NEZADOVOLJENE POTREBE ZA STOMATOLOŠKOM ZDRAVSTVENOM ZAŠTITOM U SRBIJI

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ORIGINAL ARTICLE

UNMET DENTAL HEALTH CARE NEEDS IN SERBIA

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SAŽETAK

Cilj: Cilj ove studije je bila analiza socijalnih karakteristika i karakteristika zdravstvenog stanja populacije sa nezadovoljenim potrebama za stomatološkom zdravstvenom zaštitom.

Materijal i metode: Ova studija preseka uključivala je 20.069 ispitanika Ankete o prihodima i uslovima života u Republici Srbiji (engl. *Survey on Income and Living Conditions – SILC)* iz 2014. godine.

Rezultati: Gotovo svaki šesti građanin (16,1%) izjavio je da je imao nezadovoljene potrebe za stomatološkom zdravstvenom zaštitom. Učesnici starosti između 27 i 44 godine (OR: 1,48, 95% CI: 1,21 – 1,82), i između 45 i 64 godine (OR: 1,49, 95% CI: 1,19 – 1,86), učesnici koji su svoje zdravstveno stanje ocenili kao: dobro (OR: 1,91, 95% CI: 1,63 – 2,25), solidno (OR: 3,16, 95% CI: 2,64 – 3,77), loše (OR: 3,65, 95% CI: 2,94 – 4,53), ili jako loše (OR: 4,22, 95% CI: 3,10 – 5,74), imali su veću verovatnoću da prijave nezadovoljene potrebe za stomatološkom zdravstvenom zaštitom. Najčešće navođeni razlozi za nezadovoljene potrebe za stomatološkom zdravstvenom zaštitom bili su finansijske prepreke pristupačnosti stomatološke zdravstvene zaštite (66,6%) kao i strah od lečenja (15,1%).

Zaključak: Studija je utvrdila povezanost nezadovoljenih potreba za stomatološkom zdravstvenom zaštitom sa socijalnim karakteristikama i karakteristikama zdravstvenog stanja. Zdravstvena politika bi trebalo da primeni multidimenzionalni pristup i ukloni prepreke koje ograničavaju pristupačnost stomatološkoj zdravstvenoj zaštiti.

Ključne reči: nezadovoljene potrebe za stomatološkom zdravstvenom zaštitom, stomatološka zdravstvena zaštita, *SILC*, pristupačnost

ABSTRACT

Aim: The aim of this study was the analysis of the social and health status characteristics of the population with unmet dental health care needs.

Materials and methods: This cross-sectional study included 20,069 respondents from the Survey on Income and Living Conditions (SILC) in the Republic of Serbia in 2014.

Results: Nearly every sixth citizen (16.1%) reported unmet dental health care needs. Participants between the ages of 27 and 44 years (OR: 1.48, 95% CI: 1.21 – 1.82), and between 45 and 64 years (OR: 1.49, 95% CI: 1.19 – 1.86), participants who assessed their health status as: good (OR: 1.91, 95% CI: 1.63 – 2.25), fair (OR: 3.16, 95% CI: 2.64 – 3.77), bad (OR: 3.65, 95% CI: 2.94 – 4.53), or very bad (OR: 4.22, 95% CI: 3.10 – 5.74), had a higher likelihood of reporting unmet dental health care needs. The most frequent reasons for unmet dental health care needs were financial obstacles to the accessibility of dental health care (66.6%) and fear or treatment (15.1%).

Conclusion: The study found associations between unmet dental health care needs and social and health status characteristics. Health policy should adopt a multidimensional approach and eliminate barriers which restrict the accessibility of dental health care.

Key words: unmet dental health care needs, dental health care, SILC, accessibility

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UVOD

Nezadovoljene potrebe pacijenata za zdravstvenom zaštitom su definisane kao „razlika između zdravstvenih usluga koje se smatraju neophodnim za određeni zdravstveni problem i usluga koje su dobijene“ [1]. Nezadovoljene potrebe za stomatološkom zdravstvenom zaštitom mogu biti pokazatelj stepena jednakosti u pristupu stomatološkoj zdravstvenoj zaštiti i povezane su sa lošim oralnim zdravljem [2], što je nadalje povezano sa slabijim opštim zdravstvenim stanjem i kvalitetom života [3]. I subjektivni i objektivni pokazatelji oralnog zdravlja razlikuju se između populacija među kojima postoji nejednakost u pristupu stomatološkoj zdravstvenoj zaštiti [4]. Zabeležena prevalencija nezadovoljenih potreba za stomatološkom zdravstvenom zaštitom varira od 0,3%, u Holandiji, do 24,5% u Južnoj Koreji [5,6]. Nezadovoljene potrebe za stomatološkom zdravstvenom zaštitom mogu biti povezane sa troškovima zaštite [4] i socijalnim karakteristikama učesnika [5-7]. Prevalencija nezadovoljenih potreba za stomatološkom zdravstvenom zaštitom je viša među nezaposlenima i osobama sa nižim stepenom obrazovanja, odnosno sa nižim socijalno-ekonomskim statusom [6,7].

Neke zemlje su preuzele mere sa ciljem da smanje ove nejednakosti i unaprede oralno zdravlje cele populacije kroz smanjenje troškova i unapređenje pristupačnosti stomatološke zdravstvene zaštite [4,8]. Dobar primer sistema zdravstvene zaštite koji je pristupio rešavanju problema nezadovoljenih potreba za stomatološkom zdravstvenom zaštitom jeste Finska, koja je povećala procenat populacije pokrivene zdravstvenim osiguranjem putem ukidanja starosnih ograničenja u pristupu javnim službama stomatološke zdravstvene zaštite, kao i putem šire primene nadoknade troškova lečenja u okviru stomatološke zdravstvene zaštite [8]. Brazil je primenio nacionalni program pod nazivom „Nasmejani Brazil“ [9], što je podrazumevalo i uspostavljanje Tima za unapređenje oralnog zdravlja kao i širu dostupnost stomatološke zdravstvene zaštite za stanovništvo [10].

Stomatološka zdravstvena zaštita je u Srbiji organizovana kao služba koja je dostupna na nivou primarne zdravstvene zaštite, u državnim zdravstvenim ustanovama i u privatnom zdravstvenom sektoru. Tradicionalno su sve usluge bile dostupne svim stanovnicima u Srbiji koji su bili obuhvaćeni obaveznim zdravstvenim osiguranjem. Nakon 2000. godine, započele su reforme u sistemu zdravstvene zaštite u Srbiji, koje su donele sa sobom velike promene u pružanju stomatološke zdravstvene zaštite. Zakon o zdravstvenom osiguranju iz 2005. godine uveo je promene u finansiranje stomatološke zdravstvene zaštite, te je ovaj vid zaštite, bez ikakvog novčanog učešća od strane korisnika, sada dostupan samo maloletnicima, trudnicama i u hitnim

INTRODUCTION

Unmet needs of patients for health care are defined as ‘the difference between health services that are considered necessary for a particular health problem and services that are received’ [1]. Unmet dental health care needs can be an indicator of equity of access to dental health care and are associated with poor oral health [2], which is further associated with poorer general health and quality of life [3]. Both subjective and objective indicators of oral health differ between the populations with disparities in access to dental health care [4]. The reported prevalence of unmet dental health care needs varies from 0.3% in the Netherlands to 24.5% in South Korea [5,6]. Unmet dental health care needs can be associated with the costs of care [4] and social characteristics of the participants [5-7]. The prevalence of unmet dental health care needs is higher among the unemployed and those of lower education, or lower socio-economic status [6,7].

Some countries have taken action with the aim to reduce these disparities and to improve the oral health of the entire population through the reduction of costs of dental health care and an increase in dental health care availability [4,8]. A good example of a healthcare system which has addressed the unmet dental health care needs is Finland, which has increased the percentage of population covered by health insurance through the abolishment of age restrictions to the access to public dental health care services, along with a wider implementation of reimbursement of treatment costs for dental health care [8]. Brazil has implemented a national program called ‘Smiling Brazil’ [9], which has included the establishment of an Oral Health Team and a wider availability of dental services for the population [10].

Dental health care in Serbia is organized as a service that is available at the primary health care level in state-owned public health institutions and in the private sector. Traditionally, all services were available to all residents in Serbia who had mandatory health insurance. After the year 2000, the reforms in the Serbian health care system began, bringing great changes in the provision of dental health care. In 2005, the Health Insurance Law introduced changes in the funding of dental health care, and dental health care without any out-of-pocket payment is now only available to minors, pregnant women and for emergency dental care in the public health care system. The changes introduced in 2010 added college and university students under the age of 26 to the list [11,12]. This has led to a decrease in the use of dental health care services among adults [13]. In the year after the new Health Insurance Law was passed, there was a marked decline in the percentage of adults who used dental health care services at least once a year from 36.8% to 30.7% [13]. Between 2006 and 2013, the number of toothless persons

stomatološkim slučajevima, u okviru državnog sistema zdravstvene zaštite. Promene, uvedene 2010. godine, uključile su i studente do 26 godina starosti u ovu kategoriju [11,12]. Ovo je dovelo do pada u korišćenju stomatoloških zdravstvenih usluga među punoletnim građanima [13]. U godini nakon usvajanja Zakona o zdravstvenom osiguranju, zabeležen je vidan pad u procentu punoletnih građana koji su koristili usluge stomatološke zdravstvene zaštite barem jednom godišnje, sa 36,8 % na 30,7% [13]. U periodu između 2006. i 2013. godine, broj osoba koje su ostale bez svojih zuba porastao je sa 10,4% na 12,4% [13,14]. Umesto da dobiju stomatološku zdravstvenu zaštitu u ranim fazama bolesti, pacijenti su se često opredeljivali da odlože lečenje, te su kasnije morali da se podvrgnu skupljem lečenju od težeg oboljenja [13]. Iako je došlo do očiglednog razvoja privatnog sektora stomatološke zdravstvene zaštite tokom protekle decenije, stomatološke zdravstvene usluge koje se pružaju danas u Srbiji nisu dovoljne da bi se zadovoljile dugoročne potrebe stanovništva [13]. Prema našim saznanjima, nema sprovedenih studija o prevalenciji nezadovoljenih potreba za stomatološkom zdravstvenom zaštitom među punoletnim građanima Srbije, niti o njenoj povezanosti sa socijalnim karakteristikama. Ciljevi studije bili su da se analiziraju socio-demografske, socio-ekonomske, i karakteristike zdravstvenog stanja populacije sa nezadovoljenim potrebama za stomatološkom zdravstvenom zaštitom u Srbiji, kao i da se identifikuju prediktori nezadovoljenih potreba za stomatološkom zdravstvenom zaštitom u Srbiji.

METODE

U ovoj studiji analizirani su podaci iz Ankete o prihodima i uslovima života u Republici Srbiji (*SILC*) koja je sprovedena 2014. godine [15,16]. Uzorkovanje i upitnici koji su korišćeni opisani su na drugom mestu [18]. Stopa odgovora bila je 80,8% (16.220/20.069). Okvir za uzorkovanje uključivao je sve stanovnike Srbije starije od 16 godina.

Zavisna varijabla – nezadovoljene potrebe za stomatološkom zdravstvenom zaštitom, definisana je pitanjem: „Da li je postojao neki trenutak u proteklih 12 meseci kada je trebalo da posetite stomatologa, a niste?“ (Da / Ne). Od onih koji su na navedeno pitanje odgovorili sa ‘Da’ je potom traženo da se izjasne o uzrocima zbog kojih nisu dobili stomatološku zdravstvenu zaštitu.

Posmatrali smo povezanost ishodne varijable sa sledećim: socijalnim varijablama (socio-ekonomskim i socio-demografskim), zdravstvenim stanjem, prisustvom hroničnih bolesti, ograničenjima u dnevnim aktivnostima uzrokovanim nekim postojećim zdravstvenim problemima, raspoloživim prihodom domaćinstva.

Etički komitet Medicinskog fakulteta u Beogradu odobrio je istraživanje (Br. 29/IX-5, 21. 09. 2016).

increased from 10.4% to 12.4% [13,14]. Instead of receiving dental health care at the early stages of illness, patients often opted to wait for the treatment and later had to receive more expensive treatment for a more severe illness [13]. Although there has been a marked development of privately-owned dental health care during the past decade, dental health care services provided in Serbia today are insufficient to meet the long-term needs of the population [13]. To the best of our knowledge, there have been no studies examining the prevalence of unmet dental health care needs among adults in Serbia, or its association with social characteristics. The study aims were to analyze the socio-demographic, socio-economic and health status characteristics of the population with unmet dental health care needs in Serbia and to identify predictors of unmet dental health care needs in Serbia.

METHODS

The data from the Survey on Income and Living Conditions (SILC) in Serbia, conducted in 2014, were analyzed in this study [15,16]. The sampling and the questionnaires used have been described elsewhere [18]. The response rate was 80.8% (16,220/20,069). The sampling frame included all residents of Serbia, above the age of 16 years.

The dependent variable - unmet dental health care needs, was defined by the question: “Was there any time during the past 12 months that you should have visited a dentist, but did not?” (Yes / No). Those who answered ‘Yes’ to the previous questions were then asked to report the causes for not receiving dental health care.

We examined the association of the outcome variable with the following: social variables (socio-economic and socio-demographic), health status, presence of chronic diseases, limitations in daily activities caused by any existing problems with health, household disposable income.

The Ethics Committee of the Faculty of Medicine in Belgrade approved the research (No. 29/IX-5, 21. 09. 2016).

Descriptive and analytical statistics were used, and data were presented as the absolute number and frequency (percentages). Pearson’s chi-square test was used to analyze the differences in general characteristics between respondents with unmet dental health care needs, and those whose dental health care needs had been met, for weighted values. Multicollinearity was examined using the variance inflation factor (VIF).

All variables found to be significant were used as independent variables in the multivariate logistic regression model with the self-perceived unmet dental health care needs as an outcome variable. The analysis was performed using the Statistical Package for Social Sciences (SPSS) version 22.0.

Tabela 1. Socio-demografske karakteristike populacije koja prijavljuje nezadovoljene i zadovoljene potrebe za stomatološkom zdravstvenom zaštitom

Table 1. Socio-demographic characteristics of the population reporting unmet and met dental health care needs

Varijable	**Populacija koja prijavljuje nezadovoljene potrebe za stomatološkom zdravstvenom zaštitom**	**Populacija koja prijavljuje zadovoljene potrebe za stomatološkom zdravstvenom zaštitom**	**p-vrednost***
Variables	***Population reporting unmet dental health care needs***	***Population reporting met dental health care needs***	***p-value****
	n = (2,599) (16.1%)	n = 13,620 (83.9%)	
Predisponirajući faktori / *Predisposing factors*			
Pol: / *Sex*			<0.001
Muški / *Male*	1,325 (16.9)	6,490 (83.1)	
Ženski / *Female*	1,274 (15.4)	7,130 (84.6)	
Starost: / *Age:*			<0.001
16 – 26	179 (8.1)	2,138 (91.9)	
27 – 44	607 (14.0)	3,761 (86.0)	
45 – 64	1,219 (21.6)	4,549 (78.4)	
65^{+}	594 (15.3)	3,172 (84.7)	
Stepen obrazovanja: / *Education:*			<0.001
Osnovno obrazovanje / *Primary education*	1,121 (21.3)	4,299 (78.7)	
Srednje obrazovanje / *Secondary education*	1,252 (15.4)	7,101 (84.6)	
Tercijarno obrazovanje / *Tertiary education*	226 (9.3)	2,220 (90.7)	
Zaposlenje: / *Employment status:*			<0.001
Zaposleni / *Employed*	885 (15.4)	5,627 (84.6)	
Nezaposleni / *Unemployed*	664 (20.4)	3905 (79.6)	
Penzioneri / *Retired*	706 (15.5)	399 (84.5)	
Neaktivni / *Inactive*	282 (12.0)	289 (88.0)	
Bračno stanje: / *Marital status:*			<0.001
Neoženjeni/neudate / *Unmarried*	494 (11.9)	3,704 (88.1)	
Oženjeni/udate / *Married*	1,554 (17.2)	7,572 (82.8)	
Udovci/udovice / *Widowed*	370 (18.0)	1,683 (82.0)	
Razvedeni / *Divorced*	181 (20.9)	661 (79.1)	
Olakšavajući faktori / *Enabling factors*			
Kvintil prihoda po članu domaćinstva / *Equalized disposable income quintile:*			<0.001
I (0 – 20)	797 (24.5)	2,467 (75.5)	
II (20 – 40)	617 (18.2)	2,631 (81.8)	
III (40 – 60)	504 (15.7)	2,741 (84.3)	
IV (60 – 80)	386 (11.5)	2,835 (88.5)	
V (80 – 100)	295 (9.4)	2,946 (90.6)	
Faktori potreba / *Need factors*			
Zdravstveno stanje: / *Health status:*			<0.001
Vrlo dobro / *Very good*	284 (7.1)	3,778 (92.9)	
Dobro / *Good*	722 (14.2)	4,374 (85.8)	
Solidno / *Fair*	830 (22.4)	3,057 (77.6)	
Loše / *Bad*	638 (23.6)	2,032 (76.4)	
Vrlo loše / *Very bad*	125 (25.0)	379 (75.0)	
Postojanje nekog hroničnog oboljenja: / *Suffering from any chronic condition:*			<0.001
Hronično oboljenje / *Chronic*	1,051 (21.4)	3,807 (78.6)	
Bez hroničnog oboljenja / *No chronic condition*	1,548 (13.9)	9,813 (86.1)	
Ograničenja u dnevnim aktivnostima: / *Limitation in daily activities:*			<0.001
Prilično ograničeno / *Quite limited*	194 (23.9)	617 (76.1)	
Ograničeno / *Limited*	430 (23.2)	1,479 (76.8)	
Bez ograničenja / *Not limited*	1,975 (14.7)	11,524 (85.3)	
Geografsko područje / *Geographical area*			
Region: / *Region:*			<0.001
Grad Beograd / *Belgrade region*	323 (12.6)	2,339 (87.4)	
Region Vojvodine / *Region of Vojvodina*	877 (19.7)	3,587 (80.3)	
Region Šumadije i zapadne Srbije / *Region of Šumadija and Western Ser-bia*	750 (14.8)	4,489 (85.2)	
Region istočne i južne Srbije / *Region of Eastern and Southern Ser-bia*	649 (17.2)	3,205 (82.8)	
Naseljenost: / *Degree of urbanization:*			<0.001
Gusto naseljena oblast / *Densely populated area*	659 (13.1)	4,367 (86.9)	
Srednje naseljena oblast / *Intermediate urbanized area*	708 (16.0)	3,831 (84.0)	
Retko naseljena oblast / *Thinly populated area*	1,232 (19.2)	5,422 (80.8)	

Primenjene su analitičke i deskriptivne statističke metode, a podaci su predstavljeni kao apsolutni broj i učestalost (procenat). Pirsonov hi-kvadratni test primenjen je u analizi razlika u opštim karakteristikama između ispitanika sa nezadovoljenim potrebama za stomatološkom zdravstvenom zaštitom i onih čije su potrebe za stomatološkom zdravstvenom zaštitom bile zadovoljene, za ponderisane vrednosti. Multikolinearnost je ispitivana primenom faktora inflacije varijanse (*VIF*).

Sve varijable koje su se pokazale značajnim primenjene su kao nezavisne varijable u modelu multivarijantne logističke regresije, u kojem su samoprocenjene nezadovoljene potrebe za stomatološkom zdravstvenom zaštitom predstavljale ishodnu varijablu. Analiza je obavljena primenom softverskog paketa *Statistical Package for Social Sciences* (*SPSS*) *version 22.0*.

REZULTATI

Prema procenama, 16,1% punoletnih građana Srbije izjavilo je da su tokom prethodne godine imali potrebe za stomatološkom zdravstvenom zaštitom ali da nisu mogli da zadovolje te potrebe. Značajno viši procenat muškaraca je prijavio nezadovoljene potrebe za stomatološkom zdravstvenom zaštitom (16,9% naspram 15,4%, $p < 0,001$). Značajno viši procenat učesnika koji su imali samo osnovno obrazovanje je prijavio nezadovoljene potrebe za stomatološkom zdravstvenom zaštitom (21,3%), u poređenju sa učesnicima sa srednjim obrazovanjem (15,4%) i višim ili visokim stepenom obrazovanja (9,3%), $p < 0,001$. Među učesnicima sa nezadovoljenim potrebama za stomatološkom zdravstvenom zaštitom bio je značajno viši procenat onih koji su svoje zdravstveno stanje ocenili kao veoma loše ili loše. Socio-demografske i socio-ekonomske karakteristike ispitanika, koji su prijavili zadovoljene ili nezadovoljene potrebe za stomatološkom zdravstvenom zaštitom, predstavljene su u Tabeli 1.

Najčešće navođen razlog za neodlaženje kod stomatologa tokom prethodne godine odnosio se na

RESULTS

An estimated 16.1% of Serbian adults stated that they needed dental health care but had been unable to obtain it within the previous year. A significantly higher percentage of males reported unmet dental health care need (16.9% vs. 15.4%, $p < 0.001$). A significantly higher percentage of participants with only primary education reported that they had the unmet dental health care needs (21.3%), as compared with participants with secondary education (15.4%) and a college diploma or university degree (9.3%), $p < 0.001$. Among the participants with unmet dental health care needs, there was a significantly higher percentage of those who assessed their health as very bad or bad. Socio-demographic and socio-economic characteristics of the respondents reporting met and unmet dental health care needs are presented in Table 1.

The most common reason for not visiting the dentist during the previous year was related to financial obstacles to the accessibility of dental health care, which was stated by two-thirds of our respondents with unmet dental health care needs (66.6%), followed by the fear of doctors/hospital/testing/treatment, which was stated by 15.1% of participants.

The multivariate logistic regression with self-perceived unmet dental health care needs as an outcome variable showed that females (OR: 0.79, 95% CI: 0.72 – 0.87), participants over 65 years of age (OR: 0.76, 95% CI: 0.59 – 0.98), those with secondary education (OR: 0.79, 95% CI: 0.61 – 0.89), those with a college diploma or university degree (OR: 0.58, 95% CI: 0.49 – 0.69), unemployed, inactive or retired persons (OR: 0.85, 95% CI: 0.76 – 0.95) had a lower likelihood to report unmet dental health care needs. With an increase of equalized disposable income, there was a statistically significant decrease in the likelihood of unmet dental health care needs. Participants between the ages of 27 and 44 years (OR: 1.48, 95% CI: 1.21 – 1.82), and 45 and 64 years (OR: 1.49, 95% CI: 1.19 – 1.86), participants who assessed their health status

Tabela 2. Glavni razlozi zbog kojih ispitanik nije posetio stomatologa

Table 2. The main reasons why the respondent did not visit a dentist

Razlog zbog kojeg ispitanik nije posetio stomatologa	**n**	**%**
Reason why the respondent did not visit a dentist	**n**	**%**
Nisam imao-la za to novca/suviše je skupo. / *Could not afford it/too expensive.*	1,481	66.6
Predaleko se putuje do stomatologa. / *It is too far to travel.*	35	1.4
Postoji lista čekanja. / *There is a waiting list.*	54	2.8
Nisam imao-la vremena zbog posla, brige o deci ili drugima. / *Could not find the time because of work, care of children or others.*	169	8.5
Strah od lekara/bolnice/ispitivanja/lečenja / *Fear of doctors/hospital/testing/treatment*	336	15.1
Hteo-la sam da čekam da vidim da li će mi se popraviti stanje. / *Wanted to wait and see if the situation was going to get better.*	147	5.3
Nisam znao-la dobrog lekara ili specijalistu. / *Did not know of any good doctor or specialist.*	5	0.3
Drugi razlozi / *Other reasons*	-	-

Tabela 3. Modeli multivarijantne logističke regresije u kojima su nezadovoljene potrebe za stomatološkom zdravstvenom zaštitom ishodna varijabla

Table 3. Multivariate logistic regression models with unmet dental health care needs as an outcome variable

Karakteristike / *Characteristics*	**OR (95% CI)**
Pol / *Sex*	
Muški / *Male*	1.0
Ženski / *Female*	**0.79 (0.72 – 0.87)***
Starost / *Age*	
16 – 26	1.0
27 – 44	**1.48 (1.21 – 1.82)***
45 – 64	**1.49 (1.19 – 1.86)***
65+	**0.76 (0.59 – 0.98)***
Stepen obrazovanja: / *Education*	
Osnovno obrazovanje / *Primary education*	1.0
Srednje obrazovanje / *Secondary education*	**0.79 (0.71 – 0.87)***
Tercijarno obrazovanje / *Tertiary education*	**0.58 (0.49– 0.69)***
Zaposlenje: / *Employment status*	
Zaposleni / *Employed*	1.0
Nezaposleni, u penziji, neaktivni / *Unemployed, retired, inactive*	**0.85 (0.76 – 0.95)***
Bračno stanje / *Marital status*	
Oženjeni/Udate / *Married*	1.0
Neoženjeni/neudate / *Unmarried*	0.97 (0.84 – 1.11)
Razvedeni/Udovci-udovice / *Divorced/Widowed*	1.01 (0.89 – 1.14)
Kvintil prihoda po članu domaćinstva / *Equalized disposable income quintile*	
0 – 20%	1.0
20 – 40%	**0.77 (0.68 – 0.87)***
40 – 60%	**0.64 (0.56 – 0.73)***
60 – 80%	**0.50 (0.43 – 0.58)***
80 – 100%	**0.40 (0.34 – 0.47)***
Zdravstveno stanje: / *Health status*	
Vrlo dobro / *Very good*	1.0
Dobro / *Good*	**1.91 (1.63 – 2.25)***
Solidno / *Fair*	**3.16 (2.64 – 3.77)***
Loše / *Bad*	**3.65 (2.94 – 4.53)***
Vrlo loše / *Very bad*	**4.22 (3.10 – 5.74)***
Postojanje nekog hroničnog oboljenja: / *Suffering from any chronic condition*	
Hronično oboljenje / *No chronic condition*	1.0
Bez hroničnog oboljenja / *Chronic*	1.12 (0.99 – 1.27)
Ograničenja u dnevnim aktivnostima / *Limitation in daily activities*	
Nema ograničenja / *Not limited*	1.0
Ima ograničenja / *Limited*	0.98 (0.86 – 1.13)
Naseljenost: / *Degree of urbanization*	
Gusto naseljena oblast / *Densely populated area*	1.0
Srednje naseljena oblast / *Intermediate urbanized area*	0.99 (0.87 – 1.12)
Retko naseljena oblast / *Thinly populated area*	1.11 (0.99 – 1.25)
Region: / *Region*	
Grad Beograd / *Belgrade region*	1.0
Region Vojvodine / *Region of Vojvodina*	0.92 (0.79 – 1.08)
Region Šumadije i zapadne Srbije / *Region of Šumadija and Western Serbia*	**1.31 (1.16 – 1.47)***
Region istočne i južne Srbije / *Region of Eastern and Southern Serbia*	**0.82 (0.73 – 0.93)***

finansijske prepreke pristupačnosti stomatološke zdravstvene zaštite, što je izjavilo dve trećine ispitanika sa nezadovoljenim potrebama za stomatološkom zdravstvenom zaštitom (66,6%), praćen strahom od lekara/bolnice/ispitivanja/lečenja, što je izjavilo 15,1% učesnika.

Multivarijantna logistička regresija, sa samoprocenjenim nezadovoljenim potrebama za stomatološkom zdravstvenom zaštitom kao ishodnom varijablom, pokazala je da žene (OR: 0,79, 95% CI: 0,72 – 0,87), učesnici stariji od 65 godina (OR: 0,76, 95% CI: 0,59 – 0,98), ispitanici sa srednjim obrazovanjem (OR: 0,79, 95% CI: 0,61 – 0,89), oni sa višim ili visokim stepenom obrazovanja (OR: 0,58, 95% CI: 0,49 – 0,69), nezaposlena, neaktivna ili penzionisana lica (OR: 0,85, 95% CI: 0,76 – 0,95), imaju manju verovatnoću da prijave nezadovoljene potrebe za stomatološkom zdravstvenom zaštitom. Sa porastom prihoda po članu domaćinstva, došlo je do statistički značajnog pada verovatnoće nezadovoljenih potreba za stomatološkom zdravstvenom zaštitom. Učesnici starosti između 27 i 44 godine (OR: 1,48, 95% CI: 1,21 – 1,82), 45 i 64 godine (OR: 1,49, 95% CI: 1,19 – 1,86), učesnici koji su svoje zdravstveno stanje ocenili kao dobro (OR: 1,91, 95% CI: 1,63 – 2,25), solidno (OR: 3,16, 95% CI: 2,64 – 3,77), loše (OR: 3,65, 95% CI: 2,94 – 4,53) ili veoma loše (OR: 4,22, 95% CI: 3,10 – 5,74) imali su veću verovatnoću da prijave nezadovoljene potrebe za stomatološkom zdravstvenom zaštitom.

DISKUSIJA

Ova studija je analizirala faktore povezane sa nezadovoljenim potrebama za stomatološkom zdravstvenom zaštitom u okviru nacionalno reprezentativnog uzorka Srbije. Naše istraživanje je pokazalo da je 16,1% stanovništva, odnosno svaki šesti stanovnik Srbije, imao nezadovoljene potrebe za stomatološkom zdravstvenom zaštitom. Prevalencija nezadovoljenih potreba za stomatološkom zdravstvenom zaštitom u Srbiji je druga po visini među evropskim zemljama koje su sprovele *SILC* anketu, odmah iza Litvanije, u kojoj je prevalencija bila 16,8% [5]. Najznačajniji razlog navođen od strane naših ispitanika za njihovu nezadovoljenu potrebu za stomatološkom zdravstvenom zaštitom odnosio se na finansijske prepreke pristupačnosti stomatološke zdravstvene zaštite, praćen strahom od lekara i lečenja, i poteškoćama u organizovanju odlaska kod lekara, usled porodičnih obaveza ili prihvatljivosti stomatološke zdravstvene zaštite. Finansijske prepreke, odnosno 'preskupa' stomatološka zdravstvena zaštita, takođe je bio glavni razlog nezadovoljenih potreba za stomatološkom zdravstvenom zaštitom i u zemljama Evropske unije [5].

Naši rezultati su potvrdili da se neki ispitanici suočavaju sa brojnim i složenim sistemskim barijerama pristupu stomatološkoj zdravstvenoj zaštiti, uključujući tu i

as good (OR: 1.91, 95% CI: 1.63 – 2.25), fair (OR: 3.16, 95% CI: 2.64 – 3.77), bad (OR: 3.65, 95% CI: 2.94 – 4.53) or very bad (OR: 4.22, 95% CI: 3.10 – 5.74) had a higher likelihood of reporting unmet dental health care needs.

DISCUSSION

This study analyzed the factors associated with the unmet dental health care needs within the Serbia national representative sample. Our research showed that 16.1% of the population or nearly every sixth inhabitant of Serbia had unmet dental health care needs. The prevalence of unmet dental health care needs in Serbia is the second highest prevalence among European countries which conducted the SILC survey, immediately after Latvia which had a prevalence of 16.8% [5]. The most significant reason stated by our respondents for their unmet dental health care need was related to the financial obstacles to the accessibility of dental health care, followed by fear of doctors or treatment, and difficulty to arrange the visits due to work and family commitments or acceptability of dental health care. Financial obstacles, i.e., 'too expensive' dental health care was the main reason for unmet dental health care needs in the European Union, as well [5].

Our results have confirmed that some respondents face numerous and complex systemic barriers to accessing dental health care, which include demographic, social, cultural, economic, structural and geographic factors [3]. We found that there were gender differences in experienced unmet dental health care needs, contrary to other studies, where women had a higher likelihood of having unmet dental health care needs [3]. The National Health Survey of the Republic of Serbia showed that a significantly higher percentage of women in Serbia have lost all of their teeth and that women use dentures more often than men (85.7% vs 75.2%) [14]. In our study, the population aged 27 to 44 years, and 45 to 64 years, had a higher likelihood to have unmet dental health care needs. The younger and the older populations are covered with mandatory health insurance, and the dental health care services are available to them. Our findings showed that the unemployed, inactive and retired, who usually belong to the population of older age groups, had a significantly lower probability of having unmet dental health care needs than the working and young age group.

A previous study carried out in Serbia showed the association between the levels of education, income and use of health care services in the private health care sector. The association in this study was positive. Similarly, in our study, participants with higher education levels had a lower likelihood of reporting unmet dental health care needs [17].

demografske, socijalne, kulturne, ekonomske, strukturne, i geografske faktore [3]. Utvrdili smo i postojanje rodnih razlika u iskustvima vezanim za nezadovoljene potrebe za stomatološkom zdravstvenom zaštitom, nasuprot drugim studijama, u kojima su žene imale veću verovatnoću nezadovoljenih potreba za stomatološkom zdravstvenom zaštitom [3]. Nacionalno istraživanje zdravlja stanovništva Srbije pokazalo je da je značajno viši procenat žena ostalo bez svih zuba, te da žene češće koriste zubne proteze od muškaraca (85,7% naspram 75,2%) [14]. U našoj studiji, populacija starosti između 27 i 44 godine, i između 45 i 64 godine, imala je veću verovatnoću da ima nezadovoljene potrebe za stomatološkom zdravstvenom zaštitom. Mlađa i starija populacija pokrivena je obaveznim zdravstvenim obrazovanjem, te su njima dostupne usluge stomatološke zdravstvene zaštite. Naši nalazi su pokazali da su nezaposlena, neaktivna i penzionisana lica, koja obično pripadaju populaciji starijih uzrasnih grupa, imala značajno nižu verovatnoću da imaju nezadovoljene potrebe za stomatološkom zdravstvenom zaštitom nego grupa radno aktivnih lica i grupa mladih.

Jedna ranija studija sprovedena u Srbiji pokazala je povezanost između stepena obrazovanja, prihoda i korišćenja usluga zdravstvene zaštite u privatnom zdravstvenom sektoru. Povezanost u ovoj studiji je bila pozitivna. Slično tome, u našoj studiji, učesnici višeg nivoa obrazovanja imali su manju verovatnoću da prijave nezadovoljene potrebe za stomatološkom zdravstvenom zaštitom [17].

Naša studija je pokazala da, sa porastom prihoda po domaćinstvu, verovatnoća postojanja nezadovoljenih potreba za stomatološkom zdravstvenom zaštitom opada [3,7,18,19]. U 2013. godini, prosečna plata u Srbiji je iznosila oko 370 evra, te je finansijsko opterećenje plaćanja usluga stomatološke zdravstvene zaštite moglo biti prilično veliko za mnoge porodice u Srbiji. Postojale su takođe i razlike među regionima po pitanju verovatnoće postojanja nezadovoljenih potreba za stomatološkom zdravstvenom zaštitom – najveća verovatnoća da se iskuse nezadovoljene potrebe za stomatološkom zdravstvenom zaštitom bile su u Regionu Šumadije i zapadne Srbije. Razlog ovome može ležati u činjenici da u južnoj, a naročito u istočnoj Srbiji, postoji visok procenat stanovništva koji radi van zemlje, te je finansiranje usluga stomatološke zdravstvene zaštite iz sopstvenih sredstava njima pristupačnije [20]. Takođe, samoprocenjene potrebe za stomatološkim uslugama mogu biti manje u nekim regionima u kojima je viša prevalencija nižeg obrazovanja.

Vrednost ove studije leži u činjenici da ona predstavlja prvo istraživanje o nezadovoljenim potrebama za stomatološkom zdravstvenom zaštitom u Srbiji koje je zasnovano na velikom nacionalno reprezentativnom uzorku. Jedina prethodna studija ispitivala je nezadovoljene potrebe za stomatološkom zdravstvenom zaštitom

Our study has shown that, with the increase of income per household, the likelihood of unmet dental health care needs decreases [3,7,18,19]. The average salary in Serbia in 2013 was around 370 euros, and the financial burden of paying for dental health care services could be rather significant for many families in Serbia. There were also regional differences in the likelihood of unmet dental health care needs - the highest probability of experiencing unmet dental health care needs was in the Region of Šumadija and Western Serbia. The reason behind this could be that there is a high percentage of the population from Southern and especially Eastern Serbia working abroad, and out-of-pocket payment of dental health care services is more available to them [20]. Additionally, the self-perceived need for dental services might be lower in some regions with a higher prevalence of lower education.

The strength of this study is that it represents the first survey on unmet dental health care needs in Serbia based on a large nationally representative sample. The only previous study examined the unmet dental health care needs among persons with intellectual disabilities [21]. This study has some limitations. Firstly, this is a cross-sectional study and self-perceived unmet dental health care needs are considerably influenced by personal views, the cultural background, environmental factors and socio-economic status. Secondly, data obtained in this study did not include persons residing in institutions of health and social care and whose health is much more deteriorated than is the case with people living in their own homes. The SILC survey did not include questions about self-perceived oral health, which would have contributed to a better understanding of unmet dental health care needs in Serbia.

CONCLUSION

This study highlights inequalities in self-perceived unmet dental health care needs, according to socio-demographic, socio-economic, health, and regional characteristics of the population, and, consequently, defines the scale of inequalities in Serbia. Male participants, participants aged from 27 to 64 years, participants with a low income and lower educational status, participants with worse self-perceived health, participants living in the Region of Šumadija and Western Serbia, had a higher likelihood of having unmet dental health care needs. A multidimensional approach to health care system organization and elimination of barriers, which restrict the accessibility of dental health care, should be adopted. This approach could reduce inequality in unmet dental health care needs and improve dental health care outcomes.

Conflict of interest: None declared.

među licima sa intelektualnim smetnjama [21]. Studija ima izvesna ograničenja. Prvo, ovo je studija preseka i samoprocenjene nezadovoljene potrebe za stomatološkom zdravstvenom zaštitom su pod velikim uticajem ličnih stavova, kulture, faktora sredine, i socio-ekonomskog statusa. Drugo, podaci u ovoj studiji nisu uključivali lica smeštena u ustanovama zdravstvene i socijalne zaštite, a čije je zdravlje daleko slabije nego kod ljudi koji žive u sopstvenim domovima. *SILC* anketa nije uključivala pitanja o samoprocenjenom oralnom zdravlju, što bi doprinelo boljem razumevanju nezadovoljenih potreba za stomatološkom zdravstvenom zaštitom u Srbiji.

ZAKLJUČAK

Ova studija ističe nejednakosti u samoprocenjenim nezadovoljenim potrebama za stomatološkom zdravstvenom zaštitom, prema socio-demografskim, socio-ekonomskim, zdravstvenim, i regionalnim karakteristikama stanovništva, i, sledstveno, definiše skalu nejednakosti u Srbiji. Učesnici muškog pola, učesnici starosti između 27 i 64 godine, učesnici sa nižim prihodom i nižim stepenom obrazovanja, učesnici koji su niže ocenili sopstveno zdravlje, te učesnici iz regiona Šumadije i zapadne Srbije, imali su veću verovatnoću da imaju nezadovoljene potrebe za stomatološkom zdravstvenom zaštitom. Potrebno je primeniti multidimenzionalni pristup organizaciji sistema zdravstvene zaštite i ukloniti prepreke, koje ograničavaju pristupačnost stomatološke zdravstvene zaštite. Ovakav pristup mogao bi da smanji nejednakost u nezadovoljenim potrebama za stomatološkom zdravstvenom zaštitom i unapredi rezultate u stomatološkoj zdravstvenoj zaštiti.

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