

Prevalencija karijesa i faktori rizika za njegov nastanak u urbanoj i ruralnoj sredini

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Caries prevalence and risk factors for its development in urban and rural regions

Obradović Marija¹, Dolić Olivera¹

Medicinski fakultet, Klinika za preventivnu i dječju stomatologiju, Banja Luka

School of medicine, Dept of pediatric dentistry, Banja Luka

**ORIGINALNI RAD (OR)
ORIGINAL ARTICLE**

KRATAK SADRŽAJ

Uvod: Mnogi sociodemografski indikatori, pored ostalih faktora rizika dovode do nastanka multikauzalnog oboljenja kao što je karijes.

Cilj: Cilj ovog rada je bio da se ispita stanje zdravlja zuba kod 12-o godišnjaka urbane i ruralne sredine na teritoriji Banja Luke i utvrde mogući faktori rizika u oralnozdravstvenom ponašanju.

Subjekti i metode: Ispitivanje je obuhvatilo 496 12-o godišnjaka, učenika osnovnih škola na području urbane i ruralne sredine Banje Luke. Stomatološki pregled je obavljen u školskim učionicama uz korištenje dnevnog svjetla i primjenom stomatološkog ogledalca i stomatološke sonde. Prevalencija karijesa je analizirana Klein-Palmerovim-sistemom na osnovu kojeg su dobijene vrijednosti KIP-a (Karijes indeks prosjek) za gradsku i ruralnu sredinu. Učenici su popunili anketne upitnike o socijalno-ekonomskom statusu, procjeni motivacije i znanju o oralnom zdravlju te oralnihigijenskim i dijetetskim navikama.

Rezultati: Rezultati pokazuju visoke vrijednosti KIP – a, a naročito u ruralnoj populaciji učenika (4,89 i 6,74). Podaci iz ankete pokazuju statistički značajnu razliku u odgovorima vezanim za posjete stomatolozima, fluorofilaksu, učestalost pranja zuba i uzrast kada je započeto sa održavanjem oralne higijene.

Zaključak: 12-o godišnjaci imaju veliki broj oboljelih zuba, posebno stanovnici ruralnih područja. Potrebno je sprovesti oralnozdravstve edukativne programe u cilju poboljšanja oralnog zdravlja i izjednačavanja neproporcionalnosti u zastupljenosti oboljenja zuba kod populacija koje žive u različitim ekonomskosocijalnim i demografskim sredinama.

Ključne riječi: djeca, karijes, anketni upitnik, urbana sredina, ruralna sredina

SUMMARY

Introduction: Many socio-demographic indicators, apart from other risk factors, may lead to a multicausal disease, such as caries.

Aim: The aim of this study was to evaluate dental health status in 12-year olds in urban and rural populations in Banja Luka and determine possible risk factors in their oral health behavior.

Subjects and Methods: The study involved 496 children, 12-year-old pupils in primary schools in urban and rural regions of Banja Luka. Dental check-up was performed in classrooms at day light and using dental mirrors and probes. Caries prevalence was analyzed using the Klein-Palmer system to obtain the mean decayed teeth values for the two regions. The pupils filled in questionnaires about their socio-economic status, motivation and knowledge on oral health as well as oral hygiene and dietary habits.

Results: High mean decayed teeth values were obtained in the rural population of pupils (4.89 and 6.74). Questionnaire data showed statistically significant differences regarding dental visits, fluoride prophylaxis, the frequency of tooth brushing and the age when pupils started to maintain oral hygiene.

Conclusion: 12-year olds have a large number of affected teeth, especially in the rural region. It is essential to implement oral health education programs aimed at improving oral health and eliminating the misbalance in dental health status in populations living in different socio-economic and demographic regions.

Keywords: children, caries, questionnaire, urban region, rural region

Uvod

Na oralno zdravlje utiču način života, navike i rizična ponašanja – način prehrane, oralna higijena i upotreba fluorida, parafunkcije te korištenje usluga stomatologa. Ispravne oralnohigijenske navike sastoje se od dvije širokoshvaćene komponente, samozaštite (pravilna oralna higijena, ishrana, upotreba fluora) i korištenja stomatoloških usluga (redovne posjete stomatologu, oralnozdravstveno obrazovanje, upotreba preventivnih mjera).⁽¹⁾ Od 1986. godine Američka akademija za pedodonciju je preporučila da prva posjeta stomatologu treba da bude oko 6. mjeseca života bebe, što doprinosi primjeni pravovremenih preventivnih mjera. ⁽²⁾

U mnogim razvijenim zemljama svijeta se bilježi pad prevalencije karijesa posljednje dvije dekade. Razlog za to su uspješni preventivni programi koji su doveli do poboljšanja svijesti, znanja i stavova o zdravlju zuba. ⁽³⁻⁸⁾ Međutim nerazvijene zemlje i zemlje u razvoju, kao što je Bosna i Hercegovina, a samim tim i Republika Srpska, su još uvijek suočene sa visokom zastupljenošću karijesa zuba kod djece školskog uzrasta. Međutim, podaci koji govore o trenutnoj situaciji oralnog zdravlja i faktora koji direktno ili indirektno utiču na njega, na ovim prostorima su dosta oskudni.

Cilj ove studije je bio da se proveri stanje zuba i prevalencija karijesa na teritoriji grada Banja Luka i njenoj ruralnoj okolini. Takođe, namjera je bila da se determinišu faktori rizičnog ponašanja koji dovode do razlike rasprostranjenosti karijesa u dvije populacije učenika.

Subjekti i metode

U istraživanje su bili uključeni djeca starosti 12 god. učenici osnovnih škola na teritoriji grada Banja Luka, kao i njihovi vršnjaci iz ruralne sredine (seoska naselja u okolini Banjaluke). Ukupno je pregledano 495 12-godišnjaka, 311 iz gradske sredine, a 184 učenika iz ruralne sredine. Istraživanje je sprovedeno kao studija presjeka.

Pregledi su obavljeni u skladu sa kriterijumima WHO, u školskoj učionici pri dnevnoj svjetlosti uz korištenje ravnog stomatološkog ogledalca i oštre sonde. Jasno vidljive lezije sa formiranim kavitetom na površini zuba su registrovane kao dentalni karijes, dok promjene u transparentiji, početne demineralizacije u gledi sa intaktnom površinom bez kavitacije su registrovani kao zdravi zubi. Rasprostranjenost karijesa je verifikovana Klein-Palmerovim-sistemom na osnovu kojeg su dobijene vrijednosti KIP-a za gradsku i ruralnu sredinu.

Učenici su popunili anketne upitnike o socijalno-ekonomskom statusu, procjeni motivacije i znanju o oralnom zdravlju te oralnohigijenskim i dijetetskim navikama. Upitnik je oblikovan prema modelima različitih autora.^(2,3,4) Za procjenu statističke značajnosti u ispitivanju su korišteni testovi parametrijske i neparametrijske statistike, tj. Studentov t-test i χ^2 test.

Introduction

Oral health is affected by life style, habits and risk factors – diet, oral hygiene and fluoride application, parafunctions and dental services. Appropriate oral hygiene habits comprise two generally accepted components, self-protection (proper oral hygiene, diet, fluoride application) and dental services (regular visits to the dentist, oral health education, implementation of preventive measure).¹ Since 1986, the American academy of Pediatric Dentistry has recommended that the first visit to the dentist should be at the age of around 6 months and this facilitates the timely implementation of preventive measures.²

A decreasing tendency in caries prevalence has been recorded in many developed countries for the past two decades. The reason for this trend is successful preventive programs which increased awareness, knowledge and attitudes toward oral health.³⁻⁸ On the other hand, non-developed and developing countries, such as Bosnia and Herzegovina and the Republic Srpska, are still facing high caries prevalence in school children. However, the current data on oral health and risk factors directly or indirectly affecting it are scarce in this region.

The aim of this study was to evaluate dental health status and caries prevalence in urban and rural populations in Banja Luka. The intention was, also, to determine risk factors which may result in differences in caries prevalence in the two populations of pupils.

Subjects and Methods

The study involved 12-year-old children, pupils of primary schools in the town of Banja Luka and their peers from the rural region (villages around Banja Luka). In total, 495 children were examined, 31 from urban and 184 from the rural region. The study design was cross-sectional.

Dental check-ups were conducted according to WHO criteria, in classrooms at day light, using plain dental mirrors and sharp probes. Clearly visible lesions with cavities on tooth surfaces were classified as dental caries, whilst changes in transparency, initial enamel demineralization with intact surfaces and no cavitations were noted as intact teeth. Caries distribution was verified using the Klein-Palmer system to obtain the mean decayed teeth values for both regions.

The pupils filled in questionnaires about their socio-economic status, motivation and knowledge on oral health as well as oral hygiene and dietary habits. The questionnaire was designed according to similar models in previous studies.²⁻⁴ Parametric, Student's t-test, and non-parametric, χ^2 -test, were used to statistically assess differences.

Rezultati

Analizom podataka za populaciju učenika 12 godina starosti koji žive na području grada Banja Luka te okolnim selima, KIP iznosi 4,89, odnosno 6,74 gdje je na osnovu Studentovog t-testa nađena statistički značajna razlika ($p < 0,05$).

	Ukupno ispitanika	KIP	T	P
Gradska sredina	311	4,89	4,51	<0,05
Ruralna sredina	184	6,74		

Studentov t-test

Podaci anketnog upitnika su grupisani u 3 tabele. Tabela 2 sadrži rezultate vezane za posjete stomatologu i fluoro profilaksu. 27% 12-o godišnjaka u gradskoj zoni prvi put se upozna sa stomatologom prije 4.godine života, a 11,4% djece iz seoske sredine. U gradskoj sredini 47% dječaka i djevojčica već od 4. do 6. godine prvi put posjeti stomatologa, dok u ruralnoj sredini 48,4% djece prvi put posjeti stomatologa tek pri upisu u školu. Oko 1,9% u gradskoj i 4,5% ispitanika u ruralnoj sredini navodi da još uvijek nije bilo kod stomatologa ($\chi^2 = 44,6$, $p < 0,001$).

Razlog za prvu posjetu stomatologu kod 11,6% gradske djece, odnosno 18,5% djece iz ruralne sredine je bio bol. 45% gradske djece i 26,6 % ruralne sredine navode da je pregled zuba bio razlog za prvu posjetu stomatologu ($\chi^2 = 19,6$, $p < 0,10$).

Veliki procenat ispitanika obe populacije smatra da stomatologa treba posjećivati bez određenog rasporeda kada god je potrebno (65,3% i 51,1%), a 1,6% odnosno čak 6,5% 12 godišnjaka nikad ne posjećuje stomatologa ($\chi^2 = 26,38$, $p < 0,05$).

Razlog posljednje posjete stomatologu je bio kontrola 37,3% kod ispitanika u gradu, a 24,4% kod vršnjaka u selima oko Banjaluke. 11,4% ispitanika u ruralnoj sredini je zadnji put kod stomatologa radi vađenja zuba koji boli, a u urbanoj sredini 4,5% ispitanika ($\chi^2 = 23,8$, $p < 0,10$).

10% i 28% djece iz gradske sredine, a 6,5 i 15,8% djece iz ruralne sredine je odgovorilo da svakodnevno i ponekad koristi preparate fluora. 44,4% i 61,4% 12-o godišnjaka iz gradske i ruralne sredine tvrdi da uopšte ne koristi preparate fluora ($\chi^2 = 15,73$, $p < 0,05$).

Results

Analysis of data for the urban and rural populations of 12-year-old pupils in Banja Luka region showed that the mean decayed teeth values were 4.89 and 6.74, respectively. Student's t-test revealed this was statistically significant ($p < 0.05$).

Tabela 1. Odnos KIP-a kod ispitivanih grupa.

Table 1. Comparison of the mean decayed teeth values in examined groups.

Questionnaire data were grouped in three tables. Table 2 lists the results associated with dental visits and fluoride application. Before the age of 4, 27% of urban 12-year olds visited the dentist for the first time whilst this percentage in the rural population of children was 11.4%. In the urban population, 47% of boys and girls visited the dentist for the time between the age of 4 and 6 whereas 48.4% of rural population did the same when they enrolled in school. Around 1.9% in urban and 4.5% in rural population stated they still had not visited a dentist ($\chi^2 = 44.6$, $p < 0.001$).

Pain was the reason for the first visit to the dentist in 11.6% of urban children and 18.5% of children in the rural region. 45% of urban children and 26.6% of their rural peers stated dental check-up was the reason their first visit ($\chi^2 = 19.6$, $p < 0.10$).

A large percentage of children from both populations stated that a dentist should be visited when necessary, with no particular schedule (65.3% and 51.1%) and 1.6 and 6.5% of 12-year olds had never been to the dentist ($\chi^2 = 26.38$, $p < 0.05$).

The reason for their latest visit to the dentist was a check-up in 37.3% of urban subjects and 24.4% of rural population. In the rural population, 11.4% of children went to the dentist to have a painful tooth extracted and this percentage in urban children was 4.5% ($\chi^2 = 23.8$, $p < 0.10$).

10% and 28% of urban population and 6.5% and 15.8% of rural population stated they were using fluorides every day or sometimes, respectively. 44.4% and 61.4% of 12-year olds from urban and rural regions stated they had never used fluoride products ($\chi^2 = 15.73$, $p < 0.05$).

Tabela 2. *Praksa korištenja stomatoloških usluga kod 12 godišnjaka prema urbanom/ruralnom mjestu prebivanja.***Table 2.** *The use of dental services amongst 12-year olds with respect to urban/rural place of living.*

		g.s.	r.s.	g.s.%	r.s.%	X²
Koliko godina si imao/imala kada si prvi put bio/bila kod stomatologa?	manje od 4 godine	86	21	27%	11,4%	p<0,10
	od 4 do 6 godina	146	64	47%	34,8	
	pri upisu u školu	73	89	23,5%	48,4%	
	Nikada	6	10	1,9%	5,4%	
Koji je bio razlog prve posjete stomatologu?	bol	36	34	11,6%	18,5%	p<0,10
	povreda zuba	13	5	4,18%	2,7%	
	vađenje mliječnog zuba	59	46	19%	14,8%	
	vađenje stalnog zuba	5	5	1,6%	2,7%	
	popravljanje zuba	58	45	18,6%	24,5%	
	Pregled	140	49	45%	26,6%	
Stomatologa posjećujem:	svakih 3 mjeseca	37	19	11,9%	10,3%	p<0,10
	Svakih 6 mjeseci	18	4	5,8%	2,2%	
	jedanput godišnje	11	8	3,5%	4,3%	
	kad god je potrebno, bez određenog rasporeda	203	94	65,3%	51,1%	
	kad me zub boli	37	47	11,9%	25,5%	
	nikada	5	12	1,6%	6,5%	
Koji su razlozi što ne posjećuješ stomatologa?	strah	82	72	26,4%	39,1%	p<0,10
	ne trebam, jer me ništa ne boli	182	81	58,5%	44%	
	nije mi važno	23	10	7,4%	5,4%	
	roditelji me ne vode	7	3	2,2%	1,6%	
	nemamo stomatologa u blizini	5	14	1,6%	7,6%	
	preskupo je	12	4	3,8%	2,2%	
Koji je bio razlog posljednje posjete stomatologu?	kontrola, pregled	116	42	37,3%	24,4%	p<0,10
	popravljanje zuba	112	77	36%	41,8%	
	vađenje mliječnog zuba	25	20	8%	10,9%	
	vađenje zuba zbog bola	14	21	4,5%	11,4%	
	bol	18	11	5,8%	6%	
	povreda zuba	4	7	1,3%	3,8%	
	tretman oboljenja desni	6	1	2%	0,5%	
	izrada aparata/proteze	16	5	5,1%	2,7%	
Da li koristiš preparate fluora?	da, svaki dan	31	12	10%	6,5%	p<0,10
	da, ponekad	87	29	28%	15,8%	
	da, u školi	55	30	17,7%	16,3%	
	nikada	138	113	44,4%	61,4%	
Kako ocjenjujete materijalno stanje vaše porodice	dobro	258	123	83%	66,8%	p<0,10
	osrednje	34	56	10,9%	30,4%	
	loše	19	5	6,1%	2,7%	

g.s.-gradska sredina ; g.s.% - procenat dobijenih odgovora za gradsku sredinu

r.s. – ruralna sredina ; r.s.% - procenat dobijenih odgovora za ruralnu sredinu

 χ^2 test

Ispitivanjem navika o oralnoj higijeni utvrđena je statistički značajna razlika u odgovorima na pitanja koliko često peru svoje zube u toku dana ($\chi^2=19,4\%$, $p<0,05$) i godinama kada su počeli sa održavanjem oralne higijene ($\chi^2=54,4$, $p<0,05$). Dva puta dnevno pere svoje zube 53,37% djece iz urbane sredine, a 33,76% poslije svakog obroka, dok u ruralnoj sredini procenat odgovora na ovo pitanje je 59,23% i 17,93%.

Što se pitanja o dužini pranja zuba i o sredstvima koja koriste prilikom održavanja oralne higijene tiče nije nađena statistički značajna razlika. 95,14% učenika u gradskim školama, kao i 91,30% njihovih vršnjaka u seoskim školama za pranje zuba koristi četkicu za zube i 91,96%, odnosno 88,58% pastu za zube.

The data on oral hygiene revealed significant differences related to the daily frequency of tooth brushing ($\chi^2=19.4\%$, $p<0.05$) and the age when they had begun maintaining oral hygiene ($\chi^2=54.4\%$, $p<0.05$). 53.37% of urban children brushed their teeth twice a day and 33.73% after each meal, whereas in the rural region, the same answers gave 59.23% and 17.93% of children, respectively.

As for the duration of tooth brushing and the means for oral hygiene maintenance, there were no significant differences. 95.14% of children in urban schools and 91.30% of rural school children used the tooth brush and 91.96% and 88.58% toothpaste, respectively.

Tabela 3. Oralnihigijenske navike 12 godišnjaka prema urbanom/ruralnom mjestu prebivanja.

Table 3. Oral hygiene habits amongst 12-year olds with respect to urban/rural place of living.

		g.s.	r.s.	g.s.%	r.s.%	X²
Koliko često pereš svoje zube?	nikada	1	0	0,32%	0,00%	p<0,05
	ponekada (neredovno)	9	8	2,89%	4,34%	
	jedanput dnevno	30	34	9,64%	18,47%	
	dva puta dnevno (ujutru i uveče)	166	109	53,37%	59,23%	
	Poslije svakog obroka	105	33	33,76%	17,93%	
Zube perem:	nekoliko sekundi	13	3	4,18%	1,63%	NS
	1 minutu	57	34	18,32%	18,47%	
	3 minuta	94	77	30,22%	41,84%	
	detaljno sve unutrašnje i spoljašnje površine	147	70	47,26%	38,04%	
Za higijenu usta i zuba koristim (ukoliko je potrebno zaokružiti više odgovora):	četkicu za zube	296	168	95,14%	91,30%	NS
	pastu za zube	286	163	91,96%	88,58%	
	Konac za zube	53	12	17,04%	6,52%	
	rastvore za ispiranje usta i zuba (npr. Fluorogal)	39	13	12,54%	7,06%	
	Čačalicu	37	13	11,89%	7,06%	
	Ništa	1	0	0,32%	0,00%	
Počeo/počela sam prati zube:	u 2. godini	134	40	43,08%	21,73%	p<0,05
	od 2. do 4. godine	110	53	35,36%	28,80%	
	od 4. do 6. godine	53	54	17,04%	29,34%	
	kad sam krenuo/krenula u školu	13	37	4,18%	0,20%	
	još ne perem zube	1	0	0,32%	0,00%	

NS- nije signifikantno

Statistički značajna razlika nije nađena ni kod odgovora na pitanja o navikama u ishrani. Bijeli hljeb je u velikom procentu zastupljen u ishrani kod obe grupe ispitanika (53,69% u gradskoj sredini, a 66,84% u ruralnoj sredini), za piće uglavnom koriste vodu iz vodovoda, a sokove pije 28,61% djece iz grada i 20,10% djece iz seoske sredine. 44,05% i 34,23% djece slatkiše jede svakodnevno, više puta na dan, između glavnih obroka.

No statistically significant differences were found regarding dietary habits. White bread was largely used in both populations (53.69% in urban and 66.84% in rural) as well as tap water for drinking. Juices were consumed by 28.61% of urban and 20.10% of rural children and 44.05% and 34.23% of children consumed sweets every day, several times a day, between main meals.

Tabela 4. Dijetetske navike kod 12 godišnjaka prema urbanom/ruralnom mjestu prebivanja.**Table 4.** Dietary habits amongst 12-year olds with respect to urban/rural place of living.

		g.s.	r.s.	g.s.%	r.s.%	X²
Koju vrstu hljeba ili peciva najčešće koristiš u ishrani?	Bijeli	167	123	53,69%	66,84%	NS
	polubijeli	32	17	10,28%	9,23%	
	crni, raženi i sl.	56	18	18,01%	9,78%	
	kombinovano	56	26	18,01%	14,13%	
Šta koristiš za piće?	vodu iz vodovoda	162	118	52,09%	64,13%	NS
	vodu iz bunara	11	18	3,53%	9,78%	
	flaširanu vodu	49	11	15,75%	5,97%	
	Sokove	89	37	28,61%	20,10%	
Voće jedem:	svaki dan	206	109	66,23%	59,23%	NS
	Nekoliko puta sedmično	98	69	31,51%	37,5%	
	jedanput mjesečno	4	4	1,28%	2,17%	
	Nikada	3	2	0,96%	1,08%	
Povrće jedem:	svaki dan	129	88	41,47%	47,82%	NS
	Nekoliko puta sedmično	168	83	54,01%	45,10%	
	jedanput mjesečno	8	7	2,57%	3,8%	
	Nikada	6	6	1,92%	3,26%	
Slatkiše jedem:	svaki dan uz glavni obrok	85	61	27,33%	33,15%	NS
	svaki dan (stalno ih "grickam")	137	63	44,05%	34,23%	
	jedanput sedmično	79	46	25,40%	25%	
	jedanput mjesečno	7	13	2,25%	7,06%	
	Nikada	3	1	0,96%	0,54%	
Šta najčešće jedeš u školi za užinu?	Sendvič	210	119	67,5%	64,67%	NS
	proizvode od lisnatog tijesta	28	7	9,01%	3,80%	
	Picu	22	10	7,07%	5,43%	
	kolače ili druge slatkiše	4	2	1,28%	1,08%	
	smoki, čips, štapiće	47	46	15,11%	25%	
Najčešće jedem:	samo kašastu i meku hranu	104	68	33,44%	36,95%	NS
	čvrstu hranu	207	116	66,55%	63,04%	

Diskusija

U ovoj studiji, reprezentativnoj za uzrast od 12 godina na teritoriji Banja Luke i njene okoline, nađena je visoka karijes prevalencija kod obe grupe ispitivanih učenika, a naročito u ruralnom području, što doprinosi saznanju da životno okruženje utiče na zdravlje. Prevalencija karijesa kod 12-o godišnjaka na području gradske sredine iznosi 4,89, a u okolnim ruralnim sredinama je 6,74. Pored toga što zastupljenost oboljelih zuba kod ispitivanih ove studije ne dostiže cilj koji je postavila SZO u strategiji "Zdravlje za sve do 2000. godine", gdje je predviđeno da KIP kod 12-o godišnjaka bude manji od 3 (sanirana) zuba, a koji je dostignut u mnogim razvijenim zemljama, postoji i statistički značajna razlika među grupama.^(7,8)

Discussion

In this study, representative for 12-year old children in Banja Luka region, high caries prevalence has been determined in both populations of pupils, especially in the rural region, which contributes to the opinion that life environment affects oral health. Caries prevalence of 4.89 in urban and 6.74 in rural population does not conform to the aim of WHO-based strategy "Health for all by 2000", which targeted less than 3 (restored) teeth in 12-year olds and has been fulfilled in many developed countries.^{7,8} Furthermore, a statistically significant difference was found between the two populations.

Postojeći rezultati su u skladu sa ranijim istraživanjima, gdje su takođe nađene veće vrijednosti KIP-a kod ispitanika u ruralnim područjima u odnosu na urbana.^(8,10,11,14,15)

Tradicionalno, uvijek je postojao niži ekonomski i obrazovni nivo kod stanovništva u ruralnim sredinama, a takođe i manja dostupnost stomatološkim uslugama.^(15,18) Statistički značajna razlika je nađena kod svih odgovora o posjetama stomatologu između učesnika ankete. Mogući razlog za to je nepostojanje dječijih stomatoloških ambulanti u školama na seoskim područjima, dakle veća udaljenost od stomatologa, nedostatak pravilno organizovane školske stomatološke njege, zdravstvenooralna neprosvjećenost roditelja, kao autoriteta u vaspitanju, te niži socijalnoekonomski status. Ispitivanja iz zapadnoevropskih zemalja pokazuju da škole obezbjeđuju značajnu platformu za kontrolu oralnog zdravlja i relevantni su pokazatelji promocije oralnog zdravlja.⁽¹³⁾ Iako je 6,1% djece iz grada u odnosu na 2,7% iz ruralnog okruženja odgovorilo da živi u lošem materijalnom stanju, generalno u gradskoj sredini postoji viši životni standard. Prema istraživanju koje je sprovedeno u SAD na uzrastu od 18 do 64 godine, stanovnici ruralnih područja su manje koristili profesionalne dentalne servise, dva puta češće su bili bezzubi i imali su veću prevalenciju karijesa u odnosu na stanovništvo u urbanim područjima.⁽¹⁴⁾

Oralnohigijenske navike, izgleda da su na relativno visokom nivou kod ispitanika obe grupe, jer je veliki procenat odgovorio da peru zube dva i više puta dnevno (dva puta dnevno 53,37%, više puta dnevno 33,76% u gradskoj sredini, a 59,23%, odnosno 17,93% u ruralnoj sredini). Takođe je u velikom procentu zabeleženo da deca zube peru oko 3 min odnosno da ih detaljno peru sa svih strana (3 min. u gradskoj sredini zube pere 30,22% ispitanika, a 47,26% detaljno sa svih strana, dok je u ruralnoj sredini taj odnos 41,84%, odnosno 38,04%). Veliki broj ispitanika koristi, kao osnovna sredstva, četkicu i pastu za zube, ali je mali broj onih koji koriste dodatna sredstva, naročito dentalni konac i to u ruralnoj sredini samo 6,52%. Statistički značajna razlika je nađena kod učestalosti pranja zuba i uzrasta kada je započeto sa održavanjem oralne higije. Prema istraživanju u Kuvajtu češće održavanje oralne higijene velikoj mjeri pozitivno korelira sa brojem posjeta stomatologu.⁽¹⁷⁾ Međutim, informacije bi mogle da se uzmu sa određenom rezervom, jer je moguće da su ispitanici davali odgovore više se rukovodeći time koji bi odgovor bio poželjniji od toga kakve su u stvari njihove oralnohigijenske navike.

U poređenju sa drugim istraživanjima bolje oralnohigijenske navike, češće posjete stomatologu pokazuju ispitanici ove studije u odnosu na Sjeverni Jordan, Kinu, Indiju, Sjevernu Afriku (Gambia) te studiju rađenu na teritoriji Prištine, dok su dobijeni rezultati slični ispitivanju koje je sprovedeno na adolescentima u Hrvatskoj.^(2,5,6,9,10 - 13,16)

The present results are in agreement with previous studies, which also reported higher mean decayed teeth values in various rural populations.^{8,10,11,14,15}

Traditionally, there have always been lower economic and educational levels in rural population as well as lower accessibility to dental services.^{15,18} Statistically significant differences were found in all answers related to dental visits between the two groups of subjects in the present study. Possible reasons are the lack of pediatric dental offices in schools in rural regions, meaning a greater distance to a dentist, the lack of properly organized school dental care, insufficient dental health awareness of parents, inappropriate role models, as well as lower socio-economic status. Studies in Western countries show that schools provide an important platform for oral health control, being relevant indicators of oral health promotion.¹³ Although 6.1% of urban and 2.7% of rural children stated they were living in poor economic conditions, it is generally accepted that the standard of life is higher in urban regions. According to a US study on subjects of 18 to 64 years of age, rural population used dental services less frequently, were edentulous twice more often and had higher caries prevalence compared to urban population.¹⁴

Habits related to oral hygiene seem to be on a relatively high level in both groups, as large numbers of children stated they brush teeth two or more times a day (twice a day 53.37%, several times a day 33.76% in urban and 59.23% and 17.93% in rural population). Furthermore, high percentage of children brush teeth for 3 min and cover all sides (3 min in urban – 30.22%, covering all sides – 30.22% compared to 41.84% and 38.04% in the rural region). Many subjects use a tooth brush as a main tool for oral hygiene, but a small number of them use additional tools, especially dental floss (only 6.52% in the rural region). There was a statistically significant difference in the frequency of tooth brushing and the age when this was begun. According to a study in Kuwait, more frequent maintenance of oral hygiene is correlated with a greater number of visits to the dentist.¹⁷ However, this information should be considered with care as it is possible that subjects gave answers according to what was considered more appropriate than their actual oral hygiene habits.

Better oral hygiene habits and more frequent dental visits were found in the present study compared to studies in North Jordan, China, India, North Africa (Gambia) and Prishtina, and comparable to a study on adolescents in Croatia.^{2,5,6,9-13,16}

Dijetetske navike su slične kod obe ispitivane populacije i nije nađena statistički značajna razlika. Ispitivanje je pokazalo da postoji loš trend u prehrani, jer se u ishrani mnogo koristi bijeli hljeb (53,69% gradska i 66,84% seoska djeca). Veliki broj njih uzima slatkiše svakodnevno ponekad i više puta u toku dana (stalno ih "gricka" 44,05%, i 34,23%, gradske, odnosno djece iz seoskog područja). Studija sprovedena u Sjevernoj Africi, među 12-o godišnjacima Gambije, pokazuje da sa urbanizacijom i zapadnjačkim načinom ishrane dolazi do porasta karijes prevalencije, te da je prevalencija veća u urbanim područjima (5,78) u odnosu na ruralna (2,97), gdje je hrana pripremana na tradicionalni način.⁽¹⁶⁾

Oralnozdravstveno obrazovanje je veoma bitno da bi se dostigle zadovoljavajuće zdravstvenohigijenske navike, ali je veza između znanja i ponašanja loša. Iako je karijes multikauzalno oboljenje, izgleda da na poboljšanje oralnog zdravlja više utiče stepen profesionalne angažovanosti nego pacijentovo znanje.⁽¹⁾ Istraživanja takođe pokazuju da su djeca u urbanoj sredini, koja se češće koriste profesionalnu pomoć stomatologa više informisana o zdravlju zuba, međutim primjena tog znanja u velikoj mjeri zavisi i od motiviranosti pacijenta za očuvanje sopstvenog zdravlja, a takođe i znanja, motiviranosti i angažovanosti roditelja. Znanje roditelja prema zdravlju zuba je slabo, naročito u ruralnoj sredini. Do povećanja nivoa znanja kod roditelja došlo se nakon posjeta stomatolozima, gdje su dobijene određene smjernice o mjerama zdravlja zuba.⁽²⁾

Uprkos dugogodišnjoj praksi u sprovođenju oralnozdravstveno promotivnih programa gdje je naglasak dat podizanju nivoa zubozdravstvenog znanja, poboljšanju stavova i dijetetskohigijenskog režima, ovakva praksa nije uspjela da doprinese izjednačavanju prevalence oralnih oboljenja u urbanim i ruralnim populacijama, s toga je neophodno uzeti u obzir socijalne, kulturalne i ekonomske aspekte života jer to su osnovne determinante ponašanja, a i obolijevanja. Na taj način bi se došlo do najprikaladnijeg dizajna zdravstveno edukativnih programa.⁽¹⁵⁾

Zaključak

Dobijeni rezultati pokazuju visoku karijes prevalencu kod obe grupe ispitanika, ali je veća učestalost zabeležena kod dece u ruralnoj sredini. Visoka zastupljenost karijesa je posledica loših navika i nepostojanja organizovanog programa primarne zdravstvene zaštite, koji bi u skladu sa socio-ekonomskim, kulturološkim i demografskim uslovima obezbedio najoptimalnije rezultate.

Dietary habits were similar in both examined groups and no statistically significant difference was found. The study has shown that there is a bad dietary trend as white bread is used too much (53.69% of urban and 66.84% of rural population). A large number of subjects consume sweets on a daily basis, sometimes several times a day (44.05% of urban and 34.23% of rural population always have some snacks). A North African study on 12-year olds in Gambia showed increasing caries prevalence with urbanization and western dietary habits and higher caries prevalence in urban (5.78%) than rural regions (2.97%), where food was still prepared in a traditional way.¹⁶

Oral health education is very important to achieve satisfactory oral hygiene habits, but relation between knowledge and behavior was found to be unsatisfactory. Though caries is a multicausal disease, it seems that the level of professional engagement affects oral health improvements more than patients' knowledge.¹ Studies have also shown that urban children, who seek professional dental help more frequently, are better informed about oral health. However, the implementation of this knowledge is largely affected by patients' motivation to maintain their own oral health as well as knowledge, motivation and engagement of parents. Parents' knowledge on oral health is poor, especially in the rural region. The level of parents' knowledge is increased after visiting dentists and receiving guidelines on oral health measures.²

Despite long-term practice in implementing oral health promotion programs with accents on increasing knowledge and attitudes on oral health and dietary-hygiene regimes, this practice has failed to make even the prevalence of oral diseases in urban and rural populations. Therefore, it is essential to consider social, cultural and economic aspects of life because these are the main determinants of one's behavior as well as illness. In this way, the most appropriate oral health education programs could be designed.¹⁵

Conclusion

The present results confirm high caries prevalence in both examined groups, but higher frequency was found in 12-year olds in the rural region. High caries occurrence is a result of bad habits, the lack of organized preventive program and the primary health care system, which would provide the most optimal results according to socio-economic, cultural and demographic conditions.

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Adresa za korespondenciju

Obradović Marija
 Medicinski fakultet Banja Luka
 Katedra za preventivnu i dječiju stomatologiju
 e-mail: o.marija@yahoo.com

Address for correspondence

Obradović Marija
 Faculty of medicine
 Banja Luka
 e-mail: o.marija@yahoo.com