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ORIGINAL RESEARCH

The Success of Smoking Cessation Treatments: The Gulhane Experience

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Main Points

- In this study, CBT combined with varenicline was found to be more successful than CBT combined with NRT in smoking cessation. The reliability of varenicline, low FTND level, absence of comorbidity and more follow-up visits were found to be contributing factors to this success.
- The results of this study confirmed that while smokers do not have comorbidity and their addiction levels are low, they can achieve successful smoking cessation if they start smoking cessation treatments with confidence, use these treatments regularly and attend regular follow-up visits.

Abstract

This study aimed to evaluate the success and factors that affected the success of smoking cessation treatments adopted in the Gulhane Smoking Cessation Polyclinic (SCP). The smokers admitted to SCP from January 1, 2018, to July 15, 2019, were included in the study. The participants were treated with varenicline or nicotine replacement therapy (NRT) combined with cognitive behavioral therapy (CBT). The number of all participants was 598, and 196 (32.8%) of them quitted smoking successfully. The varenicline group (n=264) had significantly higher number and percentage of participants who successfully quit smoking than the NRT group (n=334), which accounted for 113 (42.8%) and 83 (24.9%), respectively (p<0.001). The highest smoking cessation rate was detected in the group with low Fagerström Test for Nicotine Dependence (FTND) at 79.5% (p<0.001). Participants without comorbidity had higher smoking cessation rates than others (p=0.002). The mean numbers of follow-up visits were higher in the successfully quit group with a mean number of 4.2 (p<0.001). CBT combined with varenicline was found to be more successful than CBT combined with NRT in smoking cessation. The reliability of varenicline, low FTND level, absence of comorbidity, and increased numbers follow-up visits were found to be contributing factors to this success.
Keywords: Cognitive behavioral therapy, nicotine replacement therapy, smoking cessation treatment, varenicline

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Introduction

Smoking poses a considerable threat to public health, and is responsible for eight million deaths annually; smoking has undoubtedly emerged as the most common public health problem reported worldwide (Kaleta et al., 2009). Smoking causes an addiction that is more severe than the cumulative addiction reported for all addictive substances, such as cannabis, amphetamines, opioids, and cocaine (Peacock et al., 2018). Nicotine is the main agent responsible for smoking addiction, including the psychological and physical forms of addiction (Cahill et al., 2016; Markou, 2008). In odder to abolish tobacco use at worldwide, the MPOWER strategy, which is defined as monitoring tobacco use (m), preventing tobacco exposure (p), offering help to quit (o), warning (w), enforcing (e), and raising taxes (r) was developed by the World Health Organization (WHO) in 2004 (Kaleta et al., 2009).

The smoking cessation treatment support program was initiated by implementing the MPOWER strategy to reorganize smoking cessation

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polyclinics (SCP) in 2011 by the Turkish Republic Ministry of Health. The SCPs aimed to provide smoking cessation treatment that comprised evaluation of the smokers' addiction status with a holistic medical perspective, by applying the most suitable smoking cessation treatment strategy, by checking the cessation success of the participants, and by monitoring possible side effects of the administered smoking cessation treatments through follow-up visits. The application process to the SCP unit is initiated via an appointment through the "Alo 171" phone line, followed by subjection to evaluation by a specialist, arrangement of appropriate treatment, and is concluded by offering the necessary services and recommended smoking cessation drugs free of charge to applicants who wish to quit smoking (Dubray et al., 2015; Tobacco Addiction Unit Regl, 2011).

Until December 2020, 521 SCPs had been established in 81 cities in Turkey, and more than three million smokers were admitted in such polyclinics. Smoking cessation strategies, including admission to SCPs have not only helped smokers to quit smoking but have also increased awareness among smokers regarding chronic obstructive lung diseases (Arslan et al., 2021). In this study, we aimed to evaluate the effectiveness and factors that affected the effectiveness of smoking cessation treatment strategies applied in the Gulhane SCP.

Methods

Clinical Evaluation of Participants

This retrospective, cross-sectional, epidemiologic study was conducted at the SCP of Ankara Gulhane Education and Research Hospital affiliated to the Health Sciences University. The study protocol was reviewed and approved by the ethics committee of Gulhane Education and Research Hospital (approval no. 2020/15). A total of 598 smokers who were admitted to SCP, expressing a desire to quit smoking, were included in the study period that spanned from January 01, 2018, to July 15, 2019.

All participants were subjected to assessments for their socio-demographic and smoking characteristics including sex, age, body mass index (BMI), educational status, smoking pack/years (p/y) anamnesis (<10, 10-30, and >30), occupational status, existing conditions such as dyspnea (dyspnea score and Modified Medical Research Council Dyspnea Scale) and comorbidities. Moreover, the participants were requested to complete the Fagerström Test for Nicotine Dependence (FTND), which was revised by Heatherton in 1991 to define nicotine dependence levels as low, moderate, and high, which correspond to < 3, 4-6, and 7-10 points, respectively (Heatherton et al., 1991). The anxiety and depression assessment scales were used for the participants, and the participants with high-risk scores were referred to the psychiatry department. Data on the comorbidity and medication status of the participants were recorded in the tobacco addiction treatment monitoring system. Complete physical examinations were performed for all participants. Biochemical analyses, including complete blood analysis and routine tests were performed, and carbon monoxide values in the breath condensate were measured. Pulmonary function tests, electrocardiography, and chest X-ray imaging were performed for all participants.

Study Protocol

All participants were interviewed for 20-30 min; the interview constituted a part of a cognitive behavioral therapy (CBT) aimed at treating the psychological component of nicotine addiction, as this component is hypothesized to persist lifelong. To integrate CBT, data of all participants were reviewed, and all were examined in accordance with the recommendations of the Food and Drug Administration and the Tobacco Control Department of Ministry of Health in Turkey. As representatives of the most appropriate medication treatments for tobacco addiction, these agencies recommended the use of varenicline (days 1-3, 0.5 mg once per day; days 4-7, 0.5 mg twice per day; day 8 till the end of treatment, 1 mg twice per day) and NRT (with varied doses that should be tapered as with the progression of therapy); heavy smokers, 21 mg per day (initial dosage); light smokers or those weighing <100 lbs. (45 kg), 10-14 mg per day (initial dosage) (GBD 2017 Disease and Injury Incidence and Prevalence Collaborators., 2018). Smokers who did not wish to receive medication treatment or were inappropriate for subjection to medication treatment received only CBT and were not included in the study. Participants who commenced smoking again after quitting were defined as those having a relapse.

The success of participants who succeeded in quitting smoking and the factors that affected successful smoking cessation were determined at the end of the first, second, third, sixth, and twelfth months by conducting face-to-face follow-up visits and periodic phone interviews until the completion of the first year of treatment.

Statistical Analysis

Data were analyzed using the Statistical Package for the Social Sciences version 22.0 (IBM SPSS Corp.; Armonk, NY, USA) for Windows. Descriptive statistics such as frequencies and percentages were obtained. The Student's t-test, analysis of variance, Pearson correlation, and chi-squared tests were used in the analyses. Findings were considered significant at $p<0.05$.

Results

In total, 598 participants with a mean age of 42.7 years were included in the study. Of these participants, 343 (57.4%) were men. A total of 196 (32.8%) participants successfully stopped smoking. The varenicline group (n=264) had a significantly higher number and percentage of participants who successfully quit smoking than the NRT group (n=334), which accounted for 113 (42.8%) and 83 (24.9%), respectively ($p<0.001$). The smoke cessation rates according to sex distribution were higher in men (33.8%) than those in women (31.4%). The 35-44 years age group had the highest number of participants (n=163). The 10-30 p/y and high FTND groups had the highest number of participants at 355 and 244, respectively. The highest smoking cessation rate was detected in the low FTND group at 79.5% (51.4% with CBT + NRT versus 90.8% with CBT + varenicline) ($p<0.001$). Participants without comorbidity had higher smoking cessation rates than other participants ($p=0.002$). The mean numbers of follow-up visits were higher in the successful group than those in the group where participants failed to quit, with mean numbers of 4.2 and 2.05, respectively ($p<0.001$). The comparison of the successful group and the group where participants failed to quit in terms of smoking cessation is shown in Table 1.

Table 1.
Comparison of Smoking Characteristics between Groups where Participants Successfully Quit Smoking and where Participants Failed to Quit

Smoking characteristics	**Number**	**Successfully Quit n (%)**	**Failed to Quit n (%)**	**p (<0.05)**
All participants	598	196 (32.8)	402 (67.2)	
Sex				0.528
Male	343	116 (33.8)	227 (66.2)	
Female	255	80 (31.4)	175 (68.6)	
Age decades (years)				0.872
18-24	58	17 (29.3)	41 (70.7)	
25-34	107	39 (36.4)	68 (63.6)	
35-44	163	56 (34.4)	107 (65.6)	
45-54	156	47 (30.1)	109 (69.9)	
55-65	83	26 (31.3)	57 (68.7)	
> 65	31	11 (35.5)	20 (64.5)	
Smoking package-year (p/y)				0.225
< 10	93	30 (32.3)	63 (67.7)	
10-30	355	125 (35.2)	230 (4.8)	
> 30	150	41 (27.3)	109 (72.7)	
FTND level				<0.001
Low (0-3)	122	97 (79.5)	25 (20.5)	
Moderate (4-6)	232	62 (26.5)	170 (63.5)	
High (7-10)	244	37 (15.2)	207 (84.8)	
Comorbidity				0.002
Present	239	76 (31.8)	163 (68.2)	
Absent	359	120 (33.4)	239 (66.6)	
Treatment type				<0.001
NRT	334	83 (24.9)	251 (75.1)	
Varenicline	264	113 (42.8)	151 (67.2)	
Mean number of follow-up visits		4.2	2.05	<0.001

FTND: Fagerström Test for Nicotine Dependence; NRT: nicotine replacement therapy

Table 2.
Comparison of Sociodemographic Data between Groups where Participants Successfully Quit and where Participants Failed to Quit

Sociodemographic Data	**Number**	**Successfully Quit n (%)**	**Failed to Quit n (%)**	**p (<0.05)**
All participants	598	196 (32.8)	402 (67.2)	
BMI (kg/m^2)				0.53*
< 18.5	11	1 (9.1)	10 (90.9)	
18.5-24.99	217	53 (24.4)	164 (75.6)	
25-29.99	177	38 (21.5)	139 (78.5)	
⩾ 30	93	18 (19.4)	75 (80.6)	
Education status				0.022
Primary school	187	58 (31)	129 (69)	
High school	303	113 (37.3)	190 (62.7)	
University	108	25 (23.1)	83 (76.9)	
Occupational status				0.137

Table 2.
Comparison of Sociodemographic Data between Groups where Participants Successfully Quit and where Participants Failed to Quit (Continued)

Sociodemographic Data	Number	Successfully Quit n (%)	Failed to Quit n (%)	p (<0.05)
Unemployed	18	6 (33.3)	12 (66.7)	
Public employee/officer	93	42 (45.2)	51 (64.8)	
Private sector/worker	263	83 (31.6)	180 (68.4)	
Student	30	8 (26.7)	22 (73.3)	
Retired	66	18 (27.3)	48 (72.7)	
Housewife	128	39 (30.5)	89 (69.5)	
Dyspnea Score				0.213
mMRC score ⩾ 2	68	16 (23.5)	52 (76.5)	
Pulmonary function tests				
Obstruction				0.348*
Yes (FEV1 < 70%)	50	9 (18)	41 (82)	
No (FEV1 ⩾ 70%)	384	92 (24)	292 (76)	
Restriction				0.133*
Yes (FVC <80%)	63	10 (15.9)	53 (84.1)	
No (FVC ⩾80%)	371	91 (24.5)	280 (75.5)	

* All data were not available. BMI: body mass index, mMRC: modified medical research council

Table 3.
Comparison of Laboratory and Pulmonary Function Tests Parameters between Groups where Participants Successfully Quit and where Participants Failed to Quit

	Successfully quit		Failed to quit		Total	
Parameters	**Min-Max**	**Mean±SD**	**Min-Max**	**Mean±SD**	**Min-Max**	**Mean±SD**
SpO2 (%)	88-98.4	90.9±13	89-98.2	93.5±8.8	88-98.4	92.8±10
CoHb	0.6-6.7	3.3±1.4	0.7-8.8	4±1.6	0.6-8.8	3.8±1.6
Hemoglobin	9.2-19.1	14.5±1.6	7.1-19.5	14.6±1.7	7.1-19.5	14.6±1.6
Hematocrit	30.3-56.7	42.6±4.2	24.4-56.7	43±4.5	24.4-56.7	42.9±4.3
Platelet	108-705	269±74	43-796	265±74	43,1-796	267±74
Eosinophil (%)	0-5	0.45±0.8	0-9.6	0.7±1.2	0-9.6	0.67±1
FVC (%)	37.6-125	97.4±14	39-135	94±14	37.6-135	94.9±15
FEV1 (%)	42-121	95.4±14	25-129	91±16	25-129	92.5±16
FEV1/FVC (%)	21-98	80.8±10	31-99	81±10	21-99	80.9±10
FEF25/75 %	17-139	80.5±24	9-168	78±26	9-168	78.8±25
PEF (L)	3.0-11.8	7.1±2	2.1-15.8	6.8±2	2.1-15.8	6.8±2

SpO2: blood oxygen saturation; CoHb: carboxyhemoglobin; FVC: forced vital capacity; FEV1: forced expiratory volume in the first second; FEF: forced expiratory flow; PEF: peak expiratory flow

As shown in Table 2, no significant difference was found between the successful group and the group where participants failed to quit based on sociodemographic data, such as BMI, occupational status, dyspnea scores, and respiratory function tests. When the success of smoking cessation was evaluated according to educational status, the participants were ranked in order as high school, primary school, and university, which accounted for 37.3%, 31%, and 23.1% of the total participants, respectively (p=0.002). The mean values of oxygenation parameters such as percentage of blood oxygen saturation (SpO_2: 93.5±8.8), carboxyhemoglobin (CoHb: 4±1.6), and hematocrit (Hct: 43±4.5) were higher in the group where participants failed to quit compared to those in the successful group. No significant difference was found between the two groups in terms of complete blood cell counts and pulmonary function tests (Table 3).

The comparison of smoking characteristics between the NRT and varenicline groups is presented in Table 4. Considering the success rates of smoking cessation according to age groups, the >65 years age group that used varenicline was determined as the

Table 4.
Comparison of characteristics between groups that used CBT + NRT and CBT + Varenicline

	CBT + NRT n=334 (100%)		CBT + Varenicline n=264 (100%)		p
Characteristics	**Successfully quit n=83(100%)**	**Failed to quit n=251 (100%)**	**Successfully quit n=113 (100%)**	**Failed to quit n=151 (100%)**	**p<0.05**
Sex					0.065
Male	47 (25.8)	135 (74.2)	69 (42.9)	92 (57.1)	
Female	36 (23.6)	116 (76.4)	44 (42.7)	59 (57.3)	
Age decades (years)					0.003
18-24	10 (25.6)	29 (74.4)	7 (36.8)	12 (63.2)	
25-34	14 (26.4)	39 (73.6)	25 (46.3)	29 (53.7)	
35-44	15 (20.5)	58 (79.5)	41 (45.5)	49 (54.5)	
45-54	23 (23.7)	74 (76.3)	24 (40.7)	25 (59.3)	
55-65	15 (29.4)	36 (70.6)	11 (34.4)	21 (65.6)	
> 65	6 (28.5)	15 (71.5)	5 (50)	5 (50)	
Smoking package-year (p/y)					0.014
< 10	17 (26.9)	46 (73.1)	13 (43.3)	17 (56.7)	
10-30	49 (26.7)	134 (73.3)	76 (44.1)	96 (55.9)	
> 30	17 (19.3)	71 (80.7)	24 (38.7)	38 (61.3)	
FTND level					<0.001
Low (0-3)	18 (51.4)	17 (48.6)	79 (90.8)	8 (9.2)	
Moderate (4-6)	47 (26.8)	128 (73.2)	15 (26.3)	42 (73.7)	
High (7-10)	18 (14.5)	106 (85.5)	19 (15.8)	101 (84.2)	
Comorbidity					0.002
Yes	49 (32.2)	103 (67.8)	27 (31)	60 (69)	
No	34 (18.7)	148 (81.3)	86 (48.6)	91 (51.4)	
Relapse					0.009
Yes	17 (5.1)		28 (10.6)		
No	317 (94.9)	236 (89.4)			

FTND: Fagerström test for nicotine dependence; NRT: nicotine replacement therapy

most successful group that quit smoking, with a success rate of 50%. The highest success rate of smoking cessation in participants with comorbidity was 32.2% in the NRT group. Overall, recurrence was detected in 45 participants, 27 of whom were men. Recurrence rates were 10.6% and 5.1% in the varenicline and NRT groups, respectively (p=0.009).

Discussion

The high prevalence of smoking has emerged as a considerable global health burden, with increasing morbidity and mortality rates reported each day. Turkey is one of the countries that recognized the pandemic nature of smoking as described by WHO and implemented all necessary precautions, that is, the MPOWER strategy, recommended by WHO to aid cessation of smoking (Calikoglu & Koycegiz, 2019). Considering the physical and psychological factors of smoking addiction, successful quitting strategies must include either CBT or medical treatments, such as varenicline, bupropion, and NRT, with regular follow-up visits. The establishment of SCPs and treatment strategies for volunteer smokers to quit smoking with behavioral and medical interventions provide insights into permanent approaches for obtaining beneficial results on smoking cessation policies regardless of sex.

In this study, 343 (57.4%) of the 598 participants were men. This finding suggested a male predominance of smoking habits, which agreed with the results reported by recent studies, in which 145 (60.2%), 446 (59.78%), and 245 (61.25%) participants were men (Arguder et al., 2013; Oztuna et al., 2013; Yasar et al., 2014). This male dominance correlated with the higher smoking rate in the general male population more than the rate observed in the general female population.

In this study, 196 (32.8%) of the overall participants (CBT + varenicline and CBT + NRT groups) successfully stopped smoking as evidenced by data obtained after the one-year follow-up period. In recent studies, 37.3% and 26.1% of the participants who used varenicline and bupropion in combination with CBT successfully stopped smoking after the one-year follow-up period, respectively (Marakoglu et al., 2017; Yasar et al., 2014). In terms of the one-year success rates in studies including smoking cessation treatments, international and national studies

have reported rates of 20%-35.5% and 10%-55.2%, respectively (Akkaya et al., 2006; Aytemur et al., 2003; Can et al., 2004; Demir et al., 2004; Jorenby et al., 1999; Kennedy et al., 2002; Wood-Baker, 2002). However, this study and a few studies conducted in Turkey did not reveal a sexual predominance on the success rates of smoking cessation (Can et al., 2004; Demir et al., 2004; Uzaslan et al., 2000). Yasar et al. (2014) have reported that female smokers were 1.29 times more successful at quitting smoking than male smokers. Similar findings were reported by Celik et al. (2015). The sex predominance on smoking cessation rate remains controversial.

The CBT + varenicline (113/264 [42.8%]) group showed significantly higher smoking cessation rate than the CBT + NRT group (83/334 [24.9%]) ($p<0.001$). Similar to these results, Marakoglu et al. (2017) have reported that the smoking cessation rate after one year was higher in the CBT + varenicline group at 27.9% than that in the CBT + bupropion group at 24.2% ($p=0.001$). Ebbert et al. (2015) have conducted a study at 61 centers in 10 countries (Australia, Canada, Czech Republic, Egypt, Germany, Japan, Mexico, Taiwan, the United Kingdom, and the United States) between July 2011 and July 2013 and reported that the success rate in the varenicline group (n=760; 32.1%) at 24 weeks was significantly higher than that in the placebo group (n=750; 6.9%), and the control success rates at 52 weeks for these groups were 27% and 9.9%, respectively.

The smoking cessation rates reported by 228 SCPs in 81 provinces in 2011 after conduction of one-year follow-up were 29.6% in varenicline users and 25.1% in bupropion users (Celik et al., 2015). In another study, the overall smoking cessation rates among participants who received behavioral education (BE), BE + NRT, BE + bupropion, BE + varenicline, and BE +bupropion + NRT were 15.2%, 43.7%, 52.2%, 66.7%, and 45.5%, respectively (Yasar et al., 2014). In the group data of a Cochrane meta-analysis, the effectiveness of varenicline was 2.33 times higher than that of placebo and was 1.52 times higher than that of bupropion with respect to smoking cessation for $\geqslant$ 6 months (Cahill et al., 2016). Sahbaz et al. (2007) emphasized that smoking cessation results obtained by different pharmacological treatments were comparable. In contrast, Ucar et al. (2014) have revealed that smoking cessation rates after one year as 32.5%, 23%, and 52.8% in patients using varenicline (n=166), bupropion (n=148), and NRT (n=108), respectively. The superiority of NRT to other therapies was explained by using NRT forms in combination (gum, spray, and tape), and the overall high success rate of all groups was attributed to the result of integrating CBT to all types of pharmacological treatments.

In a meta-analysis of 18 studies that compared CBT + pharmacotherapy with pharmacotherapy alone, success rates of smoking cessation were higher with CBT + pharmacotherapy than those obtained with pharmacotherapy alone, at 27.6% and 21.7%, respectively (Fiore et al., 2008).

The results of this study and the above-mentioned studies may encourage doctors to select pharmacotherapies such as varenicline and bupropion in combination with CBT than those without pharmacotherapy to accomplish higher success rate of smoking cessation.

At the end of the one-year follow-up period, the >65 years age group that received varenicline were found to have the highest success rate of 50%. Consistent with this finding, Celik et al. (2015) reported that smoking cessation rates of 41.4% and 42.3% after one-year follow-up in the 50-59 and > 60 years age groups that received varenicline, which were higher than those observed in other age groups. Participants with low FTND had a significantly higher smoking cessation rate at 79.5% (51.4% with CBT + NRT versus 90.8% with CBT + varenicline) than that reported in other groups ($p<0.001$). In accordance with this result, Yasar et al. (2014) and Górecka et al. (2003) suggested that a low FTND score was related to higher smoking cessation rates. Moreover, Kenford et al. (1994) reported that high nicotine dependence correlated with low smoking cessation rates.

In this study, participants who graduated high school had the highest rates of both outpatient SCP admission and smoking cessation rates ($p=0.022$). Studies that have evaluated the effect of education level on the success of smoking cessation have reported that smokers with higher education level present with higher smoking cessation rate (Sahbaz et al., 2007; Janson et al., 2006). In contrast to these claims, Arguder et al. (2013) and Monso et al. (2001) did not observe any difference between smoking cessation rates and education levels.

Patients without systemic comorbidities had a higher smoking cessation rate ($p=0.002$). Participants with comorbidities who used NRT had a higher smoking cessation rate at 32.2% than those who used varenicline. Previous studies have also reported that those with chronic diseases experience greater difficulty at quitting smoking than those without chronic diseases (Aytemur et al., 2003).

The mean values of oxygenation parameters such as the percentage of SpO2 (93.5 ± 8.8), CoHb (4 ± 1.6), and Hct (43 ± 4.5) were higher in the group where participants failed to quit compared those in the successful group. These parameters may be predictors of successful smoking cessation in SCPs.

In this study, the mean numbers of follow-up visits were higher in the successful group than those observed in the group where participants failed to quit at 4.2 and 2.05, respectively ($p<0.001$). To successfully quit smoking, at least four face-to-face interviews are recommended within one year of subjection to follow-up (Ozturk, 2019). The time period with absence of smoking is an important indicator of successful smoking cessation. It is recommended to conduct follow-up of patients who wish to quit smoking within 6 to 12 months (Shields et al., 2016). Half of the patients who attempt to quit smoking with pharmacological treatment resume smoking within the first year (Kocak et al., 2015; Roche et al., 2014).

In this study, a significantly higher relapse rate was detected in the varenicline group than in the NRT group (10.6% vs 5.1%; $p=0.009$). Recurrence was 1.62 times (95% confidence interval [CI] 1.16-2.27) higher in men than that in women, 1.63 times (95% CI 1.15-2.29) higher in the unemployed group than that in the employed group, and 1.54 times (95% CI 1.81-2.19) higher in those with a low education level (Yasar et al., 2014).

Relevant studies have reported that successful smoking cessation is related to age, sex, socioeconomic status, and nicotine dependence (Górecka et al., 2003; Kenford et al., 1994; Monso et al., 2001).

Limitations and Directions/Suggestions for Future Research
The generalizability of the current results is limited by the retrospective design and single-center setting of this study.

We recommended the use of extended treatment options, including a wide selection of treatment agents, individualized treatments, longer period of follow-up investigation, and patient-oriented treatment approaches. Relapse is a marked problem in smoking cessation, and comprehensive national studies and subsequent analyses are warranted to determine and eliminate causes of relapse.

In this study, CBT combined with Varenicline was found to be more successful than CBT combined with NRT in smoking cessation. The reliability of varenicline, low FTND level, absence of comorbidity, and the conduction of more follow-up visits were found to be contributing factors to this success. The results of this study confirm that when smokers do not have comorbidities, and their addiction levels are low, they can achieve successful smoking cessation, if they commence smoking cessation treatments with confidence, adopt the use of the above-mentioned therapeutic agents and approaches regularly, and subject themselves to regular follow-up visits.

Ethics Committee Approval: Ethics committee approval was received for this study from the Ethics Committee of Gulhane Training and Research Hospital (approval no. 2020/15).

Informed Consent: Written informed consent was obtained from patients who participated in this study.

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