

Original Article



Attitudes and Practices of Family Physicians and Nurses in Evaluating Their Patients' Smoking Status: A Cross-sectional Study

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Abstract

OBJECTIVE: The low quit rate of smokers without support increases the importance of very brief clinical interventions for smoking cessation. The aim of this study was to determine the attitudes and practices of family physicians and nurses in primary care in evaluating patients' smoking status.

MATERIAL AND METHODS: This cross-sectional survey was conducted in family health centres in Aydın Efeler district between November and December 2020. A questionnaire developed on the basis of the "modified very brief clinical intervention (3A-OR)" model was used. Questionnaires were administered to all participants using the face-to-face method. In addition to descriptive statistical methods, univariate and multivariate analysis were performed. The statistical significance level was accepted as " $P < 0.05$ ".

RESULTS: Fifty-nine family physicians and 64 nurses participated in the study. Of the participants, 62.6% were female and the mean age was 44.9 years. The most common practices of family physicians and nurses concerning learning their patients' smoking behaviour were to offer assistance to smokers (82.4%) and to recommend that they quit (81.3%). Family physicians and nurses mostly thought that it was their responsibility to refer their smoker patients to stop smoking counselling centres (71.6%) and to offer assistance (61.8%). Family physicians had a 3.12 times more positive attitude than nurses in evaluating the smoking status of the patients ($P = 0.008$).

CONCLUSION: Our study results have revealed that the positive attitudes of family physicians are not fully reflected in practice and that nurses generally do not adopt responsibilities related to evaluating patients' smoking habits, despite their efforts to make better practices.

KEYWORDS: Smoking cessation, family physicians, nurses, behaviour, attitude

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INTRODUCTION

Smoking is one of the most important preventable public health problems of the present.¹ The positive effects of smoking cessation on health and the desire of most smokers to quit are important motivations in the struggle against tobacco use. The low quit rate of smokers without support increases the importance of very brief clinical interventions for smoking cessation. Many national or international stop smoking strategies have been established to improve cessation rates in medical settings and especially in primary care.²

The AAR brief clinical intervention method, which has been developed from the 5A approach, is primarily aimed at increasing awareness, offering advice and making referrals.³ An AAC approach to increase the effectiveness of referrals for stop smoking counseling services is also recommended.² These brief clinical interventions do not overemphasize evaluating the smoker's motivation to quit. However, the success of the next steps of an intervention is closely related to knowing the smoker's motivation to quit. From this point of view, we use a modified brief intervention in our family health centres (FHCs) (primary care). This brief intervention, which is defined as 3A-OR, consists of five steps: 1) Learning the smoking status of all patients during the course of a routine consultation (Ask). 2) Evaluating the motivation of smokers to quit smoking (Assess). 3) Providing brief stop smoking advice to those who do not contemplate quitting

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(Advise). 4) Offering assistance with quitting to all smokers regardless of readiness to quit (Offer) and 5) Recording the smoking information to their files (Record).

Studies have shown that joint interventions by healthcare providers are more effective than individual interventions in evaluating and counselling smokers to quit.⁴ Although all guidelines recommend that smokers be advised to quit smoking at every opportunity, opportunities to give stop smoking advice are not sufficiently used in primary care.⁵ In many countries, non-physician healthcare professionals contribute to the stop smoking services, and there is evidence to suggest that their advice to quit smoking is as effective as that of physicians.⁶

It is known that the frequency of physicians who advise smokers to quit smoking is not sufficient in our country.⁷ In FHCs in primary care, family health providers, mostly nurses or midwives, provide reproductive health services such as pregnancy follow-up, family planning and cervical cancer screening, as well as other preventive health services. Although the provision of these services is an important opportunity to assess the smoking status of women, the attitudes and behaviors of the family health providers are not known. On the other hand, the attitudes of primary health care providers towards evaluating patients' smoking status will influence their practices.

The aim of this study was to determine the attitudes and practices of family physicians and nurses in primary care when evaluating the smoking status of patients.

MATERIAL AND METHODS

In this descriptive cross-sectional study, the aim was to reach all 91 family physicians and 79 nurses in 25 FHCs in Aydın Efeler district (330,000 inhabitants) between November and December 2020. No criteria for inclusion or exclusion were determined; volunteering to participate in the study was the only criterion.

Data Collection

A questionnaire developed by the researchers (RS) based on the relevant literature review and the "modified very brief clinical intervention (3A-OR)" model was used as a data collection tool. In addition to some socio-demographic characteristics and habits of the participants, the questionnaire consisted of questions about the evaluation of patients' smoking status by family physicians and nurses. Their attitudes, opinions, and perceptions on self-competency regarding these practices were taken. Questionnaires were administered by one of the RS to

all family physicians and nurses who agreed to participate in the study, outside of working hours, taking into account the pandemic conditions. Verbal informed consent was obtained from all participants.

Ethical approval for the study was received from the Aydın Adnan Menderes University Faculty of Medicine Non-interventional Research Ethics Committee (protocol number: 2020/156, date: 20.08.2020). Administrative permission to conduct the study in FHCs obtained from the Aydın Provincial Health Directorate (number: 44021967-605.01, date: 03.11.2020).

Statistical Analysis

The data were analyzed using the IBM Statistical Package for the Social Sciences 20.0 (Armonk, New York, USA) statistical program. In addition to the use of descriptive statistical methods for data analysis, the Shapiro-Wilk test for the normality distribution of the variables, the independent samples t-test, the Mann-Whitney U test, and the chi-square test for comparisons between groups, and the Spearman correlation test for correlation analyses between variables were used. ROC analysis was conducted to categorize the total attitude score and multiple logistic regression analysis was conducted to determine the independent variables affecting attitudes. Statistical significance level was accepted as $P < 0.05$.

RESULTS

In the study, 88 of 91 family physicians and 77 of 79 nurses working in 25 FHCs in the Efeler district were reached. Out of the family health staff reached, 59 family physicians (response rate 67.1%) and 64 nurses (response rate 83.1%) agreed to participate in the study (total 123 participants; total response rate 74.5%).

Socio-demographic Characteristics of the Participants

Of the participants, 77 (62.6%) were female, and the mean age was 44.9 ± 10.3 . Female family physicians (47.9 ± 6.6), were younger than male family physicians (52.6 ± 6.9), ($P = 0.003$). The mean working time in the profession was 22.8 ± 9.6 years, and 7.8 ± 3.4 years in FHCs.

Thirty-three (26.8%) of the participants were smokers. Almost one third (32.5%; $n = 40$) of the participants stated that they received training on "stop smoking counselling." Some socio-demographic characteristics and habits of family physicians and nurses participating in the study are comparatively shown in Table 1.

The most common practices of family physicians and nurses concerning learning their patients' smoking behaviour were to offer assistance to smokers (82.4%) and to recommend them to quit (81.3%). Nearly two-thirds of the participants (67.5%) considered themselves competent to refer smokers to smoking cessation counseling centers, while 56.1% of them considered themselves competent to advise smokers to quit smoking.

The practices of the participants regarding the patients' smoking behaviors and their views on their self-competency are shown comparatively in Table 2.

Main Points

- The positive attitudes of family physicians in smoking cessation are not fully reflected in practice.
- Despite efforts to implement better practices, nurses generally do not assume responsibility for assessing patients' smoking habits.
- The lack of education among primary care professionals and their lack of competence seem to prevent them from assuming responsibility for smoking cessation.

Nurses were more likely to know if patients were smoking than family physicians ($P = 0.001$). After removing the confounding effect of gender ($P = 0.002$), this relationship persisted (forward LR, odds ratio (OR)=3.872; $P = 0.001$).

In univariate analyses, it was found that family physicians offered more assistance to smokers than nurses ($P = 0.027$). However, after removing the confounding effect of male (OR=2.903; $P = 0.011$) and non-smokers (OR=2.594; $P = 0.028$), it was

Table 1. Some socio-demographic characteristics and habits of family physicians and family health workers participating in the study, n = 123

Socio-demographic characteristics and habits		Participants			Statistics*
		FP	FHW	Total	
Age		51.5±7.0 (52; 29-68)	38.7±8.9 (42; 21-58)	44.9±10.3 (46; 40-52)	Z=7.618 $P < 0.001$
Mean±SD (median; interquartiles)					
Working years in the profession,		27.2±7.2 (28; 5-42)	18.7±9.9 (20.5; 1-39)	22.8±9.6 (25; 18-30)	Z=5.227 $P < 0.001$
Mean±SD (median; interquartiles)					
Working years at FHC,		8.6±3 (10; 1-14)	7.1±3.5 (9; 1-13)	7.8±3.4 (10; 5-10)	Z=2.924 $P = 0.003$
Mean±SD (median; interquartiles)					
		Number (%)	Number (%)	Number (%)	
Gender	Woman	14 (23.7)	63 (98.4)	77 (62.6)	$\chi^2=70.030$ $P < 0.001$
Marital status	Married	51 (86.4)	48 (75.0)	99 (80.5)	$P > 0.05$
Smoking status	Yes	15 (25.4)	18 (28.1)	33 (26.8)	$P > 0.05$

FP: family physicians, FHW: family health worker, FHC: family health center, SD: standard deviation

Table 2. The practices and self-competency perceptions of the participants in learning smoking behaviors of the patients comparatively (univariate analyses)

Interventions		Practice number (%)		Perceptions of self-competency, number (%)	
		Always	Statistics*	Competant	Statistics*
ASK if you smoke	FP	27 (45.8)	$\chi^2=11.064$ $P = 0.001$	29 (49.1)	$P > 0.05$
	FHW	49 (76.6)		38 (59.4)	
	General	76 (61.8)		67 (54.5)	
ASSESS smokers' motivation	FP	20 (33.9)	$P > 0.05$	33 (55.9)	$\chi^2=14.451$ $P = 0.001$
	FHW	18 (28.1)		16 (25.0)	
	General	38 (30.9)		49 (39.8)	
ADVISE smokers to quit	FP	49 (83.1)	$P > 0.05$	38 (64.4)	$\chi^2=6.518$ $P = 0.041$
	FHW	51 (79.6)		31 (48.4)	
	General	100 (81.3)		69 (56.1)	
ATTEMPT to improve motivation	FP	36 (61.0)	$P > 0.05$	32 (54.2)	$P > 0.05$
	FHW	30 (46.9)		25 (39.1)	
	General	66 (53.7)		57 (46.3)	
ASSIST when they want to quit	FP	42 (71.2)	$\chi^2=4.899$ $P = 0.027$	32 (54.2)	$P > 0.05$
	FHW	32 (50.0)		25 (39.1)	
	General	74 (60.2)		57 (46.3)	
REFER for stop smoking counselling	FP	55 (93.2)	$\chi^2=7.146$ $P = 0.008$	48 (81.4)	$\chi^2=9.953$ $P = 0.005$
	FHW	47 (73.4)		35 (54.7)	
	General	102 (82.9)		83 (67.5)	
RECORD smoking behavior information	FP	18 (30.5)	$P > 0.05$	28 (47.5)	$P > 0.05$
	FHW	28 (43.8)		29 (45.4)	
	General	46 (37.4)		57 (46.3)	

FP: family physicians (n = 59), FHW: family health workers (n = 64), *chi-square test

determined that this relationship did not persist (forward LR; $P > 0.05$).

In univariate analyses, it was found that family physicians mostly referred smokers ready to quit for smoking cessation counseling ($P = 0.008$). However, when the confounding effect of age ($OR = 1.072$ for each 1 year increase; $P = 0.003$) was removed, it was determined that this relationship did not persist (forward LR, $P > 0.05$).

Attitudes Towards Learning Patients' Smoking Behavior

Family physicians and nurses mostly thought that it was their responsibility to refer their patients who smoke to stop smoking counseling centers (71.6%) and to offer assistance (61.8%). The least responsibility they assumed was evaluating the motivations of smokers to quit smoking (49.6%). Family physicians assumed more responsibility than nurses for all items of duties related to learning the smoking behaviors of patients ($P < 0.001$) (Table 3).

To determine the factors related to attitudes, a total score out of 7 points was defined by giving 1 point to each attitude statement. Attitude scores increased with increasing age ($r = 0.272$; $P = 0.002$). Men had more positive attitudes compared to women ($P < 0.001$), and family physicians had more positive attitudes compared to nurses ($P < 0.001$). ROC analysis was performed to categorize the total attitude score variable

according to whether the participants were family physicians or nurses. The attitude cut-off point was determined to be 5.5 by ROC analysis [area under the curve = 0.224; 95% confidence interval (CI): 0.142-0.307; $P < 0.001$]. Those with a total attitude score above 5.5 were considered to be high-attitude, and multiple logistic regression analysis was performed to determine the variables associated with attitudes (forward LR). In the regression analysis, in which the variables of age, gender, marital status, smoking, profession, and education were considered, only the profession of the participants entered into the model [$OR = 3.120$ (95% CI: 1.349-7.214), $P = 0.008$]. Compared to nurses, family physicians were 3.12 times more likely to have a positive attitude towards evaluating the patients' smoking status.

Opinions of Family Physicians Regarding the Responsibilities of Nurses

Family physicians mostly thought that nurses should take responsibility for the effort against smoking. The most attributed responsibility was that nurses should give advice of quitting smoking to women who do not contemplate to quit smoking ($n = 54$; 91.5%). The views of the family physicians participating in the study on the responsibilities of family health worker nurses in evaluating the smoking behaviors of the patients are shown in Table 4.

Table 3. Attitudes of the participants regarding their duties in evaluating the smoking behaviors of the patients, $n = 123$

Attitude statements		Participants n (%)	Statistics
It is the responsibility of the FPs/FHWs to learn smoking status of their patients.	FP	46 (78.0)	$\chi^2 = 15.150$ $P < 0.001$
	FHW	23 (35.9)	
	General	69 (56.1)	
It is the responsibility of the FPs/FHWs to assess motivation of the smokers to quit smoking.	FP	43 (74.1)	$\chi^2 = 20.905$ $P < 0.001$
	FHW	18 (31.6)	
	General	61 (49.6)	
It is the responsibility of the FPs/FHWs to advise smokers to quit who do not consider quitting.	FP	42 (73.7)	$\chi^2 = 10.997$ $P = 0.001$
	FHW	23 (41.1)	
	General	65 (52.8)	
It is the responsibility of the FPs/FHWs to make an attempt to positively change motivation to quit smoking for patients who do not intend to quit smoking.	FP	46 (83.6)	$\chi^2 = 22.929$ $P < 0.001$
	FHW	19 (36.5)	
	General	65 (52.8)	
It is the responsibility of the FPs/FHWs to offer assistance to their smoking patients when they consider quitting.	FP	47 (82.5)	$\chi^2 = 11.408$ $P = 0.001$
	FHW	29 (50.9)	
	General	76 (61.8)	
It is the responsibility of the FPs/FHWs to refer patients who consider or are ready to quit smoking and request support to centers providing stop smoking counseling.	FP	52 (89.7)	$\chi^2 = 10.593$ $P = 0.001$
	FHW	36 (62.1)	
	General	88 (71.6)	
It is the responsibility of the FPs/FHWs to record the information about the smoking behavior of their patients into their files.	FP	44 (78.6)	$\chi^2 = 13.554$ $P < 0.001$
	FHP	25 (43.1)	
	General	69 (56.1)	

FPs: family physicians ($n = 59$), FHWs: family health workers ($n = 64$)

Table 4. Opinions of family physicians regarding the responsibilities of family health workers in evaluating the smoking behaviors of patients, n = 59

Family health workers, for women who receive reproductive health services (pregnant follow-up, 'smear', etc.):

Opinions	Agree, n (%)
Should question the smoking behavior of women.	52 (88.2)
Should evaluate motivation of the smokers to quit smoking.	50 (84.8)
Should offer stop smoking advice to the smokers who do not consider quitting.	54 (91.5)
Should attempt to positively change their motivation to quit smoking for women who do not intend to quit smoking.	51 (86.4)
Should offer assistance if they later consider quitting smoking.	50 (84.8)
Should refer women who consider/are ready to quit smoking and request support to centers that provide stop smoking counseling.	53 (89.9)
Should record the information about the smoking behavior of individuals in their files.	46 (77.9)

DISCUSSION

This study aims the attitudes and behaviors of family physicians and nurses in FHCs in evaluating patient smoking behaviors.

According to our study results, the practices of family health care providers are not sufficient in terms of all the tasks related to evaluating the smoking behavior patients. On the other hand, although they often feel inadequate about these tasks, they still perform better. Nurses ask more questions about the smoking status of the patients. Family physicians take on more responsibility in evaluating smoking behaviors patients. Family physicians generally believe that nurses should also take responsibility for the evaluation of patients' smoking behaviors.

According to the Health Statistics Yearbook (Turkish Ministry of Health) 2019 data, the average number of patient-doctor encounters per person per year in FHCs is 3.5.⁸ These encounters should be seen as valuable opportunities for the struggle against smoking. For this reason, primary healthcare providers are expected to have medical competency in smoking addiction and its treatment. However, according to our study results, FHC staff members do not consider themselves competent at evaluating smoking behaviors of the patients. Studies on the competencies of healthcare providers in evaluating patients' smoking status are limited in the literature. In a study conducted in Jeddah, 69% of physicians were found to be confident in their ability to give smoking cessation counseling to their patients.⁹ It has been determined that 31% of physicians and 43% of nurses working in primary care in Bosnia and Herzegovina feel very ready to provide smoking cessation counseling to smokers.¹⁰ The main reason they do not see themselves as sufficiently trained seems to be the lack of training. Notably, three out of five family physicians and four out of five nurses have stated that they are not trained on the issue. There are many national¹¹⁻¹³ and international^{9,10,14-18} studies emphasizing the lack of training and inadequacy of family physicians and nurses, working in primary care.

According to our study results, the practice of family physicians and nurses in evaluating the smoking behavior of their patients is not as high as expected and desired. The fact that the participants do not consider themselves competent in this regard and do not receive appropriate training seems to be reflected in their practice. Nurses seem to be active in learning

the smoking status of women applying for reproductive health and directing those who want to quit to centers that provide smoking cessation counseling. Evaluating the motivations of smokers and taking initiatives to improve them are the weakest areas. This is understandable, given the general lack of nurse training on the subject. Assessing motivation for behavior change and attempts to improve motivation in individuals requires special interview techniques.

Family physicians, on the other hand, are more effective in advising smokers not ready to quit and in directing those ready to quit to the counseling services. It is recommended that physicians should at least advise smokers to quit, especially in the presence of clinical conditions directly related to smoking.⁷ Therefore, the high rate of giving advice to quit should be seen as an expected outcome.

Family physicians and nurses mostly behave similarly when evaluating the smoking habits of patients. Nurses are better at asking whether their patients smoke. It does not seem possible to draw a conclusion explain the difference from our study results.

The practices of primary healthcare providers in evaluating the smoking behaviors of patients vary considerably in different studies conducted in different countries. In studies conducted in our country, the rate of primary care physicians varies between 23-67% for inquiring if their patients smoke, between 45-77% for giving advice to smokers to quit smoking, and between 25-63% for smoking cessation counseling.^{7,13,19-22} In national and international studies, smokers' motivation to quit has been less evaluated, and it has been found to be low (25-49%), which is similar to our results.^{13,14,23} On the other hand, our results in offering assistance show an improvement of 15-45%.^{13-15,19,23,24}

No study investigating the practices of nurses in primary care to evaluate the smoking behaviors of their patients has been found in our country. International studies on this subject are also very limited. In a study conducted in Spain, it has been found that physicians and nurses working in primary care learn the smoking status of their patients, advise smokers to quit smoking, assist and counsel them, and record related information in their files at a higher rate compared to our study results. Similar to our study, nurses have more often asked whether their patients smoke than physicians have. Physicians, on the other hand,

have more often explained and assisted patients, and planned and arranged their patients' smoking cessation treatments.²⁵

Attitudes of Family Physicians and Nurses

Family physicians adopt and practice recommending smokers to quit and referring them to smoking cessation counseling. For other tasks, although they know that they are their own responsibilities, they seem reluctant to implement them. This can be explained by the emphasized recommendation that physicians should at least advise smokers to quit.

Regarding attitudes, nurses, differ from family physicians. They generally do not see evaluating their patients' smoking habits as their responsibility, but they are better at asking, advising, and directing, which go beyond their perception of self-competency. The lack of aptitude for other tasks, which is also reflected in practice, can be partially explained by the fact that they have not had the required knowledge and skills for these tasks, and that they have not been adequately trained. In other studies, it has been found that the majority of family physicians (80-97%) think that they should play an active role in the struggle against smoking and that it is important to provide smoking cessation counseling to smokers.^{9,13,18}

Opinions of Family Physicians

The family physicians participating in the study believe that evaluating the smoking behaviors of patients is the responsibility of nurses as much as it is theirs. We think that this is important for establishing a team approach in the struggle against smoking in FHCs.

In the literature, studies involving physicians' opinions on the tasks of other healthcare professionals in evaluating the smoking habits of applicants are limited. In a study, 87% of the physicians agree that healthcare professionals should regularly advise their patients who smoke to quit smoking.¹⁶

To ensure that stop smoking interventions become standard nursing practice, there is a need to improve nurses' attitudes towards their contribution to the patients' stop smoking initiatives.²⁶

The study was designed based on a short clinical interview model that we used in our clinic. This provided the opportunity to obtain systematic and near-complete information on the evaluation of patients' smoking behavior. The inclusion of nurses in FHCs into the study is one of its strengths as well. Our study, which we think is the first in our country on this subject, has revealed important results for developing a team approach in the struggle against tobacco use, and has been a guide for future research. Considering that participation in survey studies is generally low, the high level of participation in our study is important for generalizing the results to the related population.

Study data were self-reported. Although their statements about their attitudes are considered to be more realistic, the participants may have overestimated their own practices. Because the study has been carried out only in the central district of Aydın, its results should be carefully generalized.

CONCLUSION

Our study results have revealed that the positive attitudes of family physicians are not fully reflected in practice, and that nurses generally do not adopt responsibilities related to evaluating patients' smoking habits, despite their efforts to improve practices. The most important reason for this seems to be that primary care professionals do not see themselves as competent due to lack of training. There is a need for new studies on qualitative methodology to better understand the attitudes and practices of family physicians and nurses in evaluating patients' smoking behaviors.

Ethics

Ethics Committee Approval: Ethical approval for the study was received from the Aydın Adnan Menderes University Faculty of Medicine Non-interventional Research Ethics Committee (protocol number: 2020/156, date: 20.08.2020). Administrative permission to conduct the study in FHCs obtained from the Aydın Provincial Health Directorate (number: 44021967-605.01, date: 03.11.2020).

Informed Consent: Verbal informed consent was obtained from all participants.

Footnotes

Authorship Contributions

Concept: R.S., O.B., Design: R.S., O.B., Data Collection or Processing: R.S., Analysis or Interpretation: R.S., M.D., O.B., Literature Search: R.S., M.D., O.B., Writing: R.S., M.D., O.B.

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