THE TURKISH JOURNAL ON ADDICTIONS
www.addicta.com.tr

ORIGINAL ARTICLE

Nicotine Use Awareness and Nicotine Insight Scale in Addicts: A Turkish Validity – Reliability Study

Feyza Nehir Oznur Muz[1], Selma Metintas[1], Muhammed Fatih Onsuz[1], Sevda Sungur[1], Mine Tepetas[1], Zehra Akdag[2]

[1]Department of Public Health, Eskisehir Osmangazi University School of Medicine, Eskisehir, Türkiye
[2]Department of Psychiatry, Ankara Etlik City Hospital, Ankara, Türkiye

ORCID iDs of the authors: F.N.O.M. 0000-0001-8747-9867, S.M. 0000-0002-5002-5041, M.F.O. 0000-0001-7234-3385, S.S. 0000-0002-0186-0331, M.T. 0000-0003-4747-7220, Z.A. 0009-0005-7573-2913

Main Points

- One of the main barriers to treatment interventions for nicotine addiction, defined as a disease by the World Health Organization (WHO), is the individual's continued smoking behavior.
- While previous studies on nicotine addiction focused on the addiction levels of individuals, this study emphasizes the awareness of nicotine addiction in addicted individuals.
- The study is a methodological research, and content, face, construct, and criterion validity methods were used for validity analysis. In the reliability analysis of the scale, internal consistency, item discrimination, and test – retest methods were used.
- The Nicotine Use Awareness and Insight Scale (NAS), which is used to assess disease awareness in individuals with nicotine addiction, is a valid and reliable scale for the Turkish population.

Abstract

One of the first steps in tobacco addiction treatment is gaining insight into whether the individual has a problem with nicotine use and realizing the need for cessation treatment. This study is a methodological study describing the cultural adaptation of the Nicotine Use Awareness and Insight Scale and evaluating its Turkish validity and reliability. Linguistic validation was carefully performed through forward and backward translation. The study group consisted of 368 individuals who were confirmed to be tobacco-dependent by scoring four or higher on the The Fagerström Test for Nicotine Dependence. A strong positive correlation was found between Nicotine Use Awareness and Insight Scale and Stages of Change Readiness and Treatment Eagerness Scale scores, used for equivalent criterion (predictive) validity. Cronbach's α coefficient was 0.85. Exploratory factor analysis showed that the scale explained 52.7% of the total variance with a single-factor structure. Nicotine Use Awareness and Insight Scale, a reliable and valid scale for Turkish people, can be utilized in studies aimed at raising awareness and raising consciousness among addicted individuals.

Keywords: Awareness, nicotine, scale

Corresponding Author:
Feyza Nehir Oznur Muz
E-mail:
feyzanehir@yahoo.com

Received: December 20, 2023
Revision Requested: March 29, 2024
Last Revision Received: April 1, 2024
Accepted: June 4, 2024
Publication Date: July 17, 2024

Introduction

The habit of using tobacco and tobacco products is considered one of the most serious social health problems today and is among the preventable causes of mortality and morbidity (Dietz et al., 2010). Tobacco addiction is defined as the development of physiological tolerance due to nicotine intake into the body and the emergence of symptoms such as irritability, anxiety, difficulty in focusing, increased appetite after discontinuation, and the inability to quit use despite the risk of many health problems (Parashar et al., 2016).

World Health Organization reported that 36.7% of men, 7.8% of women, and 22.3% of the population in general used tobacco in 2020. While countries such as China, India, and Indonesia are at the forefront

Cite this article as: Oznur Muz, F.N. Metintas, S., Onsuz, M.F., Sungur, S., Tepetas, M., & Akdag, Z. (2024). Nicotine use awareness and nicotine insight scale in addicts: A Turkish validity – reliability study. *Addicta: The Turkish Journal on Addictions*, 11(2), 164-169.

DOI: 10.5152/ADDICTA.2024.23150

in the ranking of tobacco consumption, Türkiye is among the top 10 countries in the ranking with approximately 17 million (31.2%) people (World Health Organization, n.d.). According to the Türkiye Health Survey conducted in 2019, it was reported that 28% of individuals aged 15 years and older (41.3% of men and 14.9% of women) used tobacco and tobacco products (Türkiye Istatistik Kurumu, 2019).

The most important reason for the general failure of treatment attempts for nicotine dependence is the continuation of smoking behavior (CARE, 2000). Other reasons for treatment failure include ignorance of the effects of nicotine on the body and lack of recognition of the need for treatment after realizing the problems related to the use of tobacco products (Steptoe et al., 2002). Although various studies in the literature focus on the levels of nicotine dependence, related factors, and the effects of nicotine on smoking addiction, there are not enough studies on the awareness of nicotine dependence.

Apart from the Nicotine Use Awareness and Insight Scale (NAS), developed by Kim et al. in 2022and is the only scale related to nicotine addiction awareness, no other scale to determine the awareness level of nicotine addiction has been found (Kim et al., 2022). In this study, the aim was to adapt the NAS into Turkish and evaluate its validity and reliability.

Material and Methods

This was a methodological study conducted with adults with nicotine dependence who applied to Eskişehir Osmangazi University Hospital for any reason between July and August 2022.

Study Procedure and Sampling

The original NAS was unidimensional and consisted of a total of seven items on a 10-point Likert-type scale: disease awareness (two items), symptom attributions (two items), awareness of the need for treatment (three items), and awareness of negative consequences related to nicotine (one item). In the study, a two-stage method used for the adaptation of measurement tools from different languages and cultures was followed. In the first stage of the study, the language was translated and the content validity of the NAS was tested. For language validity, two independent language experts translated the scale into Turkish using the translation – back translation method, and then another expert translated the form back into English. The Turkish form of the questionnaire was created by comparing all forms, and high care was taken for cultural adaptation. The questionnaire was finalized in Turkish utilizing expert opinion in terms of Turkish grammar. The flowchart of the study is given as Figure 1.

In order to evaluate the content validity of the NAS, 11 experts evaluated the appropriateness of the questionnaire items. The Kaiser – Meyer – Olkin (KMO) values for the scale items were calculated between 0.63 and 1.00. The content validity index was calculated as 0.84, indicating that the scale demonstrated content validity.

In the second phase of the study, the validity and reliability of the NAS were analyzed. The data collection phase of the study was also designed in two stages. Firstly, 561 people who answered "yes" to the question "Do you consume any tobacco products?"

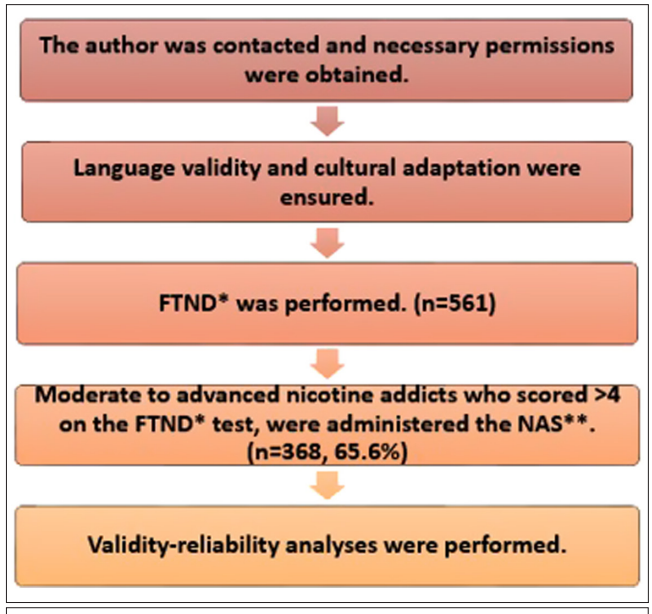

Figure 1. Flowchart of the Study.

were administered the Fagerström Test for Nicotine Dependence (FTND) by the researchers using the face-to-face interview technique to determine the level of nicotine dependence. At this stage, the score obtained by the participant from the test was immediately calculated by the researcher, and it was decided whether to proceed to the second stage. According to the results of this test in the second step, 368 (65.6%) participants with a score of 4 and above (moderate/high addiction level) were included in the study. In the validity analysis, content, face, construct, and criterion validity were assessed. The reliability analysis included evaluations of internal consistency, item discrimination, and test – retest reliability.

Ethical Approval

Permissions were obtained from the authors who developed the NAS for its adaptation and for conducting the validity and reliability study. Ethical approval was obtained from the Eskişehir Osmangazi University Ethics Committee (E-25403353-050.99-3 64078). All ethical and administrative permissions were obtained, and the Declaration of Helsinki was followed.

Data Collection

Participants who were moderately to severely nicotine dependent, according to the FTND, were administered a questionnaire form, which was developed as a result of a comprehensive literature review. Informed consent was obtained from all participants. This questionnaire consisted of three parts. The first part included the sociodemographic characteristics of the participants, including age, gender, and occupation, as well as some propositions thought to be related to tobacco use, such as the reasons that lead the individual to smoking. The second part of the questionnaire included NAS questions, and the third part included the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES) questions adapted to nicotine use (Evren et al., 2008; Muehlig et al., 2003).

The FTND is a self-assessment test developed by Sainz et al. which consists of six questions and provides 2- and 4-point Likert-type

Table 1.
NAS Items, Factor Loadings, Item Analysis Results, and Variance Value

Items	Factor Loading	Item – Total Correlation Coefficient	Cronbach α If Deleted Item
1. My experiences are due to my nicotine use.	0.44	0.54	0.84
2. I have a nicotine use problem.	0.56	0.63	0.83
3. I need help for my nicotine use.	0.71	0.75	0.81
4. I always use nicotine responsibly.	0.49	0.58	0.83
5. I can safely continue my current nicotine habits.	0.46	0.56	0.84
6. My nicotine use has led or can lead to negative consequences in my life.	0.33	0.46	0.85
7. I need treatment for my nicotine use.	0.71	0.75	0.81

Note: Cronbach α value: 0.85; total explained variance: 52.70%.

measurements. In terms of levels of addiction, 0–3 is considered low, 4–6 as moderate, and 7–10 as high (Heatherton et al., 1991). A Turkish validity and reliability study was conducted in 2003 (Uysal et al., 2004).

The SOCRATE scale, which was developed as a tool to evaluate the stage of change in order to provide a change in nicotine use, was developed by Miller and Tonigan (1997) (Miller & Tonigan, 1997). The Turkish validity and reliability study of the scale was conducted by Evren et al. in 2008. The scale consists of 16 questions in a 5-point Likert-type questionnaire with a maximum score of 80 points. The scale consists of three sub-domains including dilemma, realization, and taking steps, and provides information about the different stages of change (Evren et al., 2008).

The NAS, which is used to determine the level of disease awareness in individuals with nicotine addiction, was developed by Kim et al. (2022). The scale consists of 20 yes/no questions asking about the symptoms experienced due to nicotine use and seven questions asking the individual to score the situations related to his/her own nicotine use between 0 and 10, from not at all appropriate to completely appropriate, totaling 27 questions (Kim et al., 2022).

Data Analysis

Within the scope of construct validity, the suitability of the sample for exploratory factor analysis (EFA) was checked by calculating the KMO and Bartlett test values. Within the scope of internal consistency analyses and item analysis, item – total correlations, the inter-item correlation coefficient, and the Cronbach's α coefficient of the scale were calculated.

Descriptive data were presented as numbers, percentages, means, and standard deviation values. The conformity of the data to normal distribution was evaluated by the Kolmogorov – Smirnov test and graphs.

Results

Validity Analyses of NAS

While determining the number of factors, it was confirmed that the scale was a single sub-dimension by paying attention to the fact that the eigenvalue was greater than one. Item factor loadings were between 0.33 and 0.71. The total variance explained was 52.70%. The obtained factor loadings and variance values are given in Table 1.

For the equivalent criterion (predictive) validity of the scale, the SOCRATES was used. Spearman correlation analysis revealed a strong positive correlation between the scores obtained from the SOCRATES and the NAS ($r = .71$, $p < .001$). The item discrimination of the scale was performed according to the number of cigarettes consumed per day. Individuals with a daily cigarette consumption of more than 30 cigarettes constituted 10.6% of the group. As shown in Table 2, those with less than 30 cigarettes per day had a higher NAS score than those with more than 30 cigarettes per day ($p = .015$). A significant difference was found between the lower and upper 27% groups in both item-based comparison and total scale scores ($p < .001$ for each analysis).

Reliability Analyses of NAS

The Cronbach's α reliability coefficient, calculated to evaluate the internal consistency of the scale, was 0.85. The item – total correlation coefficients were between 0.46 and 0.75. If any of the scale items were deleted, Cronbach's α values was between 0.81 and 0.85. When the factors were evaluated within themselves, it was concluded that the internal consistency of all factors was adequate (Table 1).

For the test – retest reliability, 14 participants answered the NAS again after 2 weeks. The scores of these participants in the first assessment were between 2.75 and 7.58, with a median of 5.47. Their retest scores were between 1.92 and 7.33, with a median of 5.66. There was a strong positive correlation between total NAS scores in the test – retest comparison analyses ($r = .76$, $p < .001$).

Table 2.
Comparison of NAS Scores According to Daily Cigarette Consumption

		n (%)	Median (min – max)	*p**
Daily cigarette consumption	≤30 cigarettes	329 (89.4)	6.42 (1.13 – 9.79)	.015
	>30 cigarettes	39 (10.6)	4.54 (2.67 – 9.54)	

Note: *Mann – Whitney *U*-test.

Cross-sectional Analyses

According to the data collected for the study, 138 (37.5%) of the 368 participants were female and 230 (62.5%) were male. Their ages were between 18 and 80 years, and the mean age was 41.1 ± 14.6 years. The total scores in the study group were between 1.13 and 9.79, with a mean (SD) of 6.20 (1.71) and a median of 6.38 points. The comparison of the scores obtained from the scale according to the sociodemographic characteristics of the participants is given in Table 3.

Participants with moderate and severe tobacco dependence predominantly smoked classic cigarettes the most (63.9%). Among the participants, 7.3% smoked conventional cigarettes and hookah, 4.9% smoked conventional cigarettes and electronic cigarettes, and 23.9% smoked multiple tobacco products together. Among the participants, the NAS total scores of e-cigarette smokers were higher than those of other groups (p = .019). The comparison of the NAS scores of the participants according to the tobacco products they used is given in Table 4.

Discussion

Tobacco addiction can also be described as "nicotine use disorder" (İlkay, 2002). The number of people who thought that they had such a disorder, i.e., described themselves as tobacco addicted, was only 267 (72.6%). In addition, in our study, those who were older, single, had higher education, had a chronic disease, and had more years of smoking scored higher on the NAS.

From the perspective of awareness and insight, the first step in applying for treatment is to believe that one needs treatment (Kim et al., 2022). In this context, the first step in the fight against tobacco may be to provide opportunities for individuals to gain insight and facilitate their access to cessation treatments. Despite all the policies carried out within the scope of the fight against tobacco, it should not be forgotten that, as a country where one out of every three to four people in society smokes, there is a danger of a great loss, not only in the field of health but also in the economic dimension (World Health Organization, n.d.).

Table 3.
Distribution of Participants' NAS Scores According to Sociodemographic Characteristics

		n (%)	NAS Median Score (Minimum – Maximum)	*p**
Gender	Female	138 (37.5)	6.42 (1.79 – 9.58)	.192
	Male	230 (62.5)	6.31 (1.13 – 9.79)	
Age group	≤25 years[a]	65 (17.7)	5.50 (1.96 – 8.33)	<.001
	26 – 50 years[b]	201 (54.6)	6.29 (1.13 – 9.29)	
	≥51 years[c]	102 (27.7)	6.83 (1.21 – 9.79)	
Marital status	Single[a]	125 (34.0)	5.58 (1.58 – 8.88)	<.001
	Married[b]	217 (59.0)	6.63 (1.13 – 9.58)	
	Divorced[b]	26 (7.0)	6.58 (3.38 – 9.79)	
Education	High school and below	133 (36.1)	6.63 (1.13. – 9.79)	.002
	University and above	235 (63.9)	6.17 (1.21 – 9.29)	
Chronic disease	No	223 (60.6)	6.21 (1.13 – 9.29)	<.001
	Yes	145 (39.4)	6.67 (1.21 – 9.79)	
Years of smoking	≤10 years[a]	145 (39.4)	5.88 (1.33 – 9.13)	<.001
	11 – 20 years[a,b]	96 (26.1)	6.25 (1.13 – 9.29)	
	≥21 years[b]	127 (34.5)	6.71 (1.21 – 9.79)	
Identifying oneself as a nicotine addict	No	101 (27.4)	5.38 (1.13 – 9.54)	<.001
	Yes	267 (72.6)	6.67 (1.21 – 9.79)	

Note: a, b, c values show the difference between groups. Bold values indicate statistical significance.
*Mann–Whitney *U*-test.

Table 4.
Distribution of Participants' NAS Scores According to Tobacco Products They Use

	n (%)	NAS Median Score (Minimum – Maximum)	*p*
Only classic cigarette	235 (63.9)	6.25 (1.13 – 9.58)	.019
Multiple tobacco products	88 (23.9)	6.40 (3.0 – 9.79)	
Classic cigarettes + hookah	27 (7.3)	5.50 (2.25 – 7.79)	
Classic cigarettes + e-cigarettes*	18 (4.9)	7.10 (4.71 – 8.29)	

Note: The bold value indicates statistical significance. "*" shows the group that makes statistical difference.

Smoking cessation treatments are considered to be one of the most cost-effective interventions among all health interventions (Parrott et al., 1998). However, while the consumption of traditionally popular tobacco products such as conventional cigarettes and hookah continues to increase rapidly among young people all over the world, the electronic cigarette (e-cigarette), which was initially introduced as a smoking cessation tool, has taken its place on the shelves as a new tobacco product. Although the legal prohibition of the purchase and sale of e-cigarettes in our country has limited the consumption of e-cigarettes in line with the strategies developed by the tobacco industry, e-cigarette consumption has been found to be 2.1%, even among university students (Mutlu et al., 2023). In our study, the rate of e-cigarette users was only 4.9% among 368 individuals who used various tobacco products. The higher NAS scores of this group compared to other tobacco product users may be explained by the higher awareness of these individuals and their desire to quit tobacco products in accordance with the initial purpose of e-cigarettes.

The general judgment in the literature is that addiction increases in direct proportion to increasing daily cigarette consumption (Sözer et al., 2021). The fact that smokers with high daily cigarette consumption are more addicted makes it more difficult to quit smoking, and this is explained by different pharmacodynamics (Nguyen et al., 2015). In our study, NAS scores of those who smoked less than 30 cigarettes daily were found to be higher. Nevertheless, daily cigarette consumption may have led to a gradual increase in nicotine-related symptoms and the effects of nicotine on the body, leading to earlier recognition of addiction. Therefore, nowadays, public awareness raising and awareness-raising activities have become much more important as a basic step in terms of public health in the field of addiction. In this study, the validity and reliability of the NAS were evaluated by adapting it to Turkish, and it can be considered the first scale study examination of the awareness of nicotine use in Turkish society.

Exploratory factor analysis defines the weight of the relevant variable on that factor by minimizing the number of factors. Factor loadings should be at least 0.30, while loadings greater than 0.70 are defined as loadings that can explain the structure well (R.A., 2016). In the present study, according to EFA, similar to the original scale, a unidimensional structure was revealed, and it was observed that the factor loadings of the scale items were greater than 0.30 and ranged between 0.33 and 0.71.

Regardless of the methods used in factor analysis, it is expected that the factor loadings should be high, and the variance explained should have a high representativeness. An explained variance of 50% or more of the total variance is considered a important criterion of factor analysis (Bandalos & Finney, 2018). In the study, it was observed that the single-factor structure explained 52.7% of the total variance. In addition, the unidimensional structure was also supported by the scree scatter plot.

Concurrent criterion validity is the comparison of the scores obtained from the scale to be developed with the scores obtained from a previously proven test measuring a similar behavior (Boateng et al., 2018). In this study, SOCRATES was used for equivalent criterion (predictive) validity as in the original scale study, and a strong positive relationship was found between them and the NAS. Similar to the original scale study, there was a strong positive relationship between the NAS and the SOCRATES (recognition subdomain).

As expected in the study, scores obtained from the scale by those who defined themselves as nicotine addicted were higher than those of other group ($p < .001$). It was also observed that the scores obtained from the NAS increased with increasing age ($p < .001$). The awareness and insight of single individuals, university graduates, and those who did not have any chronic disease diagnosed by a physician were lower than the other groups ($p < .001$, $p = .002$, $p < .001$, respectively). One of the assumptions established in the study is that individuals with high daily cigarette consumption have low awareness and insight, and their willingness to receive treatment is low in parallel. The number of daily cigarettes consumed was also used for item discrimination. Item discrimination is a statistically significant difference between the scores obtained from the scale between those who have the characteristic to be measured and those who do not (Yang & Yao, 2021). In the study, it was observed that in individuals with nicotine use, those whose daily cigarette consumption was less than 30 cigarettes had higher scores on the NAS compared with individuals with more cigarettes ($p < .001$). In addition, sorting the total scores obtained from the scale from highest to lowest and dividing them into upper and lower 27% groups and comparing the mean/median scores of the groups strengthens the discriminative power of the study (Bindak, 2005). The finding of a significant difference between the upper – lower 27% groups in the study ($p < .001$) is another feature showing that the NAS provides discriminant validity.

For a reliable scale, Cronbach's α coefficient representing internal consistency should be above 0.70 (Spiliotopoulou, 2009). Cronbach's α coefficient was calculated as 0.85 in this study. The fact that Cronbach's α values did not increase significantly when any of the items in the scale were removed showed that there was good agreement between the scale items. In addition, the item – total correlation coefficients were between 0.46 and 0.75. Since the values were above 0.20, no item was removed from the scale (Şener BÜYÜKÖZTÜRK, 2021).

In order to measure the stability of the scale, the same people were asked to respond to the test again after 2 weeks using the test – retest method. The correlation coefficient between test – retest measurements is required to be at least 0.70, and it is thought that the stability of the scale will increase as this coefficient increases (Bjørnsen et al., 2017). In this study, a strong correlation coefficient ($r = .762$) was obtained in the test – retest measurements. Accordingly, it was accepted that the stability of the scale was also sufficient.

Limitations and Directions/Suggestions for Future Research

This is the first scale study in Türkiye to assess awareness and insight in nicotine addicts. The most important limitation of the study is that the scale was developed very recently and has not yet been translated into another language and culturally adapted, so no comparison could be made with another study. The NAS, a valid and reliable scale that can be used in nicotine addicts in the Turkish population, could be utilized in studies aiming to increase applications for treatment and to evaluate the treatment

response thanks to the awareness that will be created by raising awareness in addicts in order to protect public health.

Ethics Committee Approval: For the study, permission was obtained from Eskişehir Osmangazi University Non-Interventional Clinical Research Ethics Committee (E-25403353-050.99-364078).

Informed Consent: Informed consent was obtained from the participants who agreed to take part in the study.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept – F.N.Ö.M., S.M.; Design – F.N.Ö.M., S.M., M.F.Ö.; Supervision – F.N.Ö.M., S.M., M.F.Ö.; Resources – F.N.Ö.M., S.S., M.T.; Materials – F.N.Ö.M., S.S., M.T.; Data Collection and/or Processing – F.N.Ö.M., S.S., Z.A.; Analysis and/or Interpretation – F.N.Ö.M., M.T., Z.A.; Literature Search – F.N.Ö.M., S.S., M.T., Z.A.; Writing – F.N.Ö.M., S.M.; Critical Review – S.M., M.F.Ö.

Declaration of Interests: The authors have no conflict of interest to declare.

Funding: The authors declared that this study has received no financial support.

References

Alpar, R. (2016). *Spor, sağlık ve eğitim bilimlerinden örneklerle uygulamalı istatistik ve geçerlilik ve güvenilirlik-SPSS'de çözümleme adımları ile birlikte*.Detay Yayıncılık.

Bandalos, D. L., & Finney, S. J. (2018). Factor analysis: Exploratory and confirmatory. In *The reviewer's guide to quantitative methods in the social sciences* (pp. 98 – 122). Routledge.

Bindak, R. (2005). Tutum ölçeklerine madde seçmede kullanılan tekniklerin karşılaştırılması. *İnönü Üniversitesi Eğitim Fakültesi Dergisi*, *6*(10), 17 – 26.

Bjørnsen, H. N., Eilertsen, M., Bradley, E., Ringdal, R., Espnes, G. A., & Moksnes, U. K. (2017). Positive mental health literacy: Development and validation of a measure among Norwegian adolescents. *BMC Public Health*, *17*(1), 1.

Boateng, G. O., Neilands, T. B., Frongillo, E. A., Melgar-Quiñonez, H. R., & Young, S. L. (2018). Best practices for developing and validating scales for health, social, and behavioral research: A primer. *Frontiers in Public Health*, *6*, 149. [CrossRef]

Büyüköztürk, Ş. (2021). *Sosyal Bilimler İçin veri Analizi el kitabı* P. Akademi (Ed.).

Care, P. (2000). A clinical practice guideline for treating tobacco use and dependence: A US Public Health Service report. The Tobacco Use and Dependence Clinical Practice Guideline Panel, Staff, and Consortium Representatives. *JAMA*, *283*(24), 3244 – 3254.

Dietz, P. M., England, L. J., Shapiro-Mendoza, C. K., Tong, V. T., Farr, S. L., & Callaghan, W. M. (2010). Infant morbidity and mortality attributable to prenatal smoking in the US. *American Journal of Preventive Medicine*, *39*(1), 45 – 52. [CrossRef]

Evren, C., Dalbudak, E., & Çakmak, D. (2008). Deiflime HazrOlma ve Tedavi‹stei Ölçei (SOCRATES) Türkçe Versiyonu'nun Yatarak Tedavi Gören Erkek Alkol Ba¤› ml› s› Hastalarda Faktör Yap› s›, *Geçerliive Güvenirlii. Klinik Psikofarmakoloji Bülteni*, *18*, 84 – 91.

Heatherton, T. F., Kozlowski, L. T., Frecker, R. C., & Fagerström, K. O. (1991). The Fagerström Test for Nicotine Dependence: A revision of the Fagerstrom Tolerance Questionnaire. *British Journal of Addiction*, *86*(9), 1119 – 1127. [CrossRef]

İlkay, P. D. E. (2002). Cerrahpaşa psikiyatri. *İstanbul üniversitesi Basım ve Yayınevi*.

Kim, J., Kambari, Y., Taggar, A., Quilty, L. C., Selby, P., Caravaggio, F., Ueno, F., Song, J., Pollock, B. G., Graff-Guerrero, A., & Gerretsen, P. (2022). A measure of illness awareness in individuals with nicotine dependence—Nicotine use awareness and insight scale. *Nicotine and Tobacco Research*, *24*(4), 536 – 543. [CrossRef]

Miller, W. R., & Tonigan, J. S. (1997). *Assessing drinkers' motivation for change: The Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES)*. American Psychological Association.

Muehlig, S., Hoch, E., Hoefler, M., Pittrow, D., & Wittchen, H. U. (2003). Aims, design and methods of the Smoking and nicotine Dependence Awareness and Screening (SNICAS) study. *International Journal of Methods in Psychiatric Research*, *12*(4), 208 – 228. [CrossRef]

Mutlu, A., Fatih Önsüz, M., Metintaş, S., Aydoğan Gedik, S., Nehir Öznur Muz, F., & Arslan Torba, T. (2023). Determination of the frequency of tobacco products and electronic cigarette use of university students and the evaluation of related factors. *Addicta: The Turkish Journal on Addictions*, *10*(3), 229 – 236. [CrossRef] [Epub ahead of print].

Nguyen, M.-A. H., Reitzel, L. R., Kendzor, D. E., & Businelle, M. S. (2015). Perceived cessation treatment effectiveness, medication preferences, and barriers to quitting among light and moderate/heavy homeless smokers. *Drug and Alcohol Dependence*, *153*, 341 – 345. [CrossRef]

Parashar, M., Agarwalla, R., Mallik, P., Dwivedi, S., Patvagekar, B., & Pathak, R. (2016). Prevalence and correlates of nicotine dependence among construction site workers: A cross-sectional study in Delhi. *Lung India: Official Organ of Indian Chest Society*, *33*(5), 496 – 501. [CrossRef]

Parrott, S., Godfrey, C., Raw, M., West, R., & McNeill, A. N. N. (1998). Guidance for commissioners on the cost effectiveness of smoking cessation interventions. *Thorax*, *53*(Suppl. 5 Pt 2), S1 – 38.

Sözer, Ü., Özvurmaz, S., & Durmaz, S. (2021). Sağlık çalışanlarının sigara bırakmaya yönelik desteğe hazır olma durumu ve ilişkili faktörler. *Turkish Journal of Family Medicine and Primary Care*, *15*(2), 286 – 293. [CrossRef]

Spiliotopoulou, G. (2009). Reliability reconsidered: Cronbach's alpha and paediatric assessment in occupational therapy. *Australian Occupational Therapy Journal*, *56*(3), 150 – 155. [CrossRef]

Steptoe, A., Wardle, J., Cui, W., Baban, A., Glass, K., Tsuda, A., & Vinck, J. (2002). An international comparison of tobacco smoking, beliefs and risk awareness in university students from 23 countries. *Addiction*, *97*(12), 1561 – 1571. [CrossRef]

Türkiye Istatistik Kurumu (2019). Türkiye sağlık araştırması. Retrieved from https://data.tuik.gov.tr/Bulten/Index?p=Turkey-Health-Survey-2019-33661

Uysal, M. A., Kadakal, F., Karşidağ, C., Bayram, N. G., Uysal, O., & Yilmaz, V. (2004). Fagerstrom Test for Nicotine Dependence: Reliability in a Turkish sample and factor analysis. *Tüberküloz ve Toraks*, *52*(2), 115 – 121.

World Health Organization (n.d.). (2023) Tobacco. Retrieved from https ://www.who.int/health-topics/tobacco#tab=tab_1

Yang, J.-J., & Yao, G. (2021). Item discriminant validity. In *Encyclopedia of quality of life and well-being research* (pp. 1 – 2). Berlin: Springer.