

Original Article

Evaluation of post-graduate training effect on smoking cessation practice and attitudes of family physicians towards tobacco control

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Received July 9, 2014; Accepted August 16, 2014; Epub September 15, 2014; Published September 30, 2014

Abstract: Objective: Family physicians (FPs) are cornerstone for tobacco control. It was aimed to compare the effect of training on their smoking cessation practice, knowledge level and attitudes towards smoking and tobacco control. Methods and materials: The cross-sectional and multi-centered study was carried out using structured survey modified WHO based questionnaire. It was delivered to 1500 FPs randomly selected among approximately 23000 family physicians across the country. The study survey was self-reported by FPs, assessing their knowledge, attitudes, status of post-graduate training, and practice about tobacco control. Participants were assigned into two groups as non-trainee groups (Group 1) and post-graduate trainee (Group 2). Results: The mean age was 38.4 ± 7.1 years-old. The percentage of male and female FPs in the study was 53.1% and 46.9%. The ratio of family physicians who participated in training program (Group 2) was 26.5% (n = 327). The ratio of female FPs who participated the SCP training course was significantly higher than that of male FPs (27.3% versus 22.5%, $p = 0.035$). There was no significant difference for smoking status between groups ($p = 0.686$). When the number FPs whose consulted by the smokers over ≥ 5 a week was compared, the ratio of FPs was significantly higher in group 2 than group 1 ($p < 0.001$), but overall ratio of FPs (2.8%) who consulted within a week smokers was considerably lower. Statements of Competence and confidence items stated by all FPs were 24.2% and 32.2%, respectively. Physicians who had attended post-graduate training on SCP were more competent and confident, compared to non-trained FPs ($p = 0.002$ and $p = 0.001$). Conclusion: Post-graduate training on tobacco control improved self-confidence and competence of FPs. With post-graduate training, significant improvement was seen in practical skills of physicians. A continuing training program should be introduced to FPs, to engage them for smoking cessation practice.

Keywords: Smoking, family physician, attitude, training, smoking cessation practice

Introduction

Smoking is a major one of the public health problems, causing many diseases such as chronic bronchitis, lung cancers and cardiovascular disease [1]. It seemed to be difficult to stop smoking, and so it often needs multiple attempts to quit and requires several repeated interventions [2]. Health professionals, especially family physicians (FPs), are the major part of providing for smoking cessation practice (SCP) [3]. However, frequency of smoking health care providers is not rare, and cigarette smok-

ing by health care professionals, particularly FPs, in health care practice undermines their roles [4]. It is essential that clinicians consistently identify and document status of tobacco use and treat every tobacco user encountered in a health care setting not only the ones already suffering from tobacco-related diseases [5]. It was suggested that there were many reasons for clinicians to fail to intervene SCP, such as lack of knowledge about how to identify smokers quickly and easily, time constraints, limited training in tobacco cessation, or inadequate payment for treatment [6, 7].

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Table 1. Socio-demographic features of subjects and the number of smokers consulted by family physicians

Items regarding with knowledge about smoking (n = 1233)	All (%)	Group 1 (%)	Group 2 (%)	p
Gender				
Male	53.1	77.5	22.5	0.035
Female	46.9	72.7	27.3	
Smoking Status				
Current	34.1	73.2	26.8	0.686
Former	14.8	73.7	26.3	
Never	51.1	73.6	26.4	
The number of smokers consulted a week				
< 3	90.8	24.1	32.6	< 0.001
3-5	6.4	6.4	9.0	
≥ 5	2.8	1.7	4.3	

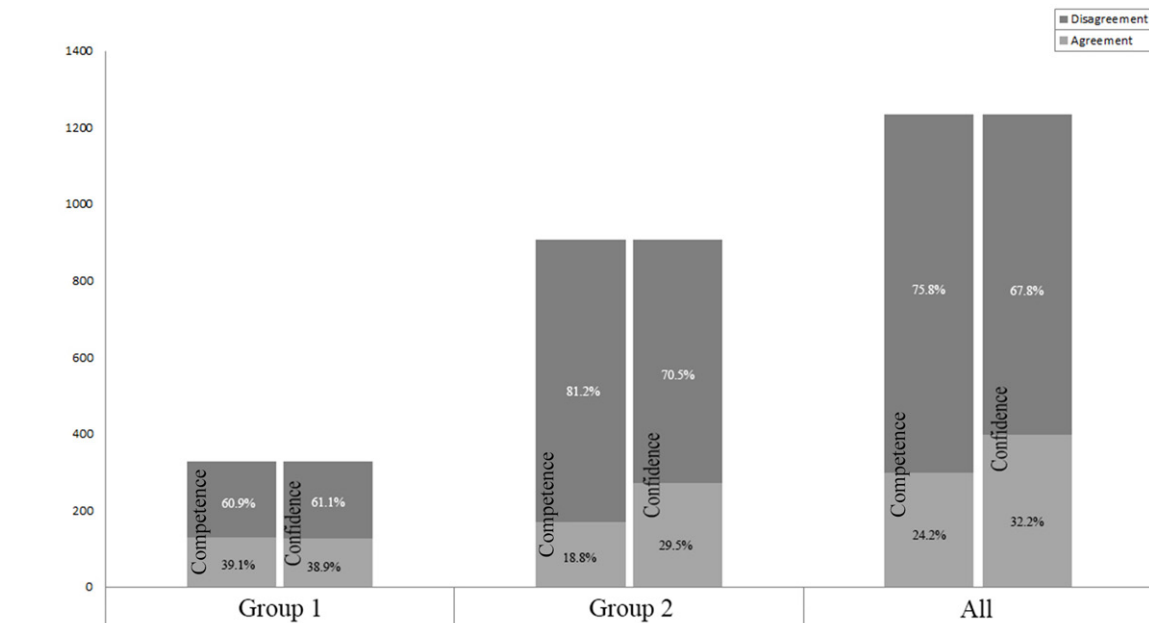


Figure 1. Comparisons of competence and confidence statement agreed by family physicians.

Prevalence of smoking among primary care physicians was reported as various in different countries: Among European countries, Bulgaria (45.2%), Greece (40.0%) and Slovakia (38.0%) are the highest smoking prevalent, whereas Portugal (19.7%), United Kingdom (22.0%), Italy (22.7%) and Turkey (34%) [8, 9]. In USA, prevalence among health professionals except nurses was found to be less than 6.0 %, based on 2010 report of national surveys [10]. Family physicians are gate keepers, so they are anticipated to be the most important providers for smoking cessation. A systematic review showed

that while the majority of FPs doesn't hold negative beliefs and attitudes towards discussing SCP with their patients [11, 12]. Physicians should play a major role in advising patients to quit smoking. Physicians' smoking status could influence their knowledge and attitudes on tobacco control, as well as their practices of cessation interventions [13].

Although smoking is one of the leading causes of preventable death worldwide, there is good evidence that brief interventions from health professionals can increase smoking cessation

attempts. A number of trials have examined whether skills training for health professionals can lead them to have greater success in helping their patients who smoke. Previous limited studies reported that training on SCP was effective on achievement for tobacco control [14, 15]. Education, communication and training are most effective when incorporated into a comprehensive tobacco control program. Training program in tobacco cessation counseling can significantly increase health professionals' confidence and provision of counseling and compliance with the tobacco guidelines can be greatly improved. Knowledge level of physicians on smoking cessation practice is significantly improved by using continuous training program [16, 17].

In the study, the purpose of the present study was to compare the effect of training on smoking cessation practice among Turkish family physicians on their knowledge level on and attitudes towards smoking and smoking cessation practice

Methods and materials

The study protocol and data collection

The enrollment of family physicians and the study protocol was described in recent publication by Baltaci et al. [9]. Briefly, we structured and modified the study survey originally developed by World Health Organization (WHO), "Global Health Professional Survey" [18]. The study surveys were self-reported questionnaires consisting of questions determining physicians' socio-demographic features, attitudes, knowledge and skills about tobacco use, status of post-graduate training on SCP. Ever smoker was defined as both the current smoker and the former smoker who quitted smoking 6 months or more before. Never smoker was defined as non-smoker who never smoked before. The participants were categorized into two groups according to smoking status as ever and never smokers, and assigned into two groups as trainee and non-trainee on SCP.

Post-graduate training program on smoking cessation practice was defined as formal and certificated training. Physicians' knowledge level about and attitudes towards smoking and SCP between groups of non-trainee (Group 1) and trainee (Group 2) was compared.

Knowledge level was evaluated with seven items regarding harmful effects of smoking and attitudes were evaluated with fifteen items regarding physician's role in tobacco control, anti-smoking activities and pharmacotherapy administration. Smoking cessation practice was evaluated with five "A" steps practiced by FPs. Five "A" steps is composed of five steps indexed capital letters of Ask", "Advise", "Asses", "Assist" and "Arrange" [19].

Statistics

All data were entered the PC software program. Statistical analysis was done using SPSS for Windows (version 15.0, Chicago, IL, USA). Continues Mean and standard deviation was for continuous variables and percentage and frequency for categorical variables were computed. Comparisons of categorical variables between trainee and non-trainee groups were analyzed with chi-square or Fisher's exact test. A *p* value of less than 0.05 was considered to be statistically significant.

Results

The ratio of FPs who had participated formal post-graduate smoking cessation practice course was 26.5% (*n* = 327). Remaining 906 FPs (73.5%) had no attended training course after graduation from medical school. The percentage of male and female FPs in the study was 53.1% and 46.9%. The mean age was 38.4 ± 7.1 years-old. Mean year of working as a physician was 13.85 ± 6.96 years-old. It was previously reported that the ratio of current smokers was 34.1% [9]. The ratio of female FPs who participated the SCP training course was significantly higher than that of male FPs (27.3% versus 22.5%, *p* = 0.035). It was observed that there was no significant difference for smoking status between groups (*p* = 0.686). When the number FPs whose consulted by the smokers over ≥ 5 a week was compared, the ratio of FPs was significantly higher in group 2 than group 1 (*p* < 0.001), but overall ratio of FPs (2.8%) who interviewed smokers was considerably lower (**Table 1**). In **Figure 1**, status competence and confidence stated by FPs were shown. For all FPs, 24.2% and 32.2% of the FPs stated that they were competent and confident for SCP, respectively. Physicians who had attended post-graduate training on SCP were more competent (39.1% versus 18.8%) and confident

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Table 2. Comparison of knowledge level of family physicians about smoking and smoking cessation practice

Items regarding with knowledge about smoking a (n = 1233)	Statement of Agreement			p
	All (%)	Group 1 (%)	Group 2 (%)	
Smoking is harmful to your health.	98.9	98.6	99.1	0.503
Neonatal death is associated with passive smoking.	95.2	93.9	95.7	0.218
Passive smoking increases the risk of lung and heart diseases in non-smokers.	98.6	96.2	98.7	0.012
Paternal smoking increases the risk of LST illnesses	98.7	98.3	98.8	0.548
Maternal smoking during pregnancy increases the risk of SIDS	98.2	97.9	98.3	0.654
Pharmacotherapy is effective in SCP	59.5	58.3	63.1	0.023

Table 3. Comparison of attitudes family physicians towards smoking and smoking cessation practice

Items regarding with attitudes towards smoking (n = 1233)	Statement of agreement			p
	All (%)	Group 1 (%)	Group 2 (%)	
Physicians should serve as role model for their patients and the public.	91.8	91.1	92.2	0.619
Physicians should set a good example by not smoking.	96.2	95.1	96.5	0.084
Physicians should routinely ask about their patients' smoking habits.	91.9	91.6	92.7	0.612
Physicians should routinely advise their smoking patients to quit smoking.	89.6	84.7	90.4	0.031
Physicians should get a specific training on cessation.	90.3	87.3	94.2	0.042
Physicians should speak to community groups about smoking.	75.8	75.1	78.2	0.066
Smoking in enclosed public area should be prohibited.	94.7	93.7	95.1	0.039
Health warnings on cigarette packages should be written and big print.	92.7	92.1	93.8	0.525
Sponsorships supported by tobacco industry should be banned.	91.8	91.1	92.4	0.421
There should be a complete ban on the advertising of tobacco products and it should be extended.	93.2	91.8	93.7	0.053
The price of tobacco products should be increased sharply.	73.4	71.2	74.1	0.043
Physicians should routinely advise patients to avoid smoking around their children.	97.9	96.9	98.2	0.030
Pharmacotherapy such as nicotine replacement and bupropion is useful for smoking cessation.	59.5	57.1	64.3	0.024
Physicians who smoke are less likely to advise people to stop smoking.	58.8	59.7	57.3	0.062
Patient's chances of quitting smoking are increased if a physician advises him or her to quit.	93.2	92.1	96.6	0.011

(38.9% versus 29.5%), compared to non-trained FPs ($p = 0.002$ and $p = 0.001$).

Table 2 demonstrated the percentage distribution of statement for items regarding with knowledge level about smoking and SCP. All items, except one item of "Nicotine replacement therapy is effective in SCP", were rated the majority of FPs as agreement (98.9%-95.2%). The lowest rated item was "Nicotine replacement therapy is effective in SCP" and agreed by 59.5% of FPs. Between groups, there was significant difference in two items "Nicotine replacement therapy is effective in SCP" and "Passive smoking increases the risk of lung and heart diseases in non-smokers" ($p = 0.023$ and $p = 0.012$, respectively). Beside non-significant difference in items, post-graduate train-

ing course appeared to improve in knowledge level on smoking effects.

In **Table 3**, agreement statements of FPs about items regarding their attitudes towards smoking and anti-smoking activities were shown. Also, its comparisons between groups were given. Items were rated by FPs as ranged between 58.8% and 97.9%. Items of "Pharmacotherapy such as nicotine replacement and are who smoke are less likely to advise people to stop smoking" were rated by FPs as lowest ratio (59.5% and 58.8%, respectively), but, item of "Physicians should routinely advise patients to avoid smoking around their children" was rated by FPs as highest ratio (97.9%). With training, that improvement changes favorably in trainee group was observed in

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Table 4. Comparison of 5A steps of family physicians in smoking cessation practice

Five "A" (5A) steps in SCP (n = 1233)	All and Groups			p
	All (%)	Group 1 (%)	Group 2 (%)	
"Asking" step	35.3	31.6	46.4	< 0.001
"Advise" step	15.7	14.2	16.4	0.020
"Asses" step	34.6	31.5	39.1	0.011
"Assist" step	7.9	4.9	10.3	< 0.001
"Arrange" step	17.1	14.4	25.1	< 0.001

The ratio of FPs who practiced steps of "advise", "Asses", "Assist" and "Arrange" was the computed among FPs who practiced step of "Asking" (n = 435).

some items regarding FPs' attitudes towards smoking and anti-smoking activities. This was significantly different in some items. Items about "routine advising smoking and smoking around children, getting a specific training on cessation, banning of smoking in closed area, increase in the price of tobacco products, usefulness of pharmacotherapy and patient's chance of quitting smoking" ($p = 0.031$, $p = 0.042$, $p = 0.039$, $p = 0.043$, $p = 0.030$, $p = 0.024$, $p = 0.011$, respectively).

Table 4 given information about the ratio of FPs who practiced 5A steps in their practice. Step of "asking" was practiced only one-third of FPs (35.3%). The ratio of FPs who practiced further "A" steps was analyzed among the FPs who practiced step of "asking". Those steps were dramatically and comparably lower. Particularly, step of "assist" was practiced by to small number of FPs (7.9%). Only one-fifth of FPs who practiced step of "assist" practiced step of "arrangement" (17.1%). Between groups, there was significant difference in 5A steps of SCP favorably for FPs who participated the post-graduate training course of SCP ($p < 0.001$, $p = 0.020$, $p = 0.011$, $p < 0.001$ and $p < 0.001$, respectively).

Discussion

The present study primarily investigated attitudes, knowledge and skills about tobacco use, and tobacco control and the influence of training on smoking cessation among family physicians. The study indicated that only one-fourth of family physicians had post-graduate training course on SCP. The study displayed that training the family physicians on SCP made them more competent and were skilled in SCP. The study highlighted that post-graduate training

considerably improved skills and practice of FPs in SCP. Among FPs with post-graduate training on SCP, significant favorably changed in their attitudes towards anti-smoking activities.

Primary care physicians are gate keeper physicians and their counseling with pa-

tients about smoking cessation is very important for public health. Readiness, competence and confidence of FPs for SCP would increase patients' succeed of quitting smoking. Therefore, undergraduate or post-graduate training and education program is needed. The percentage of family physicians who attended post-graduate training program varies between countries and usually at lower rate. In our study, only one-fourth of FPs (26.5%) had post-graduate training on SCP. Similarly, Mosvisyan et al. [20] reported that the ratio of FPs in Armenia was 26.6 %. In contrast, a study conducted by Djala-linia et al. [21] revealed that the 9% had received formal training. In USA, Balls et al. [22] found that the 18.0% of African-American primary care physicians received post-graduate training smoking cessation practice. Another study conducted by Pretti et al. [23] in Italy revealed that 67.0% of physicians lacked a specific training in tobacco control.

Our study indicated that smoking status of physician has not got effect on FPs on their participation the post-graduate training on smoking intervention. In contrast, Meshefedjian et al. [24] reported that Current smokers were more interested than never- or former smokers in learning about counseling methods. In the study, female FPs attended the post-graduate training course, compared to male FPs. Several studies reported that training program on smoking interventions significantly improved knowledge level of FPs on smoking and smoking cessation practice A randomized clinical trial indicated that gender did not appear to be a predictor of smoking cessation practice at the one-year follow-up in individuals presenting at Primary Care Centers [25-28].

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In the present study, we observed that knowledge level of our subjects had high level and it, not at all, was improved with post-training course, but not significant. Significant improvement was appeared in knowledge level on pharmacotherapy use and harmful effect of passive smoking. The present study explored that training on SCP encouraged the participation of family physicians in the tobacco control. Training improved their skills and made more competent for smoking cessation practice. Victor et al. reported that continuing medical education training on tobacco control for physicians are more confident in their smoking cessation practice [29, 31]. Guo et al. [32] suggested that Training program provided high satisfaction with confidence and adherence to a smoking cessation practice. We observed more 10% for confidence and 20% for competence favorably to FPs of trainee group. Those were self-reported by FPs and indicated their readiness for smoking interventions. Those favorable differences did not reflect definite satisfaction but figured significant improvement with post-graduate training programs.

Attitude is having a feeling about something or an opinion whether it is positive or negative. Attitude is important because someone has a positive attitude, it is more likely that he/she will accomplish his/her goals and overcome setbacks. Smoking cessation practice requires strong positive attitudes and patience. Attitudes of FPs towards anti-smoking activities and smoking will display whether they fix or not to smoking interventions. In the current study, our subjects had high and positive attitudes. We detected that item of "usefulness of pharmacotherapy in SCP" was rated by FPs as low. We considered that was due to low knowledge level of FPs about effect on pharmacotherapy on SCP. Among FPs in group 2, significantly increased ratio of most items regarding attitudes was observed. Our results were consistent with previous studies. Butler et al. [33] found that More intervention practice patients reported making an attempt to change (39% versus 32%), odds ratio 1.40 (1.15 to 1.70). Scheffer et al. [34] conducted a study designed as pre- and post-training tests assessing attitudes and knowledge of health professionals and found that statistically significant increases on nearly all measures were achieved. In a study conducted by Caplan et al. [35], it was reported that training physicians increases their adherence PHS guideline. In the present study, significant improvements in all steps

were observed. The most dramatic improvement was seen in step of "assist". There was two-fold increase (4.9% to 10.3%). Another dramatic improvement was seen in "arrange" step of 5A: more than 10% increase. Ratio of our subjects' adherent to 5A steps of PHS was comparatively lower. In the study conducted by Schnoll et al. [36] ratio for "advise" and "assist" steps were 75% and 64%. Another study by Ferketich et al. [37] revealed that 22% of physicians advised to quit smoking. However, we found that 15.7% and 7.9%.

There are some limitations in the study. Firstly, one of the criteria for participation in the study was based on willingness. As such, current smokers among family physicians might have held back to complete the study surveys or participate in the study. The other limits are related to the study design: self-reported data carry a risk of under-reporting and recall bias. Lastly, the study was cross-sectional and descriptive. Prospective study on investigations of Pre-and post-training changes on the same sample size would be more reliable.

Conclusion

Family physicians can play an important role in smoking cessation practice among the population in such our country with a high burden of smoking related illness. The present study provides comprehensive data on family physicians' attitudes towards smoking as well as skills and knowledge family physicians. Post-graduate training on tobacco control improved self-confidence and competence of family physicians. With post-graduate training, significant improvement was seen in practical skills of family physicians. Beside the non-significance, family physicians' knowledge level about and attitudes towards tobacco control were slightly increased. We considered that continuing medical education should be introduced among family physicians to improve their practice in tobacco control. Based on the lights of our results, we highlight that smoking cessation programs should be introduced among physicians. A continuing education program should be instituted to motivate physicians about their role in society and smoking cessation practice.

Acknowledgements

On behalf of my colleagues, I would like to thank to local directorships of Health Ministry of Turkey for their corporation in the study. We

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appreciate all family physicians who participated in the study for their valued contributions.

Disclosure of conflict of interest

None.

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