

Smoking cessation prediction of smoking healthcare professionals and associated factors

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Abstract

This study aimed to examine the relationship between smoking cessation success prediction and the factors influencing smoking cessation among healthcare professionals who smoke. In this context; sociodemographic and environmental factors, smoking habits, symptoms of posttraumatic stress disorder, and resilience variables were examined. A total of 149 healthcare professionals participated in the study. Participants completed the Participant Information Form, Fagerström Test for Nicotine Dependence, PTSD Checklist for DSM-5, Connor-Davidson Resilience Scale, and Smoking Cessation Success Prediction Scale. Data analysis included t-tests, correlation analysis, and multiple linear regression. In the final model obtained from the multiple linear regression analysis, 39.5% of the variance in smoking cessation success prediction was accounted for. Education level ($\beta = .09$, $p > .05$), occupation ($\beta = .04$, $p > .05$), and smoking duration ($\beta = -.02$, $p > .05$) did not significantly contribute to the final model. High perceived social support ($\beta = .27$, $p < .001$), smoking initiation age ($\beta = .16$, $p < .05$), contemplation/preparation stage of smoking cessation ($\beta = .27$, $p < .001$), resilience ($\beta = .19$, $p < .05$) positively predicted smoking cessation success prediction. Conversely, an increase in nicotine dependence ($\beta = -.27$, $p < .001$) negatively predicted smoking cessation success prediction. In conclusion, a comprehensive evaluation of sociodemographic and environmental factors, individual smoking patterns, and psychological processes is essential for understanding smoking cessation among primary care health professionals.

Keywords: smoking cessation, tobacco use disorder, post- traumatic stress disorder, resilience, health care professionals

Main points

- Smoking cessation involves a complex and dynamic interaction of various contributing factors.
- It is important to comprehensively evaluate smoking cessation among health professionals in terms of sociodemographic, environmental, smoking patterns, and psychological factors.
- Developing multifaceted models may help identify both protective and risk factors in the smoking cessation process.

Introduction

Although much research highlights the harmful effects of smoking, a portion of the population continues to smoke (Henley et al., 2020). It is estimated that each year, approximately two out of every five smokers attempt to quit, but less than 10% of them succeed. In this context, exploring factors associated with successful smoking cessation is

considered essential for reducing the risk of relapse (Lee & Kahende, 2007). When considering the smoking cessation attempts, researchers frequently conduct studies on sociodemographic factors such as gender (Stockton et al., 2000), age (Lee & Kahende, 2007), marital status (Vangeli et al., 2011) and, education (Tsourtos & O'Dwyer, 2008). Social and environmental factors, including the smoking status at home (Lee & Kahende, 2007), and support from family and

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Received: November 17, 2025 **Accepted:** February 13, 2026 **Published online:** July 9, 2026

This study was derived from the PhD thesis of Sevda Acar, titled "Smoking Cessation Prediction of Smoking Healthcare Professionals and Associated Factors", conducted under the supervision of Prof. Dr. Görkem Yararbaş at Ege University, Institute on Drug Abuse, Toxicology and Pharmaceutical Science, in 2024.

Cite as: Acar, S., Yararbaş, G., Şaşman Kaylı, D., & Hassoy, H. (2026). Smoking cessation prediction of smoking healthcare professionals and associated factors. *Addicta: The Turkish Journal on Addictions*, Advance online publication. <https://doi.org/10.15805/addicta.2026.514>

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friends (Aschbrenner et al., 2019), are also examined in the literature. Furthermore, the influence of the work environment on smoking has been examined as a factor (Nieva et al., 2017).

In addition to these factors, a range of variables related to individuals' smoking habits also influence smoking cessation. Variables such as smoking initiation age (Caponnetto & Polosa, 2008), smoking duration (Sanderson et al., 2005), nicotine dependence (Hagimoto et al., 2009), readiness to quit smoking (Beletsiti-Stika & Scriven, 2006) are associated with smoking cessation. With regard to psychological variables, researchers focus on posttraumatic stress disorder (PTSD) as a risk factor and resilience as a protective factor (Asnaani et al., 2015). Smokers diagnosed with PTSD face significant barriers to quitting (Lasser et al., 2000). Higher levels of PTSD symptoms are associated with barriers to quitting smoking (Short et al., 2015). On the other hand, higher levels of resilience are associated with lower nicotine dependence and reduced smoking (Goldstein et al., 2013). Smoking rates are significantly higher among healthcare professionals, who play a critical role in public health (Nilan et al., 2019). For this reason, further research is needed to determine the factors that influence smoking cessation success among healthcare professionals who smoke (Evenhuis et al., 2023).

Based on these considerations, the present study aimed to identify the relationship between smoking cessation success prediction and the factors influencing smoking cessation among healthcare professionals who smoke. Within this scope, sociodemographic and environmental factors, smoking habits, symptoms of posttraumatic stress disorder, and resilience variables were examined.

Methods

The study was designed as a cross-sectional study and was conducted in 2023 at the Karabağlar District Health Directorate in İzmir, Türkiye. The organizational structure of the directorate included administrative units, Family Health Centers, Healthy Life Centers, and a Migrant Health Center. At the time of the study, a total of 469 healthcare professionals were employed.

The study population consisted of healthcare professionals working at the District Health Directorate. A non-probability purposive sampling method was used. All primary healthcare professionals were screened for smoking status. Those who met the inclusion criteria (being a current smoker and volunteering to participate) were included in the study. 158 primary healthcare workers who smoked were identified, corresponding to approximately 33.7% of the total population. After excluding nine participants due to extreme responses and substantial missing data, the final sample consisted of 149 participants.

During the data collection process, all units were personally visited. Family Health Centers informed the Family Medicine Unit of the dates and time periods suitable for face to face data collection due to their workload. On the scheduled dates, the

researcher visited the designated centers and collected data through face to face questionnaires. Within this procedure, healthcare professionals who smoked and voluntarily agreed to participate were visited between November and December 2023.

Measures

Sociodemographic and Environmental Factors

This form includes questions about gender, age, marital status, education level, occupation, years of professional experience, perceived income level, household members, coworkers' smoking status and support from family and friends in the decision to quit smoking.

Smoking Habits

This form includes questions about smoking initiation age, smoking duration, readiness to quit smoking and, nicotine dependence. The stages of change model developed by DiClemente et al. (1991) was used to assess participants' readiness to quit smoking (DiClemente et al., 1991). Fagerstrom Test for Nicotine Dependence was used to measure nicotine dependence. The test consists of six items. The total score obtained from the test ranges from 0 to 10. The results indicate the individual's level of nicotine dependence. Uysal et al. (2004) conducted the Turkish psychometric studies of the scale (Uysal et al., 2004). In the present study, the reliability coefficient (Cronbach's alpha) of the scale's total score was .74.

Posttraumatic Stress Disorder Symptoms

The PTSD Checklist for DSM-5 (PCL-5) was used to assess PTSD symptoms. The scale is a 5-point Likert-type measure, with total scores ranging from 0 to 80. Higher scores indicate greater severity of PTSD symptoms. Boysan et al. (2017) conducted the Turkish psychometric validation of the scale and reported a reliability coefficient of .94 for the total score (Boysan et al., 2017). In the present study, the reliability coefficient of the scale's total score was .94.

Resilience

Connor-Davidson Resilience Scale was used to assess the level of resilience. The scale consists of 25 items and is rated on a 5-point Likert scale. Higher scores indicate greater resilience. Karairmak (2010) conducted the Turkish psychometric validation of the scale and reported a reliability coefficient of .92 for the total score (Karairmak (2010)). In the present study, the reliability coefficient of the scale's total score was .93.

Smoking Cessation Success Prediction

The Smoking Cessation Success Prediction Scale was used. The scale consists of 10 items and is rated on a 5-point Likert

scale. It measures individuals' potential to quit smoking. Aydemir et al. (2019) conducted the Turkish psychometric validation of the scale and reported a reliability coefficient of .78 for the total score (Aydemir et al., 2019). In the present study, the reliability coefficient of the scale's total score was .81.

Procedure

Ethical approval and necessary permissions for the study were obtained from the Medicine Medical Research Ethics Committee (decision number 23-7T/14). Approval for the implementation of the study was obtained from the Provincial Directorate of Health on October 19, 2023 (Reference No: E-36026262-619-227166936). Informed consent was obtained from all participants prior to the completion of the questionnaire.

Data Analysis

Data analysis was performed using SPSS version 27.0. In the study, descriptive statistics were used to determine the sociodemographic characteristics of 149 participants. For analyses, multi-category variables were recoded into two categories. Preliminary analyses were conducted before each analysis to evaluate whether the variables satisfied the assumptions of normal distribution. Correlation analyses and independent samples t-tests were conducted to examine the relationship between factors influencing smoking cessation and smoking cessation success prediction. After these analyses, multiple linear regression analysis was conducted with the significant variables. Dummy variables were created for categorical variables. Educational level was recoded as below bachelor's degree and bachelor's degree or higher (reference category). Occupation was recoded as other healthcare professionals and physician, midwife, or nurse (reference category). Perceived social support was recoded as low and high (reference category). Readiness to quit smoking was recoded as precontemplation stage and contemplation/preparation stage (reference category). The Durbin-Watson coefficient for the analysis is 2.08.

Results

Sample Characteristics

A total of 149 healthcare professionals participated in the study, of whom 66.4% were female (n=99) and 33.6% were male (n=50). The participants' ages ranged from 20 to 64 years, with a mean of 40.01 ± 10.44 years. Regarding marital status, 69.1% were married (n=103), 22.8% were single (n=34), and 8.1% were divorced (n=12). In terms of income levels, 18.1% of participants reported a low income (n=27), 73.8% a medium-income (n=110), and 8.1% a high income (n=12). Educational levels included 1.3% primary school graduates (n=2), 24.8% high school graduates (n=37), 55% university graduates (n=82), 15.4% with a master's degree (n=23), and 3.4% with a doctoral degree (n=5). The occupational

distribution was as follows: 27.5% physicians (n=41), 28.2% nurses (n=42), 14.8% midwives (n=22), 1.3% psychologists (n=2), 1.3% social workers (n=2), 1.3% child development specialists (n=2), 1.3% physiotherapists (n=2), 0.7% dietitians (n=1), 4.7% medical secretaries (n=7), 4% data preparation and control operators (n=6), 4% drivers (n=6), 8.7% cleaning personnel (n=13), and 2% patient referral support personnel (n=3). The participants' professional experience ranged from 1 to 39 years, with a mean of 16.71 ± 10.32 years. Table 1 summarizes their sociodemographic characteristics.

The Association Between Smoking Cessation Success Prediction and Sociodemographic and Environmental Factors

In order to investigate relationship between sociodemographic and environmental factors and the total score of smoking cessation success prediction, the following variables were analyzed using the t-test. The findings are presented in Table 2.

Table 1. Participants' sociodemographic characteristics

Variable	Category	Frequency (n)	Percentage (%)
Gender	Female	99	66.4
	Male	50	33.6
Marital Status	Married	103	69.1
	Single	34	22.8
	Divorced	12	8.1
Educational level	Primary School	2	1.3
	High School	37	24.8
	University	82	55
	Master's Degree	23	15.4
	Doctoral Degree	5	3.4
Income Levels	Low	27	18.1
	Medium	110	73.8
	High	12	8.1
Occupation	Physicians	41	27.5
	Nurses	42	28.2
	Midwives	22	14.8
	Cleaning Personnel	13	8.7
	Medical Secretaries	7	4.7
	Data Preparation And Control Operators	6	4
	Drivers	6	4
	Patient Referral Support Personnel	3	2
	Physiotherapists	2	1.3
	Psychologists	2	1.3
	Social Workers	2	1.3
	Child Development Specialists	2	1.3
	Dietitians	1	0.7
Total		149	100

Table 2. Pairwise comparisons of variables related to smoking cessation success prediction

Variable	Category	Mean	SD	t(147)	p	d
Gender	Female	33.50	8	0.85	> .05	0.15
	Male	32.34	7.62			
Marital status	Married	33.26	7.93	-0.27	> .05	-0.05
	Single	33.68	7.54			
Educational level	Below Bachelor's	30.72	8.77	-2.24	< .05	-0.42
	Bachelor's Degree or Higher	33.96	7.39			
Occupation	Physician, Midwife, Or Nurse	34.16	7.85	2.56	< .05	0.46
	Other Healthcare Professionals	30.61	7.44			
Household Members	No	31.45	7.23	-0.95	> .05	-0.23
	Yes	33.24	7.88			
Smoking Status of Coworkers	Yes	32.96	7.99	-0.48	> .05	-0.10
	No	33.73	7.48			
Perceived Social Support	Low	26.09	6.79	-4.87	< .001	-1.12
	High	34.33	7.42			
Readiness To Quit Smoking	Precontemplation Stage	30.79	7.85	-4.20	< .001	-0.69
	Contemplation /Preparation Stage	35.96	6.97			

Table 3. Correlation analyses of variables associated with smoking cessation success prediction

Variable	Mean	SD	1	2	3	4	5	6	7
1. Smoking Cessation Success Prediction	33.11	7.87	-	-.02	.34**	-.22*	-.44**	.01	.19*
2. Age	40.01	10.44							
3. Smoking Initiation Age	20.01	4.31							
4. Smoking Duration	18.88	10.95							
5. Total Nicotine Dependence Score	3.14	2.71							
6. PTSD	35.01	17.10							
7. Resilience	67.72	16.13							

*p < .05, **p < .001.

Gender: The mean test scores of women (M = 33.50) and men (M = 32.34) did not show a significant difference, $t(147) = .85$, $p > .05$.

Marital status: No significant difference was found between the mean test scores of married participants (M = 33.26) and single participants (M = 33.68), $t(147) = -.27$, $p > .05$.

Educational level: A significant difference was found between the mean test score of participants with less than a bachelor's degree (M = 30.72) and those with a bachelor's degree or higher (M = 33.96), $t(147) = -2.24$, $p < .05$. The findings indicate that participants with a bachelor's degree or higher have higher smoking cessation success prediction scores compared to those with less than a bachelor's degree.

Occupation: A significant difference was found between the mean test scores of participants with the profession of physician, midwife, or nurse (M = 34.16) and those of other healthcare professionals (M = 30.61); $t(147) = 2.56$, $p < .05$. The findings indicate that participants with the profession of physician, midwife, or nurse have higher smoking cessation success prediction scores compared to other healthcare professionals.

Household members: The mean test scores of participants living with others (M = 33.24) and those living alone (M = 31.45) did not show a significant difference; $t(147) = -.95$, $p > .05$.

Smoking status of coworkers: No significant difference was found between the mean test scores of participants with a coworker who smokes (M = 32.96) and those with a coworker who does not smoke (M = 33.73); $t(147) = -.48$, $p > .05$.

Support from family and friends in the decision to quit smoking: A significant difference was found between the mean test scores of participants who perceived low levels of support from their family and social environment (M = 26.09) and those who perceived high levels of support (M = 34.33); $t(147) = -4.87$, $p < .001$. The findings indicate that participants with higher social support perception have higher smoking cessation success prediction scores.

Age: In order to assess relationship between age and the total smoking cessation success prediction score, a correlation analysis was conducted. No significant relationship was found between age and smoking cessation success prediction ($r = -.02$, $p > .05$). The findings are presented in Table 3.

Table 4. Model of factors associated with smoking cessation success prediction

Variable	β	t	R ² Change	F _{Change}
Stage 1			.19	11.10**
Education Level: Bachelor's Degree or Higher	.14	1.60		
Occupation: Physician, Midwife, Nurse	.12	1.36		
Perceived Social Support: High	.37	4.91**		
Stage 2			.21	12.03**
Education Level: Bachelor's Degree or Higher	.07	.83		
Occupation: Physician, Midwife, Nurse	.08	1.05		
Perceived Social Support: High	.26	3.81**		
Smoking Duration	-.01	-.18		
Smoking Initiation Age	.18	2.27*		
Readiness To Quit: Contemplation / Preparation Stage	.26	3.83**		
Total Nicotine Dependence Score	-.27	-3.73**		
Stage 3			.03	8.27*
Education Level: Bachelor's Degree or Higher	.09	1.13		
Occupation: Physician, Midwife, Nurse	.04	.54		
Perceived Social Support: High	.27	3.98**		
Smoking Duration	-.02	-.28		
Smoking Initiation Age	.16	2.15*		
Readiness To Quit: Contemplation / Preparation Stage	.27	4.16**		
Total Nicotine Dependence Score	-.27	-3.79**		
Resilience Score	.19	2.88*		

*p < .05, **p < .001.

The Association Between Smoking Cessation Success Prediction and Smoking Habits

In order to examine the relationship between smoking habits and the total smoking cessation success prediction score, the relevant variables were analyzed using t-tests and correlation analysis. The findings for pairwise comparisons are presented in Table 2. The results of the correlation analyses are shown in Table 3.

Readiness to Quit Smoking: A statistically significant difference was found between the mean scores of participants in the precontemplation stage (M = 30.79) and those in the contemplation /preparation stage of quitting smoking readiness (M = 35.96), $t(147) = -4.20$, $p < .001$. Participants in the contemplation /preparation stage exhibited higher smoking cessation success prediction scores compared to participants in the precontemplation stage of quitting smoking.

Smoking Initiation Age: A moderate and positive statistically significant correlation was observed between smoking initiation age and smoking cessation success prediction ($r = .34$, $p < .001$). Higher smoking initiation age was associated with greater smoking cessation success prediction.

Smoking Duration: A weak and negative statistically significant correlation was observed between smoking duration and smoking cessation success prediction ($r = -.22$, $p < .05$). As smoking duration decreases, smoking cessation success prediction increases.

Total Nicotine Dependence Score: A moderate and negative statistically significant correlation was found between the total nicotine dependence score and smoking cessation success prediction ($r = -.44$, $p < .001$). Lower nicotine dependence scores were associated with higher smoking cessation success prediction.

The Association Between Smoking Cessation Success Prediction and Post-Traumatic Stress Disorder Symptoms

A Pearson correlation analysis was conducted to examine the relationship between the total PTSD symptom score and the smoking cessation success prediction score. The analysis indicated no significant association between the two variables ($r = .01$, $p > .05$).

The Association Between Smoking Cessation Success Prediction and Resilience

A Pearson correlation analysis was conducted to assess the relationship between the total resilience score and the smoking cessation success prediction score. The results revealed a weak and positive significant correlation between these variables ($r = .19$, $p < .05$).

A Model of Smoking Cessation Success Prediction and Associated Factors

Based on the findings outlined above, a model was developed using multiple linear regression analysis. This analysis focused

on the independent variables identified as influencing smoking cessation success prediction among healthcare professionals. The results of the hierarchical multiple regression model are presented in Table 4.

In the first stage, sociodemographic and environmental variables, including education level, occupation, and social support perception were entered into the model. These variables accounted for 17% of the variance in smoking cessation success prediction ($R = .43$, $R^2 = .17$), and the model was significant ($F(3,145) = 11.10$, $p < .001$). At this stage, the individual's perception of family and social support played a significant role in the model's contribution to the quitting decision. A higher social support perception was a positive predictor of change in smoking cessation success prediction ($\beta = .37$, $p < .001$).

The second stage included the characteristics related to individuals' smoking habits. In this stage, variables such as smoking duration, age of smoking initiation, stage of contemplation /preparation to quit smoking, and nicotine dependence score were entered into the model. These variables accounted for 36.4% of the variance in smoking cessation success prediction ($R = .63$, $R^2 = .36$), and the model was significant ($F(4,141) = 13.08$, $p < .001$). Predictors of changes in smoking cessation success prediction at this stage included high social support perception ($\beta = .26$, $p < .001$), age of smoking initiation ($\beta = .18$, $p < .05$), being in the contemplation /preparation stage ($\beta = .26$, $p < .001$), and nicotine dependence score ($\beta = -.27$, $p < .001$).

In the third stage, the resilience variable, identified as influencing smoking cessation success prediction, was added to the model. The variables entered in this stage explained 39.5% of the variance in smoking cessation success prediction ($R = .65$, $R^2 = .39$), and the model was found significant ($F(1,140) = 13.06$, $p < .001$). Predictors of changes in smoking cessation success prediction at this stage included high perceived social support ($\beta = .27$, $p < .001$), age of smoking initiation ($\beta = .16$, $p < .05$), being in the contemplation /preparation stage ($\beta = .27$, $p < .001$), nicotine dependence score ($\beta = -.27$, $p < .001$), and resilience score ($\beta = .19$, $p < .05$). In the final model, high social support perception, age of smoking initiation, being in the contemplation /preparation stage, and resilience were variables that positively predict smoking cessation success, whereas increased nicotine dependence negatively predicted smoking cessation success.

Discussion

The literature reveals diverse findings when regarding the sociodemographic and environmental factors related to smoking cessation success prediction. Consistent with our results, gender has not been found to be a significant factor in previous studies (Caponnetto & Polosa, 2008; Zhu et al., 1999). In our study, age was not a significant predictor with inconsistent findings reported in the literature (Vangeli et al., 2011). Contrary to our findings, some studies suggest that relationship status influences smoking cessation success (Lee

& Kahende, 2007). Additionally, in contrast to our findings, a study conducted with nurses found that living with family members had an impact on smoking cessation (Kitajima et al., 2002). Furthermore, our findings indicate no association between coworkers' smoking behaviors and smoking cessation success prediction. Similarly, Albertsen et al. (2006) reported that the work environment affects smoking quantity; however, evidence regarding its impact on cessation and relapse remains insufficient (Albertsen et al. (2006)).

According to our findings, education level, occupation, and social support perception were factors that influencing smoking cessation success prediction. Similarly, studies in the literature report an association between higher education levels and smoking cessation. (Lesueur et al., 2018). In our study, being employed in one of the professions of doctor, midwife, or nurse emerged as a factor that increases smoking cessation success prediction, compared to other healthcare professions. Evenhuis et al. (2023) emphasized the importance of considering that the impact of professional groups on smoking cessation may vary across different healthcare systems (Evenhuis et al., 2023). In our study, high social support perception emerged as a factor that enhances smoking cessation success prediction. Consistent with our findings, Aschbrenner et al. (2019) identified family and friends' support as a significant facilitator of smoking cessation (Aschbrenner et al., 2019). Both education level and occupation were significant when assessed separately; however, when sociodemographic and environmental factors were considered together within the constructed model, social support perception was the only significant predictor among these variables. The literature also recognizes lack of social support as a barrier to smoking cessation (Akanke et al., 2020).

Our study also examined a set of variables related to smoking habits. The findings indicate that as the duration of smoking increases, the likelihood of smoking cessation success prediction decreases. This aligns with similar research conducted among nurses, which found that individuals with a shorter smoking history are more likely to successfully quit smoking (Sanderson et al., 2005). Although smoking duration was significant in the individual analysis, it did not contribute significantly to the regression model. Our findings also suggest that an older age at smoking initiation enhances the smoking cessation success prediction. In line with this, literature identifies early initiation of smoking as a critical factor influencing smoking cessation outcomes. (Caponnetto & Polosa, 2008). In our study, increased nicotine dependence was identified as a factor reducing smoking cessation success prediction. In line with our findings, evidence suggests that individuals diagnosed with nicotine dependence exhibit lower rates of successful smoking cessation. (Agrawal et al., 2008). In our study, a comparison between participants in the precontemplation stage and those in the contemplation/preparation stage revealed that the smoking cessation success prediction was lower among those in the precontemplation stage. A similar study demonstrates a significant relationship between being in the preparation stage for quitting smoking

and the willingness to seek help from a smoking cessation clinic (Beletsoti-Stika & Scriven, 2006).

Another variable examined in our study is PTSD symptoms. Our findings reveal no significant relationship between PTSD symptoms and smoking cessation success prediction. However, this contrasts with existing literature, which identifies a PTSD diagnosis as a substantial barrier to successful smoking cessation (Fu et al., 2007). This relationship has been shown to persist even after adjusting for potential confounding variables such as poverty, substance use, and comorbid psychiatric disorders (Balk et al., 2009). Moreover, several studies suggest that improvements in PTSD symptoms may increase the likelihood of successful smoking cessation (Salas et al., 2022).

Resilience, another variable examined in our study, is recognized as a factor that influences individuals' attempts to quit smoking (De Zylva et al., 2023; Pergadia, 2001). Studies have shown that individuals with higher resilience place greater importance on quitting smoking. (Akande et al., 2020). Consistent with these findings, our results suggest that as resilience increases, the smoking cessation success prediction also improves, indicating that resilience is a significant predictor of smoking cessation success.

In the final model derived from the regression analysis, several factors emerged as significant predictors of smoking cessation success. These include a high perception of social support, an older age of smoking initiation, being in the contemplation or preparation stage of smoking cessation, and higher resilience. Conversely, higher levels of nicotine dependence were associated with lower smoking cessation success prediction. Evenhuis et al. (2023), in their review on smoking cessation among healthcare professionals, emphasize that smoking cessation patterns vary across different cultures and professional groups, and that sociodemographic factors play a significant role in shaping these variations (Evenhuis et al., 2023). Furthermore, studies have underscored the importance of investigating the role of resilience in successful smoking cessation (Akande et al., 2020).

In conclusion, when the factors influencing smoking cessation are examined through a holistic perspective, it appears that social support perception, smoking behavior patterns, and resilience play a more prominent role than sociodemographic characteristics. These findings underscore the importance of focusing on individual and psychosocial resources in the development of effective smoking cessation interventions.

Limitations and Future Directions

This study has several limitations. First, it was conducted among healthcare workers from a specific region. Therefore, the findings may not be generalizable to all healthcare professionals or other occupational groups. Second, the cross-sectional design of the study limits the ability to establish causal relationships between the variables. Finally, smoking cessation prediction was assessed through self-

reported measures. These reports may not accurately capture actual cessation behavior or long-term maintenance. Future research should take these limitations into account.

Our study, in line with existing literature, suggests that the process of smoking cessation involves a complex and dynamic interaction of various contributing factors. Research in this domain underscores the importance of evaluating a wide range of components, including smoking behavior patterns, individuals' self-perceptions and perceptions of their environment, awareness of smoking cessation, and psychological resilience—within individual, social, and organizational contexts. A comprehensive examination of these interrelated factors—spanning sociodemographic and environmental variables, smoking-related behaviors, and psychological processes—is crucial for understanding the mechanisms that underlie smoking cessation. Developing multifaceted models may illuminate both protective and risk factors involved in this process. Moreover, investigating the determinants of smoking cessation among healthcare professionals may not only contribute to improving their cessation outcomes but also indirectly enhance the well-being of the communities they serve.

Author contributions

Conception and design: S.A., G.Y., D.S.K., H.H.; Data acquisition: S.A., G.Y.; Data interpretation: S.A., G.Y., D.S.K., H.H.; Drafting of the manuscript: S.A., G.Y., D.S.K., H.H.; Critical revision of the manuscript: S.A., G.Y., D.S.K., H.H. All authors reviewed the results, approved the final version of the manuscript, and agreed to be accountable for all aspects of this study.

Ethical approval

This study was approved by the Ege Üniversitesi Tıbbi Araştırmalar Etik Kurulu (Date: 13.07.2023, Decision/Protocol No: 23-7T/14). Informed consent was obtained from all participants involved in this study.

Data availability statement

The data supporting the findings of this study are not publicly available due to ethical restrictions and participant confidentiality requirements. The study was approved by the relevant ethics committees, and data sharing is limited in accordance with informed consent procedures and institutional data protection policies.

Conflict of interest

The authors declare that this study was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Funding

The authors declare that this study received no funding.

Generative AI statement

The authors declare that no generative AI or AI-assisted technologies were used in the writing or preparation of this study.

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