Euras J Fam Med 2026;15(2):106-17. doi:10.33880/ejfm.2026150204 **Original Research**

Comparison of Cardiovascular Risk Assessment and the 5A-5R Approach for Smoking Cessation Among Individuals Aged 18-40 Years

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ABSTRACT

Aim: This study aimed to compare smoking cessation outcomes between cardiovascular risk assessment-based advice and the 5A-5R approach.

Methods: This intervention study was conducted between June and July 2023 at the Family Medicine Clinic of Karadeniz Technical University. Volunteer participants aged 18–40 years, who had smoked at least 10 cigarettes per day for at least one year and had a lipid profile available within the preceding six months, were included. A total of 164 participants were allocated in a 1:1 ratio. Both groups completed a face-to-face questionnaire assessing sociodemographic characteristics and smoking habits. The control group received counseling based on the 5A-5R strategy, whereas the intervention group received smoking cessation advice guided by the 2019 ESC/EAS guidelines, including a 10-year cardiovascular risk estimation for young adults. Smoking status was assessed at six months via telephone or face-to-face follow-up interviews.

Results: The median age of participants was 33 years (interquartile range: 25–37). Overall, 61.6% (n=101) of participants had not been asked about smoking during their last outpatient visit, and 36% (n=59) had never received advice to quit. After six months, at least one quit attempt was reported by 29.3% (n=24) of the control group and 42.7% (n=35) of the intervention group.

Conclusion: Smoking cessation advice based on cardiovascular risk assessment resulted in a comparable number of quit attempts relative to the 5A-5R strategy.

Keywords: tobacco use, preventive health services, primary health care, smoking cessation

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Introduction

Undoubtedly, one of the most important causes of morbidity and mortality worldwide is cigarette smoking (1). It is estimated that the global economic burden of smoking amounts to approximately 2 trillion US dollars annually (2).

With the measures implemented by the World Health Organization (WHO), tobacco use decreased from 22.8% to 17%. However, mortality rates attributable to tobacco use have increased and are still estimated to cause approximately 8.7 million deaths annually (3). According to 2022 data from the Organisation for Economic Co-operation and Development (OECD), Turkey ranks third in cigarette consumption rates, with an estimated tobacco use prevalence of 31.5% (4,5).

The risk of coronary artery disease has been reported to be 3–7 times higher in smokers compared to non-smokers (6). Smoking cessation before the age of 50 years has been shown to prevent nearly all smoking-related risks (7). A cohort study indicated that individuals who quit smoking before the age of 35 avoided almost all risks associated with smoking compared to active smokers (8).

Smokers often cite their healthcare providers' advice to quit smoking as a significant source of motivation. It has been shown that brief smoking cessation advice, lasting approximately three minutes, can increase quit rates (9). Increasing smoking cessation attempts is essential to reduce diseases caused by tobacco use. Tobacco control is highly important from the perspective of preventive medicine. In particular, smoking cessation among young individuals will significantly reduce smoking-related morbidity and mortality.

In this context, it was hypothesized that providing young smokers with numerical information about the risk of smoking on the cardiovascular system could influence their quit attempts. This study aimed to investigate whether there is a difference between cardiovascular risk assessment (CvRA) and the 5A-5R approach in smoking cessation, the effects of CvRA on smoking cessation behavior, and the impact of a single strong and clear recommendation for smoking cessation on quitting behavior.

Methods

This study is a single-center, open-label, and individually randomized behavioral intervention study. It was conducted at the Department of Family Medicine, Faculty of Medicine, Karadeniz Technical University, between June 2023 and July 2023. The study population consists of voluntary patients who are smokers and present to the Family Medicine outpatient clinic of the Faculty of Medicine, Karadeniz Technical University.

According to previous studies, the smoking cessation rate associated with smoking cessation advice is approximately 5% (10). Therefore, with a Type 1 error rate of 0.05 and a power of 80%, the sample size for each group was calculated to be 82 individuals, for a total of 164 individuals, in order to detect a 15% difference. The sample size calculation was performed using G.Power version 3.1.9.7.

Inclusion Criteria:

1) Being between the ages of 18 and 40 and being a current smoker.
2) Smoking for at least one year.
3) Smoking at least 10 cigarettes per day.
4) Having undergone lipid profile assessment within the last 6 months.

The questionnaire consists of 4 sections: 10 questions regarding participants' sociodemographic characteristics, 7 questions concerning smoking status and cessation advice, the Fagerström Test for Nicotine Dependence (FTND) consisting of 6 questions, and 1 question querying the stage of change according to the Transtheoretical Model for individuals who smoke. Participants were asked to provide their own contact phone number and the phone number of a first-degree relative.

Transtheoretical Model:

The Transtheoretical Model is a change process involving different stages and progressing through these stages in a cyclical manner. Initially defined by Prochaska and colleagues, the Transtheoretical Model is a five-stage change process that assesses individuals' interest in and readiness for behavior change (1).

Precontemplation: Individuals in this stage do not consider making any changes regarding smoking within the next six months. They may focus on the perceived advantages of smoking.

Contemplation: Individuals in this stage are considering quitting smoking within the next six months and are aware of the harms associated with smoking.

Preparation: Individuals in this stage are planning to quit smoking within the next month and demonstrate a high level of awareness regarding the harms of smoking.

Action: This stage includes individuals who have quit smoking but have not yet maintained abstinence for six months. Relapses are common, with the most frequent occurring within the first two to three weeks.

Maintenance: Individuals in this stage have sustained smoking cessation for more than six months. Their confidence in maintaining abstinence has increased due to successfully quitting.

5A approach:

Ask: The individual's smoking status should be assessed. If the individual smokes, they should be asked about the duration of smoking and the number of cigarettes smoked per day. All participants in this study were smokers.

Advice: Smoking cessation is clearly and unambiguously recommended. For example, statements such as "The best thing you can do for your health is to stop smoking" or "I think it is very important for you to stop smoking" may be used.

Assess: Participants were asked whether they intended to quit smoking. For those with previous quit attempts, the challenges encountered during the process were reviewed. If participants did not wish to quit, the 5R strategies were applied.

Assist: At this stage of the 5A model, setting a quit date is generally recommended, as it may increase the patient's motivation to quit smoking. However, a quit date was not established due to the study protocol. Participants were advised to share their intention to quit smoking with their family members, friends, and social environment. It was explained that nicotine withdrawal symptoms may occur during the first two weeks. To cope with these symptoms, participants were advised to take ten deep breaths, peel and eat a fruit or raw vegetable, or take a shower. Participants were advised not to smoke at all after the quit date. It was explained that thinking that "one cigarette will not hurt" may lead to relapse. Participants were encouraged to seek support from people they live with and from their friends by stating, for example, "I would like your support; please do not smoke around me or in the house." They were also advised to avoid behaviors associated with smoking. For instance, if they usually smoked while drinking alcohol, coffee, or tea, they were advised to avoid these situations. If they had a specific place, such as a balcony or chair where they usually smoked, they were advised to change the arrangement and not to keep items such as ashtrays or lighters visible. Participants were also informed that effective medications are available to support smoking cessation, including nicotine replacement therapies and bupropion. It was explained that pharmacological treatment combined with supportive counseling may increase the likelihood of successful smoking cessation, and participants were informed that they could apply to smoking cessation clinics if they wished to use these treatments.

Arrange: Normally, the first follow-up interview should take place during the first week after the quit date. Subsequent follow-up interviews are conducted every 15 days or monthly, depending on the individual's condition. However, in this study, participants were informed that their smoking status would be assessed after six months through a telephone call or a face-to-face interview (1).

5R approach:

Relevance: Participants were encouraged to quit smoking by relating the harms of smoking to their current health condition, family, children, and economic situation. Emphasis should be placed on the individual's current health status, family and children, economic situation, age, gender, and concerns about potential future illnesses. For example, they were asked questions such as: "You mentioned that your father had a heart attack. Smoking is one of the important factors that increase the risk of heart attack.

Have you ever thought that you might experience a similar health problem in the future?" or "How do you think your children are affected by your smoking?".

Risks: Smokers were informed about the acute and chronic risks associated with smoking. Acute problems included cough, shortness of breath, nasal discharge, and an increased risk of respiratory tract infections. Chronic risks were explained to include a high likelihood of cardiovascular events such as heart attack and stroke, as well as cancers, including lung, trachea, kidney, and stomach cancer, and chronic obstructive pulmonary disease. Unlike the CvRA used in the intervention group, these individuals were informed that they had a generally high risk of cardiovascular diseases without providing a calculated risk estimate. Participants in the control group did not undergo CvRA, and the estimated "increased risk" was not calculated.

Rewards: The potential benefits of smoking cessation were explained to participants. For example, quitting smoking may improve persistent post-nasal drip, reduce the constant smell of cigarettes on clothing and breath, and provide a positive example for their children.

Roadblocks: Potential barriers to smoking cessation were identified, such as enjoying smoking, having a majority of friends who smoke, and experiencing stress, among others. Recommendations were provided to address these barriers; for example, engaging in physical activities, such as swimming, was suggested to cope with stress.

Repetition: For patients who are unwilling, motivational support should be provided repeatedly at each clinical visit. It was explained to patients who had tried multiple times without success that this does not mean they will fail in their next attempt, and that quitting may occur after several attempts (1).

Intervention

Individuals who presented to our family medicine outpatient clinic for any reason, met the inclusion criteria, and agreed to participate were included in the study. The questionnaire was administered face-to-face to both groups by the researchers. While the control group received the 5A/5R approach, which lasted approximately 10–15 minutes, the intervention group was provided with smoking cessation advice based on CvRA, with risk calculation taking approximately 5 minutes.

According to the 2019 ESC/EAS guidelines, the 10-year CvRA chart for young individuals (Figure 1) was applied to the intervention group. This calculation includes total cholesterol, systolic blood pressure, and smoking status. The calculation provides the relative risk of cardiovascular mortality in individuals aged 18-40 years. It has been shown to be particularly useful in motivating lifestyle changes among young individuals (11).

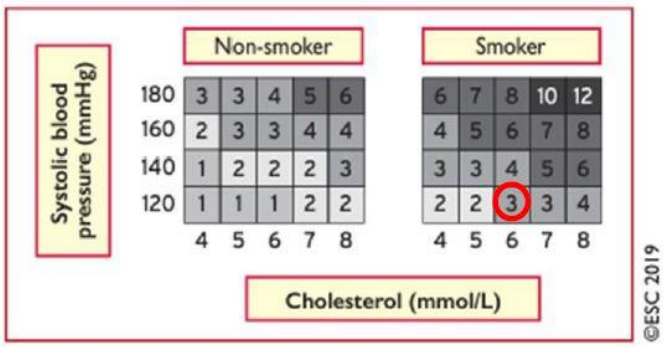


Figure 1. Chart for estimating the relative risk for 10 year cardiovascular mortality in young people. Cholesterol: 1 mmol/L = 36.87 mg/dL

Volunteers who met the inclusion criteria were asked to fill out an informed consent form. Participants were randomly allocated into 2 groups in a 1:1 ratio. The questionnaire was administered through face-to-face interviews. In the intervention group, the risk associated with smoking was explained using the CvRA given in Figure 1. Participants were explicitly advised to quit smoking. Specifically, they were informed about their risk of developing cardiovascular disease due to measured blood pressure, total cholesterol, and smoking status, stating how much higher their risk is compared to a non-smoker of the same age group. They were recommended to quit smoking (Such as; "Mr. Sarı, you are 29 years old. Your total cholesterol level was measured at 225 mg/dL, and I measured your blood pressure as 110/70 mmHg. You have been smoking for 10 years. Due to your smoking status, according to the risk calculation figure we use, your risk of developing cardiovascular

diseases such as heart attack, stroke, or artery occlusion is three times higher than that of a non-smoker of the same age. Therefore, the best thing you can do for your health is to quit smoking. You should definitely quit smoking.”). The key difference between CvRA in our intervention and RISK under the 5Rs is that we provide a numerical risk assessment.

In the control group, the 5A approach was applied to participants willing to quit smoking, while the 5R approach was used for those unwilling to quit.

The 5A–5R model was implemented by the researchers. Participants were informed that they could apply to smoking cessation outpatient clinics if they wished and were asked to inform the researchers in such cases. The 5A approach was applied to individuals in the contemplation or preparation stage, whereas the 5R approach was applied to individuals in the precontemplation stage (1).

Both intervention and control groups were interviewed once, and their smoking status was queried via phone or face-to-face interviews after 6 months.

The study was completed with 82 individuals in the control group and 82 individuals in the intervention group, totaling 164 participants. The data of all 164 individuals were analyzed.

The main outcome measure of this study was the effect of individuals' awareness of their CvRA on smoking cessation behavior.

The SPSS 26.0 software package was used for data analysis in this study. Statistical calculations were conducted by the researchers. The Kolmogorov-Smirnov test was employed to assess whether numerical data followed a normal distribution. Descriptive statistics were performed. For comparisons between variables, the Chi-square test, Mann-Whitney U test, Wilcoxon test were used. Differences were considered to be statistically significant, if the two-sided p value is <0.05.

Ethics committee approval dated 16.06.2023 and numbered 24237859-402 was obtained from Karadeniz Technical University Medical Faculty Scientific Research Ethics Committee.

Results

The median age of the 164 participants was 33 (IQR: 25-37) years, with 35 years (IQR*:29-38) for control and 29 years (IQR*:24-35) for intervention group. 37.2% (n=61) of the participants had no previous smoking cessation attempt. 53% (n=87) of the participants were at the stage of precontemplation quitting smoking. Sociodemographic characteristics of the participants according to the groups are shown in Table 1.

Table 1. Sociodemographic characteristics of participants

		Control group n (%)	Intervention group n (%)	p
Sex	Male	58 (70.7)	38 (46.3)	**0.002**
	Female	24 (29.3)	44 (53.7)	
Occupation	Teacher	5 (6.1)	3 (3.7)	**<0.001**
	Doctor	2 (2.4)	10 (12.2)	
	Nurse	14 (17.1)	21 (25.6)	
	Officer	13 (15.9)	3 (3.7)	
	Student	8 (9.8)	22 (26.8)	
	Other	40 (48.8)	23 (28.0)	
Chronic disease	No	50 (61.0)	51 (62.2)	**0.008**
	Hypertension	8 (9.8)	0 (0)	
	Diabetes mellitus	1 (1.2)	0 (0)	
	Hypothyroidism	3 (3.7)	10 (12.2)	
	Psychiatric disease	3 (3.7)	8 (9.8)	
	Other	17 (20.7)	13 (15.9)	
Smoking cessation (previous)	No	27 (32.9)	34 (41.5)	0.466
	Family support	8 (9.8)	3 (3.7)	
	Smoking cessation hotline	1 (1.2)	1 (1.2)	
	My own request	41 (50.0)	41 (50.0)	
	Physician advice	5 (6.1)	3 (3.7)	
Transtheoretic model	Precontemplation	50 (61.0)	37 (45.1)	0.063
	Contemplation	31 (37.8)	45 (54.9)	
	Preparation	1 (1.2)	0 (0.0)	

IQR: Interquartile Range

The median age at smoking initiation was 18 (IQR: 17-20) years. The median number of cigarettes smoked per day was 20 (IQR: 10-20). Among the 103 participants who had previously tried to quit smoking, baseline smoking characteristics were statistically different in the control and intervention groups. The smoking characteristics of the participants are shown in Table 2.

Table 2. Distribution of smoking status of the participants

	Control group	Intervention group	Total	
	Median (IQR* 25-75)	Median (IQR* 25-75)	Median (IQR* 25-75)	p
Age of starting smoking (years)	18 (16-20)	19 (17-20)	18 (17-20)	**<0.001**
Duration of smoking (years)	14 (8-20)	8 (4-13.25)	10 (6-17)	**<0.001**
Number of cigarettes smoked per day (number)	20 (10-20)	17.5 (10-20)	20 (10-20)	**<0.001**
Smoking (pack/year)	10 (5.7-20)	6 (2-12,5)	8 (3-16)	**<0.001**
Time since smoking cessation attempt (years)	5 (2-10)	2.5 (1-6,75)	4 (2-9)	**<0.001**
Number of non-smoking days	60 (15-730)	60 (15-365)	60 (15-365)	**<0.001**

**IQR: Interquartile Range*

Smoking was not asked to 61.6% (n=101) of the participants at the last outpatient clinic visit. Smoking cessation was not recommended to 73.2% (n=120) of the participants. Of the 63 participants who were questioned about smoking, 69.8% (n=44) were advised to quit smoking. Total 36% (n=59) of the participants hadn't been advised to quit smoking by any department before. The rates of questioning about smoking status at the last outpatient clinic visit of the participants and the rates of smoking cessation advice in the department where the participants were last admitted are shown in Table 3.

According to the FTND, the intervention group 36.6% (n=30) and the control group 32.9% (n=27) were found to be low dependent. There was no significant difference between the groups in terms of FTND (p=0.327). FTND classification of the control and intervention groups is shown in Figure 2.

Table 3. The status of participants being asked about smoking and being advised to quit smoking in the outpatient clinics they last visited

	Have you been asked if you smoke? (p<0.001)		Have you been advised to quit smoking? (p<0.001)	
	Yes	No	Yes	No
Last outpatient clinic	n (%)	n (%)	n (%)	n (%)
Internal medicine	8 (40)	12 (60)	7 (35.0)	13 (65.0)
Cardiology	8 (66.7)	4 (33.3)	5 (41.7)	7 (58.3)
Respiratory medicine	12 (100)	0	10 (83.3)	2 (16.7)
Family medicine	12 (41.4)	17 (58.6)	9 (31.0)	20 (69.0)
Emergency medicine	7 (33.3)	14 (66.7)	2 (9.5)	19 (90.5)
Gynecology and obstetrics	2 (20.0)	8 (80.0)	2 (20.0)	8 (80.0)
Otorhinolaryngology	1 (9.1)	10 (90.9)	1 (9.1)	10 (90.9)
Dermatology	2 (16.7)	10 (83.3)	2 (16.7)	10 (83.3)
Physical medicine and rehabilitation	0	9 (100)	0	9 (100)
Dentist	3 (33.3)	6 (66.7)	3 (33.3)	6 (66.7)
Other	8 (42.1)	11 (57.9)	3 (15.8)	16 (84.2)
Total	63 (38.4)	101 (61.6)	44 (26.8)	120 (73.2)

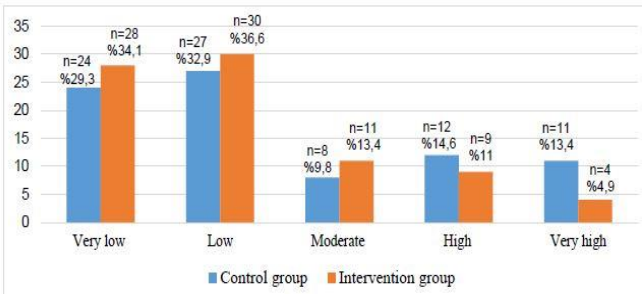


Figure 2. Participants' Fagerstrom test for nicotine dependence

According to the 2019 ESC/EAS guideline, 58.5% (n=48) of the intervention group had a cardiovascular risk 2 times higher than healthy individuals. The cardiovascular risk distribution of the intervention group is shown in Figure 3.

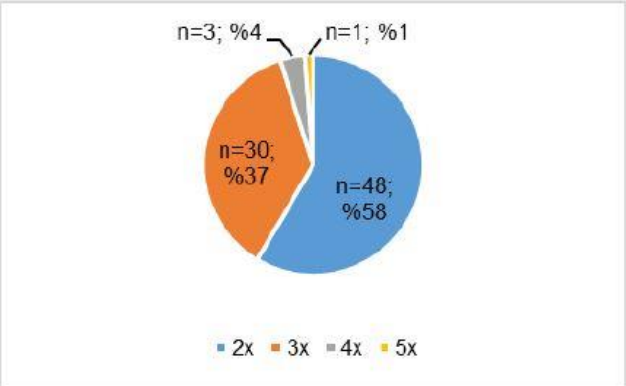


Figure 3. The cardiovascular risk distribution of the intervention group

The number of participants who attempted to quit smoking even for one day at the end of six months was 29.3% (n=24) in the control group and 42.7% (n=35) in the intervention group (p=0.073). Participants' attempts to quit smoking within 6 months are shown in Table 4.

Table 4. Participants' smoking cessation attempt during the 6-month period

		Did you try smoking cessation?		
		Yes	No	p
Control group	n (%)	24 (29.3)	58 (70.7)	
Intervention group	n (%)	35 (42.7)	47 (57.3)	0.073
Total	n (%)	59 (36)	105 (64)	

In the intervention group, 58.3% (n=28) of those with a previous smoking cessation attempt made a smoking cessation attempt during the 6-month observation period. This rate was 20.7% in those without a previous smoking cessation attempt (p=0.001). There was no significant difference between FTND stage and smoking cessation attempt in both groups (p>0.05).

At the end of 6 months, 6.1% (n=5) of the control group and 7.3% (n=6) of the intervention group were in the action stage (non-smokers) according to transtheoretical modeling. There were no participants in the maintenance stage in both groups. There was no statistical difference between the groups at the end of 6 months according to transtheoretical modeling (p=0.567). At the end of 6 months, 153 individuals continued to smoke.

With multiple logistic regression analysis for odds ratio (OR) of associated factors for smoking cessation, in a multivariable logistic regression analysis, a statistically significant positive association was observed between higher smoking burden (pack-years) and smoking cessation (OR: 1.22, p=0.041). In contrast, risk assessment (intervention) was not significantly associated with smoking cessation (Table 5).

Table 5. The results of a binary logistic regression analysis examining factors associated with smoking cessation

Variables		Odds Ratio	95% CI	p
Age		0.99	0.84-1.17	0.892
Pack-year smoking history		1.22	1.01-1.47	0.041
Sex		1.02	0.24-4.31	0.984
Occupation	Teacher (reference)			0.787
	Doctor	4.62	0.17-124.50	0.362
	Nurse	9.36	0.41-214.54	0.162
	Officer	1.80	0.09-38.07	0.706
	Student	8.86	0.32-247.16	0.199
	Other	3.09	0.25-37.84	0.378
Group		0.89	0.21-3.69	0.873

Discussion

In this study, it was observed that approximately two-thirds of smokers were not questioned about their smoking status at their last outpatient clinic visit, and approximately one-third were not given smoking cessation advice in any outpatient clinics they previously visited. It has been found that one in three people try to quit smoking in a 6-month period after a clear and strong advice to quit smoking along with a one-time motivational interview or CvRA.

In our study, the number of participants who had previously attempted to quit smoking due to physician advice was quite low. Recommending smoking cessation to a patient who smokes has been shown to be more effective than not recommending smoking cessation at all (12). In a study, it was observed that

approximately three-quarters of the participants thought that physician advice on smoking cessation would be effective (13). Therefore, it's important for all healthcare professionals to be more meticulous about smoking, and to give cessation advice to every patient who smokes.

In our study, those in the precontemplation and contemplation stages were almost half and half. There was only one person in the preparation stage. In a study, it was found that approximately one third of the participants were in the precontemplation stage and one third in the contemplation stage (14). In other study, it was found that 41.2% were in the contemplation stage and 30.6% were in the preparation stage (15). In our study, the fact that there was only one person in the quit preparation phase and that approximately half of the participants were in the stage of not thinking about quitting smoking may have made it difficult to quit smoking in both the control and intervention groups.

In our study, almost one-third of participants were asked about smoking, while about two-thirds of these patients were advised to quit smoking. Among all participants, only a quarter were advised to quit smoking. In a study conducted among approximately 250 physicians in Argentina, it was shown that nearly all of them routinely assessed patients' smoking status (16). In a study examining the smoking status of patients presenting to hospitals, it was observed that the smoking status of 63% of the patients was reported (17). In another study, it was found that approximately half of the healthcare professionals working in primary care routinely assessed patients' smoking status and provided smoking cessation advice (18). In a study conducted on family physicians in our country, it was found that 35.3% of them frequently or always inquired about their patients' smoking habits (19). In another study conducted in primary care, it was observed that approximately half of the participants provided smoking cessation advice only if the patient presented with a smoking-related complaint (20). In a study conducted among primary care practitioners in Spain, it was found that approximately 90% of the physicians routinely assessed patients' smoking status, and the majority provided smoking cessation advice (21). In our study, the rate of assessing participants' smoking status and providing cessation advice was lower than the rates reported in the literature. This may be attributed to the fact that our study population consisted of young patients, who consequently exhibited fewer smoking-related symptoms. Nevertheless, regardless of the reason for the patient's visit, physicians should routinely inquire about smoking history and emphasize the importance of smoking cessation for every patient.

In our study, the outpatient clinics where smoking status was most frequently questioned were respiratory medicine, cardiology, and family medicine, respectively. Although all patients admitted to respiratory medicine were questioned about smoking status, approximately one fifth of these patients were not advised to quit smoking. In a study in which the records of outpatients were analyzed, it was found that the rates of smoking and cessation counseling according to the outpatient clinics consulted were 71.2%-24.8% in family medicine, 69.7%-26.7% in internal medicine, 71%-29.8% in cardiology and 66%-11.4% in other departments, respectively (22). Although smoking was questioned, emergency medicine was the department where smoking cessation was recommended the least. Indeed, in a study on smoking cessation in patients admitted to the emergency department, it was found that approximately 15% of the patients quit smoking after 6 months of observation (23). All health professionals have a great impact on identifying smokers and ensuring that they quit smoking.

More than a third of the participants had never been given smoking cessation advice before. It has been shown that smoking cessation advice given to smokers by health professionals is effective in smoking cessation (24). In a study of participants who didn't plan to quit smoking and were satisfied with their smoking habits, it was observed that approximately 30% of the participants asked for support to quit smoking at the end of three months (25). It's very important to ask people who don't plan to quit smoking about their smoking and advise them

to quit.

Although there was no statistical difference between the groups in terms of smoking cessation attempts in the 6-month period, there was a higher rate of people who attempted to quit smoking in the intervention group compared to the control group. This may have been influenced by the fear of health that occurred momentarily in individuals. A research has shown that one of the most important reasons for wanting to quit smoking is the fear of falling ill (26). At this point, the results of our study may be suggest a potential effect of CvRA on smoking cessation.

In the intervention group, more than half of the people with a previous quit attempt had made a quit attempt within 6 months. Some of the reasons for this may be that the intervention group smoked fewer cigarettes per day, had been smoking for a shorter period of time and their last quit attempt was earlier.

At the end of the six-month period, 6.7% of the participants were non-smokers. This rate was similar in the control and intervention groups. In studies conducted in smoking cessation outpatient clinics, smoking cessation rates are 13% and 25% (26,27). However, nicotine replacement therapies and pharmacological treatments are also used in smoking cessation outpatient clinics. Patients applying to these centers are in the older age group. They are willing to quit smoking. The majority of the patients were followed up as a result of repeated applications. Considering such factors, it is important that smoking cessation was achieved as a result of the 5A-5R model or intervention applied only once in our study. As a matter of fact, it has been shown that giving short advice on smoking cessation is successful at a rate of 2-3% and this rate may increase with follow-up (28). In our study, smoking cessation success was approximately 2 times higher in both groups compared to brief advice.

In a study that recommended quitting smoking by explaining the harms of smoking, they found that approximately 4.7% of the participants quit smoking (29). In a study in which lung cancer symptoms were questioned in smokers and it was emphasized that smoking is a very important risk factor for lung cancer and therefore smoking cessation was recommended, 4.8% of the participants quit smoking (30). Another study found that approximately 4% of smokers over the age of 40 quit smoking at 6-month follow-up (31). In our study, a 7.3% quit rate as a result of giving smoking cessation advice using CvRA, which was performed only once, and a 6.1% quit rate as a result of the 5A-5R model, which was applied only once, achieved a more significant result compared to these studies in the literature.

Several studies have shown that a lower number of cigarettes smoked per day is associated with a higher likelihood of smoking cessation (32–33). However, a study by Guerra et al. reported no significant association between smoking duration, daily cigarette consumption, or total smoking burden (pack-years) and smoking cessation success (34). In the present study, a positive association was observed between increasing pack-year history and smoking cessation. This may be explained by the higher prevalence of smoking-related symptoms among heavy smokers, as well as a greater number of prior quit attempts in this group. Accordingly, the observed positive association may be attributable to these factors.

Limitations:

There are some limitations in our study. The 5A-5R model is applied with repeated follow-ups. In our study, the 5A-5R model was applied once. Smoking cessation status was evaluated based on self-report, which may increase the risk of recall bias and social desirability bias. There were baseline differences in smoking behavior, age, sex and occupation between the groups, which may limit the validity of the comparisons. In our study, the observation period was planned to be 6 months. Other factors that may affect smoking cessation were not evaluated during this period.

Conclusion

It is noteworthy that approximately two-thirds of smokers are not asked about their smoking status during outpatient visits, and approximately three-quarters are not provided with advice to quit smoking.

Assessing patients' smoking habits and offering cessation advice during routine evaluations should not be neglected, and every visit should be considered an opportunity.

A single application of the 5A–5R model or smoking cessation advice using cardiovascular risk assessment (CvRA) prompted more than one-third of smokers to attempt quitting. Although the quit success rate appeared higher in the CvRA group compared to brief advice, the difference was not statistically significant. Therefore, although CvRA yielded results similar to the 5A–5R model, it shows promise as a supportive strategy in clinical practice for smoking cessation.

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