Prevalence of tobacco use, exposure to secondhand smoke and knowledge on smoking cessation among students of health professions in Central Greece: a cross-sectional study

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ABSTRACT

Objectives The aim of this study was to assess the prevalence of tobacco use and exposure to secondhand smoke among students of health professions (SHPs) and determine possible risk factors for current smoking. In addition, we sought to investigate the level of students’ knowledge regarding smoking cessation.

Design Cross-sectional.

Setting Central Greece.

Participants A convenient sample of 822 SHP volunteers were used, composed of 365 medical students, 123 students from a biochemistry department, 71 students from a nursing department, 176 from medical laboratory department and 84 students from a veterinary medicine department.

Primary and secondary outcome measures We investigated the prevalence of current smoking and secondhand smoke, their determinants and SHP’s knowledge and attitudes regarding smoking cessation. Univariate and logistic regression statistical analysis were used in order to identify risk factors associated with current smoking.

Results The prevalence of current smoking was estimated at 23.5% (95% CI 20.7% to 26.5%), while 49% of current smokers reported they wanted to quit smoking. The prevalence of current e-cigarette use was 1.2%. In addition, 96.5% (95% CI 94.9% to 97.5%) of SHP have been exposed to secondhand smoke at least 1 day per week. Logistic regression analysis showed that increasing age (p<0.001), alcohol consumption (p<0.001) and exposure to secondhand smoke in the home (p<0.001) were independent risk factors for current smoking. Notably, only 11.6% of the participants had learnt about methods to be used for smoking cessation.

Conclusions Our results underline the need for integrated tobacco control initiatives that should discourage tobacco use among SHP, promote smoke free schools of health science, and implement programs that train SHP in effective cessation-counseling techniques.

INTRODUCTION

Tobacco use is one of the major preventable causes of mortality and morbidity worldwide. WHO warns that tobacco use is one of the primary risk factors for several chronic illnesses, including cancer, lung diseases and cardiovascular diseases. 1 The tobacco epidemic is one of the greatest public health threats the world has ever faced, killing more than 7 million people each year. More than 6 million of those deaths are the result of direct tobacco use, while approximately 890 000 deaths are the result of non-smokers being exposed to secondhand smoke. 1 Greece has one of the highest smoking rates of countries in the European Union. Each year, over 19 000 Greeks die from tobacco-attributable illnesses such as cancers, cardiovascular and respiratory system diseases. 2 Smoking-related conditions account for approximately 14.4% of the total healthcare costs in Greece, resulting in approximately €3.4 billion. 2 The 2013 Global Adult Tobacco Survey study measured the prevalence of current smoking in Greece at 38.2% (95% CI 35.7% to 40.8%). 3 These findings are of concern and indicate the critical role of healthcare professionals, both as students in universities and during their later careers, to reduce the tobacco epidemic by counselling their patients on smoking cessation.
Providing effective interventions against tobacco use, and counselling patients about smoking cessation is a core clinical skill that must be acquired during undergraduate health science studies. Counselling from students of health professions (SHPs) has shown increased smoking cessation rates. Data pooled from 17 trials of brief advice versus no advice detected a significant increase in the rates of cessation; however, there was only a small advantage provided by intensive advice versus minimal advice. Each contact with the patient, regardless of the reason for admission, could be an effective opportunity to support patients to quit smoking. According to Tobacco Use and Dependence Clinical Practice Guidelines developed by the US Public Health Service, all healthcare providers (HCPs) should promote tobacco cessation to all patients. Unfortunately, only half of all smokers receive advice on smoking cessation from any HCP, and even fewer receive pharmacotherapy.

The tobacco epidemic seems to affect SHPs as well. The Global Health Professions Student Survey (GHPSS), which was conducted among third year medical students in 47 countries worldwide from 2005 to 2008, shows that over 20% of medical students are current smokers in 26 of 48 sites, and more than 40% in three countries (Bosnia and Herzegovina, Bolivia and Albania). Only a few studies have collected data on SHP’s training on tobacco cessation methods, and even fewer studies exist regarding knowledge about this topic during the 6 years of medical school. The GHPSS mentioned above that was conducted among the third year medical students revealed that less than 40% of medical students reported receiving formal training on counselling patients to quit using tobacco. In 2011 in Greece, the rate of undergraduate SHPs who had received formal training on smoking cessation counselling was extremely low (ranging from 10.7% to 22.4%). In addition, the prevalence of current smoking among SHP is important according to the literature, since there is evidence that physicians who smoke are less likely to ask about patients’ smoking history and provide advice for smoking cessation.

Furthermore, to date, the GHPSS has only surveyed students belonging to departments of medicine, dentistry, nursing and pharmacy. However, other SHPs such as veterinarians, paramedics, biochemists and others may also play a role in tobacco use cessation. The main objectives of this study were to assess the prevalence of current smoking and secondhand smoke among various groups of SHPs in Central Greece; to identify independent risk factors of current smoking; and to compare knowledge on tobacco cessation methods among different schools of health professions.

**METHODS**

**Survey design-settings**

A cross-sectional questionnaire-based study was conducted. Participants received a structured, self-administered modified version of the questionnaire used in the GHPSS Greece in 2011. The questionnaire was distributed during obligatory courses held in regular classroom settings. The study was conducted between March 2016 and June 2016.

**Data collection**

A convenient sample of SHPs at the University of Thessaly enrolled in the study. Medical students from all years of study, second and third year students from departments of biochemistry/medical laboratories/nursing, and third and fourth year students from the faculty of veterinary medicine participated in the survey. To make comparisons between preclinical and clinical study years, medical students from all years of study were selected to participate. Students from other schools of health professions who were in their middle years of study were selected to provide a more representative sample. The questionnaire consisted of 43 questions related to social characteristics, frequency of tobacco use, exposure to secondhand smoke, education and knowledge about risks of tobacco use and attitudes and methods for supporting patients to quit smoking.

As a first step, the GHPSS questionnaire was modified to include alcohol consumption information. The questionnaire was then translated from English to Greek, followed by back-translation into English to check for accuracy and compatibility with the core questionnaire. To address potential bias, the questionnaire was pilot tested in a sample of 20 SHP, who were asked to provide feedback on the face validity of the questionnaire. The questionnaire was then revised taking into consideration the pilot study results.

**Patient and public involvement**

Neither patients nor the public were directly involved with or participated in the research. All participants were informed about the purpose of the study. On ensuring that participation was voluntary and that responses would remain anonymous and confidential, return of a completed questionnaire indicated informed consent.

**Primary outcome measures**

As current smoking was defined the use of tobacco products at least once on the past 30 days and as secondhand smoking was defined the exposure at home or public places at least once in the past 7 days.

**Statistical analysis**

Quantitative variables are presented as means with SD and qualitative variables are presented as absolute (N) and relative (%) frequencies.

In univariable analysis, $\chi^2$ test tests or Fisher’s exact tests were used to identify associations between categorical factors and smoking status. $\chi^2$ test for trend was used to explore any associations between ordinal factors and smoking status.

Logistic regression analysis was performed using the backward conditional method to identify independent
factors for smoking status, adjusting for age and gender by calculating the ORs with the corresponding 95% CIs. Variables which were found to be statistically significant in univariable analysis were included in the logistic regression analysis. A result with a p<0.05 was considered to be statistically significant. Data were analysed using Epi Info (V.3.5.3, CDC, Atlanta) and SPSS V.21.0 (IBM SPSS).

RESULTS

The response rates were 81% (365/450) among medical students, 61.5% (123/200) among students in the Biochemistry department, 56% (84/150) among students in the Veterinary Medicine department and 70.5% (247/350) among nursing/medical laboratories students. The total sample consisted of 822 students, with a mean age of 21 years. Females represented 66.5% of the participants and males represented 33.5%; 47.1% of participants were <20 years of age, 47.6% were 20–24 years of age and 5.3% were older than 24 years of age. In total, 23.5% (95% CI 20.7% to 26.5%) of SHP were current smokers (females: 24.5%, males: 21.5%) with a mean number of 9.2 cigarettes smoked daily. Of the participants, 57.5% of SHP have used an e-cigarette before, but only 1.2% are consistent users. Almost half of current SHP smokers (49%) wanted to quit smoking in the past year, but only 20.7% of them received support from a health professional. In addition, 96.5% (95% CI 94.9% to 97.5%) of SHP have been exposed to secondhand smoke at least 1 day per week, and 41.4% of them in their own home. Furthermore, the vast majority of participants reported exposure to secondhand smoke in the school’s restaurant—cafeteria (84.1%) and in school buildings (77.4%) (table 1).

In the univariate analysis of current smoking, association between increasing age and current smoking was identified. In fact, the prevalence of current smokers tended to increase with age (p=0.002). Medical students have the lowest rates of current smoking (17%) while medical laboratories students have the highest rates (32.4%); the smoking rate among students in the veterinary medicine department was 23.8% and 26.8% in the biochemistry department. The association between gender and current smoking was not statistically significant (p=0.332). In addition, the existence of an anti-smoking law banning smoking in school buildings and/or clinics does not appear to affect the prevalence of smoking (p=0.985). Furthermore, knowledge regarding smoking related hazards does not reduce the prevalence of smoking (p=0.299). Tobacco use was significantly associated with alcohol consumption (p<0.001) and exposure to secondhand smoke at home (p<0.001) (table 2).

Logistic regression analysis showed that increasing age, alcohol consumption of ≥70 units per year, and exposure to secondhand smoke in the home were all independent risk factors for current smoking, while the school of study was not identified as an independent risk factor (table 3).

The vast majority of undergraduate SHP (91.9%) believe that healthcare professionals should have adequate knowledge about smoking cessation, and 91.1% believe that healthcare professionals should advise their patients to stop smoking. It is also worthy to mention that 81.3% of SHP recognise the special role that healthcare professionals play in advising their patients to quit smoking; 63.1% of SHP believe that if a healthcare professional advises a patient to stop smoking, the patient’s odds of quitting increase. Only about one-fifth of participants (21.5%) reported that healthcare professionals advise their patients to quit smoking. Additionally, more medical students believe that healthcare professionals are ‘role models’ for their patients and more broadly, society, in comparison to the rest of SHP (p<0.001) (table 4).

| Table 1 Demographic and smoking-related characteristics |
|-------------------------------------------------------|
| Gender | N | %  |
| Female | 547 | 66.5 |
| Male | 275 | 33.5 |
| Total | 822 | 100.0 |
| Age group |  |  |
| ≤20, 0 years old | 372 | 47.1 |
| 20, 1–24, 0 years old | 376 | 47.6 |
| >24, 0 years old | 42 | 5.3 |
| Total | 790 | 100.0 |
| Year of study |  |  |
| First-second year | 409 | 49.9 |
| Third-fourth year | 327 | 39.9 |
| Fifth-sixth year | 84 | 10.2 |
| Total | 820 | 100.0 |
| School of health sciences training |  |  |
| Biochemistry | 123 | 15.0 |
| Medicine | 365 | 44.6 |
| Veterinary medicine | 84 | 10.3 |
| Nursing | 71 | 8.7 |
| Medical laboratories | 176 | 21.5 |
| Total | 819 | 100.0 |
| Have you ever smoked e-cigarette? |  |  |
| Yes | 509 | 61.9 |
| No | 313 | 38.1 |
| Total | 822 | 100.0 |
| Current smoking |  |  |
| Yes | 193 | 23.5 |
| No | 629 | 76.5 |
| Total | 822 | 100.0 |
| Secondhand smoking |  |  |
| Yes | 792 | 96.5 (94.9–97.5) |
| Total | 821 | 100.0 |
In total, 66.7% of undergraduate SHP reported that during their studies they learnt about smoking hazards, but only 36.8% have learnt about the reasons why people smoke. Furthermore, 56.1% of the respondents reported that they have learnt the importance of smoking history as a part of the patient’s medical history. It is also worth noting that only 11.6% of respondents have learnt about using methods for smoking cessation, and only 27.1% have ever learnt the importance of providing informational materials against tobacco use to patients who want to quit smoking (table 5).

Medical students have a greater knowledge of the hazards associated with tobacco use (p<0.001) as well as the reasons why people smoke (p=0.005), compared with undergraduate students of other health professions. Medical students have also shown a greater knowledge in recording a patient’s smoking history as a part of the patient’s medical history (p<0.001) and they better understand the importance of providing informational materials to patients who want to quit smoking (p<0.001).

**DISCUSSION**

In our study, the prevalence of current smoking among SHP was 23.5%, while among medical students the prevalence was 17%. As it concerns the prevalence of current smoking in European countries, the GHPSS reported this figure as 36.6% in Croatia, 21.7% in the Czech Republic, 34.7% in Serbia and 30.6% in Slovakia. Countrywide aggregate data from the GHPSS published in 2018 found the highest prevalence of current smoking in European countries (20% medical and 40% dental students) and use of other tobacco products higher in eastern Mediterranean (10%–23%) and European countries (7%–13%). In 2011, the Greek GHPSS study found the prevalence of current smoking among SHP to be 28.8% among pharmacy students, 46.4% among health visitor students and 56.1% among medical students.

**Table 2** Univariate analysis of current smoking

| Age group                  | N   | %   | P value* |
|----------------------------|-----|-----|----------|
| ≤20,0 years old            | 72/372 | 19.4 | 0.002†  |
| 20,1–24,0 years old        | 98/376 | 26.1 |          |
| 24,1 years old             | 16/42  | 38.1 |          |
| Gender                     |     |     |          |
| Female                     | 134/547 | 24.5 | 0.332   |
| Male                       | 59/275  | 21.5 |          |
| Year of health science training |     |     |          |
| First-second year          | 98/409 | 24.0 | 0.720†  |
| Third-fourth year          | 75/327 | 22.9 |          |
| Fifth-sixth year           | 19/84  | 22.6 |          |
| School of health sciences training |     |     |          |
| Biochemistry                | 33/123 | 26.8 |          |
| Medicine                    | 62/365 | 17.0 |          |
| Veterinary medicine         | 20/84  | 23.8 |          |
| Nursing                     | 20/71  | 28.2 |          |
| Medical laboratories        | 57/176 | 32.4 |          |
| Does your school have an official policy banning smoking? |     |     |          |
| Yes, (school building or/and clinics) | 98/418 | 23.4 | 0.985   |
| No/I don’t know             | 94/400 | 23.5 |          |
| Is your school’s official smoking ban for school buildings/clinics enforced? |     |     |          |
| Yes                        | 52/216 | 24.1 | 0.346   |
| No                         | 57/278 | 20.5 |          |
| There is no antismoking law/I don’t know | 82/322 | 25.5 |          |
| During your health science school training, were you taught in any of your classes about the dangers of smoking? |     |     |          |
| Yes                        | 134/535 | 25.0 | 0.299   |
| No/I don’t know             | 58/267 | 21.7 |          |
| Alcohol consumption (units/year) |     |     | <0.001† |
| ≥532.00                    | 74/206 | 35.9 |          |
| 225.25–531.99              | 50/205 | 24.4 |          |
| 70.00–225.24               | 50/206 | 24.3 |          |
| <70.00                     | 19/205 | 9.3  |          |
| During the past 7 days, on how many of those days has anyone (family member or friend) smoked inside your home, in your presence? |     |     | <0.001‡ |
| ≥1 day                     | 133/340 | 39.1 |          |
| 0 days                     | 60/481 | 12.5 |          |

*2 test.
†2 test for trend.
‡Statistically significant
29.5% among medical students. These figures reflect a possible reduction of current smoking prevalence among Greek SHP, in line with the decrease of smoking in the general population of Greece (measured at 38.2% in 2013; 42.6% in 2008).3

The extremely high rate of exposure to secondhand smoke at least 1 day per week (96.5% in public places and 41.4% at home) corroborate previous studies from Greece,11 14 and indicate the urgent need for enforcement of tobacco banning policies in enclosed public places throughout the country. The existence of laws banning smoking in school buildings does not appear to affect the rates of smoking in these buildings, which is reflected through the high rates of exposure to secondhand smoke on the school campus (84.1% in the school cafeteria and 77.4% in school buildings).

An interesting finding of our study was the extremely low rates, ranging between 4.7% for medical laboratory students and 14.4% for medical students, who have received training on smoking cessation counselling. In Greece in 2011, formal training on smoking cessation counselling among under-graduate SHP ranged from 10.7% to 22.4% (for health visitors and nursing students, respectively).11 In other countries belonging to the European Union (Germany, Italy, Poland and Spain), only 16.5% of students (lowest proportion in Italy at only 3.5%) had reported training on smoking cessation during their studies in medical school.15 In the eastern Mediterranean region, a region close to Greece with social bonds and traditions similar to the Greek lifestyle, less than 30% of medical students had ever received formal training in smoking cessation methods.10 Regarding tobacco cessation methods, the vast majority of students had heard about

| Table 3  | Logistic regression analysis of current smoking |
|----------|-----------------------------------------------|
|          | OR    | 95% CI          | P value |
| Age group|       |                 |
| ≤20, 0 years old | 0.17  | 0.08 to 0.37 | <0.001 |
| 20.1–24.0 years old | 0.33  | 0.15 to 0.70 | 0.004  |
| >24.1 years old | Ref. |                 |
| Gender   |       |                 |
| Female   | 1.20  | 0.80 to 1.79 | 0.372  |
| Male     | Ref.  |                 |
| School of health sciences training |   |                 |
| Biochemistry | 0.99  | 0.47 to 2.11 | 0.986  |
| Medicine  | 0.53  | 0.26 to 1.05 | 0.070  |
| Veterinary medicine | 0.84  | 0.36 to 1.96 | 0.695  |
| Nursing   | Ref.  |                 |
| Medical laboratories | 1.07  | 0.53 to 2.16 | 0.857  |
| Alcohol consumption (units/year) |   |                 |
| ≥532.00  | 6.14  | 3.33 to 11.32 | <0.001 |
| 225.25–531.99 | 3.93  | 2.11 to 7.31 | <0.001 |
| 70.00–225.24 | 3.82  | 2.07 to 7.05 | <0.001 |
| <70.00   | Ref.  |                 |
| During the past 7 days, on how many of those days has anyone (family member or friend) smoked inside your home, in your presence? |   |                 |
| ≥1 day   | 3.97  | 2.72 to 5.81 | <0.001 |
| 0 days   | Ref.  |                 |

| Table 4  | Beliefs of students of health professions on their role in smoking cessation |
|----------|--------------------------------------------------------------------------|
|          | Yes | Total |
|          | N   | %    | N    |
| Should healthcare professionals have special knowledge about smoking cessation? | 752 | 91.9 | 818 |
| Do you believe that healthcare professionals are a ‘role model’ for their patients and society? | 488 | 59.9 | 815 |
| Healthcare professionals should advise their patients to stop smoking? | 746 | 91.1 | 819 |
| Healthcare professionals should advise patients who use tobacco products to quit? | 685 | 83.7 | 818 |
| Do you believe that healthcare professionals have the advance and the special role to provide their patients with advice and information on smoking cessation? | 666 | 81.3 | 819 |
| If a healthcare professional advises a patient to stop smoking then the odds are increasing? | 517 | 63.1 | 819 |
| Do you believe that healthcare professionals advise their patients satisfactorily to stop smoking? | 175 | 21.5 | 815 |
nicotine patches and gum, but only a quarter of them were aware of antidepressant medication use for this purpose.11,15 The majority of SHP (59.9%) believe that their profession serves as a role model and they recognise the importance of learning smoking cessation techniques (91.9%). These findings are in line with the GHPSS study conducted in Greece and internationally.10,11 Medical students from Italy, Germany, the UK and the USA believe that health professionals should receive formal training in order to advise patients to quit smoking; however, these medical students have not received formal training during their studies, and as a result do not feel competent in providing counselling.16–19

WHO Framework Convention on Tobacco Control underlines the important role played by doctors, dentists, nurses, pharmacists and other health professionals in cessation and prevention of tobacco use through provision of brief counselling or even simple advice.20 However, health professionals who use tobacco themselves may be deterred from providing cessation advice and counselling to their patients.21 In this context, supporting SHP’s efforts to stop smoking is essential. In Italy, smoking behaviour among SHP significantly changed after attending a university course for smoking cessation.22

In many medical schools worldwide, there is a limited or oftentimes even non-existent systemic approach to smoking cessation topics, although almost all medical schools include topics on tobacco related diseases.23,24 Evidence exists that medical students do not receive adequate medical education on tobacco use due to a variety of factors, such as impediments posed by staff, systemic and organisational challenges.25,26,27 Although considerable progress addressing tobacco teaching in medical schools has been made globally, more intensive efforts are needed in order to establish education on tobacco use as an ongoing part of medical curricula.28

As it was expected, there was a significant difference between medical students and non-medical students of other healthcare professions regarding their knowledge of smoking related diseases; however, medical students were not shown to have a statistically significant greater knowledge about smoking cessation techniques. Similar results have been reported in Italian medical students, who have marginally higher knowledge about smoking-related diseases and cessation methods than non-medical students.29

Alcohol consumption of more than 70 units per year and exposure to secondhand smoke in the home were independent risk factors for current smoking. The relationship between smoking and alcohol consumption underlines the need for common targeting campaigns. Being exposed to smoking contributes to the development of a positive attitude towards tobacco use as a social norm, and increases the tendency to smoke.30 Alcohol consumption is negatively associated with successful smoking cessation in both community and clinical research.31,32

Table 5. Curriculum and training about smoking and smoking cessation among students of health professions

|                                | Biochemistry | Medicine | Veterinary medicine | Medical laboratories | Nursing |
|--------------------------------|--------------|----------|---------------------|----------------------|---------|
| During your studies, have you ever learnt about smoking risks? | Yes | 74 | 63 | 291 | 82 | 30 | 37 | 87 | 50 | 52 | 73 | <0.001 |
|                                | Total        | 118 | 100 | 354 | 100 | 81 | 100 | 175 | 100 | 71 | 100 |
| During your studies, have you ever discussed the reasons why people start smoking? | Yes | 45 | 38 | 139 | 39 | 27 | 32 | 48 | 27 | 35 | 49 | 0.003 |
|                                | Total        | 119 | 100 | 353 | 100 | 84 | 100 | 175 | 100 | 71 | 100 |
| During your studies, have you ever learnt the importance of recording the smoking history as a part of the medical history of the patient? | Yes | 37 | 31 | 280 | 79 | 27 | 32 | 60 | 34 | 46 | 65 | <0.001 |
|                                | Total        | 118 | 100 | 353 | 100 | 84 | 100 | 175 | 100 | 71 | 100 |
| During your studies, have you ever learnt about using methods to stop smoking? | Yes | 12 | 10 | 51 | 14 | 10 | 12 | 8 | 4.7 | 10 | 14 | 0.019 |
|                                | Total        | 118 | 100 | 353 | 100 | 84 | 100 | 172 | 100 | 70 | 100 |
| During your studies, have you ever learnt the importance of giving information material against smoking to patients who want to stop smoking? | Yes | 28 | 24 | 116 | 33 | 15 | 18 | 27 | 16 | 30 | 42 | <0.001 |
|                                | Total        | 118 | 100 | 351 | 100 | 84 | 100 | 175 | 100 | 71 | 100 |
| Have you ever heard about methods for replacement of nicotine in smoking cessation programmes (nicotine patch or nicotine gum)? | Yes | 102 | 86 | 305 | 86 | 71 | 85 | 145 | 83 | 56 | 79 | 0.527 |
|                                | Total        | 118 | 100 | 353 | 100 | 84 | 100 | 174 | 100 | 71 | 100 |
| Have you ever heard about using antidepressants drugs in smoking cessation programmes (like Bupropion, Zyban)? | Yes | 31 | 26 | 91 | 26 | 23 | 27 | 30 | 17 | 22 | 31 | 0.107 |
|                                | Total        | 118 | 100 | 353 | 100 | 84 | 100 | 175 | 100 | 71 | 100 |

*p* test.
the quality of undergraduate education in Nursing school, with respect to tobacco control and smoking cessation methods. Other HCPs, like veterinarians, biochemists and medical laboratory’s workers serve as role models in society. Several studies have reported the potential harms of tobacco exposure in dogs, cats and other pets’ health. In this prospect, veterinarians could advice pet owners quit smoking in every visit in order to improve both pet’s and owner’s health. In everyday clinical practice, very brief advice is an evidence-based, effective and time-efficient way of improving quality of life for patients, saving money and increasing paramedic job satisfaction. More study is needed on paramedics potential role providing advice on smoking cessation.

Our survey presents both advantages and limitations. The main advantage of this study is the fact that it provides for the first time, data on the determinants of smoking among SHPs. In addition, for the first time data is presented on smoking-related variables from students of paramedical, biochemistry and veterinary health professions. The main limitation of our study is the self-reported nature of data selected, where students might under-report or over-report their behaviours or attitudes. The extent of misclassification bias cannot be determined from this data, since there is no biochemical verification of smoking status. In a cross-sectional study in Kyrgyzstan, when self-reported non-smokers having CO ≥7 ppm were included, the smoking prevalence increased from 35.0% to 44.8%. Our sample was convenient and selection bias included, the smoking prevalence increased from 35.0% to 44.8%.36 More study is needed on paramedics potential role providing advice on smoking cessation.

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CONCLUSIONS

The present study found a high prevalence of current smoking and secondhand smoke among SHPs in Central Greece. Considerable knowledge gaps among SHPs related to smoking cessation were identified. Campaigns targeting SHP, as well as curriculum alterations should be implemented. The association between alcohol consumption and current smoking deserves further investigation for the development of common prevention programmes.

Correction notice Collaborators section is corrected.

Collaborators Léonima Anagnostopoulou.

Contributors AAS participated in study design, collecting questionnaires, drafting and revising the manuscript. GR participated in study design, drafting and revising the manuscript. SP, KP, KT and EC participated in study design and collecting the questionnaires. AK participated in statistical analysis. CSH supervised study design and the implementation of the study, participated in statistical analysis, interpretation of results and revision of the manuscript. All authors have read and approved the final version of the manuscript.

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