



ORIGINAL PAPER

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Behaviors, attitudes and opinions of medical students in the field of smoking and anti-smoking counseling in two countries of Central and Eastern Europe

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ABSTRACT

Introduction. Europe is the region with the greatest proportion of deaths (16%) attributable to tobacco smoking worldwide. Medical students and physicians should set an example of tobacco-smoking abstinence for their patients.

Aim. The aim of the study was to compare opinions on behaviors and attitudes of Czech and Polish medical students about tobacco smoking and the position of a physician in anti-smoking counseling.

Material and methods. The Global Health Professions Student Survey (GHPSS) was conducted among 707 medical students in Czech Republic in 2011 and among 1164 medical students in Poland.

Results. Twenty percent of Polish and 25,7% of Czech medical students declared current tobacco smoking. Eighty-one percent in Poland and 60% in Czech Republic felt that physicians should be trained in smoking cessation techniques but only 27% of the medical students in Poland and 2,8% in Czech Republic, declared that such a course had been realized during the course of their education.

Conclusion. Over a fifth of Polish students and a quarter of Czech students declared themselves as active smokers. It is worrying that about half of Polish students were exposed to environmental tobacco smoke, while only one-fifth of Czech students declared such exposure. Polish and Czech students agreed that the doctor will play an important role in the patient's smoking cessation process and that physicians should give advice on quitting smoking.

Keywords. anti-smoking education, cessation training, cigarette smoking, medical students, tobacco smoking

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Participation of co-authors: A – Author of the concept and objectives of paper; B – collection of data; C – implementation of research; D – elaborate, analysis and interpretation of data; E – statistical analysis; F – preparation of a manuscript; G – working out the literature; H – obtaining funds

Received: 15.02.2019 | Accepted: 25.05.2020

Publication date: September 2020

Introduction

Smoking is a very important and current social and health problem throughout Europe and the main risk factor for most of the leading causes of death.¹ Tobacco smoking is a financial burden on economies and European healthcare systems.² Around eighty percent of the 1.1 billion smokers worldwide live in low and middle-income countries where the burden of tobacco-related illness and death is heaviest.³ Every year more than 1.6 million Europeans die from smoking cigarettes and it making Europe the region with the greatest proportion of deaths (16%) attributable to tobacco smoking worldwide.⁴ In developed countries, smoking has been associated with a loss of at least a decade of life. Cessation before the age of 40 years, can dramatically reduce the risk of death and significantly improve quality of life.⁵ Smoking has historically been and continues to be one of the key factors shaping the health of adult European people.⁶ The term "smoking" is valid for people who have smoked more than 100 cigarettes over their lifetime and is one of the main and most common risk factors for many diseases.⁷ Most European countries established laws against smoking in public places to protect from tobacco epidemic.⁸ Early initiation of tobacco smoking is associated with increased risk of smoking-related mortality and morbidity.^{9,10}

Smoking is one of the most important modifiable risk factors for cardiovascular disease and the leading cause of death in the European population. Even a small amount of tobacco smoke (eg several cigarettes a day, occasional smoking or passive smoking) increase the incidence of cardiovascular events. Smokers are burdened with a significantly higher risk of abdominal aortic aneurysm, coronary heart disease, sudden cardiac death and peripheral atherosclerosis. Smoking is one of the main modifiable causes of stroke, it is also an important factor in the development of dementia and Alzheimer's disease. The prevalence of tobacco smoking is still declining in Europe, which is mainly related to more restrictive national regulations that have been introduced over time.¹¹⁻¹³ Second-hand smoke is the smoke that fills restaurants, offices or other enclosed spaces when people burn tobacco products such as cigarettes, bidis and water-pipes. There are more than four thousands chemicals in tobacco smoke of which at least 250 are known to be harmful and more than 50 are known to cause cancer.^{3,14} Second-hand smoking also known as environmental tobacco smoking, is the inhalation of smoke by a nonsmoker, released from the burning tobacco or exhaled by the smoker.^{15,16} Passive smoking is the third after drinking alcohol and active smoking the cause of avoidable deaths. The main place of exposure to passive inhalation of tobacco smoke is the home environment. It is estimated that the number of deaths caused by ex-

posure to tobacco smoke in homes is about ten times higher compared to exposure to environmental tobacco smoking only in the workplace. Non-smoking man, staying an hour in smoky room, absorbs such a quantity nitrosamines, which is found in the main stream of filter cigarettes, and benzopyrene, as much as he would have consumed by burning four cigarettes. A person exposed to daily smoke inhalation tobacco, has a 15% higher risk of death compared to a person without such exposure.¹⁷⁻¹⁹ There is no risk-free level of secondhand smoke exposure.^{20,21} Despite the transfer of society knowledge about the negative health consequences of tobacco use, a high percentage of adults continue to be addicted to this habit. Therefore, it seems justifiable to recognize risky behaviours in the area of the use of tobacco products among university students.²² Particularly rich knowledge on topic of the negative impact of tobacco use on the state health should be demonstrated by medical students. Knowledge and related to the behavior of future physicians are particularly important for two reasons: first, this group should be a pattern of behavior for society pro-health, secondly in the future professional work will be obliged to provide comprehensive treatment (pharmacological and non-pharmacological: counseling and psychological support) of tobacco addiction.²³ Physicians as should set an example of tobacco-smoking abstinence for their patients. Tobacco smoking among medical students, as well as physicians, has been a research subject for many years.²⁴ Treatment of tobacco addiction should be part of health care in which the role of a health care professional should be crucial in tobacco control advice - should range from short intervention at every contact with a smoking patient, to intensive and long-term treatment including both psychosocial and behavioral support as well as appropriate pharmacotherapies. According to the WHO recommendations, this formula should apply to all professions in clinical medicine - mainly to physician, nurses, pharmacists and dentists, and the costs of the activities carried out should be covered within healthcare systems. From an economic point of view, this would be one of the most cost-effective interventions in medicine.^{25,26}

In the Czech Republic, approximately 22,000 people die annually as a result of diseases directly related to smoking, and most of them die prematurely before the age of 69. This means that smoking each year contributes to the premature death of 42% of men and 9% of women, which on average shortens the lives of smokers by about 15 years. The Czech Republic is in the group of 10 European countries where the incidence and mortality caused by malignant tumors is the highest. They are also in the lead of countries with the highest number of cigarettes smoked per one inhabitant. It is also disturbing that over 60% of Czech children are exposed to passive smoking in their family homes.²⁷⁻³⁰ In Poland,

smoking is still a major health problem. Polish society occupies the third place in Europe in the consumption of tobacco per capita.^{6,31}

Aim

The aim of the study was to compare opinions on behaviors and attitudes of Czech and Polish medical students about tobacco smoking and the position of a physician in anti-smoking counseling.

Material and methods

The basis of the analysis was a standardized international GHPSS study (Global Health Professions Student Survey) created by experts of the World Health Organization (WHO) and the United States Centers of Disease Control and Prevention (CDC). The Global Health Professions Student Survey (GHPSS) was developed in 2004 to collect data on tobacco use and cessation counseling among the medical students, it has a standardized methodology for selecting participating schools and classes. Methodology, questionnaires and scope of the study have been developed by experts from the Tobacco Free Initiative (TFI). The study population consisted of students of the third year of medical studies (medicine). These survey results have generated valuable information about attitudes, beliefs and behavior related to tobacco control among medical students, and provide a valuable source of information to develop tobacco control policies and intervention programs.³² In Czech republic, GHPSS, which was carried out in 2011, covered 707 medical students from 11 medical universities. In Poland the survey was conducted in 2010 and covered 1219 medical students from 5 medical universities. In the study conducted in the Czech Republic, the response rate was 85.5% and in Poland 89,9% among medical students.

The questionnaire

The tool used in this study was validated anonymous and self-administered the The Global Health Professions Student Survey questionnaire. The tool used in this study was from the The Global Health Professions Student Survey questionnaire. The original version (English version) of the questionnaire was used in Czech Republic. The questionnaire for Polish students has been translated from English and tested by the WHO department in Poland. The WHO collaborators adapted, a questionnaire by adding questions about local forms of tobacco, native language questionnaires were back-translated to English - to check compatibility with the main questionnaire. Questionnaires were administered during regular class sessions in accordance with the protocol developed by WHO. The questionnaire was an anonymous, self-administered, filled in by the students during regular classes.

Questionnaire contained 42 questions covering six categories. The first one concerned the current cigarette smoking by the respondent, the second - exposure to environmental tobacco smoke, the third included questions regarding the attitudes of the respondent to the smoking ban and the role of health care workers in the field of antitobacco counseling, the fourth related to nicotine addiction and attempts to break with addiction, fifth - it included questions about the level of education of the subject in the field of anti-tobacco intervention obtained during studies, and the last category was created for obtaining socio-demographic data. As a current smoker, the respondent was defined who declared that he had smoked cigarettes at least once during the 30 days preceding the examination. The GHPSS questionnaire had questions about local forms of tobacco consumed in each country. The section called: "Current use of tobacco products other than cigarettes" was defined as using bidis, pipes, snuff, e- cigarettes, cigars and chewing tobacco on one or more days during the past 30 days. The students' attitudes towards the total ban on smoking in restaurants, nightclubs and music clubs and bars were analyzed, as well as the position regarding the ban on smoking in all public places. Special attention was paid to the attitudes of students regarding the position of the doctor in creating patients' attitudes with particular emphasis on his role in providing anti-smoking advice and help in giving up smoking - including the status of smoking by the doctor and the frequency of his advice encouraging patients to quit addiction. The next analyzed variables concerned the trainings in the field of techniques supporting the quitting of smoking and the respondents' expectations regarding the education and significance of using educational materials for patients in this field. Additional variables included in the analysis included socio-demographic characteristics: gender and age of students.

Statistical analysis

The main purpose of statistical analysis was to compare the opinions of medical students in Poland and the Czech Republic regarding smoking and the position of a physician in the process of quitting smoking. Opinions were also analyzed regarding the usefulness of the anti-nicotine counseling suggested by the physician, and his practical skills. Student attitudes regarding total smoking bans in public places were also assessed and compared. The chi square test of independence was used to calculate p values. Statistical analyzes were performed using STATISTICA 13. Given the lack of data on smoking status for 4 medical students in the Czech Republic and 55 in Poland, a total of 703 and 1164 students were included respectively.

Results

More than 95% of the medical students in Poland and nearly 93% medical students in Czech Republic were 20-24 years (Tab.1). Sixty five percent of the medical students in Czech Republic and 64% of the medical students in Poland were women ($p<0.05$).

Table 1. Characteristics of the study sample, exposure to second-hand smoke, prevalence and regulations of smoking at the universities, attitudes toward smoking in public places

Variable	Czech Medical Students N=707		Poland Medical Students N=1219		p
	≤20	6	47		
Age (years)	20-24	655	1157		-
	≥25	45	12		
Gender	male	247	433		0.754
	female	459	780		
Currently smoked cigarettes	Yes	137	313		-
	No	566	851		
Exposed to second-hand smoke at home within past week	Yes	190	597		-
	No	517	619		
Exposed to second-hand smoke in public places within past week	Yes	333	867		-
	No	374	350		
School had ban on smoking in school building	Yes	696	1120		-
	No	111	89		
Tobacco-free environment is enforced at University	Yes	660	704		-
	No	40	502		
Ever smoked cigarettes in school buildings during the past year	Never	185	419		-
	Yes	61	51		
	No	460	660		
Smoking should be banned in restaurant	Yes	640	1027		0.135
	No	61	125		
Smoking should be banned in discos/bars/pubs	Yes	469	781		0.750
	No	232	374		
Smoking should be banned in all enclosed public places	Yes	571	886		0.012
	No	131	274		

Tobacco smoking was declared by 20% of medical students in the Czech Republic and 25.7% of medical students in Poland. Exposure to Environmental Tobacco Smoke (ETS) in the home during the last week preceding the survey was declared by 26.8% of medical students of Czech universities and as many as nearly half (49.1%) of medical students surveyed in Poland, while exposure to this factor in public places indicated 47% and 71.2%, respectively. The existence of a smoking ban in the university building was indicated by 98.4% of respondents in the Czech Republic and 91.9% of the medical students in Poland. About 94% of Czech students and only 57.7% of Polish students said that compliance with this prohibition is enforced by the university authorities, in addition, nearly 9% of Polish and 5% of Czech students declared smoking in the university building during the last year. Over 90% of Czech students declared support for a total ban on smoking in restaurants, 67% of medical students support smoking in bars, nightclubs and music, and nearly 80% of re-

spondents are for a total ban on smoking in all public places. Substantial relations were noted in the case of smokers and non-smokers. In Poland, support for a total ban on smoking in restaurants was declared by 89% of the medical students. Fewer students (over 65%) expressed support for the ban on smoking in bars, pubs and nightclubs. Support for a total ban on smoking in all public places was declared by more than 76% of the students ($p<0.05$).

Table 2. Opinions of medical students from Poland and the Czech Republic regarding the role of a physician in the process of smoking cessation of their patients, practical skills in the anti-tobacco counseling obtained during the education

Variable	Czech Medical Students N=707		Poland Medical Students N=1219		p
	Yes	369	1006	----	
The physician serve as role models for their patients	Yes	369	1006	----	---
	No	333	140	---	
The physician have a role in giving advice or information about smoking cessation to patients	Yes	574	981		0.016
	No	127	159		
The physician who smoke is less likely to advise patients to stop smoking	Yes	463	649		----
	No	238	495		
Patients have more chances to quit smoking if advised by physician	Yes	480	865		0.004
	No	222	295		
The physician should regularly advise smokers to quit	Yes	633	1074		0,063
	No	70	87		
The physician should get specific training in cessation techniques	Yes	423	928		----
	No	280	219		
Any formal training in smoking cessation approaches to use with patients in their medical school training	Yes	20	311		----
	No	682	850		
Training about importance to provide educational materials to support smoking cessation to patients who want to quit	Yes	258	409		0,851
	No	442	714		

Only slightly more than half of the medical students in the Czech Republic (53%) and nearly 88% of the Polish students felt that a physician plays an important role in creating patients' attitudes (Tab. 2). However, 82% of Czech students and 86% Polish medical students admitted that the physician plays an important role in advice on quitting tobacco and said that patients have a better chance of quitting if they get doctor's professional advice on anti-smoking therapy (68% of medical students in Czech Republic and 75% in Poland) ($p<0.05$). The majority, i.e. 68% of medical students in Czech Republic and 56,7% in Poland, claimed that, in the case when a physician smoked, he was less inclined to provide their patients with smoking cessation advice. A similar proportion of the respondents saw an import-

ant role in providing anti-tobacco advice to patients and nearly 90% polish students and 82% czech students believed that physicians should provide smoking cessation advice ($p < 0.05$). In Poland 57% and 66% of the medical students (66% in Czech Republic) claimed that, in the case when a physician smoked, he was less inclined to provide their patients with smoking cessation advice. Majority of the respondents expressed the opinion that the patients' chances of quitting smoking increased if a health professional advised them to quit (75% medical students in Poland and 68% in Czech Republic). Most of the surveyed students (81% of the medical students in Poland and 60% in Czech Republic) felt that physicians should be trained in smoking cessation techniques. Unfortunately, much smaller percentage of the respondents declared that such a course had been realized during the course of their study (27% of the medical students in Poland and only 2,8% in Czech Republic). A low percentage of the students declared that during their studies they had learned that it is important to provide the patients who want to quit smoking with educational materials to support smoking cessation (36% of the polish students and 37% of the czech medical students).

Discussion

The study showed that 19.8% of medical students studying in the Czech Republic were smoking cigarettes and nearly 26% of students were exposed to secondhand smoke in the home environment. Among Polish medical students, the percentage of smokers is as high as 26%. For comparison, China is the world's largest producer and consumer of tobacco products but analyzes carried out by Yang et al., indicate that the smoking prevalence among third-year medical students was relatively low (7.0%). The smoking prevalence among the third-year medical students was lower than rates reported in most other countries (over 10%). However, researchers have shown that the smoking prevalence among physicians is much higher (23%) in China.³² In 2015, the World Health Organization's report on tobacco smoking reported that the percentage of people currently smoking in the Czech Republic was close to 29 in the group of adults and 30.6% in the group of youth in the age group 13-15. The World Health Organization in a report from 2017 reported that 24% of the Czech population smoked cigarettes.²⁷ The positive is, that the percentage of students smoking cigarettes in the analyzed study was lower than in the general population of smokers in the Czech Republic. Similar to the results obtained in the population of Czech medical students, it was observed in a study conducted in Latvia (19.6%), Slovenia (18%), higher in Germany (28%), Slovakia (29%), Spain (29%), Lithuania (30%) and in Italy (31%), while the highest percentage of students smoking cigarettes among the European countries covered by the GHPSS survey was

recorded in Moldova (65%), Macedonia (53%) and Bulgaria (52%).³³⁻³⁵ The percentage of smoking polish medical students (26%) in the study was high and similar to the nationwide survey on smoking attitudes (in 2011, the percentage of smokers in our country was 31%, in 2017 - 24%), similar results were obtained in the GATS study for the 20-29 age group - 32% of people smoked cigarettes. The World Health Organization published similar results - in 2017 tobacco smokers constituted one fourth of the Polish population. Analyzes carried out by Warren et al. indicate that in the majority of European countries in which this study was conducted, students who smoke are more than a third of the respondents.^{33,36} In the analyzes carried out by Warren et al. out of more than 40 countries in which the GH-PSS survey was carried out, in 50% of these countries, the percentage of students declaring current smoking exceeded 20%. Similar results to those observed in the population of Polish and Czech students were recorded in a study conducted in Italy (29%), Lithuania (30%), Slovakia (29%) and lower in Germany (22%) and Spain (16%). A higher percentage of smoking students was observed in Bulgaria (52%), Greece (39%) and Russia (65%).³⁷⁻³⁹ Differences in the distribution of smoking in various countries may result from cultural differences - in China, there is practically no smoking occurrence among women who study at medical universities because it is related to cultural tradition and sanctions against women who smoke, especially unmarried women. Factors such as social acceptance, the lack of provisions sanctioning smoking in public places, conditions for advertising of cigarettes, economic conditions (low prices of tobacco products, better accessibility) and the level of medical care and public education regarding the harmfulness of smoking also contribute to the differences between countries. Similar results to those observed in our analyzes (among Czech and Polish medical students), regarding passive exposure to environmental tobacco smoke at home and in public places were recorded for other countries where the study was conducted in accordance with the GHPSS methodology (for example over 50% of medical students declared exposure to the environmental tobacco smoke (in home) and more than 70% in public places (in 29 out of 48 countries). In our analyzes, similarly to those recorded in Lithuania, Slovenia and Slovakia, over 90% of students indicated that the area of the university is subject to regulations prohibiting smoking. The lower percentage of students indicating the occurrence of these regulations was noted in other European countries. In the Czech population, over 90% of future physicians supported the ban on smoking cigarettes in restaurants, slightly less, about 80% of those polled expressed support for the introduction of such a ban in all public places. A large majority of Polish students also supported the ban on smoking in public plac-

es. The results obtained in the group of medical students are higher than for the general Polish society obtained in the GATS study, where 58% declared support for the ban on smoking in restaurants, while in bars, night-clubs and music clubs – only 37% of respondents. Higher than in Poland, the percentage of students supported the ban on smoking in public places in Germany and in Italy, lower - in Spain.^{40,37} A significantly higher percentage of respondents in both populations was exposed to environmental tobacco smoke in the home environment and public places. It should be mentioned that in the Czech Republic during the research the least restrictive law regarding smoking in public places was in force. Compared to most European countries, in the Czech Republic it was possible to smoke cigarettes in places where it is strictly forbidden in other European countries. Currently, the Czech government has introduced a law banning smoking in all restaurants, pubs and bars. The vast majority of both Polish and Czech students declared that the physician plays an important role in anti-tobacco counseling and about 90% of Czech students and 92% of Polish students decided that he should give advice on quitting tobacco addiction. Similarly to the results we analyzed, over 80% of students expressed the opinion that the physician plays an important role in giving advice on quitting smoking in 42 out of 46 countries in which the study covered medical students. A significant percentage of students in both Poland and the Czech Republic, as well as in other countries, claim that a doctor should be trained in anti-tobacco techniques and advice. In spite of this, only close to 3% of the surveyed students in the Czech Republic and less than 27% of medical students in Poland pointed to the training during the studies in the field of techniques supporting the quitting of cigarettes. Only in 2 out of 48 countries included in the GHPSS study, over 40% of medical students declared participation in such training.^{34,37,38,41}

Conclusion

Smoking by medical students in Poland and the Czech Republic is not uncommon. Analyzes carried out in the Czech Republic and Poland, as well as in other countries covered by the GHPSS study, indicate the urgent need to include practical activities during medical studies in the field of anti-smoking counseling. Over a fifth of Polish students and a quarter of Czech students declared themselves as active smokers. It is worrying that about half of Polish students were exposed to environmental tobacco smoke, while only one-fifth of Czech students declared such exposure. The overwhelming majority of students from these two countries confirmed the existence of a smoking ban in the university building, but worrying her that only more than half of Polish students said that the ban was observed (compared to Czech future doctors, where

compliance with this ban was indicated by more than 90 percentage of students). Students representing both surveyed nationalities mostly agreed in favor of a total ban on smoking in all public places. The vast majority of Polish students expressed the opinion that the physician plays an important role in shaping the attitudes of the health of patients among Czech citizens a little more than half of the students expressed this conviction. Polish and Czech students agreed that the doctor will play an important role in the patient's smoking cessation process and that physicians should give advice on quitting smoking. Over twenty percent more Polish students compared to students studying in the Czech Republic expressed the opinion about the need to train future doctors in the techniques of quitting smoking. A significant difference was visible in the case of students' declarations regarding such training during their studies. More than one-fifth of Polish students declared that they would undergo it, while Czech students declared that they did not undergo such training, however, they recognized that it could have a significant role in the process of quitting smoking by patients. Students are aware of the fact that future physicians have an important social role to play in disseminating knowledge in the field of public health and propagating preventive actions, including in the field of anti-tobacco counseling. Despite this, the classes carried out as part of medical studies do not include education in specific techniques, acquiring skills and knowledge necessary to help patients who want to quit smoking. The fight against tobacco addiction should be part of a broader strategy implemented by the all medical staff and aimed at reducing the overall risk of tobacco-related diseases, and consequently reduce mortality, morbidity and disability resulting from their occurrence.

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