Paper Accepted[*]

Original Article / Оригинални рад

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Sociodemographic and socioeconomic predictors of unmet health care needs of adolescents and young adults in Serbia – a part of the national research

Социодемографски и социоекономски предиктори неоствaрених здравствених потреба адолесцената и младих одраслих у Србији – део националног истраживања

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SUMMARY
Introduction/Objective Recognizing the reasons for the unmet health needs of adolescents and young adults is important for identifying the barriers in solving certain health problems, as well as for monitoring the availability, level of use and implementation of health care. The aim of this study was to establish the socio-demographic and socio-economic parameters associated with unmet healthcare needs of adolescents and young adults in Serbia.

Methods This cross-sectional study is a part of the 2019 Population Health Survey of Serbia, carried out by Statistical Office of the Republic of Serbia in cooperation with the Dr. Milan Jovanović Batut Institute of Public Health of Serbia and the Ministry of Health of the Republic of Serbia, on a stratified two-stage sample. The survey included 1519 respondents, aged 15–24 years. The instruments and methodology of the European Health Survey – third wave (EHIS-wave 3) were used. Factors associated to unmet healthcare needs were examined using logistic regression and the χ^2 test.

Results Unfulfilled health needs were present in 4.1% of respondents, and the dominant reasons were finances (44.4%) and long waiting times (34.9%), distance from health institutions was recorded in 1.6% of respondents, while 19.5% of respondents stated several reasons. Multivariate analysis revealed that significant parameters of unmet healthcare needs include: age, region, marital and employment status.

Conclusion The results of this research can give a new direction in creating strategies and defining preventive programs to reduce inequality in the health of adolescents and young adults improve the health of future young generations.

Keywords: healthcare; health services' needs; adolescents; young adults; health surveys; Serbia

САЖЕТАК
Увод/Циљ Препознавање разлога неостварених здравствених потреба адолесцената и младих одраслих важно је како би се сагледале препреке које стоје на путу решавања одређених здравствених проблема, пратила доступност, степен коришћења и спровођења здравствене заштите. Циљ истраживања је био да утврђивање социо-демографских и социо-економских фактора који су повезани са неоствареним здравственим потребама адолесцената и младих одраслих у Србији.

Методе Ова студија пресека је део Националног истраживања здравља становништва Србије 2019. године, коју је спровео Републички завод за статистику, у сарадњи са Институтом за јавно здравље Србије „Др Милан Јовановић Батут“ и Министарством здравља Републике Србије, на стратификованом двостепеном узорку. Истраживањем је обухваћено 1519 испитаника, узраста од 15 до 24 године. У овој студији коришћени су инструменти и методологија трећег таласа Европског здравственог истраживања (ЕХИС-талас 3). Одређени фактори повезани са неоствареним потребама здравствене заштите испитани су коришћењем логистичке регресије и хи-квадрат теста.

Резултати Неостварене здравствене потребе биле су присутне код 4,1% испитаника, а доминантни разлози били су финансије (44,4%) и дуго чекање (34,9%), удаљеност од здравствених установа забележена је код 1,6% испитаника, док је 19,5% испитаника навело више разлога. Мултиваријантна анализа показује да су значајни индикатори неостварених потреба за здравственом заштитом: животна доб, регион, брачни статус и радни статус.

Закључак Резултати овог истраживања могу дати нови правац у креирању стратегија и дефинисању превентивних програма за смањење неједнакости у здрављу адолесцената и младих одраслих и унапређење здравља будућих младих генерација.

Кључне речи: здравствена заштита; потребе за здравственим услугама; адолесценти; млади одрасли; истраживања здравља; Србија

INTRODUCTION

A society's systematic, all-encompassing efforts to maintain and enhance its members' health are known as health care. The health care system consists of institutions, laws and other

regulations in the field of health, as well as organizations dealing with health insurance. Its main goal is the prevention of diseases and health disorders, the improvement and restoration of health and it is responsible for implementation of programs and providing services to individuals, families and society. This system is society's response to all unforeseen events that lead to endangering health, and is available as much as the individual or the health system allows it [1, 2, 3]. How much health services will be used depends on the number of services offered, the speed of development of health technologies and how accessible and affordable they are [3, 4]. One of the most important markers of disparities in health care access, implementation and utilization is the unfulfilled need for medical care. An unmet need for health care is present in an individual who has recognized the need for specific medical care, but does not obtain it. Research has shown that unmet needs for medical treatment have an impact on one's health and life quality [5]. They can also raise one's chance of dying or be linked to a wide range of psychological and psychosomatic disorders [3]. Certain socio-demographic and socio-economic factors such as a person's age, gender, education level, inadequate material status, unemployment and distance of settlements from cities are all linked to an unmet health care needs [3, 6, 7]. Research of EU Statistics on Income and Living Conditions (EU-SILC) conducted in 2022 shows that 4.1% of individuals 16 years of age and older in the EU reported having an unfulfilled need for health care and that the two most typical causes of unfulfilled medical needs were bad financial situation and long waiting [6]. The most precious part of any society are children and adolescents; therefore, their health is a priority task of every society. The United Nations Global Strategy for Women's, Children's and Adolescent Health (2016-2030) supports the goal of giving adolescent health more attention [8]. Since its founding in 1948, the World Health Organization (WHO) has considered health believed that having good health was a basic right, irrespective of ethnicity, faith, financial or social standing, opinions on politics, and has repeatedly confirmed its commitment to enhance the health of vulnerable categories of the population and recognized the reasons for unmet health care needs and reduced them to a minimum [9]. Many countries are making efforts to reduce the prevalence of unfulfilled medical needs through a system of universal health coverage for every individual, which is the goal of modern global health policy. Research and improvements in understanding the unfulfilled health needs of adolescents are important above all from the aspect of health preservation and prevention of chronic diseases, because they can lead to the formation of healthy generations in the future, and therefore to a more favorable economic aspect for the society [10, 11].

The aim of this research is to identify the relationship between socio-demographic and socio-economic determinants of health and unmet health care needs of adolescents and young adults in Serbia. This research is the first study on the unmet health care needs of adolescents in this country, carried out on a nationwide representative sample.

METHODS

This study was done as an analytical, cross-sectional, nationwide research on a sample that was representative of the population of the Republic of Serbia and the population from the territory of AP Kosovo and Metohija was excluded. The research was a part of The 2019 Serbian National Health Survey carried out by Statistical office of the Republic of Serbia in cooperation with the Institute of public health of Serbia "Dr Milan Jovanović Batut" and Ministry of Health of the Republic of Serbia, from October to December 2019. The instruments and methodology of the European Health Survey—third wave (EHIS-wave 3) were used in this study [12]. EHIS-wave 3 recommendations are also used to compute sample size (https://ec.europa.eu/eurostat/documents/3859598/8762193/KS-02-18-240-EN-N.pdf/5fa53ed4-4367-41c4-b3f5-260ced9ff2f6).

The sample of this study included 1519 adolescents (15-18 years) and young adults (19-24 years). The study used a two-stage random stratified sampling. The sample was selected in order to get ratings that were statistically credible for Serbia overall and for each of the regions separately: Belgrade, Vojvodina, Sumadija and West Serbia, and South and East Serbia Region. The research was conducted through interviewing in person and self-completed questionnaires [13].

In this study, the dependent variable was the unmet need for health care. The socio-economic status factors (household wealth, work status and educational attainment) and demographic factors (gender, age, marriage status, and region) were the independent variables.

A standard software program was used to conduct the statistical analysis Statistical Package for Social Sciences software (SPSS Inc, version 20.0, Chicago, IL). Using the χ^2 test, the differences between the groups, with categorical variables, were compared. Univariate and multivariate logistic regression were used to evaluate the risk (OR (odds ratio)) with a 95%

confidence interval. A statistically significant outcome was defined as one with a probability of less than 5% (p < 0.05).

Ethical standards have been harmonized with international Declaration of Helsinki, as well as the legislation of the Republic of Serbia. In order to respect the privacy of the research subjects and the confidentiality of the information collected about them, all necessary steps were taken in accordance with the General Data Protection Regulation. Research participants were provided with a document outlining the subject matter and objectives of the study [13].

RESULTS

In this research, data from 1519 respondents aged 15–24 (52.2% male and 47.8% female) were analyzed. The average age of the respondents was 19.6 ± 2.8 years. The largest percentage of respondents completed secondary education (59.6%), 33.2% completed elementary school, while the least number of them have higher education (7.2%). In relation to work status, the largest percentage were students/inactive (61.4%), the unemployed were 22.7%, while the percentage of employed was 15.9%. Regarding material status, most of respondents belonged to the poorest class (25.2%), and the lowest to the richest class (14.8%). The average number of household members was 4.7 (±1.9), the lowest percentage consisted of single households (0.7%), followed by couples without children (1.4%), households with one parent under 25 years of age (7.6%), households with couples with at least one child under the age of 25 (39.5%), and other households made up almost half of the surveyed households. The largest percentage of respondents (92.0%) were never married or cohabiting, (7.6%) were married/cohabiting, and (0.4%) were divorced or cohabiting broke up. The majority of responders were from the region of Šumadija and Western Serbia (34.3%), followed by Belgrade (23.8%), Vojvodina (21.7%) and the least region of Southern and Eastern Serbia (20.1%).

Unmet health care needs were present among 4.1% of respondents, and the dominant reasons were finances (44.4%) and long waiting time (34.9%). The problem of the distance of the health care facility was the reason for unmet health care needs among 1.6% of respondents, while 19.5% of respondents mentioned several reasons.

The χ^2 test's findings indicated that the highest percentage of unfulfilled needs (39.7%) was among respondents from the Belgrade region, and the lowest from Sumadija and Western

Serbia (7.9%). There was a statistically significant difference in distribution of unmet health needs between the regions, showing the greatest risk in Belgrade (Pearson chi square = 22.540, df = 3, p = 0.000). Distribution of unmet health needs was significantly different in relation to marital status, showing greater risk among married and cohabiting (Continuity Correction = 5.295, df = 1, p = 0.021). Unfulfilled needs were recorded in a higher percentage among men (60.3%), in the younger age group (57.1%), with a completed secondary level of education (61.9%), the poorest (52.4%) and among inactive respondents/students (47.6%). However, no statistically significant difference was observed in the distribution of unmet health needs in relation to these socio-demographic and socio-economic parameters (Table 1).

When looking at the individual impact of socio-demographic and socio-economic indicators (univariate approach), region and marital status contribute significantly to the explanation of unmet health care needs. Those living in Sumadija and Western Serbia had a 87% lower chance of having unmet needs compared to those living in the Belgrade region (OR = 0.13; 95% CI = 0.05-0.35; p = 0.00). Singles were 59% less likely to have unfulfilled health care needs than cohabiting individuals (OR = 0.41; 95% CI = 0.21-0.84; p = 0.01). When looking at the joint influence of socio-demographic and socio-economic indicators (multivariate approach), age, region, marital status and work status contributed significantly to the explanation of unmet health care needs. Those aged 20 to 24 were 59% less likely to have unmet needs than those aged 15 to 19 (OR = 0.41; 95% CI = 0.21-0.79; p = 0.01). Those living in Šumadija and Western Serbia had a 90% lower chance of having unmet needs in comparison with the people who resided in the Belgrade region (OR = 0.10; 95% CI = 0.04-0.28; p = 0.00). Those living in Southern and Eastern Serbia had a 56% lower chance of having unmet needs compared to those who lived in the Belgrade region (OR = 0.44; 95% CI = 0.22-0.92; p = 0.03). Singles were 62% less likely to have unmet needs than cohabiting individuals (OR = 0.38; 95% CI = 0.17-0.86; p = 0.02). Inactive students were 54% less likely to have unmet needs in comparison with employed population (OR = 0.46; 95% CI = 0.21-0.99; p = 0.05) (Table 2).

DISCUSSION

According to this study, waiting, finances, and distance are the primary barriers preventing adolescents and young adults from receiving the necessary medical care. The results show a statistically significant relationship between unmet health care needs and region, marital status, age, and employment status.

A major public health problem is represented by socio-demographic and socio-economic inequalities in the accessibility of medical care because they are reflected in the health status of the population. They have not been given enough attention in public health policies and have not been studied enough in countries in transition, including Serbia. According to the WHO, every person should have access to the best medical care, despite their ethnicity, religion, political affiliation, or socio-economic background. In this regard, the WHO has developed Sustainable Development Goal 3 for equal access to health care [14].

In the last 20 years, unfulfilled health needs have doubled in many EU countries [3]. In the EU in 2022, the proportion of unmet healthcare needs varied from 0.2% in Cyprus to 13.1% in Greece [6]. In Russia in 2018, in 34.7% of cases, failure to receive health care was recorded [14]. In the Republic of Serbia, there were several studies on unmet health needs, nevertheless, not enough research has been done on the unfulfilled needs for health care in adolescents and young adults.

In this research the following were the main barriers to receiving the necessary health care: lack of funds (44.4%), long waiting time for appointments or medical exams (34.9%), the distance to a health care facility (1.6%), or issues with transportation. In neighboring countries such as Montenegro, Macedonia, Croatia, and Slovenia, similar obstacles to access to health care are cited as in Serbia [3]. The national research from 2013 showed results which indicate that the main factor for not meeting health needs is of a financial nature, and this is stated by every fourth citizen of Serbia (24.8%), followed by waiting lists and the distance from health institutions [15]. Also, data from the study from 2014 showed that the most frequent cause of unfulfilled health care requirements was financial (36.6%) [16].

Regarding reasons linked to the organization and operating of health services (finances, distance or waiting lists), the share varied from 0.1% in Cyprus to 9.1% in Estonia. Waiting lists as a reason for unfulfilled health care needs were expressed in most European countries, including Serbia [6]. The proportion of individuals who faced financial obstacles to receiving health care in 38 selected European countries in 2018 ranged from 0.1% in Austria to 13.7 % in Albania, while in Korea 2.5% of people included a financial barrier [17]. Similar results were obtained in a study in Italy, where the primary cause for unfulfilled needs was economic reasons, followed by the distance and waiting. Another important result of this study was the evidence of an increase in the gradient from north to south for all considered barriers [18]. In Serbia, respondents from the Šumadija and Western Serbia regions have significantly less

unfulfilled health needs compared to Belgrade region. Contrary to this, in research of Popovic et al. which included the elderly population, it was observed that the smallest percentage of unfulfilled health requirements occurred in the Belgrade region, however Vojvodina was listed as the region with the most of unmet health needs [16]. In a previous study the most unrealized health care needs were detected in the northern region - Vojvodina (39.5%), and the least in the central region – Šumadija and Western Serbia (20.3%) [16].

Regarding the marital status, those who are not married or cohabiting had less unfulfilled needs than those who were married or cohabiting, while the study of Popovic et al points out that divorced people have more unmet health needs than married [16]. The research conducted in South Korea also revealed that younger people had more unfulfilled health care needs than older respondents [19], while in the study of Mitrasević et al. [3], there were more unfulfilled needs in the category of citizens aged 60 – 69. Previous study carried out in Serbia showed that it was more common for women to have unfulfilled needs compare to males, and that the lowest degrees of education, employment, and economic standing had a significant influence on whether or not healthcare demands were met, which was not the case in our research [3]. In many member states of the European Union, age played a important role in the existence of unfulfilled needs for health care. In the EU, notably in Greece and Romania, younger people reported fewer unmet needs in 2022, compared to older people. In Denmark, France, Sweden, Germany, Luxembourg, Norway, Switzerland and Belgium, opposite results were obtained [6]. In South Korea, in 2017, 9.5% of respondents had unmet health care needs [19].

In 2022, the share of unmet health needs was higher among people with lower education. This was really noticeable in Greece and Romania. In Spain, Lithuania and the Netherlands, the group of individuals with the greatest percentage of unmet needs was in those with a secondary education level, while in Estonia opposite results were obtained [6]. A study conducted in Iran showed that unemployed people were 1.7 times more probable to have unmet needs, which is the opposite of our results [7].

Bismarck's "classical" model (1883) is in force in Serbia, which represents mandatory health insurance, or the so-called "social health insurance." The health care system in Serbia is financed from contributions for statutory health coverage, within which 97% of inhabitants are covered by it in the area of health care interventions, including preventative ones, but only around 3% of people have insurance for emergency medical care [3, 20, 21]. Given that the healthcare system of Serbia has undergone reform in the last ten years, it is essential to observe

the unfulfilled healthcare needs at the national level [20]. The theory says that access to health services is free in most countries, but practice does not confirm this. Health inequalities arise because of variations in opportunities, situations, and living conditions between geographic regions and demographic groups. Generally speaking, possibilities and resources to do actions that promote health increase with one's socio-economic status [22].

A persistent concern for health policy is the disparity in socio-economic status [23]. This was also shown in our study, which confirmed that individuals with better financial situation nonetheless have greater access to health care, and they more used the services of private practice, unlike those who belonged to the poorest population. Adolescent health is influenced by many factors that are associated with determinants of health that include socio-economic status [24].

Public health and health care is the responsibility of the member states of the European Union. Chapter 28 of negotiations for EU membership, which Serbia has not yet opened and in which there are EU legislative and strategic acts, is also in this area. In 2019, a report was submitted on Serbia's progress during the EU admission procedure, and it reached a conclusion of moderate preparedness around consumers and health. There is a need for more active participation of Serbian institutions to create conditions for further progress [25].

CONCLUSION

The results of this research show that the main obstacles that cause unmet health needs among adolescent and young adults are finances, waiting time and distance. Our study revealed the significant association between region, marital status, age and employment status with unmet healthcare needs. Policies aimed at addressing unfulfilled healthcare requirements ought to take a multifaceted strategy, concentrating on removing obstacles that restrict access to healthcare for the total and a vulnerable population.

ACKNOWLEDGEMENT

Conflict of interest: None declared.

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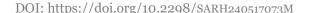
Table 1. The correlation of sociodemographic and socioeconomic parameters with unmet healthcare needs (χ^2 test)

Sociodemographic and socioeconomic parameters	Total respondents (%)	Unmeet health care (%)		Pearson χ^2 (continuity correction) / df/p
		Yes	No	
Sex				
Female	47.8	39.7	51.9	1.411/1/0.235
Male	52.2	60.3	48.1	
Age group				
15–19	49.5	57.1	49.2	1.231/1/0.267
20–24	50.5	42.9	50.8	
Region				
Belgrade	23.8	39.7	23.1	22.540/3/0.000*
Vojvodina	21.7	30.2	21.4	
Šumadija and Western Serbia	34.3	7.9	35.4	
Southern and Eastern Serbia	20.1	22.2	20.1	
Educational level				
Higher	7.2	4.8	7.3	0.618/2/0.734
Secondary	59.6	61.9	59.5	
Primary	33.2	33.3	33.2	
Marital status				
In marriage/cohabiting	7.6	15.9	7.2	5.295/1/0.021*
Unmarried	92.4	84.1	92.8	
Economic status				
Wealthy class	32.3	30.2	32.3	0.460/2/0.794
Middle class	19.5	17.5	19.6	
Poor class	48.3	52.4	48.1	
Employment status				
Employed	15.9	22.2	15.6	5.347/2/0.069
Unemployed	22.7	30.2	22.3	
Inactive/student	61.5	47.6	62.1	

*Statistically significant (p < 0.05)

Table 2. Influence of sociodemographic and socioeconomic indicators on unmet healthcare needs (logistic regression)

Sociodemographic and socioeconomic parameters	Univariate model		Multivariate model	
	OR (95% CI)	p	OR (95% CI)	p
Sex				
Female	1		1	
Male	1.411 (0.843–2.362)	0.190	1.477 (0.860–2.539)	0.158
Age group				
15–19	1		1	
20–24	0.726 (0.436–1.208)	0.217	0.410 (0.213–0.790)	0.008*
Region				
Belgrade	1		1	
Vojvodina	0.824 (0.445–1.525)	0.537	0.657 (0.345–1.251)	0.201
Šumadija and Western Serbia	0.131 (0.050–0.345)	0.000*	0.104 (0.039–0.279)	0.000*
Southern and Eastern Serbia	0.646 (0.330–1.267)	0.204	0.444 (0.216–0.916)	0.028*
Educational level				
Higher	1		1	
Secondary	1.606 (0.488–5.287)	0.436	0.982 (0.284–3.401)	0.977
Primary	1.551 (0.454–5.293)	0.484	0.796 (0.202–3.131)	0.744
Marital status				
In marriage/cohabiting	1		1	
Unmarried	0.414 (0.205–0.837)	0.014*	0.377 (0.165–0.862)	0.021*
Economic status				
Wealthy class	1		1	
Middle class	0.957 (0.449–2.040)	0.909	1.079 (0.496–2.352)	0.847
Poor class	1.169 (0.657–2.080)	0.596	1.422 (0.751–2.694)	0.280
Employment status				
Employed	1		1	
Unemployed	0.948 (0.466–1.930)	0.883	0.893 (0.415–1.922)	0.773
Inactive	0.539 (0.281–1.033)	0.062	0.458 (0.212–0.990)	0.047*

*Statistically significant (p < 0.05)