





Original Research / Orijinal Araştırma

Evaluation of Adults' Intention to Quit Smoking and Related Factors in a Primary Care Center

Bir Birinci Basamak Sağlık Merkezindeki Erişkinlerin Sigara Bırakma Niyetleri ve İlişkili Faktörlerin Değerlendirilmesi

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Abstract

Introduction: This study aims to examine the smokers' intention levels to quit smoking and related factors.

Methods: This cross-sectional study was conducted at XXX Family Health Center. The study population consisted of smoker individuals and seeking services at XXX Family Health Center. Research data were collected through face-to-face interviews using a questionnaire (27 questions and the Intention to Quit Smoking Scale) after obtaining informed consent from the participants.

Results: In a study with 268 participants who smoke cigarettes, the mean age of the participants was 41.20, 68.3% of them were male. The mean score for participants' intentions to quit smoking on the Quit Intention Scale was 23.70. According to the self-assessment of dietary habits, individuals who rated themselves as very unhealthy, engaged in physical activity, increased their cigarette consumption over the years, had prior attempts to quit smoking, and those with moderate to high levels of nicotine dependence showed the highest intention to quit smoking scale scores compared to other groups (respectively; p=0.012; p<0.001; p<0.001; p<0.001; p=0.008). In the correlation analysis, a weak negative correlation was found between the intention to quit smoking scale score and age (t=-0.153, p=0.012). According to the regression analysis, while doing physical activity decreased 5.420 times, the amount of smoking over the years increased 3.372 times; previous smoking cessation experience decreased 2.812 times intention to quit smoking.

Conclusions: Health-related behaviors, prior quit attempts, and nicotine dependence were found to be crucial factors influencing quit intentions. The results underscore the importance of considering individual characteristics and experiences when developing smoking cessation interventions.

Key words: Adults, Intention, Quit Smoking, Primary Care

Özet

Giriş: Bu çalışma, sigara içenlerin sigara bırakma niyet seviyeleri ve bununla ilişkili faktörleri incelemeyi amaçlamaktadır.

Yöntem: Kesitsel tipteki bu çalışma, XXX Aile Sağlığı Merkezi'nde yapılmıştır. Araştırma evrenini sigara kullanan ve XXX Aile Sağlığı Merkezi'ne başvuran bireyler oluşturmuştur. Araştırma verileri, katılımcılardan bilgilendirilmiş onam alındıktan sonra anket (27 soru ve Sigarayı Bırakma Niyet Ölçeği) kullanılarak yüz yüze görüşme yoluyla toplanmıştır.

Bulgular: Sigara içen 268 katılımcı ile yapılan çalışmada katılımcıların yaş ortalaması 41.20 olup, bunların %68.3'ü erkektir. Katılımcıların Sigarayı Bırakma Niyet Ölçeği'nden aldıkları ortalama puan 23,70'dir. Beslenme alışkanlıklarının öz değerlendirmesine göre, kendini çok sağlıksız olarak değerlendirenler, fiziksel aktivite yapanlar, yıllar içinde sigara tüketimini artıranlar, daha önce sigarayı bırakmak için girişimde bulunan ve orta ila yüksek düzeyde nikotin bağımlılığı olan kişilerde diğer gruplara göre sigarayı bırakma niyeti ölçeği puanları daha yüksektir (sırayla; p=0,012; <0,001; <0,001; <0,001; 0,008). Korelasyon analizinde sigarayı bırakma niyeti ölçek puanı ile yaş arasında negatif yönde zayıf bir korelasyon bulundu (t=-0,153, p=0,012). Regresyon analizine göre fiziksel aktivite yapmak sigarayı bırakma niyetini 5,420 kat azalırken, önceki sigara bırakma deneyimi 2,812 kat azalırmakta; yıllara göre sigara içme miktarının artması 3,372 kat arttırmaktadır.

Sonuçlar: Sağlıkla ilgili davranışlar, önceki bırakma girişimleri ve nikotin bağımlılığı, bırakma niyetlerini etkileyen önemli faktörler olarak bulundu. Çalışma sonuçları sigara bırakma müdahalelerini planlarken bireysel özellikleri ve deneyimleri dikkate almanın önemini vurgulamaktadır.

Anahtar kelimeler: Erişkin, Niyet, Sigara Bırakma, Birinci Basamak

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Introduction

Smoking has become a serious public health issue worldwide due to the harmful substances it contains and the nicotine addiction. Therefore, the intention of smokers to quit smoking has become a significant focus of tobacco control policies and public health interventions.

Reducing or completely quitting smoking can significantly improve individuals' quality of life and positively impact their health outcomes. Although smokers express the desire to quit smoking, they often believe they cannot achieve this without professional help. It is well-known that success rates increase with the individual's decisiveness and intensive support and follow-up. Several studies have shown that the intention to quit smoking increases the likelihood of converting into actual quitting behavior.^{2,3} The intention to quit smoking plays a critical role at the beginning of the smoking cessation process and reflects individuals' motivation and decisiveness.

The intention to quit smoking can be influenced by various factors. Some important factors affecting individuals' intention to quit include health consciousness, social norms, family support, economic factors, and environmental factors. Additionally, personal experiences, lifestyle choices, and knowledge levels can also shape smokers' intentions to quit smoking.⁴⁻⁷

In a longitudinal study examining variables related to the intention to quit smoking and smoking cessation behavior, it was found that individuals with a higher intention to quit had a higher rate of actually quitting smoking.² It was also determined that individuals expressing their intention to quit smoking made more attempts to quit.^{6,7}

The importance of the intention to quit smoking is also critical in assessing the impact of tobacco control policies and public health interventions. Effective policies and interventions aimed at increasing smokers' intention to quit can contribute to reducing tobacco use and creating a healthier society. There are a few smoking cessation intention scales and they can vary in complexity and specificity (Motivation To Stop Scale (MTSS), Willingness to Quit, etc.), however, these scales were not adapted to Turkish smokers. In 2022, "The Intention to Quit Smoking Scale" was developed by Söyler et al. to measure the intention to quit smoking and this scale was evaluated as valid and reliable for Turkish smokers. A study evaluating the intention to quit smoking with a scale has not been encountered yet, and this scale is quite new.

This study aims to examine the smokers' intention to quit smoking levels and the factors that influence it.

Methods

This cross-sectional descriptive study was conducted at XXX Family Health Center. The study population consisted of smoker individuals and apply to XXX Family Health Center for any reason. The sample size for the study group was planned to reach a minimum of 242 individuals with an unknown universe sample calculation of 31.6% (frequency of smokers), 95% confidence level, and 5% margin of error.

Inclusion criteria:

- Being 18 years old or older
- Having a visit to the outpatient clinics at XXX Family Health Center
- Being an active smoker
- Being oriented and cooperative
- Being voluntary
- Being literate

Exclusion criteria:

• Refusing to participate in the study

Research data were collected through face-to-face interviews using a questionnaire after obtaining informed consent from the participants. Interviews with the participants were conducted by the researcher after the visit to the family physician in XXX Family Health Center patient waiting room between 01 May 2023-01 August 2023. The questionnaire included a total of 27 questions and the Intention to Quit Smoking Scale. The first part of the form consisted of sociodemographic characteristics and questions related to smoking, including the Fagerström Nicotine Dependence Test.

The Intention to Quit Smoking Scale: Developed by Söyler et al. in 2022, the scale is of 5-point Likert type (1=Strongly Disagree - 5 Strongly Agree) and has a Cronbach's alpha value of 0.929.⁵ The scale was developed to measure the intention to quit smoking among smokers and consists of 8 questions. The scale's scoring is performed by summing up the scores obtained from each item. The minimum score that can be obtained from the scale is 8, and the maximum score is 40. Increasing scores indicate an increased intention to quit smoking while decreasing scores indicate a decreased intention to quit.⁵

Statistical Analysis: The data obtained in the study were transferred to electronic media (data entry) and analyzed using the IBM SPSS Statistics Premium 23 V statistical software package, licensed by Hacettepe University. Descriptive statistics such as percentages, means, medians, quartiles, minimum-maximum values, and standard

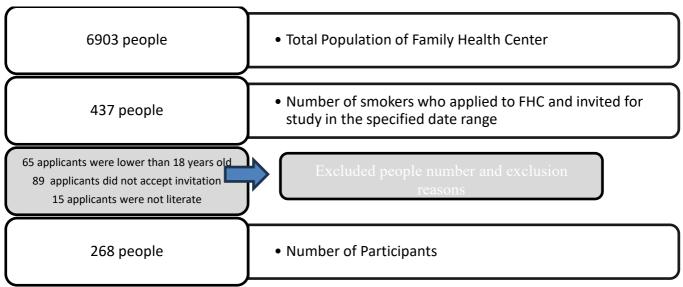
deviations were used for descriptive analyses. When necessary, the normality of the variables was tested using the Kolmogorov-Smirnov and Shapiro-Wilk tests.

When continuous variables fit the normal distribution, independent two groups were compared using independent t-tests, otherwise, the Mann-Whitney U test was used. ANOVA was used to compare the means of more than two independent groups, and when parametric assumptions were not met, the Kruskal-Wallis variance analysis was used. Correlation analysis was conducted to evaluate the linear relationship between variables. The significance level (alpha) was set at 0.05. Multivariate testing was performed using logistic regression analysis.

Ethical issues: For the study, ethical committee approval was obtained from XXX University Faculty of Medicine Non-Invasive Clinical Research Ethics Committee with GO 23/511 research number. Informed consent was obtained from all participants before study enrollment.

Results

In a study with 268 participants who smoked cigarettes, the mean age of the participants was 41.20 (SD=10.23). It was observed that 68.3% of them were male, 70.5% were married, and 65.3% had a university degree or higher education.



Graph 1. Flow-diagram of study

Regarding self-assessment of health status, 67.5% of the participants expressed feeling healthy, while 29.9% stated that they had been diagnosed with a medical condition by a doctor. According to the self-assessment of lifestyle habits (both dietary and physical activity), 46.3% of the participants claimed to have a healthy eating pattern, and 45.9% reported engaging in regular physical activity. The distribution of some socio-economic and health-related characteristics of the participants is presented in Table 1.

Table 1. Distribution of some socioeconomic and health-related characteristics of participants

	Number		Percen	t	
Gender			31.7		
Female	85	85			
Male	183	183		68.3	
Marital Status					
Married	189	189		70.5	
Single	63			23.5	
Divorced from spouse	16			6.0	
Education level					
Secondary school graduate and below	12		4.5		
High school graduate	81			30.2	
University graduate and above	175		65.3		
Employment in any job					
Yes	245		91.4		
No	23		8.6		
Self-assessment of the family's economic situation					
Income is less than expenses	59		22	22	
Income is equal to expenses.	112			41.8	
Income is more than expenses	97			36.2	
People living in the same household					
Alone	32	32		11.9	
With spouse/ spouse and children	185			69.1	
With mom/dad/siblings	51			19	
Self-assessment of health status					
Very healthy	4	4			
Healthy	181			67.5	
Indecisive	52	52		19.4	
Unhealthy		31		11.6	
Very unhealthy		0		0	
Presence of disease diagnosed by doctor			-		
Yes	80	80			
No	188			29.9 70.1	
Regular use of medication recommended by the doctor	100		70.1		
Yes	87		32.5		
No No	181			67.5	
Self-assessment of eating habits	101	181		07.3	
Very healthy	5	5		1.9	
Healthy				46.3	
Indecisive		124		31.3	
		84			
Unhealthy		46		17.2 3.4	
Very unhealthy	9	9			
The state of doing physical activity	100	122			
Yes		123			
No	145			,	
	Mean	SD	Min	Max	
Age	41.20	10.23	20	66	

SD=Standart deviation, Min=Minimum; Max=Maximum

When examining the reasons for participants starting to smoke, the most common reason, with 48.5%, was 'curiosity.' When looking at changes in the amount of cigarette consumption over the years, it was found that 41.4% of participants reduced their cigarette intake, 32.1% increased it, and 51.1% attempted to quit smoking. Regarding the Fagerström Test for Nicotine Dependence, the majority of participants (42.9%) indicated being at a 'very low dependence' level. The distribution of some characteristics related to smoking among the participants is given in Table 2.

Table 2. Distribution of some smoking-related characteristics of the participants

	Number		Percen	ıt	
Reason for starting smoking*					
Curiosity	130	130		48.5	
İnfluence of the environment	123	123		45.8	
Prove yourself	75	75		27.9	
Emulation	86			32.0	
Reaction to the ban	45			16.7	
Stress/sadness	98	98		36.5	
Other	54	54		20.1	
Changes in the amount of smoking over the years					
Hasn't changed	71	71		26.5	
Decreased	111	111		41.4	
Increased	86	86		32.1	
Previous smoking cessation experience					
Yes	138	138		51.5	
No	130	130		48.5	
Fagerström Nicotine Addiction Scale Level					
Very little dependent	115	115		42.9	
Little dependent	50	50		18.7	
Moderately dependent	39	39		14.6	
Highly dependent	52	52		19.4	
Very highly dependent	12		4.5		
	Mean	SD	Min	Max	
Smoking time (year)	19.05	9.73	2	40	
Number of cigarettes smoked (piece/day)	15.23	9.22	1	40	
Package/year	14.64	11.10	0.6	45	
Fagerström Nicotine Addiction Scale Score	3.46	2.46	0	9	
Intention to Quit Smoking Scale Score	23.70	10.19	8	40	

^{*} More than one option has been chosen.

SD=Standart deviation, Min=Minimum; Max=Maximum

The mean score for participants' intentions to quit smoking on the Quit Intention Scale was 23.70 (SD=10.19). The distribution of participants' answers to scale items is presented in Table 3. The Cronbach's alpha value for the Quit Intention Scale in this study's sample was 0.977.

Table 3. Distribution of participants' answers to Quit Intention Scale items

Scale Items	I strongly	I disagree	I Neither	I	I strongly
	disagree		agree nor	agree	agree
			disagree		
I am planning to quit smoking.	17.1	22.6	19.4	20.7	20.3
I will try to quit smoking.	15.1	15.1	22.0	17.9	22.5
I am dreaming about quitting smoking.	19.3	26.6	12.4	16.5	25.2
I want to quit smoking.	16.5	20.2	22.5	20.2	20.6
Quitting smoking is important to me.	16.1	22.0	18.8	21.6	21.6
I will quit smoking in the near future.	23.4	21.1	20.6	15.1	19.7
I am researching about quitting smoking.	20.9	28.4	16.6	15.2	19.0
I intend to consult with a healthcare professional regarding	24.8	22.4	19.5	16.7	16.7
quitting smoking.					

According to our results, individuals who had very unhealthy eating habits, those engaged in physical activity, those who increased their cigarette consumption over the years, those who had had prior attempts to quit smoking, and those with moderate to high levels of nicotine dependence showed the highest intention to quit smoking scale scores compared to other groups (in sequence; p=0.012; p<0.001; p<0.001; p<0.001; p=0.008). There was no statistically significant relationship found between gender, marital status, education level, employment in a job providing economic income, self-assessment of family's economic status, diagnosed diseases, medication use, and intention to quit smoking. The factors associated with the intention to quit smoking scale score are presented in Table 4.

Table 4. Factors associated with the intention to quit smoking scale score

Intention to Quit Smoking Scale Score						
	Median	IQR	Mean	SD	р	
Self-assessment of eating habits						
Very healthy	8	14	13.60	12.52		
Healthy	26	18.5	23.55	10.45		
Indecisive	21	15.25	22.63	10.06		
Unhealthy	24	17	26.21	9.36		
Very unhealthy	27	2.5	28.66	4.71		
The state of doing physical activity					<0.001**	
Yes	28	15	27.30	10.11		
No	16	12	20.66	9.24		
Changes in the amount of smoking over the years					<0.001***	
Hasn't changed	21	13	20.08	8.55		
Decreased	24	17	23.49	10.28		
Increased	26.5	24	26.97	10.36		
Previous smoking cessation experience					<0.001**	
Yes	30.5	18.5	27.83	10.25		
No	16	12.25	19.33	8.10		
Fagerström Nicotine Addiction Scale Level					0.008***	
Very little dependent	19	12	21.20	9.18		
Little dependent	24	23	24.16	11.67		
Moderately dependent	29	17	27.07	9.96		
Highly dependent	24	24	26.30	10.45		
Very highly dependent	27	5.25	23.66	7.10		

IQR=Inter Quartile Range

The predictors of intention to quit smoking were analyzed using regression analysis (Table 5). According to the regression analysis, while doing physical activity increased 5.420 times, the amount of smoking over the years increased 3.372 times; previous smoking cessation experience decreased 2.812 times intention to quit smoking.

Table 5. Regressions of intention to quit smoking

Independent Variables	Binary Logistic Regression Analysis			
independent variables	OR*	%95 CI*	р	
Individuals who thought very healthy eating habits			NS^{\pm}	
(Ref: unhealthy)			145	
Individuals who were very healthy			NS^\pm	
(Ref: very unhealthy)			143	
Individuals who doing physical activity	5.420			
(Ref: Those who not doing physical activity)	5.420	1,623-9,978	< 0.001	
Individuals with increased the amount of smoking over the years				
(Ref: Those who not have changed in the amount of smoking over	-2.123			
the years)		1,345-3,498	0.001	
Individuals with decreased the amount of smoking over the				
years	3.698	1,431-7486		
(Ref: Those who not have changed in the amount of smoking over	3.070		< 0.001	
the years))				
Individuals with previous smoking cessation experience				
(Ref: Those without previous smoking cessation experience)	-2.812	1,871-4,756	0.005	
Individuals who have used smoking cessation medication. (Ref:	•			
Those who not have used smoking cessation medication)			NS*	
Moderately dependent individuals (Ref: very little dependent)			NS^{\pm}	
Moderately dependent individuals (Ref:little dependent)			NS^{\pm}	

^{*} OR: Odds ratio; CI: Confidence interval; NS: Not significant

^{*} independent sample t-test ** Mann-Whitney U test. ***Kruskal-Wallis analysis

Discussion

The present study aimed to explore factors associated with the intention to quit smoking among a sample of cigarette smokers. The findings revealed several significant associations between health-related behaviors, smoking-specific factors, and the participants' intentions to quit smoking.

Consistent with previous research, the majority of participants in this study were male, married, and had a university degree or higher education. These demographic characteristics may reflect the broader smoking patterns observed in the general population. However, it is important to note that these results are limited to the specific sample examined in this study and may not be representative of all smokers. Regarding health status, a substantial proportion of participants reported feeling healthy, while almost one-third had been diagnosed with a disease by a doctor. These findings suggest that a significant number of smokers may be unaware of or underestimate the health risks associated with smoking. This lack of awareness can influence their motivation to quit smoking.

Several studies have shown that intention to quit smoking is a precursor to following smoking cessation attempts. ^{12,13} For this reason, it is important to determine the intentions of people to quit smoking and the affecting factors in terms of planning the interventions. In terms of dietary habits and physical activity, nearly half of the participants claimed to have healthy eating patterns and engaged in regular physical activity. These health-conscious behaviors were associated with a higher intention to quit smoking. This finding aligns with previous research that indicates healthier lifestyle choices may motivate smokers to quit. ^{14,15} Smokers who prioritize their overall health may be more willing to quit smoking to improve their well-being. Also, the relationship between engaging in physical activity and the intention to quit smoking aligns with previous research that highlights the beneficial effects of physical activity on smoking cessation intentions. Regular physical activity has been consistently linked to increased motivation to quit smoking and improved success rates in smoking cessation programs. ^{16,17} Moreover, the positive impact of physical activity on overall health and well-being may enhance individuals' motivation to quit smoking. ^{17,18}

In our study, participants who increased their cigarette consumption over the years had prior quit attempts, or exhibited moderate to high levels of nicotine dependence demonstrated higher intention to quit smoking scale scores. These results are in accordance with previous studies and suggest that those with a history of unsuccessful quit attempts and higher levels of nicotine dependence may be more motivated to quit smoking in future attempts. Understanding the factors influencing quit attempts can aid in the development of targeted interventions for these subgroups. On the other hand, no statistically significant relationship was found between demographic factors such as marital status, education level, gender, and employment status with the intention to quit smoking scale scores. These results are consistent with some previous studies that also found no direct association between these factors and quit intentions. However, it is essential to consider that demographic characteristics might indirectly influence smoking cessation through various psychosocial and contextual factors. Limitations of this study include its cross-sectional design, which prevents the setting up of causal relationships between variables. Additionally, the study's reliance on self-reported data introduces the potential for response bias. Future research should consider longitudinal designs and objective measures of smoking behavior to validate these findings.

Conclusion

In conclusion, this study provides valuable insights into the factors associated with smokers' intentions to quit smoking. Health-related behaviors, prior quit attempts, and nicotine dependence were found to be crucial factors influencing quit intentions. The results underscore the importance of considering individual characteristics and experiences when developing smoking cessation interventions. Tailored cessation programs that address these specific factors may increase the effectiveness of quit-smoking initiatives and ultimately contribute to improving public health. In addition, if family physicians in family health centers can manage to include a healthy lifestyle and physical activity in their population, the number of people who want to quit smoking will increase.

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Conflict of Interest/Financial Disclosure statement

The authors have no competing interests to declare that are relevant to the content of this article.

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