



The association between the frequency of dental visits and independent factors among the adults aged 20 years and over in Serbia

Povezanost između učestalosti poseta stomatologu i nezavisnih činilaca među odraslim stanovništvom starosti 20 i više godina u Srbiji

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Abstract

Background/Aim. Regular check-ups with a dentist are an important component of general oral hygiene habits. In addition to regular visits to a dentist, this includes the ongoing knowledge upgrade in the field of oral health as well as the application of preventive measures recommended by the selected dentist. The aim of this study was to determine the link between dental visits and independent sociodemographic factors and smoking in the adult population in Serbia. **Methods.** This cross-sectional study represents an analysis of 2013 National Health Survey for the population of Serbia (without the data on Kosovo and Metohija population). The study included 13,404 adults of 20 years of age and older. The mean age of participants was 51.7 years, including 7,221 (53.9%) females and 6,183 (46.1%) males. In order to determine possible predictors of a dental visit, a multivariate logistic regression model was implemented. A visit to a dentist was a dependent variable, while the independent variables were: sex, age, marital status, type of settlement, region, education, employment status, Wealth Index and smoking status. **Results.** Significant differ-

ences were observed between categories of dental visit and all independent variables except marital and smoking status. In the multivariate model, the odds of visiting a dentist in the period “12 months or longer” vs. “in the last 6 months” were the highest among older respondents [odds ratio (OR) = 1.03; 95% confidence interval (CI) = 1.02–1.04], from a rural area (OR = 1.17; 95% CI = 1.03–1.32), with a low (OR = 2.55; 95% CI = 2.12–3.07) and middle education level (OR = 1.76; 95% CI = 1.54–2.00), the unemployed (OR = 1.20; 95% CI = 1.06–1.37), those who belong to poorer (OR = 1.30; 95% CI = 1.08–1.54) or the poorest class (OR = 1.71; 95% CI = 1.38–2.12) and smokers (OR = 1.13; 95% CI = 1.01–1.26). **Conclusion.** The study demonstrated that sociodemographic factors and smoking are important factors related to a visit to a dentist. This study can help to advance regular visits to a dentist and programs of health education focusing on oral health and smoking cessation as well.

Key words:

adults; oral health; dentists; office visit; sociological factors; smoking; serbia.

Apstrakt

Uvod/Cilj. Redovne kontrole kod stomatologa su važna komponenta opštih oralnih higijenskih navika. Pored redovnih kontrola kod stomatologa, podrazumeva se i redovno unapređivanje u oblasti oralnog zdravlja, kao i primena preventivnih mera po preporuci stomatologa. Cilj ove studije bio je utvrđivanje povezanosti između posete stomatologu i nezavisnih socio-demografskih faktora i pušenja kod odrasle populacije u Srbiji. **Metode.** Istraživanje predstavlja analizu podataka dobijenih u okviru Nacionalnog istraživanja zdravlja stanovništva Srbije koje je sprovedeno 2013. godine kao studija preseka na reprezentativnom uzorku odraslog stanovništva Srbije (bez podataka o stanovništvu Kosova i Metohije). Studijom je bilo obuhvaćeno 13 404 ispitanika starosti 20

godina i više. Prosečna starost ispitanika bila je 51,7 godina, uključujući 7 221 (53,9%) ženu i 6 183 (46,1%) muškarca. Prediktori učestalosti posete stomatologu analizirani su multivarijantnom logističkom regresijom. Poseta stomatologu je bila zavisna promenljiva, dok su nezavisne promenljive bile: pol, starost, bračni status, tip naselja, region, obrazovanje, radni status, indeks blagostanja i pušački status. **Rezultati.** Ustanovljene su značajne razlike između kategorija posete stomatologu i svih nezavisnih promenljivih, osim bračnog i pušačkog statusa. Rezultati multivarijantnog modela pokazali su da su šanse za posetu stomatologu u periodu “12 meseci ili duže” u odnosu na “u poslednjih 6 meseci” bile najveće kod starijih ispitanika [odds ratio (OR) = 1,03; 95% confidence interval (CI) = 1,02–1,04], onih koji žive u naseljima van grada (OR = 1,17; 95% CI = 1,03–1,32), sa niskim (OR = 2,55; 95% CI =

2,12–3,07) i srednjim nivoom obrazovanja (OR = 1,76; 95% CI = 1,54–2,00), nezaposlenih (OR = 1,20; 95% CI = 1,06–1,37), onih koji pripadaju siromašnijoj (OR = 1,30; 95% CI = 1,08–1,54) ili najsiromašnijoj klasi (OR = 1,71; 95% CI = 1,38–2,12) i pušača (OR = 1,13; 95% CI = 1,01–1,26). **Zaključak.** Socio-demografski faktori i pušenje su važni faktori vezani za posetu stomatologu. Ova studija može biti

od pomoći u unapređenju redovnih poseta stomatologu, kao i programa zdravstvenog vaspitanja usmerenog na oralno zdravlje i prestanak pušenja.

Ključne reči: odrasle osobe; usta, zdravlje; stomatolozi; zdravstvena ustanova, poseta; socijalni faktori; pušenje; srbija.

Introduction

Regular check-ups with a dentist are an important component of general oral hygiene habits. In addition to regular visits to a dentist, this includes the ongoing knowledge upgrade in the field of oral health as well as the application of preventive measures recommended by the selected dentist¹. Furthermore, monitoring dental visits is important because it represents a basis for predicting the costs distributed for dental health care annually², recognizing the differences in oral health, and assessing the impact of changed economic conditions and health policies³. Dental professionals are convinced that frequent check-ups allow a disease to be detected and treated in time, but they are the only ones who can adequately assess the most appropriate interval between check-ups⁴, and the most commonly recommended revisiting period is in 6 months⁵.

By the 1990s, in the Republic of Serbia (as a part of the former Yugoslavia) the health care system was financed through a compulsory social insurance, but the access to health care was a constitutional right of all citizens⁶. However, the last decade of the 20th century in Serbia was marked by wars, sanctions of the international community and the negative consequences they caused, which led to the collapse of all segments of society, including the health care system⁷. The Republic Health Insurance Fund (RHIS), financed by mandatory taxation of employers and employees provides dental health care only through public dental services. Since 2005, RHIS for adult population has covered only emergency dental care and provision of acrylic complete and partial dentures for patients older than 65 years⁸. Those changes significantly affected the accessibility and provision of dental health care⁹. In 2006, the total number of dental visits in Serbia decreased compared to the previous year by 44%, and in 2007 it was reduced by additional 11%. The number of dental cavity intervention services and cavity complication interventions has significantly decreased after 2005. For example, in 2007 there were 59% fewer cavity fillings than in 2005. Furthermore, there was a reduction in the treatment of cavity complications, as much as 64% fewer treatments in 2007 compared to 2005⁷. According to the 2013 National Health Survey in Serbia, only 26.9% of the respondents had their chosen dentist in the government-owned institution, while 31% reported having a dentist in private practice¹⁰.

To explain the determinants of health care use, the Andersen's behavioral model was usually applied. The predisposing factors include demographic characteristics, such as age, gender, education, marital status, type of settlement and health beliefs. Financing and organizational factors are considered to serve as conditions enabling services utilization (income/financial situation, insurance, usual source of care, availability of health-

related information, affordability of medical care). Need factors include perceived need for health care (evaluated health status and perceived need and self-rated health)¹¹.

An additional factor related to the use of dental services is smoking. Moreover, smokers have lower rates of dental care utilization, despite the fact that tobacco use is a risk factor for tooth loss¹² and oral squamous cell carcinoma¹³.

The aim of this study was to determine the link between dental visits and independent sociodemographic factors and smoking in the adult population in Serbia.

Methods

Study design and sampling

This study represents an analysis of the 2013 National Health Survey for the population of Serbia (without the data on Kosovo and Metohija population), which was carried out by the Ministry of Health of the Republic of Serbia. The study protocol was approved by the Ethical review board of the Institute of Public Health of Serbia. A stratified two-stage representative sample of the population of Serbia was used for this study. The sample was selected to provide statistically reliable estimates at the national level and at the levels of 4 geographical regions of Serbia (The Province of Vojvodina, Belgrade, Central and West Serbia, South and East Serbia). Within 10,089 of all registered households in the Republic of Serbia in the census 2011, 6,500 households were randomly selected for the research sample (3,960 urban and 2,540 rural households) and interviewed during October-December 2013. The interviews and measurements were carried out in each household by teams of two trained interviewers and a healthcare worker. Informed, written consent was obtained from all respondents. The household response rate was 64.4%. Of the total 16,474 registered members of the household aged 15 years and over, 14,623 were interviewed giving a response rate of 88.9%. Among the people who agreed to be interviewed, 13,756 accepted to fill a self-administered questionnaire (response rate 94.1%)¹⁰. For the purpose of this study, we analyzed the data on the participants aged 20 years or over, the total of 13,404 adults for whom dental visits data were available (91.7% of all interviewed respondents). The mean age of participants was 51.7 years.

Study variables

A dental visit (in the public and in private sector) was a dependent variable, and it was assessed within 3 categories (in the last 6 months, 6–12 months, 12 months or longer). In addition, a series of demographic and socio-economic variables po-

tentially related to a dental visit were included: sex (female or male), age (20–34, 35–44, 45–54, 55–64, and 65 years and over), type of settlement (urban or rural), marital status (living with or without a partner), education level (low, middle or high), and employment status (employed, unemployed or inactive). In addition, the households and respondents were classified according to Wealth Index (Demographics and Health Survey Wealth Index) into five socio-economic categories: poorest, poorer, middle class, richer and the richest class¹⁴. Smoking status was assessed as never smoked, past smoker and smoker.

Statistical analysis

Statistical analyses, bivariate and multivariate logistic regressions were used to analyze the data. In order to assess the differences between groups, the χ^2 -test and ANOVA were used

where appropriate. To determine possible predictors of a dental visit, the multivariate logistic regression model was implemented for all categories of dental visits. The analysis was done using the statistical software package SPSS 21, including the weight factor (“weight on”). This factor was used for the correction of disproportionate size of the sample and adjustment of the collected data.

Results

Almost two thirds of participants had a partner. The highest percentage of the respondents (54.3%) had middle education, and 28.9% had low education. Only one in three was employed (33.2%) and more than two fifths (43.8%) were poor. The distribution of demographic, socioeconomic characteristics and the smoking status of participants are presented in Table 1.

Table 1

The distribution of demographic, socioeconomic characteristics and the smoking status of the sample and description of study population across categories of dental visit (Survey 2013)

Variable	n (%)	< 6 months n (%)	6–12 months n (%)	≥ 12 months n (%)	<i>P</i>
Total	13,404 (100)	2,445 (18.3)	1,851 (13.8)	9,108 (67.9)	
Sex					
female	7,221 (53.9)	1,431 (19.8)	1,065 (14.8)	4,725 (65.4)	
male	6,183 (46.1)	1,014 (16.4)	786 (12.7)	4,383 (70.9)	< 0.0001 ^a
Age (years), mean ± SD	51.7 ± 17.3	44.8 ± 15.9	44.2 ± 16.0	55.1 ± 16.9	< 0.0001 ^b
Age (years)					
20–34	2,713 (20.2)	782 (28.8)	609 (22.4)	1,322 (48.8)	< 0.0001 ^a
35–44	2,158 (16.1)	516 (23.9)	397 (18.4)	1,245 (57.7)	
45–54	2,291 (17.1)	421 (18.4)	336 (14.6)	1,534 (67.0)	
55–64	2,839 (21.2)	420 (14.8)	268 (9.4)	2,151 (75.8)	
65+	3,403 (25.4)	306 (9.0)	241 (7.1)	2,856 (83.9)	
Marital status					
living with a partner	8,771 (65.4)	1,556 (17.7)	1,219 (13.9)	5,996 (68.4)	0.119 ^a
living without a partner	4,633 (34.6)	889 (19.1)	632 (13.6)	3,112 (67.3)	
Type of settlement					
urban	7,554 (56.4)	1,615 (21.4)	1,198 (15.8)	4,741 (62.8)	< 0.0001 ^a
rural	5,850 (43.6)	830 (14.1)	653 (11.1)	4,367 (74.8)	
Region					
Belgrade	2,850 (21.2)	2,850 (21.2)	472 (16.5)	1,763 (61.9)	< 0.0001 ^a
Vojvodina	3,299 (24.6)	3,299 (24.6)	359 (10.9)	2,363 (71.6)	
Šumadija and West Serbia	4,089 (30.5)	4,089 (30.5)	567 (13.9)	2,853 (69.7)	
South and East Serbia	3,166 (23.6)	3,166 (23.6)	453 (14.4)	2,119 (67.0)	
Education					
low	3,868 (28.9)	357 (9.2)	262 (6.7)	3,249 (84.1)	< 0.0001 ^a
middle	7,281 (54.3)	1,437 (19.7)	1,103 (15.1)	4,741 (65.2)	
high	2,255 (16.8)	651 (28.9)	486 (21.5)	1,118 (49.6)	
Employment					
employed	4,438 (33.1)	1,069 (24.1)	838 (18.9)	2,531 (57.0)	< 0.0001 ^a
unemployed	3,076 (22.9)	582 (18.9)	435 (14.1)	2,059 (67.0)	
inactive	5,890 (44.0)	794 (13.5)	578 (9.8)	4,518 (76.7)	
Wealth Index					
poorest class	3,004 (22.4)	303 (10.1)	216 (7.2)	2,485 (82.7)	< 0.0001 ^a
poorer class	2,865 (21.4)	462 (16.1)	329 (11.5)	2,074 (72.4)	
middle class	2,670 (20.0)	487 (18.2)	400 (15.0)	1,783 (66.8)	
richer class	2,507 (18.7)	573 (22.9)	422 (16.8)	1,512 (60.3)	
richest class	2,358 (17.5)	620 (26.3)	484 (20.5)	1,254 (53.2)	
Smoking status					
never smoked	5,620 (45.6)	1,014 (18.0)	822 (14.6)	3,784 (67.4)	0.123 ^a
former smoker	2,358 (19.2)	475 (20.1)	317 (13.4)	1,566 (66.5)	
smoker	4,330 (35.2)	820 (18.9)	584 (13.5)	2,926 (67.6)	

^a χ^2 -test; ^bANOVA.

There was a higher percentage of males (70.9%) than females (65.4%) that visited a dentist in a 12-month period or longer and the mean age was significantly higher among the study respondents who visited a dentist in the same period. The majority of participants reported visiting a dentist in the period of 12 months or longer and this pattern is the same for all age categories. In the urban area and Belgrade region only every fifth study participant visited a dentist every 6 months, and in a rural region every seventh. Among those who reported visiting a dentist in the period of 12 months or longer, the highest percentage belonged to the participants with a low education level (84.1%), inactive participants (76.7%), and those who belonged to the lowest socio-economic class (82.7%). Significant differences were observed between the categories of dental visits and all dependent variables, excluding marital status and smoking (Table 1).

The results of bivariate and multivariate logistic regression analysis on the association between a dental visit

and sociodemographic and lifestyle factors are presented in Table 2. In category visit to a dentist ≥ 12 months vs. < 6 months, using a bivariate analysis, we observed that demographic factors (age, sex, type of settlement and regions), socioeconomic factors (education, employment and Wealth Index) and smoking status were significantly associated with a dental visit. In the multivariate model, we found that demographic factors (female gender, age, rural area), socioeconomic factors (low and middle education level, Wealth Index), smoking status (smokers and former smokers) were significantly associated with a dental visit. Results showed that the odds of visiting a dentist in the period "12 months or longer" vs. "in the last 6 months" were the highest among older respondents (OR = 1.03), with a low (OR = 2.55) and middle (OR = 1.76) education level, the unemployed (OR = 1.20), the respondents who belonged to poorer (OR = 1.30) or the poorest class (OR = 1.71) and smokers (OR = 1.13).

Table 2

Predictors of dental visit – bivariate[#] and multivariate logistic regression analysis (Survey 2013)

Variables	Type of logistic regression analysis	6–12 months vs. < 6 months (1.909 vs. 2.549) OR (95% CI); <i>p</i>	≥ 12 months vs. < 6 months (8.817 vs. 2.549) OR (95% CI); <i>p</i>
Age	bivariate	1.00 (0.99–1.01); 0.270	1.04 (1.03–1.05); 0.000
	multivariate	1.00 (0.99–1.01); 0.591	1.03 (1.02–1.04); 0.000
Sex	bivariate		
female		0.94 (0.84–1.06); 0.361	0.67 (0.61–0.74); 0.000
male		1*	1*
Sex	multivariate		
female		1.02 (0.89–1.17); 0.700	0.70 (0.63–0.78); 0.000
male		1*	1*
Marital status	bivariate		
living with a partner		1.11 (0.98–1.26); 0.098	0.99 (0.89–1.09); 0.837
no partner		1*	1*
Marital status	multivariate		
living with a partner		1.09 (0.95–1.26); 0.209	1.03 (0.92–1.15); 0.524
no partner		1*	1*
Type of settlement	bivariate		
urban		1*	1*
rural		1.02 (0.90–1.16); 0.678	1.76 (1.60–1.93); 0.000
Type of settlement	multivariate		
urban		1*	1*
rural		1.08 (0.92–1.28); 0.313	1.17 (1.03–1.32); 0.014
Region	bivariate		
Belgrade		1*	1*
Vojvodina		0.80 (0.68–0.95); 0.012	1.38 (1.22–1.57); 0.000
Central and West Serbia		1.09 (0.92–1.28); 0.287	1.45 (1.27–1.64); 0.000
South and East Serbia		1.00 (0.84–1.19); 0.962	1.21 (1.06–1.39); 0.004
Region	multivariate		
Belgrade		1*	1*
Vojvodina		0.87 (0.72–1.05); 0.162	0.95 (0.82–1.09); 0.479
Central and West Serbia		1.17 (0.97–1.41); 0.094	1.01 (0.88–1.18); 0.800
South and East Serbia		1.08 (0.89–1.31); 0.436	0.85 (0.73–0.99); 0.048
Education	bivariate		
low		0.96 (0.78–1.18); 0.710	3.87 (3.32–4.50); 0.000
middle		1.01 (0.88–1.17); 0.798	2.17 (1.93–2.43); 0.000
high		1*	1*
Education	multivariate		
low		0.96 (0.74–1.23); 0.757	2.55 (2.12–3.07); 0.000
middle		0.99 (0.85–1.16); 0.978	1.76 (1.54–2.00); 0.000
high		1*	1*

Employment	bivariate		
employed		1*	1*
unemployed		0.94 (0.81–1.09); 0.430	1.50 (1.33–1.68); 0.000
inactive		0.97 (0.83–1.13); 0.704	1.13 (1.01–1.28); 0.032
Employment	multivariate		
employed		1*	1*
unemployed		0.97 (0.82–1.14); 0.743	1.20 (1.06–1.37); 0.004
inactive		1.06 (0.89–1.26); 0.505	1.08 (0.94–1.24); 0.246
Wealth Index	bivariate		
poorest class		0.89 (0.72–1.10); 0.303	3.14 (2.68–3.68); 0.000
poorer class		0.90 (0.75–1.08); 0.265	1.93 (1.67–2.22); 0.000
middle class		1.05 (0.88–1.25); 0.560	1.63 (1.42–1.88); 0.000
richer class		0.94 (0.80–1.11); 0.469	1.20 (1.05–1.37); 0.007
richest class		1*	1*
Wealth Index	multivariate		
poorest class		0.89 (0.67–1.20); 0.467	1.71 (1.38–2.12); 0.000
poorer class		0.91 (0.72–1.14); 0.419	1.30 (1.08–1.54); 0.004
middle class		1.00 (0.82–1.23); 0.939	1.16 (0.99–1.37); 0.063
richer class		0.92 (0.76–1.11); 0.405	1.04 (0.90–1.21); 0.555
richest class		1*	1*
Smoking status	bivariate		
never smoked		1*	1*
former smoker		0.81 (0.68–0.96); 0.016	0.81 (0.71–0.92); 0.001
smoker		0.84 (0.73–0.96); 0.013	1.18 (1.06–1.32); 0.001
Smoking status	multivariate		
never smoked		1*	1*
former smoker		0.82 (0.69–0.97); 0.027	0.84 (0.73–0.96); 0.015
smoker		0.87 (0.75–1.00); 0.063	1.13 (1.01–1.26); 0.033

#Adjusted on age; *Reference category.

OR – odds ratio; CI – confidence interval.

Discussion

This study was based on the analysis of the data of the third consecutive national health survey (2000, 2006, 2013) and we identified several factors associated with the last visit to a dentist in a period longer than 12 months. The highest percentage of the respondents in this survey (67.9%) reported visiting a dentist 12 months ago or longer. Only one in three (32.1%) respondents visited dentist less than one year ago, which is slightly higher than in the 2006 survey (30.7%). However, the 2000 survey level (when the distribution of the visits to a dentist in the past 12 months was 35.1%), was not reached¹⁵. According to these data, Serbia is far from northern European Union countries: the Netherlands (83%), Germany and Luxembourg (77%), Sweden (71%), but close to Romania (34%) and Hungary (35%)¹⁶.

We also observed that the higher the age of the respondents is, the higher the chance is that they will visit a dentist less frequently, which is confirmed by other studies¹⁷. However, in Sweden¹⁸ the situation is reversed, and the reason for such contradictory results can be explained by the increasing presence of natural teeth in people over 60 years of age, as well as a developed awareness of the importance of oral hygiene habits among the respondents.

No association between marital status and visits to the dentist was found in our study, while the results of Lee et al.¹⁹ showed that in adults aged 65 or older being married was associated with higher odds of dental care utilization.

Women were less likely to visit a dentist in the period longer than 12 months compared to men (OR = 0.70). According to the literature, women more regularly visit a dentist than men²⁰, which also confirms the survey results by developed countries, such as Germany and the United States^{21, 22}. In a cross-sectional study in Turkey²³, women had more visits to a dentist compared to men during a previous 12-month period. Such results can be explained by the fact that women, due to a higher level of awareness of health problems²³, their role in society, as well as hormonal differences²⁴, are more likely to regularly visit a dentist than men.

It has long been known that the majority of the rural population belong to a lower economic status and education level. They also have lower access since dental services often tend to be located in wealthy urban neighborhoods^{25, 26}. In regard to the place of residence in our research, we noted that respondents who live in a rural area tend to visit a dentist once in a 12-month-period or longer more frequently in comparison to the city residents. This trend has been confirmed by a study conducted in the United States on the population aged 18 years and older, where rural residency was shown as an independent factor associated with lower dental care utilization²². The research showed that the population of a rural area is most likely to visit a dentist only when they experience acute pain^{27, 28}.

Our findings revealed that the quintiles of the welfare, education level and employment status are significant predictors of rare dental visits. Education is a measure of intellectual level, and also an important and stable predictor of soci-

oeconomic status for most adults, unlike the employment status and income, which are strongly influenced by economic fluctuations^{29, 30}. In our study, as well as in National Health Survey in Serbia 2006¹⁵, the highest percentage of the respondents have completed a secondary school, while there is the smallest percentage of those with higher education. Our study showed that the respondents with secondary education were twice as likely to visit dentists in the period of 12 months or longer, when compared to the highly educated individuals, and odds increase among the respondents with a lower level of education. Similarly to the results of our study, the study of behavioral risk factors among the adult US population from 1995 to 2008 showed that those with a higher education level reported a significantly higher number of dental visits in the last 12 months compared to the population with a secondary and lower education level³¹. The same situation is in Europe, as demonstrated by a cross-sectional study conducted in 11 European countries on the adult population aged 50 years and over³². A study that included the residents of the 24 European countries has defined the level of education as the most important factor of dental health care services use in terms of sex, age, marital status, and working status, as well as the number of available dentists³³.

The unemployed in Serbia are less likely to use health care services³⁴. When it comes to the dental health service, both state and private, the unemployed in Serbia were 1.20 times more likely than the employed to visit a dentist in the period of 12 months or longer. In line with our results, the US adults who reported being unemployed in contrast to the employed had greater odds (OR = 1.174) of not having a dental visit in the last 12 months²². Following the economic crisis affecting Iceland in 2008, the unemployed women were nearly twice as likely to visit a dentist in the period of 12 months or longer than before the crisis began³⁵.

One of the most common causes of irregular visits to a dentist is the cost of dental services, that is, the financial constraints resulting from a bad financial situation of a household³⁶. The expenses relating to dental services vary between countries and depend on the legislative regulation of dental health care^{18, 37}. The estimates of spending money on dental health care in low and middle income countries showed that dental health care can be a considerable burden on households, to the extent of preventing the expenditure on basic necessities³⁸. Since the onset of the economic crisis in 2008, the standard of living in Serbia has been gradually decreasing, and consequently, the poverty rate increased from 6.1% in 2008 to 8.9% in 2014³⁹. In our study, the respondents who, according to the welfare quintile, belong to the poor economic class were 1.30 to 1.71 times more likely to visit a dentist in the period of 12 months or longer in relation to the richest. The study based on the data from 13 European countries⁴⁰ and the data from the United States⁴¹ confirms the positive correlation of the household material condition regarding quintile of welfare and personal earnings with a

dental visit. The results of the study in China indicate that the poor are not only less likely to seek dental care, but they make less frequent dental visits than the rich⁴². According to the results of the research by Wamala et al.⁴³, financial limitations dominated as the main reason for refraining from seeking a dental treatment.

Based on our results, smoking is a significant predictor of dental visits. Former smokers had lower odds of visiting a dentist in the period longer than 12 months. From this attitude ex-smokers have towards dental visits, it can be concluded that quitting this form of risky behavior is connected with an increased awareness of the importance of oral health as a component of the overall health. On the other hand, smokers were more likely to have a dental visit in the period longer than 12 months compared to non-smokers. Our finding was consistent with the results of other authors reporting that current smokers were more likely to delay routine dental visits⁴⁴ and less likely to report visiting a dentist within the past year than non-smokers⁴⁵.

Our study had several limitations. First, a visit to a dentist was self-reported with possible recall bias. Second, we were unable to examine other factors associated with a dental visit, such as dental insurance, number of dental caries, periodontal diseases or community water fluoridation. Third, our study was cross-sectional. Therefore, we cannot infer causality. Cross-sectional studies are not relational, and cannot determine causal relationships between different variables. It should be noted that, in addition to the demographic, socio-economic factors and smoking, there are other factors that are known or suspected to affect a dental visit that could be subject to examination in a future research. These are psychological factors (fear, psychosocial issues) and factors related to the community (relations between people, social support).

Conclusion

Nevertheless, this study demonstrated that sociodemographic and lifestyle factors are also important factors related to the visit to a dentist. The results of the socioeconomic status in relation to the visit to a dentist suggest the existence of inequalities. It is necessary to implement policies and programs aimed at improving accessibility of dental health care, particularly among the socially disadvantaged adults in Serbia.

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