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SOCIO-DEMOGRAPHIC FACTORS ASSOCIATED WITH SMOKING HABITS AMONG UNIVERSITY STUDENTS IN BELGRADE, SERBIA

SOCIODEMOGRAFSKI DEJAVNIKI, POVEZANI S KAJENJEM, PRI ŠTUDENTIH V BEOGRADU, SRBIJA

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ABSTRACT

Background: Smoking rates in Serbian adults are among the highest in Europe. The objective of this study is to assess the prevalence of smoking and smoking-related behaviours of Belgrade University students depending on their sociodemographic characteristics and faculty group.

Methods: A cross-sectional study was carried out among 2,608 Belgrade University students (59.6% female) in 2015. A self-administered questionnaire was applied to the opportunity sample to collect the data describing students' smoking habits and attitudes across all 30 faculties of the university.

Results: 30.5% of students reported smoking: 26.4% of medical, and 31.1% of non-medical ones. Smoking rate among female students was 31.2% vs. 29.5% among males. Age (p=0.001), relationship (<0.001) and employment status (p=0.002) had statistically significant influence on smoking status, while the differences in smoking status between genders (p=0.141) and medical and non-medical group of students (p=0.066) were not statistically significant. The highest percentage of students started smoking during high school (66.2%). As the most common reason to start smoking, respondents cited peer influence (36.5%). 44.3% of students who smoked unsuccessfully tried to quit smoking.

Conclusion: To combat high smoking prevalence among a younger population, the formal education of students about the adverse impacts of smoking should be integrated in all active anti-smoking programs. Medical students, as future healthcare professionals, can play an important role in smoking rates reduction among both younger and general populations, if properly trained and educated about smoking prevention and cessation techniques.

Keywords:
students, faculties, smoking, tobacco

IZVLEČEK

Ozadje: *Stopnja kajenja pri odraslih v Srbiji je med najvišjimi v Evropi. Cilj te študije je bil ovrednotiti razširjenost kajenja in vedenj, povezanih s kajenjem, med študenti beograjske univerze glede na njihove sociodemografske značilnosti in fakulteto, ki jo obiskujejo.*

Metode: *V letu 2015 smo med 2608 študenti v Beogradu (59,6 % žensk) izvedli presečno raziskavo. Uporabili smo samoodzivni vprašalnik, ki je zbiral podatke o kadilskih navadah in o odnosu študentov vseh 30 beograjskih fakultet do kajenja.*

Rezultati: *Da kadi, je poročalo 30,5 % študentov: 26,4 % študentov medicine in 31,1 % študentov drugih fakultet. Stopnja kajenja pri študentkah je bila 31,2-odstotna, pri študentih pa 29,5-odstotna. Starost (p = 0,001), stan (< 0,001) in zaposlitveni status (p = 0,002) so statistično značilno vplivali na status kajenja, medtem ko spol (p = 0,141) in študijska smer (medicina vs. nemedicina) (p = 0,066) nista bila statistično značilna. Največ študentov je začelo kaditi v srednji šoli (66,2 %). Kot najpogostejši razlog za začetek kajenja so anketiranci navedli vpliv vrstnikov (36,5 %). Neuspešno je poskušalo prenehati kaditi 44,3 % študentov.*

Zaključek: *V boj proti kajenju med mlajšo populacijo je v formalno izobraževanje študentov o škodljivih učinkih kajenja treba vključiti tudi vse aktivne protikadilske programe. Študenti medicine lahko imajo kot bodoči zdravstveni delavci pomembno vlogo pri zmanjševanju števila kadilcev pri mlajši in splošni populaciji, če so seveda ustrezno izobraženi o preprečevanju kajenja in poznajo tehnike prenehanja kajenja.*

Ključne besede:
študenti, fakultete, kajenje, tobak

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1 INTRODUCTION

According to the World Health Organization (WHO) data from 2008, 5.4 million deaths each year were attributed to tobacco (1). This number had risen to over 7 million annually by 2015 (2). WHO estimates that tobacco kills up to half of its users globally (3), and the same death rate is reported in 2014 by the European Commission for the European Union (EU) countries, where 50% of smokers die prematurely (14 years earlier on average) (4).

Average smoking rates are declining globally (WHO: 24% in 2007 – 21% in 2015) (2), but the number of smokers stagnates as the world population grows (5).

WHO estimated that out of 1.1 billion smokers in the world in the beginning of the 1990s, 800 million were from developing countries (5). The number of smokers remains unchanged to this day. Around 80% of smokers live in developing countries (3).

As WHO reported, the smoking rate in the Serbian population aged over 15 years stood at 33% in 2015. There were only six other European countries with smoking rates exceeding the 30% threshold: Montenegro (38%), Greece (35%), Russia (33%), Bosnia and Herzegovina (32%), Croatia (32%), and Latvia (31%). Results achieved in Slovenia and Albania, where the smoking rates in 2015 were 19% and 23% respectively, are an important reminder of the milestones Serbia should set as well (2).

A national health survey conducted in Serbia in 2013 showed smoking prevalence in persons over the age of 15 to be 34.7%: 31.6% among females (F) and 37.9% among male population (M). In particular, smoking prevalence in the age group of 15–24 years was 26%, increasing to 44.1% at 25–34 years (6).

In comparison to Serbia, the overall smoking prevalence in the EU in 2014 was lower (26%), but a larger share of young Europeans aged 15–24 were smokers (29%) (4). Similarly, Slovenia had a higher smoking prevalence among the younger population (25.2% in 15-year-olds, 2014 data) (7), than the overall smoking rate was (19%) (2).

Tobacco-related deaths in Serbia were estimated by WHO at 1.23 million of 2.46 million smokers in 2016. The death rate might even increase unless stronger tobacco-control policies are enforced (8). Although Serbia has significantly advanced its tobacco-control agenda, the smoking rate in the country is still high. Serbia signed the WHO Framework Convention on Tobacco Control (WHO FCTC) (9) in 2006, and smoke-free law was adopted in 2010 (10). Some of the key tobacco-control measures in line with the WHO FCTC and national laws (8–11) are:

- Protection from second-hand smoke at public indoor places (public transportation, educational, health, government facilities, but not at bars and restaurants)
- Access to smoking-cessation services at some healthcare facilities, covered by the national Health Insurance Fund
- Health warnings placed on cigarette packages (without accompanying graphic images)
- Gradual cigarette taxes increase (closing the gap between Serbian and EU cigarette prices)
- Occasional low-level media campaigns
- Restrictions on tobacco industry advertising, promotions and sponsorships

A smoke-free lifestyle should be promoted from childhood, and strengthened through school education (12). Healthcare professionals can influence their patients' smoking habits. There are plenty of studies on medical students' tobacco-related behaviour and attitudes, but non-medical faculties are barely analysed (13). Some authors marked the period of studying as the period of increased risk for students to start smoking or continue smoking more intensively, which is attributed to the additional stress, lack of restrictions/control from parents or regulations, social integration, and accessibility to tobacco (14).

Warren et al. reported that a high percentage of medical students from Serbia believed that health workers play a role in advising patients on quitting smoking (89.9%, 2006 data), and that health workers should get specific training on this subject (81.5%), but relatively modest formal training in smoking cessation was offered at medical schools (21.3% of participants from Serbia received any formal training in smoking cessation) (15).

We found no published data about the student population in Serbia analysed as per multiple predictors such as sociodemographic characteristics, factors of smoking pertaining to the social environment (influence of friends, family, social experiences, education), psychological indicators (behaviours, motives, attitudes), all investigated from an academic background perspective (by faculty group). Our research took all the listed variables into consideration when assessing smoking among Belgrade University students.

2 MATERIALS AND METHODS

The research objectives of our cross-sectional study were to assess the prevalence of smoking and smoking behaviours, motives, experiences and attitudes of undergraduate students attending the University of Belgrade (BU). Smoking prevalence was analysed by gender and faculty group. Smoking behaviours (smoking onset, length of smoking, and attempt to quit smoking) and motives (presence of smokers in the family and reasons for starting smoking) were analysed by faculty group. We analysed the differences in smoking experiences and

attitudes by sociodemographic characteristics, faculty group, and smoking status to estimate the influence of each variable on the smoking habits of students.

Particular attention was given to the differences in analysed variables between medical and non-medical students.

The survey was conducted between February and October 2015 among 2,608 students of all faculties at BU.

The selection criteria for participants were (a) studying at BU and (b) consent to participate in the research (outlined in the questionnaire introduction).

We chose BU, being the biggest and oldest university in Serbia, with enrolment of students from across the country accounting for 36% of total higher education students in Serbia (16). BU has 30 faculties seated in Belgrade divided in four sections: 4 Faculties of Medical Sciences (MF), 10 Faculties of Social Sciences and Humanities (SSHF), 6 Faculties of Natural Sciences and Mathematics (NSMF), and 10 Faculties of Technology and Engineering Sciences (TESF).

For the purposes of our research, the students were classified as per faculty groups. SSHF, NSMF, and TESF were observed as a single group of non-medical faculties (NMF) and the results were interpreted in comparison to the findings pertaining to the medical faculties (MF). Where no statistically significant differences were detected between MF and NMF, the differences were also investigated among the three sub-groups of NMF.

Respondents were classified according to their smoking status as:

- Non-smokers
- Ex-smokers
- Smokers

An anonymous self-administered questionnaire was designed specifically for this research. It contained 31 questions divided in four sections. Part one was applied to all respondents. It included questions on different sociodemographic factors and smoking status, and 5 questions about tobacco-related experiences and attitudes toward smoke-free legislation.

Three subsequent parts were applied to smokers, ex-smokers or non-smokers only. Depending on the reported smoking status, the participants were asked about onset age, length of smoking, reasons for starting/quitting smoking, number of smokers in the family, smoking habits and effects, attempts to quit smoking, and exposure to second-hand tobacco smoke.

The questionnaire was piloted among 50 students, in order to affirm whether the questions were clearly formulated. Reproducibility was estimated through a one-month test-retest among 50 students.

We used an opportunity sample comprised of students available at the time the study was carried out. To minimize the sample selection bias, the classes during which the questionnaires were administered were not chosen according to any prior scheme or selection criteria. The class sessions were mandatory for all the students of particular faculties and the researchers had no control or influence over the structure of attendees.

The sample was designed to include at least 5% (2,455) of the BU student population (49,105 – as per the total enrolment data provided by each faculty of the BU). The response rate of 98.9% was higher than expected, so the total number of participants reached 2,608 (5.3% instead of the planned 5% of the population).

The sample followed the population distribution by faculty groups and gender. The data on population structure by age/year of study was not available and, for potential differences in those variables, no weighting adjustments were applied as the population distribution was unknown. Program SPSS (SPSS 22.0 for Windows, SPSS Inc., Chicago, IL, USA) was used for collected data analysis. Descriptive statistics were used to describe the variables in the research. The data was analysed using a nonparametric chi-square (χ^2) test with a post-hoc Bonferroni test (when conducting multiple intragroups comparisons simultaneously). The significance level was set at 0.05. When χ^2 test indicated an overall significant difference between multiple groups, we were applying adjusted p value (Bonferroni correction) (17).

3 RESULTS

The total number of the students participating in the research was 2,608 (59.6% female). 12.6% of the respondents were from MF and 87.4% from NMF.

The distribution of sampled students by sociodemographic characteristics and faculty groups is presented in Table 1. The sample distribution by gender and faculty groups approximated the population structure. In the academic year 2015/16 (16), 59.6% of BU students were females, 12% were attending MF.

Table 1. Distribution of students by sociodemographic characteristics and faculty group.

Faculty Group / Sociodemographic characteristics	MF (n=329) 12.6%	TOTAL NMF (n=2,279) 87.4%	SSHF (n=1,225) 47%	NSMF (n=200) 7.7%	TESF (n=854) 32.7%	TOTAL (n=2,608) 100%
Gender (%)						
Female	63.5	59.1	68.9	66.0	43.3	59.6
Male	36.5	40.9	31.1	34.0	56.7	40.4
Age (Mean±Sd)	24.3±1.6	23.7±2.7	24.2±2.9	23.3±1.8	23.2±2.5	23.8±2.6
Year of study (%)						
I	9.4	22.2	17.4	24.2	28.5	20.5
II	18.9	22.6	16.9	30.4	29.0	22.1
III	52.5	24.5	26.2	21.6	22.8	28.1
IV	14.5	21.0	27.6	20.1	11.9	20.2
V	4.7	9.7	12.0	3.6	7.9	9.1

Average age of the respondents was 23.8±2.6 years. The third year of studying prevailed (28.1% vs. 9.1–22.1%).

The results of analysed influence of 4 predictors of smoking status are shown in Table 2.

Table 2. Smoking status and sociodemographic characteristics of students.

Predictors	Pearson's χ^2 test	P value	Statistically significant influence of predictors on smoking status
Gender	3.9	0.141	-
Age	15.1	0.001	Ex-smokers – ≤25 Ex-smokers – >25
Faculty group			
MF, SSHF, NSMF, TESF	14.4	0.025	Smoking status – MF and SSHF Smoking status – NSMF and SSHF
MF, NMF	5.4	0.066	-
Year of study	8.2	0.411	-

Age (p=0.001) and faculty group (p=0.025, all four groups analysed) had a statistically significant influence on smoking status.

There were no statistically significant differences in smoking status between students of MF and NMF (p=0.066). When all four faculty groups were included in the analysis, statistically significant differences in smoking status of students from MF and SSHF were discovered, as well as between those attending NSMF and SSHF.

An overview of the smoking status of the students by faculty group and gender is presented in Table 3.

Table 3. Smoking status of students by faculty group and by gender.

Faculty Group		Smoking status								P (Gender/ Smoking status)
		Non-smokers		Ex-smokers		Smokers		TOTAL		
		n	%	n	%	n	%	n	%	
MF	Female	149	71.3	6	2.9	54	25.8	209	8.0	0.224
	Male	79	65.8	8	6.7	33	27.5	120	4.6	
NMF	**Female**	**842**	**62.6**	**73**	**5.4**	**431**	**32.0**	**1346**	**51.6**	**0.244**
	Male	**591**	**63.3**	**64**	**6.9**	**278**	**29.8**	**933**	**35.8**	
SSHF	Female	517	61.3	46	5.5	281	33.3	844	32.4	0.029
	Male	230	60.4	36	9.4	115	30.2	381	14.6	
NSMF	Female	90	68.2	4	3.0	38	28.8	132	5.1	0.587
	Male	51	75.0	2	2.9	15	22.1	68	2.6	
TESF	Female	235	63.5	23	6.2	112	30.3	370	14.2	0.871
	Male	310	64.0	26	5.4	148	30.6	484	18.6	
TOTAL MF		228	69.3	14	4.3	87	26.4	329	12.6	0.066
TOTAL NMF		1433	62.9	137	6.0	709	31.1	2279	87.4	
TOTAL FEMALE		991	63.7	79	5.1	485	31.2	1555	59.6	0.141
TOTAL MALE		670	63.6	72	6.8	311	29.5	1053	40.4	
TOTAL		1661	63.7	151	5.8	796	30.5	2608	100.0	

The prevalence of smokers was lower among medical students than among non-medical ones (MF: 26.4% vs. NMF: 31.1%), but this difference was not statistically significant (p=0.066).

Although the percentage of smokers was higher among women (31.2% vs. 29.5%), the gender difference in smoking status among students was not statistically significant (p=0.141).

The analysis of smoking-related experiences and attitudes of students depending on their sociodemographic characteristics, faculty group, and smoking status is depicted in Table 4.

Table 4. Smoking experiences and attitudes of students by sociodemographic characteristics, faculty group and smoking status.

Predictors	Experience / Attitude									
	Attendance to tobacco industry sponsored event		Supporting the smoking ban		Compliance with the smoking ban at my faculty		There is a sufficiently broad debate about the harmful effects of smoking at my faculty		Adequate public health training is provided at my faculty	
	%	p	%	p	%	p	%	p	%	p
Gender										
Female	18.1	0.001	78.8	<0.001	61.7	0.251	11.5	0.377	12.2	0.066
Male	24.1		72.9		60.7		13.0		15.2	
Age										
≤25	18.6	<0.001	75.4	0.018	60.9	0.091	11.7	0.179	13.3	0.415
>25	30.1		81.5		62.8		14.2		13.5	
Faculty group										
MF	16.8	0.256	83.5	0.001	57.2	<0.001	35.8	<0.001	41.1	<0.001
SSHF	22.5		75.1		65.2		8.2		7.5	
NSMF	19.6		81.8		57.7		13.6		13.6	
TESF	19.3		74.2		58.1		8.2		11.1	
Year of study										
I	15.0	<0.001	70.3	0.001	62.1	0.005	11.4	<0.001	14.7	<0.001
II	18.3		75.0		65.0		9.2		10.5	
III	19.0		76.7		53.9		16.3		16.7	
IV	25.7		81.3		64.8		11.5		11.1	
V	28.9		84.2		63.2		10.5		10.7	
Smoking status										
Non-smokers	18.2	0.002	83.4	<0.001	60.7	0.011	11.6	0.002	14.1	0.061
Ex-smokers	28.7		75.8		59.7		8.7		11.6	
Smokers	23.7		62.1		62.8		13.9		12.4	
Total	20.5		76.4		61.3		12.1		13.4	

Experience with tobacco industry sponsored events depended on gender (p=0.001), age (p<0.001), year of study (p<0.001; I, IV and V year of study were statistically significant, as revealed using Bonferroni correction), and smoking status (p=0.002; non-smokers had statistically significant influence). Events sponsored by the tobacco industry were mostly visited by male students (24.1% vs. 18.1%), students older than 25 years (30.1% vs. 18.6%), fifth-year students (28.9% vs. 15.0–25.7%), and students who were ex-smokers (28.7% vs. 18.2–23.7%).

Support of the smoking ban at educational institutions depended on gender (p<0.001), faculty group (p=0.001; MF category had a statistically significant influence), year of study (p=0.001; I year of study was statistically significant) and smoking status (p<0.001; non-smokers and smokers). A smoking ban was supported by 76.4% of all students, mostly by females (78.8% vs. 72.9%), non-smokers students (83.4% vs. 62.1–75.8%), fifth-year students (84.2% vs. 81.3–70.3%), and those attending MF (83.5% vs. 81.8–74.2%).

Students' perception of the compliance with the smoking ban at their faculties was significantly influenced by their faculty group (p<0.001; SSHF), year of study (p=0.005; III year of study) and smoking status (p=0.011; smokers and non-smokers). The respondents who stated that the smoking ban was adhered to at their faculties were mostly smokers (62.8% vs. 59.7–60.7%), second-year students (65% vs. 53.9–64.8%), and those attending SSHF (65.2% vs. 57.2–58.1%).

Faculty group (p<0.001; MF, SSHF and TESF), year of study (p<0.001; III year of study) and smoking status (p=0.002; smokers and non-smokers) were statistically significant factors influencing the positive perception of the students on whether the harmful effects of smoking were sufficiently discussed at their faculties. The highest percentage of MF students (35.8% vs. 8.2–13.6%) and those in the third year of study (16.3% vs. 9.2–11.5%) believed that the adverse effects of smoking were addressed to a sufficient extent, and this perception was more common in smokers than in ex-smokers and non-smokers (13.9% vs. 8.7–11.6%).

Only two of the analysed variables (faculty group – MF and SSHF and year of study – III) had a statistically significant influence ($p<0.001$) on the students' attitude that perception that public health training was provided at their faculties.

The results of the analysis of smoking-related behaviours and motives of smokers per faculty group can be found in Table 5.

Table 5. Smoking behaviours and motives of students who smoked per faculty group.

Smoking behaviours and motives	FACULTY GROUP (%)						P (Behaviours & motives / Faculty group)
	MF	TOTAL NMF	SSHF	NSMF	TESF	TOTAL	
Smoking onset							
In elementary school	9.0	8.7	8.1	15.2	8.3	8.7	0.555
In high school	62.8	66.6	66.9	54.3	68.5	66.2	
At faculty	28.2	24.7	24.9	30.4	23.2	25.1	
Length of smoking							
Less than a year	10.3	13.4	11.5	28.3	13.5	13.1	0.068
1–5 years	71.8	67.1	67.5	58.7	68.0	67.6	
Over 5 years	17.9	19.5	21.0	13.0	18.4	19.3	
Presence of smokers in the family							
No	34.6	29.8	28.2	18.2	34.6	30.4	0.084
Yes	65.4	70.2	71.8	81.8	65.4	69.6	
One smoker	23.1	27.6	29.5	25.0	25.1	27.1	0.088
Two smokers	20.5	28.5	29.0	34.1	26.7	27.6	
Three smokers	7.7	7.3	7.8	13.6	5.3	7.3	
More than three smokers	14.1	6.8	5.6	9.1	8.2	7.6	
Reasons for starting smoking							
Stress	15.5	15.7	16.1	18.8	15.2	15.9	0.111
Peer influence	37.9	36.3	37.8	34.4	34.3	36.5	
Pleasure and party	15.5	14.7	16.8	3.1	13.5	14.8	
Personal attitude/choice	31.0	27.2	24.5	43.8	28.1	27.4	
I do not know/remember	0.0	6.0	4.9	0.0	9.0	5.4	
Attempted to quit smoking							
Yes	52.6	43.3	44.1	34.9	43.6	44.3	0.289
No	47.4	56.7	55.9	65.1	56.4	55.7	

As the most common reason to start smoking, respondents cited peer influence (34.3–37.9%) compared to personal attitude (24.5–43.8%), stress (15.2–18.8%), pleasure and party (3.1–16.8%). 5.4% of all smokers were not aware or had no recollection of the reason.

NSMF had the highest percentage of students who smoked that had smokers in their families (81.8% vs. 71.8–65.4% in SSHF and TESF respectively and 65.4% in MF). More than three smokers in the family was the most frequent occurrence among smokers from MF (14.1%).

55.7% of all smokers never tried to quit smoking. Over half of medical students (52.6% vs. 34.9–44.1%) did try to quit smoking.

4 DISCUSSION

Although data on smoking prevalence in Serbian medical students is available (15, 18), much less is known about smoking prevalence, behaviours, motives, experiences, and attitudes among other students. Studies addressing smoking in university settings in Serbia were usually limited to a specific age group (year of study), certain group of students, or focused on general health issues, without investigating smoking-related behaviours and attitudes (18–21). Our research included all medical and non-medical BU faculties, assessing both smoking prevalence and other smoking-related variables.

In 2009, a cross-sectional study about the health-related quality of life of BU students was carried out at The Institute for Students' Health of Belgrade University. The survey sample included 1.8% of BU students from all faculties, and the results revealed 21.1% of smokers (19). 2008 research about a smoking ban in closed public places, similar to ours in its methods (cross-sectional study, self-administered questionnaire, 5% of the population) was conducted among BU students from all faculties. It showed that 29.5% of BU students were smokers (18). Our research found that the smoking prevalence among BU students even increased slightly since 2008 (30.5% vs. 29.5%) (18).

We found no smoking-related research conducted among all students of other major universities in Serbia (University of Novi Sad – NSU, and the University of Niš – NU). At NSU in 2010/11, 5% of randomly selected first and final year students were surveyed to determine the prevalence of smoking among NSU students, and 26.7% of participants reported to be smokers (20). A 2007/08 mixed methodology study about the risk factors of cardiovascular diseases among medical students of their final year at NU found that a quarter of participants were smokers (21).

A Global Health Professions Student Survey (GHPSS) conducted among third-year medical students from 2005–2008 cross-nationally (during 2006 in Serbia), using the same tools as we did, revealed that 34.7% of participants in Serbia were smokers (15).

The prevalence of smokers among first-year medical students at the University of Prishtina, Kosova in 2011, was 8.9% for general medicine students (22).

Our study revealed a much higher prevalence of smokers among medical students than in Kosova research, but still lower than the GHPSS results from 2006 indicated.

Studies conducted in Greece (23), Italy (24) and Portugal (25), from 2005–2007, were assessing smoking among medical and non-medical students at university settings. These studies used the same methods and tools as we did. We observed a lower smoking prevalence among BU students than reported in Italy and Greece (30.5% vs. 37.4–46.9%), but higher compared to Portugal's results (21.6%).

Our study found a higher percentage of smokers among students of NMF than in MF (31.1% vs. 26.4%), but the difference was not statistically significant. Higher smoking rates among non-medical students were also found in Italy (40.9–42.9% compared to 20.1% of medical students), Greece (50.2% vs. 35.5%), and Portugal (27.1% vs. 16.3%) (23–25).

Our research showed that smoking prevalence tended to be higher in female students, but this gender difference was not statistically significant (F:31.2% vs. M:29.5%, p=0.141). At NSU, a higher percentage of smokers was observed among male students (30% vs. 23.5%) (20), while at NU the distribution was nearly the same between men and women (M:25.4% vs. F:25.2%) (21). Contrary to our findings, higher smoking rates were found among male students in Greece (44% vs. 42%), Italy (38.4% vs. 36.8%) and Portugal (32.8% vs. 10.9%) (23–25).

Smoking prevalence among female students at NMF of BU was higher than in male students (32.0% vs. 29.8%, p=0.244), while the results for the MF were opposite (F:25.8% vs. M:27.5%, p=0.224). However, the observed gender differences had no statistical significance. In Italy, smoking prevalence among female students at MF was higher (F:21.1% vs. M:18.2%), while at NMF male students had a higher percentage of smokers (M:43.6% vs. F:41.8%) (24).

The reported reason for smoking initiation was mostly peer influence, as 36.5% of all smokers in our research stated this reason as a dominant factor of smoking initiation. Peer influence was also the most common reason for starting smoking in EU countries (79% of all ever-smokers in the EU), as per 2012 European Commission data (26).

We found that 66.2% of smokers among BU students started smoking at high school (before turning 18), and 25.1% even later, at faculties. In Greece, over 50% of smokers among students started smoking after enrolling into faculty (23). In EU countries, according to 2012 data, 70% of ever-smokers started smoking as minors (26).

Non-smokers were more supportive of law on a smoking ban in public places (83.4% vs. 62.1–75.8% smokers and ex-smokers), and the same results were obtained in other studies (14).

62.1% of smokers at BU supported the smoking ban, while 44.3% of smokers tried to quit smoking (MF:52.6% vs. NMF:43.3% [34.9–43.6%]). This is in line with the EU results, where 45% of smokers among European students tried to quit smoking (26). Only 5.8% of students from BU succeeded in quitting. As the majority of smokers had a positive attitude toward smoke-free legislation, while only 12.4% believed that adequate public health training was organized at their faculties, the success rate of smoking cessation could be increased with proper smoking-cessation assistance provided at faculties.

Our research has some limitations, as cross-sectional study design does not allow for causal relationships to be established among variables. Given the large population, we used an opportunity sample for practical reasons.

To minimize sampling bias, we followed the population distribution, and the questionnaires were administered during classes without favouring any particular courses. Regardless of the limitations, our findings provide a valuable reference point for future studies of related topics.

5 CONCLUSION

BU students, including smokers, were overwhelmingly supportive of the smoking ban. A high share of smokers, especially among medical students, did try to quit smoking, but to no avail. To combat a high smoking prevalence among younger populations, a formal education of students about adverse impacts of smoking should be integrated in all active anti-smoking programs. Medical students, as future healthcare professionals, can play an important role in smoking rates reduction among both younger and general populations, if properly trained and educated about smoking prevention and cessation techniques. Professional assistance and counselling across students' community can boost the success rate of smoking cessation among BU students.

CONFLICTS OF INTEREST

The authors declare that no conflicts of interest exist.

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ETHICAL APPROVAL

The survey was preapproved by the Ethics Committee for biomedical research of the Faculty of Pharmacy, University of Belgrade.

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