAD ölçeği puanları ile karşılaştırmak amacıyla sigara bırakma gününden 4 hafta sonra hasta kontrole çağrılıp SİAÖ ve HAD ölçeği tekrarlanmıştır.

**Bulgular:** Bu araştırmada sigara içme arzusu yüksek olanların anksiyete seviyesinin de yüksek olduğu saptanmıştır.

**Sonuç:** Sigara içme arzusu ve anksiyete puanları birinci ay sonunda sigarayı bırakabilen hastalarda bırakamayanlara göre anlamlı düzeyde azaldığı saptanmıştır. SİAÖ sigara bırakma polikliniklerinde kullanılması önerilmelidir.

**Anahtar Kelimeler:** Sigara, arzu, ölçek, anksiyete.

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## INTRODUCTION

Smoking is the most important cause of preventable mortality and morbidity in the whole world (1). Despite being informed about the harms of tobacco use because of willingness to tobacco, stopping to consume is not an easy process (2). Among current smokers, negative emotional symptoms and disorders significantly increase risk of smoking cessation failure (3).

From a cessation perspective, smokers higher relative to lower in anxiety sensitivity perceive quitting as more difficult (4). It was suggested that potential clinical utility of the anxiety sensitivity smoking cessation program in regard to cessation outcome. Different studies suggest that stress and negative affect are associated with increased smoking and urges to smoke (5). The desire to smoke and the main factor affecting failure were identified as the most obvious problems during smoking cessation (6). Prospective Works Show that elevated levels of anxiety sensitivity increase the chance of early smoking lapse during a leave attempt and the expectation of that smoking helps alleviate negative affect (7).

The aim of this study is to show the effect of smoking cessation on the anxiety and the urge for smoking.

## MATERIALS AND METHODS

The sample of this study was 127 patients who applied Bülent Ecevit University Medical Faculty Hospital Smoking Cessation Polyclinic for admission were included in the study between January and June 2005. During this period; patients who agreed to participate in the study and met the inclusion criteria. Inclusion criteria; patients who being 18 years old and over, who not have a psychiatric diagnosis and who not being intelligent disability.

120 patients with nicotine addiction who voluntarily participated in the study which the type of the intervention study was included in this study from patients admitted to Bülent Ecevit University Medical Faculty Hospital Smoking Cessation

Polyclinic. Patients were determined nicotine addiction. Then they were given consultancy about smoking cessation. If they have nicotine addiction they were suggested replacement therapy or medication (Bupropion or Varenicline)

The sociodemographic data form, FNBT, HAD were followed by the medical history and physical examination. According to the research design; patients were administered QSU in order to measure their desire later three hours from the last cigarette (5-7). QSU for measuring smoking desire was adapted to Turkish. The validity and reliability study was conducted by Demirezen and Kurçer (8).

Four weeks after QSU and HAD scale were repeated to compare anxiety scores and the smoking desire. The group which couldn't leave smoking after 4 weeks cessation had filled that scale after 3 hours deprivation.

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The collected data were analyzed by SPSS for Windows Version 18.0 computer program for statistical analysis. Distribution was evaluated the data obtained by measurement. It was show that the nonparametric distribution. It was evaluated by Kolmogorov Smirnov Test. Continuous variables are expressed as median  $\pm$  standard error, since the data do not show normal distribution. The Mann Whitney U test was used to compare continuous data with nonparametric tests.

For this study, ethics permission was approved

by Bülent Ecevit University Medical Faculty Clinical Investigation Ethics Committee Presidency.

## RESULTS

Of the 120 patients who participated in the study, 30 were female (25%) and 90 (75%) were male. The mean age is  $37.1 \pm 1.00$ . 74.2% of the patients participating in the study were married and 25.8% were single. Education level found that; primary school (40.8%), are high school (30.8%) and university graduates (28.4%). The mean body mass index of the patients participating in the study was  $25.5 \pm 4.03$ . 21.7% of the patients have a chronic disease. Alcohol consumption was found to be  $7.8 \pm 1.29$  times in a week.

The least of smoking onset is 5 age. The onset mean age of the patients was  $17.5 \pm 0.45$ . The mean amount of cigarette consumption is  $18.9 \pm 1.33$  packs / year. The mean Fagerström addiction score was  $5.3 \pm 0.23$ .

When it is examined why patients participating in the research do not attempt smoking cessation according to their own statements; 39.2% of them thought that they could not stop smoking, 39.2% of the patients said that they enjoyed smoking. 18.3% said that they could not catch attention and 3.3% said that they were concerned about weight gain. On the first day, the mean total scores obtained from the QSU were significantly higher in females compared to males ( $p = 0.0001$ ).

The symptoms that are most effective in the relapse of the patients; excessiveness in the urge of cigarettes (32.5%), nervousness (29.2%), and increased appetite (9.2%). 17.5% of the patients had attention and concentration problems, headache, restlessness, fatigue, insomnia. 5.8% of the patients stated that they did not show any withdrawal symptoms and 5.8% stated that they did not attempt smoking cessation before. There is a weak positive correlation between the total urge score and the amount of cigarette consumption (package / year) ( $r = 0.211$ ).

In this study, a high positive correlation was found between the total desire score of QSU and FNBT ( $r=0.518$ ).

As seen in Table 1, First day smoking urge point means ( $33.4 \pm 2.73$ ) and 4 weeks after smoking urge point means ( $39.5 \pm 2.03$ ) were not different on the patient who cannot leave smoking. First day smoking urge point means ( $36.2 \pm 2.74$ ) was significantly higher than 4 weeks after smoking urge point means ( $10.9 \pm 0.23$ ) on the patient who can leave smoking ( $p = 0.0001$ ).

On the first day of smoking cessation treatment, the smoking urge and anxiety scores of the patients who leave smoking compared to the patient who cannot leave smoking were not significantly different ( $p = 0.868$ ). First day anxiety Score means ( $7.56 \pm 0.44$ ) was significantly higher than 4 weeks after smoking urge point means ( $3.8 \pm 0.44$ ) on the patient who can leave smoking ( $p = 0.0001$ ). (Table 2)

Smoking Cessation Status	n	Smoking Urge (First Day) Mean $\pm$ Standard error	Smoking Urge (4 Weeks After) Mean $\pm$ Standard error	p
Leave	49	36.2 $\pm$ 2.74	10.9 $\pm$ 0.23	0.0001
Don't leave	71	33.4 $\pm$ 2.73	39.5 $\pm$ 2.03	0.825

## DISCUSSION

The mean age of the patients was  $18.9 \pm 1.33$  years / pack smoking history. Similar to this study, the mean annual consumption of cigarettes was found to be  $17.8 \pm 7.70$  years / package in the validity study of the QSU scale conducted by Yu et al in China (8). The mean age at onset of smoking varies between 15 and 18 years (12-16) according to the results of different studies in Turkey and the 2008 Global Adult Tobacco Survey in Turkey. The mean age of the first cigarette in this study was found to be consistent with the literature ( $17.5 \pm 0.45$ ). The patients state that they could not stop smoking; I could not leave because they enjoyed (39 %), I could not catch attention 18%, I had not attempted to leave before due to their anxiety about weight gain (3%). These findings are consistent with the literature and there are publications that state that tobacco users are enjoying tobacco or not attempting to leave because of the inability to stop (17-20).

Approximately 33% of the patients stated that they were the most uncomfortable symptom was excessive smoking urge on the patients included the study included. 29% stated that the to be nervous was the most disturbing symptom. The results of this study are consistent with DSM IV nicotine withdrawal criteria (21).

The patients state that; I had experienced at least one symptom of absence (94%) and I did not have any symptoms of withdrawal (6%). The rate of at least one symptom of withdrawal in patients attempting to leave smoking was 63-90% according to the results of various investigations (22-24). This finding is similar to the data in the study.

On the first day of the patients, the mean QSU scores were found significantly higher in women. Similar to this coincidence, according to the validity study of Araujo and his colleagues in Brazil, QSU scale was found to be significantly higher in female sex (2).

In this study, there was a weak positive correlation between the total desire score and the amount of cigarette consumption (package / year) ( $R = 0.211$ ) (25), Araujo in Brazil ( $r = 0.190$ ), Littel in the Netherlands ( $r=0.250$ ) support this finding (2).

There was a weak positive correlation between the total urge score of QSU-Brief scale and the FNBT score of Littel ( $r = 0.140$ ) and friends in the Netherlands, Araujo et al. In Brazil ( $r = 0.206$ ) similar with this study ( $r = 0.518$ ) (2).

It is noteworthy that the relationship between smoking desire and nicotine dependence is an expected finding and that strength of power is higher in this study than in studies conducted in Brazil and the Netherlands (2, 25). These findings may indicate that it is appropriate to use the QSU in smoking cessation clinics. For this reason, the use of QSU in smoking cessation clinics should be recommended. Smoking cessation and anxiety scores decreased significantly on the first day and first month after smoking cessation treatment. In addition, the score of smoking intention decreased significantly in end of the fourth week after smoking cessation treatment in this study. There is a strong association between regular smoking and new onset anxiety disorders (26-28). Acute psychosocial stress and anxiety have been reported to increase the desire for smoking (29). Similar to this study, Farris and et al. found that after adjusting for covariates, participants who remained abstinent for one month relative to those who did not demonstrate significant reductions in anxious arousal at Month 1 and Month 3 post-quit (30). The opposite is also true. Bakhshai suggest that anxiety sensitivity class moderated the relation between pre-quit reduction in anxiety sensitivity and the intensity (31). Stress may be a negative effect of smoking cessation success, but stress levels after smoking cessation may be lower.

## CONCLUSION

These findings indicate that smoking cessation treatment eliminates the desire of smoking and anxiety. For this reason, anxiety and desire for smoking should be measured in all patients who are treated for cessation of smoking cessation. When patients leave the cigarette, smoking desire and anxiety decrease together. QSU will be useful for patient who want to leave smoke. Patients will be motivated for leave smoking.

## KAYNAKLAR

- 1- Colice GL, Rubins J, Unger M. Follow-up and surveillance of the lung cancer patient following curative-intent therapy. *Chest* 2003; 123: 272–283.
- 2- Araujo RB, Oliveira MS, Mansur MA. Brazilian validation of the Questionnaire of Smoking Urges. *Cad. Saúde Pública, Rio de Janeiro* 2006; 22: 2157-2167
- 3- Hall, S.M. Muñoz R.F., Reus V.I. Cognitive-behavioral intervention increases abstinence rates for depressive-history smokers. *Journal of Consulting and Clinical Psychology* 1994; 62 :141–146
- 4- Zvolensky M.J, Bernstein, A, Cardenas, S.J., Colotla V.A., Marshall E.C., Feldner M.T. Anxiety sensitivity and early relapse to smoking: A test among Mexican daily, low-level smokers. *Nicotine & Tobacco Research* 2007; 9 : 483–491
- 5- Niaura R, Shadel W, Britt DM, Abrams DB. Response to social stress, urge to smoke, and smoking cessation. *Addictive Behaviors* 2002; 27; 2: 241–250
- 6- Kamlı S, Karatay G, Terzioğlu F, Kubilay G. Sigara ve Ruh Sağlığı. T.C. Sağlık Bakanlığı Temel Sağlık Hizmetleri Genel Müdürlüğü Beslenme ve Fiziksel Aktiviteler Daire Başkanlığı. 1. Baskı, Ankara: 2008
- 7- Zvolensky MJ, Bonn-Miller O, Feldner MT, Feldner EL, Mc Leish AC, Gregor K. Anxiety sensitivity: Concurrent associations with negative affect smoking motives and abstinence self-confidence among young adult smokers. *Addictive Behaviors* 2006; 31; 429–439
- 8- Yu X, Xiao D, Li B, Liu Y, Wang G, Chen J, Bai C, Pan J, Wan H, Li Q, Zhou X, Liao R, Li Q, Wang C, Chen R, Tang Y, Mo H, Zhao M, Du J, Li J, Kang L, Wang C. Evaluation of the Chinese versions of the Minnesota Nicotine Withdrawal Scale and the Questionnaire on Smoking Urges-Brief. *Nicotine & Tobacco Research* 2010; 12: 630–634.
- 9- Uysal M A, Kadakal F, Karsıdag C, Bayram N, Uysal O, Yılmaz V. Fagerstrom test for nicotine dependence: Reliability in a Turkish sample and factor analysis. *Tüberküloz ve Toraks Dergisi* 2004; 52: 115-121.
- 10- Cox L S, Tiffany ST, Christen A G. Evaluation of the brief questionnaire of smoking urges (QSU- brief) in laboratory and clinical settings. *Nicotine Tob Res* 2001; 3 : 7-16
- 11- Bjelland I, Dahl AA, Haug TT, Neckelmann D. The validity of the Hospital Anxiety and Depression Scale: An updated literature review. *Journal of Psychosomatic Research* 2002; 52: 69–77
- 12- Demirezen M, Kurcer MA. Questionnaire of smoking urges Turkish Validity and Reliability . *TAF Prev Med Bull* 2016; 15; 1-4
- 13- Kocabaş A. Smoking habit in middle school students. *Ankara Medical Journal* 1988; 41: 9-22.
- 14- Kiyak M. Dağoğlu T. Smoking among high school students. *Istanbul Public Health Bulletin* 1990; 11: 14-7.
- 15- Dabakoglu T, Kukner S, Vicdan K et al. Smoking, drinking and drug use in female adolescent. *Tr J Med Sci* 1993; 19: 157-64.
- 16- Smoking Prevalence in secondary school students in Karlikaya C. *Edirne. Thorax Magazine* 2002; 3: 6-12.
- 17- Bilir N, Aslan D, Özcebe H, Çan G, Ergüder T. Today and tomorrow in the control of tobacco in Turkey. *The Turkish Health Report* 2012; 197-225
- 18- The Encyclopedia Americana, Tobacco, Grolier, USA 1982; 26: 800.
- 19- Willian N. Third World Worn, WHO Chronicle 1983 [https://issuu.com/sthughscollgeoxford/docs/chronicle\\_1983-1984](https://issuu.com/sthughscollgeoxford/docs/chronicle_1983-1984) Online: 11 June 2017.
- 20- Ergeneilek, E. ve G. Öztunç, Sigara Kullanan Hemşirelerin Sigarayı Bırakmaya Yönelik Girişimleri Ve Sonuçlar. *Ç.Ü. Sağlık Bilimleri Dergisi* 2007; 23: 1-8
- 21- Fagerström K. Epidemiology of smoking. *Drugs supplement; Adis International Ltd. Turgut Publishing* 2002; 62: 1-9
- 22- Patten CA, Ames SC, Ebert JO. Tobacco use outcomes of adolescent treated clinically nicotine dependence. *Arch Pediatr Adolesc* 2001; 155: 831.
- 23- Chabrol H, Fauray R, Mullet E, et al. Study of nicotine dependence among 342 adolescent smokers. *Arch Pediatr* 2000; 7: 1064-1071.
- 24- Littel M, Franken I, Muris P. Psychometric

- properties of the brief Questionnaire on Smoking Urges (QSU-Brief) in a Dutch smoker population 2011. *Netherlands Journal of Psychology* 2011; 1: 1- 20
- 25- Lawrence D, Considine J, Mitrou F, Zubrick SR. Anxiety disorders and cigarette smoking: Results from the Australian Survey of mental health and wellbeing. *Aust N Z J Psychiatry*. 2010; 44:520-7.
- 26- Langdon KJ, Leventhal AM, Stewart S, Rosenfield D, Steeves D, Zvolensky MJ. Anhedonia and anxiety sensitivity: prospective relationships to nicotine withdrawal symptoms during smoking cessation. *J Stud Alcohol Drugs* 2013;74 :469-78.
- 27- Mojtabai R, Crum RM. Cigarette smoking and onset of mood and anxiety disorders. *American Journal of Public Health* 2013; 103: 1656-1665.
- 28- Childs E, de Wit H. Effects of acute psychosocial stress on cigarette craving and smoking. *Nicotine Tob Res* 2010;12 :449-53.
- 29- Henry SL, Jamner LD, Whalen CK. I (should) need a cigarette: adolescent social anxiety and cigarette smoking. *Ann Behav Med* 2012;43 :383-93.
- 30- Farris SG, Allan NP, Morales PC, Schmidt NB, Zvolensky MJ. Does successful smoking cessation reduce anxious arousal among treatment-seeking smokers? *Journal of Anxiety Disorders* 2015; 36: 92–98
- 31- Bakhshaie J, Zvolensky MJ, Langdon CJ, Leventhal AM. Anxiety sensitivity class membership moderates the effects of pre-quit reduction in anxiety sensitivity on quit-day tobacco craving. *Journal of Anxiety Disorders*. 2016;39: 79-87