

**Extended Abstract**

## Smoking-Cessation Success Prediction Scale: Development, Validity, and Reliability Study\*

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### Abstract

This study has been conducted with the aim of testing the validity and reliability of the Smoking Cessation Success Prediction Scale (SCSPS). The study was carried out between March 2017 to March 2018 with individuals who had applied to the smoking and quitting polyclinic of an education and research hospital after approval from the institution and the ethics committee. The sample of the study is comprised of 148 adult individuals. The test-retest method was conducted with 34 people. The data have been collected using a questionnaire prepared by the researchers and the SCSPS, which has a valid scope. The validity and reliability of the scale have been assessed using the programs IBM SPSS 23 and AMOS 23. In the study, the validity-rate test result for the scope is 0.77, and Bartlett's sphericity test is significant ( $p < .001$ ). Explanatory factor and confirmatory factor analyses have been performed to determine the structural validity of the SCSPS. The result of the exploratory factor analysis concludes the scale to have 10 items and two factors. The scale is shown to be reliable due to the results of Cronbach's alpha coefficient and the test-retest. SCSPS which developed was determined as a valid and reliable measurement tool.

### Keywords

Quitting smoking • Predictive Scale • Scale development • Validity • Reliability

\* This is an extended abstract of the paper entitled "Sigara Bırakma Başarısı Öngörü Ölçeği: Geliştirme ve Geçerlik, Güvenirlik Çalışması" published in *Addicta: The Turkish Journal on Addictions*.

**Manuscript Received:** April 10, 2018 / **Accepted:** October 2, 2018 / **OnlineFirst:** April 15, 2019

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**To cite this article:** Aydemir, Y., Doğu, Ö., Dede, C., & Çınar, N. (2019). Smoking-Cessation Success Prediction Scale: Development, validity, and reliability study. *Addicta: The Turkish Journal on Addictions*, 6, 387-402. <http://dx.doi.org/10.15805/addicta.2019.6.2.0022>

Tobacco use is first among the preventable causes of death. More than 5 million people die annually in the world due to tobacco use (Lin, 2013, pp. 6451–6452; World Health Organization [WHO], 2018). The prevalence of smoking is very high in Turkey. According to the Global Adult Tobacco Survey (GATS, 2012) in Turkey, the prevalence of tobacco use in the 15+ age group among adult individuals is 27.1%, with the rate being 41.5% for males and 13.1% for women. The most widely used tobacco product in Turkey is cigarettes, with approximately 11.1 million men and 3.6 million women smoking (Ministry of Health, 2014). Turkey has the highest rate of male smokers among European countries (WHO, 2018). Turkey is among the top 10 countries in the world for the highest tobacco consumption rates. The first step in smoking cessation treatment is to advise, motivate, inform, and support the individual who will quit smoking. Afterwards, appropriate pharmacological treatment should be planned. Proven pharmacological treatments (Bupropion and Vareniklin) lead the methods used in treating cigarette addiction (Agency for Healthcare Research & Quality, 2008). The smoking-cessation success rate is reported differently for those who have applied to the smoking polyclinics, which provide smoking-cessation services in Turkey. A 1-year success rate of 40% has been found in one study that reported five-year results from a smoking-cessation outpatient clinic (Karadağlı & Nahcıvan, 2012, pp. 8–9; Park et al., 2014, p. 4963; Park et al., 2009, pp. 272–276; Uzaslan, Özyardımcı, & Karadağ, 2000). The success of these treatments in eliminating addiction varies according to factors such as smoking-cessation requests, attitudes toward steadiness, degree of addiction, and psychological and emotional states. In some patient groups, cessation rates are very low, while in other patients it may be high.

By predicting which patients have a high potential for cessation and by directing meager and limited health support to these patients, more individuals can be given a chance to quit smoking, which may reduce the waste of material resources paid for drugs.

The aim of this study is to develop a scale that predicts the smoking-cessation success for individuals who have decided to quit smoking.

### **Method**

This study was conducted with the aim of testing the validity and reliability of the Smoking Cessation Success Prediction Scale (SCSPS).

The study was carried out between March 2017 and March 2018 with individuals who had applied to the smoking and quitting polyclinic of an education and research hospital after the approval of the institution and the ethics committee. While developing the scale, a 15-item pool of questions was established based on the literature (Argüder et al., 2013; Jayakirshnan et al., 2013; Karadağlı & Nahcıvan, 2012; Paek et al., 2014, p. 4967). The draft was presented to eight faculty members

from the Chest Diseases, Internal Medicine, Pharmacology and Nursing Faculties for expert opinions. The experts were determined to agree that the article's content represents the area to be measured (Kendall's  $w = 0.114$ ,  $p = 0.156$ ). The sample of the study is comprised of 148 adults. The test-retest was conducted with 34 people. The data were collected using the questionnaire prepared by the researchers and the SCSPS, the scope of which was deemed valid. The validity and reliability of the scale were assessed using the programs IBM SPSS 23 and AMOS 23.

### Findings

When examining the study's findings, the mean age for the majority of participants is seen to be  $43.43 \pm 13.68$  (min. 18, max. 79); 55.4% ( $n = 82$ ) of the participants are women, 78.4% ( $n = 116$ ) are married, 39.9% ( $n = 59$ ) graduated from secondary education, and they smoke an average of 23 cigarettes a day for an average of 24 years.

In the study, the scope test result for validity rates is 0.77, and Bartlett's sphericity test is significant ( $p < 0.001$ ). Explanatory factor and confirmatory factor analyses were performed to determine the structural validity of the SCSPS. As a result of the exploratory factor analysis made on the SCSPS, the scale has been concluded to have 10 items and two factors. The scale is shown to be reliable through Cronbach's alpha coefficient and test-retest (Cronbach's alpha = 0,782 and test-retest  $r=0,953$ ).

### Evaluation of the Scale

The scale is a 5-point Likert-type scale with 10 items. The participants are expected to give the most appropriate answer to the questions, scored as "Very Low," "Few," "Average," "Many," and "Too Many." The scale has two sub-dimensions: steadiness and readiness (Items 1,2,6,13,14, and 15) and health perception and appropriate environment (Items 3,4,5,7). The maximum score that can be achieved from the scale is 50 and the minimum is 10. Higher scores indicate higher smoking cessation success. The scale can be filled in approximately 10-15 min.

### Results

The developed scale is seen to have high sensitivity, validity, reliability, and adequate psychometric properties for being able to predict which individuals have a high potential for smoking cessation. This scale can provide an increase in the success of smoking cessation by predicting which individuals have a higher potential for smoking cessation, by determining who to give priority in terms of drugs and other supportive therapies, and by transferring more resources and labor to this group. At the same time, this scale will lead to the study of new methods that can help individuals who have been identified as having a low probability of smoking. By

adapting the scale to different languages and cultures, we think that it will find a wide usage area and will make a significant contribution to the individuals and institutions that address smoking.

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## Ek-1

## Sigarayı Bırakma Başarısını Öngörü Ölçeği

Adınız:	Tel:	Tarih:
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Bu anket, sizin sigarayı bırakma konusundaki görüşlerinizi değerlendirerek size ve sağlık çalışanına yardımcı olacaktır. Cevaplarınız, size sigarayı bırakma tedavisinde en fazla faydayı elde etmek için kullanılabilir. Bilgileriniz sigara bırakma tedavilerinin geliştirilmesi dışında başka hiçbir amaçla kullanılmayacak ve adınız hiçbir şekilde paylaşılmayacaktır.

Aşağıdaki her soru için, şu anki fikrinizi en iyi tanımlayan kutucuğa (X) işareti koyunuz.

	Çok	Orta	Az
Kendimi sigarayı bırakmaya hazır hissediyorum			
Sigarayı bırakmayı yeterince düşündüm			
Sigara içmeyi önemli bir sorun olarak görüyorum			
Sigaranın sağlığımı olumsuz etkilediğini düşünüyorum			
Sigarayı bırakmak için profesyonel yardım almaya hazırım			
Sigarayı bırakma ile ilgili tüm önerilere uyarım			
Sigarayı bırakmamı ailem ve yakın çevrem destekleyeceğini düşünüyorum			
İstersem sigarayı bırakabileceğime inanıyorum			
Sigarayı bırakırken çok zorlanacağımı düşünüyorum			
Sigarayı bırakma yönündeki çabalarımın boşa gitmeyeceğini düşünüyorum			