Arh. farm. 2025; 75: 287 – 297 *Original scientific paper/Originalni naučni rad*

Is primary prevention accessible to students?

Andrijana Milošević Georgiev[1*], Lea Neškov[1], Sonja Nikić[1], Dragiša Obradović[†], Valentina Marinković[1], Marina Odalović[1], Dušanka Krajnović[1]

[1]University of Belgrade – Faculty of Pharmacy, Department for Social Pharmacy and Pharmacy Legislation, Vojvode Stepe 450, 11221 Belgrade, Serbia

†PhD student at the University of Belgrade – Faculty of Pharmacy, Vojvode Stepe 450, 11221 Belgrade, Serbia

*Corresponding author: Andrijana Milošević Georgiev,
e-mail: andrijana.milosevic@pharmacy.bg.ac.rs

Received: 25 June 2025; Revised in revised forme: 30 July 2025; Accepted: 07 August 2025

Abstract

The college years are critical to students' health as they face various challenges, including social influences and unhealthy lifestyles. Limited access to health services in residence halls increases the risk of unhealthy behaviours. The aim of this study was to investigate students' attitudes towards public health services for primary prevention in dormitories and to make suggestions for improvement. A cross-sectional study was conducted using a questionnaire among students living in halls of residence. The survey explored students' views on healthcare and the availability of preventive services for students living away from home. A total of 996 students participated (response rate 99.1%). Most were unemployed (83.9%). The most frequent preventive visits were to dentists (34.4% twice a year, 24.7% once a year), while 37.7% never visited a gynaecologist/urologist. The majority (68.6%) stated that a pharmacy was necessary in their dormitories. Basic health services include general practitioners (82.3%) and psychologists (21.4%). Attitudes towards health centres varied significantly by place of residence ($p<0.001$). Primary prevention should be improved by health centres with student-friendly opening hours and additional activities that promote access to healthcare and awareness of prevention.

Key words: primary prevention, student population, pharmacy services, public health services

https://doi.org/10.5937/arhfarm75-59748

Introduction

The period of college studying is critical for an individual's health as students face many challenges, such as a changed social environment and new living conditions. During this period of life, students are more prone to engage in risky health behaviours. The start of university coincides with the transition from adolescence to adulthood, so young students often experiment with new lifestyles that often continue in later life. Sometimes the fast-paced world and high social responsibilities lead students to adopt inappropriate lifestyles (1, 2, 3). Special attention should be paid to health promotion among students, as there is evidence that their behaviours and lifestyles can become problematic (4). Students spend a lot of time at universities and therefore on-site health promotion programmes are invaluable in influencing positive lifestyles in the student population (5).

Some diseases such as sexually transmitted infections, high blood pressure, mental health symptoms and mental illnesses, obesity and overweight are also on the rise among university students (6). Factors that contribute to a healthy lifestyle include proper nutrition, physical activity, stress reduction and access to preventive healthcare (7).

According to the WHO World Health Report, preventive healthcare programmes such as smoking cessation, reduction of stress and alcohol consumption, physical activity, healthy diet, but also the availability of preventive healthcare (especially primary prevention) can contribute to a healthier life and better quality of life throughout one’s lifetime, including old age (8). Primary prevention is mainly aimed at reducing the risk of developing diseases. It is therefore very important to identify people at risk. This allows timely action to be taken, wich can and should change reversible risk factors (9, 10, 11). Studies show a significant positive correlation between health awareness and healthy lifestyle among students. The more health-conscious students are, the more likely they are to engage in positive health behaviours (12). Identifying the most common and important behavioural risk factors in the student population, which should be the leading force in society, has many benefits: 1) higher quality of life for those who have studied throughout their lives; 2) reduction in healthcare costs and medical treatment of diseases that could have been prevented or adequately treated in the early stages; 3) more rational decision-making in the healthcare (13).

In Serbia, students are covered by health insurance until the end of higher education or until the age of 26 at the latest (14), which is accepted by public health institutions. Students can choose their doctor from a health centre at the place of their registered residence or the place of study. This right is exercised at the place of study, in an institution specializing in student healthcare (the Institute for Student Healthcare). Otherwise, students remain under the care of the doctor of their choice at the healthcare centre in their place of residence (15). Each student can have a doctor of their choice, their medical records are kept either at the place of residence or at the place of study. There are five institutes for student healthcare in the Republic of Serbia (Belgrade, Niš, Novi Sad, Kragujevac and Kosovska Mitrovica), the largest of which is located in

Belgrade. The public health institutions provide medical services covered by the statutory health insurance which is run by the Republic Health Insurance Fund (RHIF).

In addition to the state healthcare facilities (listed in the Network of Healthcare Facilities Plan), the Serbian healthcare system also includes privately owned healthcare institutions. The total number of state health facilities in 2023 is 332. According to the Decree on the Plan of the Network of Healthcare Facilities, there are 37 state-owned public pharmacies (the number does not include branches), but outside the network plan of health facilities there are also privately owned pharmacies that dispense medicines at the expense of the RFZO (total number of branches: 3410) (16-18).

The aims of the study were to analyse students' attitudes towards public health services in the context of primary prevention in dormitories and to propose measures to improve primary prevention and to analyse the frequency of and reasons for visits to the doctor.

Materials and methods

A prospective cross-sectional study was conducted using an appropriate questionnaire among the student population residing in the dormitories during their studies. The questionnaire was designed to explore students' views on healthcare and the availability of preventive healthcare to students whose place of study does not match the place of residence. An anonymous, self-administered questionnaire developed specifically for this research consists of 4 parts. The general part of the questionnaire was intended for obtaining the demographic data of the respondents (year and place of birth, faculty attended, year of study and employment status, and length of living in dormitory). The specific research questions related to: 1) the attitudes and beliefs of dormitory residents toward healthy lifestyles,; 2) dormitory residents’ behaviour regarding visits to general practitioners (GPs), dentists, gynaecologists/urologists and pharmacy visits; 3) students’ attitudes toward existence of dormitory healthcare units and pharmacies offering primary prevention services. The study was conducted in 10 halls of residence between January and November 2016. Only 2 of the 10 surveyed dormitories had their own healthcare units. The research was approved by the Ethics Committee for Biomedical Research, Faculty of Pharmacy, University of Belgrade (No 2490/1).

The students who participated in the survey were residents of 10 dormitories of the Belgrade Student Centre (the largest student centre in the Republic of Serbia). An adequate sample was defined as 10% of the total number of students per each dormitory, including students from all faculties and years of study. The faculties are divided into 4 groups: Faculties of Medical Sciences (MF), Faculties of Social Sciences and Humanities (SSHF), Faculties of Natural Sciences and Mathematics (NSMF), and Faculties of Technology and Engineering Sciences (TESF). The only inclusion criterion for the research was the voluntary participation of the participants, which was essential for the realisation of this study. Only fully completed questionnaires were included in the analysis. By completing the anonymous and voluntary questionnaires, respondents gave their informed consent to participate in the survey.

Descriptive statistics were used to describe the socio-demographic and attitudinal variables. The chi-squared test ($\chi 2$) was used to analyse the relationships between the variables. The significance level was set at 0.05. Statistical software *SPSS (SPSS 25.0 for Windows, SPSS Inc., Chicago, IL, USA)* was used to analyse the data.

Results

The total number of respondents was 996 (response rate 99.1%). The average age of the respondents was 24.36 ± 1.785 years (21 — 33), and the average length of stay in a student dormitory was 28.84±17.867 months. The profile of the respondent was an unemployed 24-year-old male, who was attending the third year of SSHF and had lived about 2.5 years in the dormitory. The socio-demographic characteristics of the respondents are shown in Table I.

Table I Distribution of students by socio-demographic characteristics and the presence of healthcare units in their dormitory

Tabela I Raspodela studenata prema sociodemografskim karakteristikama i postojanju zdravstvenih ambulanti u njihovom domu

Existence of a healthcare units in dormitory / socio-demographic characteristics	TOTAL n=996 (100%)	Dormitory with a healthcare units n=558 (56%)	Dormitory without a healthcare units n=438 (44%)
Gender			
Female	487 (48.9)	272 (48.7)	215 (49.1)
Male	509 (51.1)	286 (51.3)	223 (50.9)
Year of study			
I	82 (8.2)	36 (6.5)	46 (10.5)
II	228 (22.9)	125 (22.4)	103 (23.5)
III	270 (27.1)	148 (26.5)	122 (27.9)
IV	238 (23.9)	145 (26.0)	93 (21.2)
V	178 (17.9)	104 (18.6)	74 (16.9)

The percentage of male (M) participants in the research was slightly higher than that of female respondents (F) (M: 51.1% vs. F: 48.9%). Most of the students were in the third year of their studies (27.1%), followed by the fourth and second year (23.9% and 22.9%). Most of the respondents were unemployed (83.9%), while only 16.1% were working while studying.

The frequency of visits to the doctor by students, broken down by speciality, is shown in Table II.

Table II Frequency of student's visits to specialist

Tabela II Učestalost poseta studenata lekarima specijalistima

Frequency of visits to the doctor / doctor speciality	Twice a year	Once a year	Only for a health problem	Never
General practitioner	107 (10.7)	125 (12.6)	645 (64.8)	119 (11.9)
Dentist	343 (34.4)	246 (24.7)	348 (35.0)	59 (5.9)
Gynaecologist / urologist	137 (13.8)	169 (17.0)	314 (31.5)	376 (37.7)

The majority of respondents went to a GP only when facing a health problem (64.8%), while a significantly lower percentage of them went for annual medical check-ups (12.6%). As a matter of prevention, students most often visited dentists (34.4% twice a year and 24.7% once a year). More than a third of respondents (37.7%) did not go to gynaecologist/urologist at all.

According to the respondents, the low frequency of visits to the doctor is mainly due to the lack of habit of carrying out preventive examinations (45.4%) (Table III).

Table III Distribution of students by reasons for not visiting doctors more frequently and the existence of healthcare units in their dormitory

Tabela III Raspodela studenata prema razlozima zbog kojih ne posećuju lekara češće i postojanju jedinica zdravstvenog centra u njihovom studentskom domu

Existence of a healthcare units in dormitory / reasons for not going to the doctor more often	TOTAL n=996 (100%)	Dormitory with a healthcare units n=558 (56%)	Dormitory without a healthcare units n=438 (44%)
No time	81 (8.1)	52 (9.3)	29 (6.6)
Waiting too long for an examination	175 (17.6)	90 (16.1)	85 (19.4)
Unfriendly staff in a healthcare facility	104 (10.4)	60 (10.7)	44 (10.0)
Not established habit of screening	452 (45.4)	255 (45.7)	197 (45.0)
Not sure	246 (24.7)	144 (25.8)	102 (23.3)

Other reasons for not visiting a doctor included "waiting too long for an examination" (17.6%) and "no time" (8.1%). More than half of the respondents who went to see a doctor, usually went early in the morning (52.4%). 55.8% of respondents stated that they visited a pharmacy several times a year.

The research also assessed students' views on the importance of leading a healthy lifestyle. The results are depicted in Figure 1. According to the respondents', a healthy lifestyle primarily refers to a healthy and balanced diet (79.1%), followed by a non-smoking status (48.6%) and avoiding stress (46.9%).

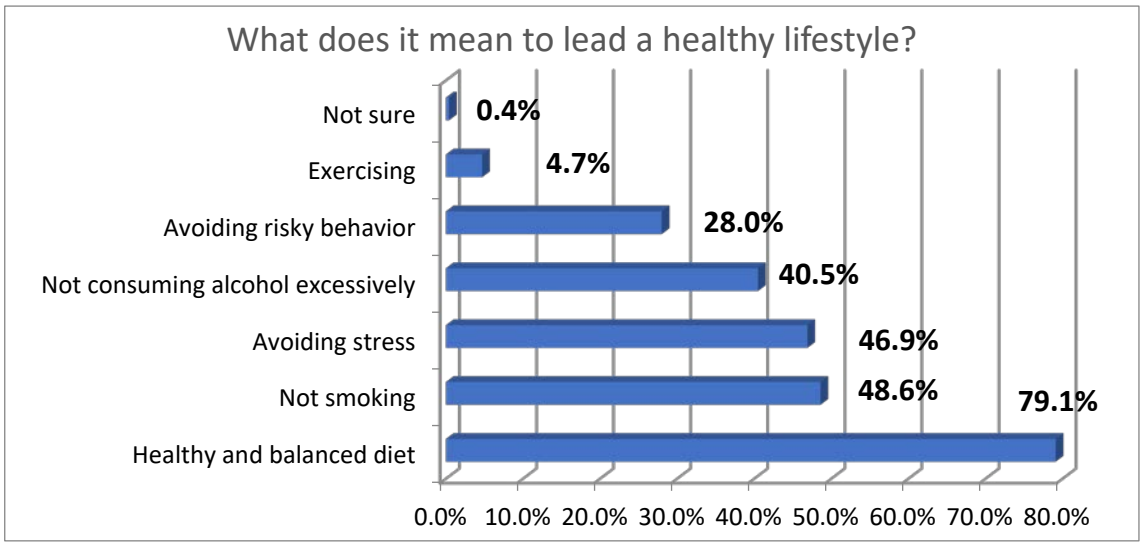

Figure 1. Students' perceptions of healthy lifestyle

Slika 1. Studentska percepcija zdravog načina života

Only 2 of the 10 dormitories surveyed had healthcare units. 86.5% of all respondents believed that there was a need for a healthcare unit within their dormitories. However, 68.6% of the respondents stated that a pharmacy with a full range of pharmaceutical products was also necessary within their dormitories.

According to the respondents, the health services that should be available in dormitories are depicted in Figure 2. Outlined by the respondents most significant health service that should be available in dormitories was the provision of GPs' services (82.3%), but a high percentage of the respondents (21.4%) stated that psychologists were also required.

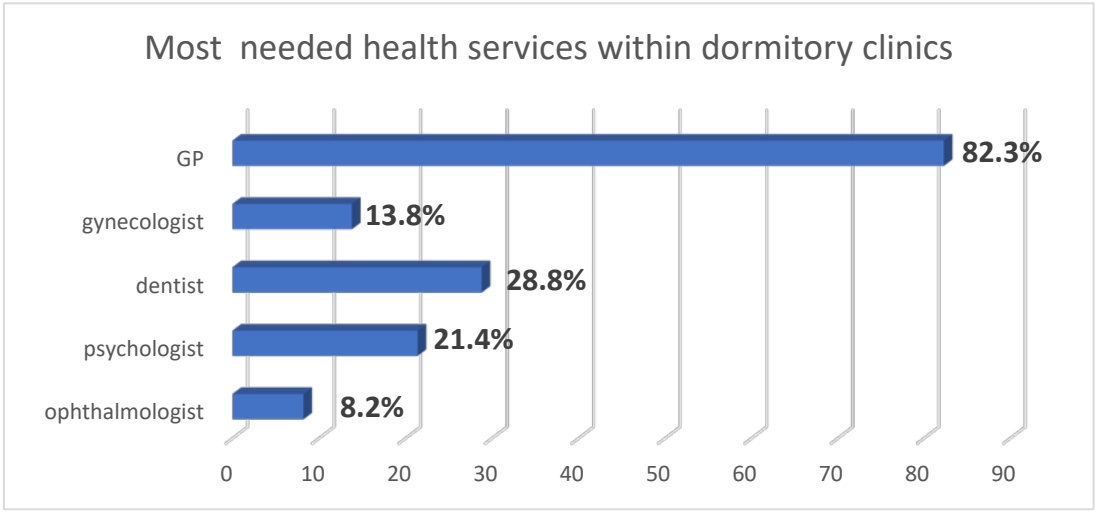

Figure 2. Students' views on the most needed health services in dormitories (ophthalmologist, psychologist, dentist, gynaecologist, GP)

Slika 2. Stavovi studenata o najpotrebnijim zdravstvenim uslugama u domovima (oftalmolog, psiholog, stomatolog, ginekolog, lekar opšte prakse)

The percentage of respondents who visited a doctor in the student clinics at the place of study was higher than those who visited health centres at the place of their living (47.9% vs. 39.3%). The place of registered residence and the place of study were not identical in the observed sample.

There was a statistically significant difference in the attitudes of the respondents towards the necessity of healthcare units at dormitories, depending on whether they lived in a dormitory with or without a healthcare unit ($p<0.001$). The percentage of the respondents who saw a health centre as a necessary facility was higher among students living in dormitories with healthcare units (90.5% versus 81.5%). Similarly, there was a higher percentage of the respondents that considered a pharmacy to be a required feature among students who lived in a dormitory with a healthcare unit (81.9% compared to 51.6%). According to the respondents from both groups, the most favourable working hours for clinics are from 8 AM to 8 PM in two shifts. Those living in dormitories with healthcare units were more in favour of these working hours (52.5% vs. 40.2%) and less in favour of a single morning shift (5.7% vs. 24%).

Discussion

Based on students' attitudes, this study finds that the availability of healthcare services and primary prevention is linked to the physical availability of healthcare facilities and their working hours. However, with the widespread use of digital technologies today, it is possible to improve the quality of preventive healthcare by using those technologies in the form of telemedicine and telepharmacy without putting significant additional resources into healthcare. A list of closest pharmacies, dentists, ophthalmologists and private clinics can be published on the official website of a healthcare institution specialising in student healthcare. It would also be of great importance if there were two separate telephone lines – one for emergencies and the other for non-urgent information. It would be important for students to be able to communicate with their chosen doctors to make primary prevention more accessible. Another primary prevention quality improvement measure could be the provision of primary prevention services at the faculties of pharmacy, medicine and dentistry.

Placing educational posters in highly visible places in dormitories can have a positive impact on student education. Constant messages through educational materials can change their attitude and then behaviour. Conducting regular mandatory medical check-ups within student population is required with the aim of obtaining health status of each student as an individual, but also to identify risk factors for possible health complications at a later time. Raising the awareness about the importance of primary prevention among health professionals is necessary, and in this sense, primary prevention should also be carried out during unscheduled check-ups (as soon as a health problem prompts the student to see a doctor).

The prevalence of unhealthy lifestyles is increasing worldwide. Lifestyle has a direct impact on the prevalence of comorbidities, and a healthy lifestyle at a young age has a positive effect on reducing the risk of comorbidities in later life (19). Many health

disorders begin occurring at a young age. For example, most mental disorders begin occurring at the age of 15 (20). Health is an important factor in academic performance (21). Universities should contribute to health promotion through primary prevention as well as promoting academic achievement. Most students are insured and have access to health services. As this study has shown, students are not accustomed to attending preventive check-ups. On the other hand, this is the most critical time for the development of initial health problems due to the lifestyle typical of this stage of life (1, 3). Poor studying performance is associated with physical, mental and emotional problems. Studyng success can also be affected by malnutrition, tobacco use, psychoactive substances, alcohol and energy drink consumption, physical inactivity, depression and stress (21).

For milder health conditions, such as colds, pharmaceutical care can meet all students' needs. As medication experts, they can advise students about rational pharmacotherapy. They can also address areas such as emergency contraception ("the morning after pill"), colds and flu, allergies, or provide consultancy on whether a doctor should be seen. Pharmacists can provide important advice on healthy lifestyle, and no appointment is required. Such a poor record of visiting physicians, according to the attitudes of the respondents, was mostly due to a lack of the habit of preventive screening (45.4%) and waiting too long for an examination (17.6%). For more complicated conditions, students should consult a doctor. How can a student know whether an illness requires urgent attention? Emergency or information hotlines can help (22). Staff in charge of communication with students would not have to be present at healthcare facilities, but rather readily available. Examples of the described practices can be found at leading universities worldwide (Harvard University, Imperial University London, Massachusetts Institute of Technology). The health centres at these universities also offer services for visiting parents or other citizens. These services are charged extra so that the health centres can generate additional income (22). In addition to educating students about the importance of screening, parallel work must be done to educate them about healthy lifestyles. During the outbreaks of infectious diseases such as flu or the recent COVID-19 pandemic, doctors recommend avoiding large groups (lectures, exercises, etc.). Students who are obliged to attend compulsory classes do not respond adequately to this recommendation, as there is no effective service that allows sick students to present a certificate of absence from the university (23). This study has limitations. As it is a descriptive cross-sectional prevalence study, the direction of impact cannot be determined. The data were collected in a single city. Self-assessment may be influenced by bias and socially desirable responses.

Conclusions

Preventive screenings are important for primary prevention, as well as education and creating a positive attitude among students about the importance of primary prevention and a healthy lifestyle. Students' health habits are at odds with recommended health behaviours that reduce the risk factors for developing chronic diseases later in life.

Inadequate attendance at check-ups due to a lack of health problems among young students can lead to certain health conditions not being recognised, which can have a significant impact on the quality of life. The availability of primary prevention needs to be improved, both through healthcare centres with working hours that meet students' needs and through additional activities and education that can improve students' access to healthcare.

Acknowledgements

This research was funded by the Ministry of Science, Technological Development and Innovation, Republic of Serbia through two Grant Agreements with the University of Belgrade —Faculty of Pharmacy No 451-03-136/2025-03/200161 and No 451-03-137/2025-03/200161.

Conflict of interest

The authors have no conflicts of interest to declare.

Author contributions

AMG and DK: Conceptualization,Data curation, Visualization,Methodology; AMG, DO: Formal analysis; AMG, LN, SN, DO: Investigation and Writing – original draft; DK: Supervision, Writing — review & editing.

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Da li je primarna prevencija dostupna studentima?

Andrijana Milošević Georgiev[1*], Lea Neškov[1], Sonja Nikić[1], Dragiša Obradović[†], Valentina Marinković[1], Marina Odalović[1], Dušanka Krajnović[1]

[1]Univerzitet u Beogradu – Farmaceutski fakultet, Katedra za socijalnu farmaciju i farmaceutsko zakonodavstvo, Vojvode Stepe 450, 11221 Beograd, Srbija

[†]Doktorand na Univerzitetu u Beogradu – Farmaceutski fakultet, Vojvode Stepe 450, 11221 Beograd, Srbija

*Autor za korespondenciju: Andrijana Milošević Georgiev,
e-mail: andrijana.milosevic@pharmacy.bg.ac.rs

Kratak sadržaj

Period studiranja je ključan za zdravlje studenata, jer se suočavaju sa različitim izazovima, uključujući društvene uticaje i nezdrav način života. Ograničen pristup zdravstvenim uslugama u studentskim domovima povećava rizik od nezdravih ponašanja. Ova studija imala je za cilj da istraži stavove studenata o javno-zdravstvenim uslugama za primarnu prevenciju u studentskim domovima i predloži poboljšanja. Sprovedena je studija preseka korišćenjem upitnika među studentima koji žive u domovima. Anketa je procenjivala stavove studenata o zdravstvenoj zaštiti i dostupnosti preventivnih usluga za one koji studiraju van mesta prebivališta. U istraživanju je učestvovalo 996 studenata (stopa odziva 99,1%). Većina je bila nezaposlena (83,9%). Najčešće preventivne posete bile su stomatološke (34,4% dva puta godišnje, 24,7% jednom godišnje), dok 37,7% nikada nije posetilo ginekologa/urologa. Većina (68,6%) smatra da je apoteka neophodna u studentskom domu. Najvažnije zdravstvene usluge uključuju lekare opšte prakse (82,3%) i psihologe (21,4%). Stavovi o zdravstvenim centrima značajno su se razlikovali u zavisnosti od postojanja takvog centra u domu ($p<0,001$). Primarna prevencija treba da se poboljša kroz zdravstvene centre sa prilagođenim radnim vremenom i dodatne aktivnosti koje poboljšavaju pristup zdravstvenoj zaštiti i podižu svest o značaju prevencije.

Ključne reči: primarna prevencija, studentska populacija, apotekarske usluge, javne zdravstvene usluge