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The Effect of Oral Hygiene on the Caries Prevalence among Schoolchildren in Foča

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SUMMARY

Introduction Caries and periodontal disease are the most common diseases afflicting oral tissues. Insufficient knowledge of the causes of these diseases leads to inappropriate behavior of patients towards their own oral health. The aim of this study was to determine the level of oral hygiene and its effect on the prevalence of dental caries in schoolchildren in Foča.

Material and Methods The study included 239 schoolchildren, 12 years old of both genders, attending four elementary schools in Foča. To assess their oral health methodology and criteria of the World Health Organization were used. Carious teeth were recorded and oral hygiene evaluated in accordance with Oral Hygiene Index. A questionnaire was used to obtain information about oral hygiene habits, reasons for dental visits as well as the number of dental visits.

Results The average number of affected teeth in the analyzed population was 5.43 and the average value of Oral Hygiene Index was 0.93. Good oral hygiene was noticed in 75% of respondents. Most respondents had at least one dental visit. Toothache was the most common reason for dental visit while the distance from clinics and fear of intervention were the most common reasons for not visiting dentist.

Conclusion In this part of Podrinje children had an average of more than five carious permanent teeth. Examined children from rural areas had poorer oral health, as well as lower number of visits to the health facilities compared to their peers in urban areas. Given that the most of examined children (75%) had good oral hygiene, other factors that led to significant number of carious teeth must be determined.

Keywords: epidemiology; dental caries; oral hygiene; children

INTRODUCTION

Oral diseases including teeth are the most widespread human diseases. Lifestyle, habits, industrialization and urbanization have led to changes in oral health. Highly processed, sticky and soft foods that can be eaten on the streets and less cooked in the family environment as well as reduced usage of raw food (fresh fruits and vegetables) have influenced increased incidence of oral diseases. Inadequate oral hygiene, retention of deposits on teeth and surrounding area also contribute to the development of these diseases. Dental plaque is rich in bacteria that have negative effect on oral tissue depending on the location as well as microbial composition [1]. There are many factors that support faster creation, accumulation and retention of plaque in caries predilection areas which causes changes in teeth and surrounding tissues [2]. Therefore, caries and periodontal disease are considered as "plaque induced diseases". Tooth decay occurs most often due to insufficient knowledge of oral health, and therefore inappropriate behavior towards one's teeth health [3]. Etiopathogenesis of caries is well known. Cariogenic oral flora in the presence of fermentable carbohydrates produces organic acids which lower the pH in the mouth, disturbing complex dynamic plaque equilibrium and causing enamel demineralization. This process eventually leads to the development of initial decay, and later a cavity [4].

Numerous epidemiological studies conducted on children indicate great variation in caries prevalence among different countries [5]. Scientists believe that tooth decay, as a multi-factorial disease, can be prevented only by multiple interactions of various preventive measures [6]. Adequate oral hygiene, a balanced diet, fluoride prophylaxis and recall visits can preserve dental health. At the end of the last century, developed European countries and North America, having realized a problem, have begun implementation of preventive and prophylactic measures in order to fight these diseases [7]. Developed countries have put under control the problem of tooth decay, but in developing countries this is not the case and dental caries is still major economic problem.

Efficient removal of dental plaque is critical for health of hard dental and periodontal tissues. Although severe forms of periodontal diseases are less prevalent in chil-

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dren as compared to adults, it starts usually with gingivitis. Therefore it is necessary to begin early prevention in order to contribute to its effectiveness [8].

Bearing in mind the fact that the health system of the Republika Srpska emphases treatment of currently present oral diseases, rather than applying preventive measures, we can predict prolonged unsatisfactory state of oral health in children in this area.

The aim of this study was to determine the level of oral hygiene and its effect on the distribution of dental caries in schoolchildren in Foča as well as to evaluate the habits important for preservation of oral health.

MATERIAL AND METHODS

This study was conducted as a descriptive cross sectional study that included 239 children of both genders (slightly more boys) from Foča. Research target group were schoolchildren attending four elementary schools in Foča, aged 12 years.

Age of twelve years is particularly interesting and important. It is a period of intensive development of children, especially girls. In the majority of cases at this age permanent dentition is present. Phylogenetically, the third molars are only missing. Motor skills are also extensively developed and manual dexterity for independent oral hygiene maintenance is achieved. Epidemiological studies in this age are extremely important, because they provide an insight into the permanent dentition (the number of teeth, shape, color, position, arrangement, relationship, caries, habits and diet). For this reason twelve year olds are usually assessed to determine the prevalence of teeth and periodontal diseases on the international level [9].

Data about socio-economic status, number of family members, parents' education and employment and number of dental visits in the last year were collected using a questionnaire, filled out by parents.

Four schools were selected for our study. Two schools were located in towns (urban) and two in suburban (rural) parts of Foča municipality. After presenting school principals with research plan and obtaining written consent from children's parents, the examinations were conducted in accordance with The Declaration of Helsinki on children's rights. Oral hygiene and teeth status evaluation was performed in classrooms, with the use of dental explorer and mirror on daylight, as proposed for this type of research.

Klein–Palmer's (DMFT) system for the evaluation of caries distribution, as well as for analysis and calculating the Average Caries Index (ACI) value was used.

Evaluation of oral hygiene was performed with the use of relevant indexes: Oral Hygiene Index (OHI), that represents a sum of Greene–Vermillion index of soft deposits or "Debris Index" (DI) and Greene's hard debris index or "Calculus Index" (CI).

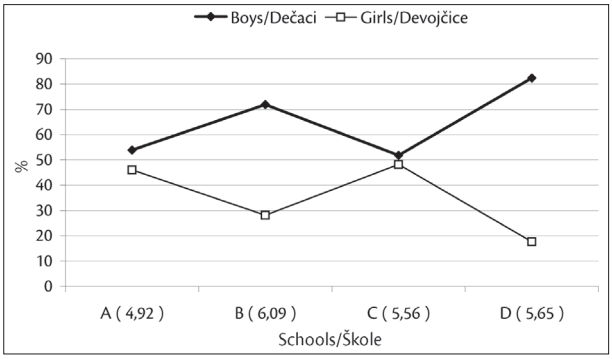
RESULTS

ACI value for all children included in the study was 5.43. Lower value of ACI was found in examined children in urban areas (4.92) while the value was higher in the children from rural areas (6.09) (Graph 1). There was no difference in ACI value between boys (5.40) and girls (5.58).

The structure of DMFT showed that the most of teeth were restored. The average number of carious teeth was 2.27 and extracted teeth 0.63, while the average number of restored teeth was 2.58 per child. Interesting fact in this study was that more children from rural areas had carious teeth while children from urban areas had more teeth with fillings (Graph 2).

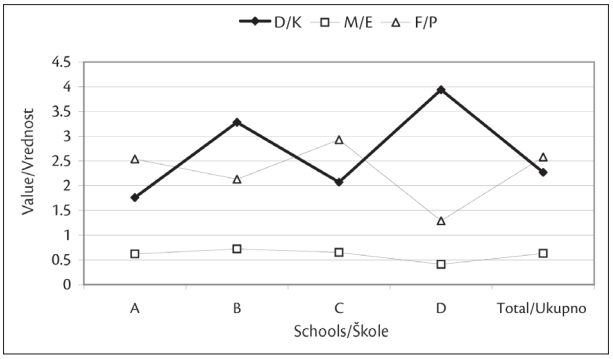
The average index of soft deposits was 0.83. The value of plaque index in the range of 0.1 to 0.6 (good hygiene) had 49% of examined children, the value of 0.7-1.8 (poor hygiene) was found in 45.6%, while the value of 1.9 to 3.0 (very poor hygiene) was obtained in 5.4% of respondents.

Average value of hard deposits was 0.1. The value of calculus index in the range of 0.1 to 0.6 (good hygiene) was found in 97.2%, the value of 0.7-1.8 (poor hygiene) was detected in 2.4%, while the value of 1.9 to 3.0 (very poor hygiene) was found in 0.4% of respondents. Overall, girls had less hard deposits on their teeth than boys.



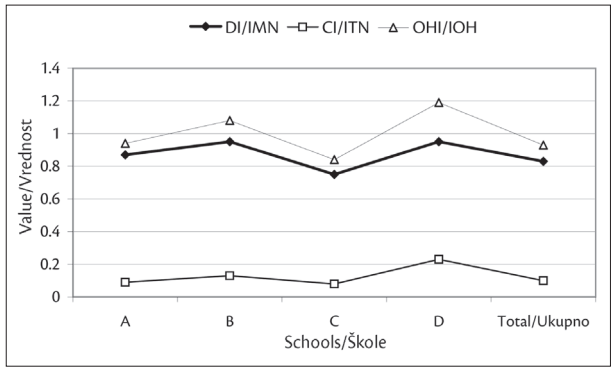
Graph 1. Distribution of the average caries index (ACI) values in schools in relation to children's gender (%)
Grafikon 1. Raspodela vrednosti karijes-indeksa osobe (KIp) po školama u odnosu na pol deteta (%)

A and C – schools in urban area; B and D – schools in rural area
A i C – škole iz gradske sredine; B i D – škole iz seoske sredine

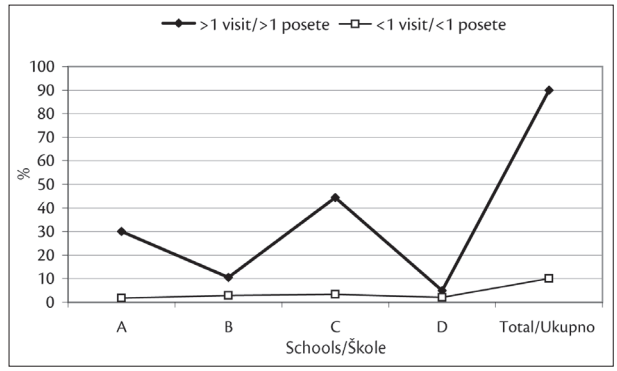


Graph 2. Distribution of DMFT index characteristics in children of examined schools
Grafikon 2. Raspodela obeležja indeksa KEP prema školama obuhvaćenim istraživanjem

D – decayed tooth; M – missing tooth; F – filled tooth
K – karijesni zub; E – ekstrahovani zub; P – plombirani zub



Graph 3. Average values of soft deposits (DI), hard deposits – calculus (CI) and oral hygiene indices (OHI) by examined schools
Grafikon 3. Prosečne vrednosti indeksa mekih naslaga (IMN), indeksa tvrdih naslga (ITN) i indeksa oralne higijene (IOH) prema školama obuhvaćenim istraživanjem



Graph 4. Distribution of children's dental visits in the previous year by examined schools (%)
Grafikon 4. Raspodela broja poseta dece stomatologu u protekloj godini prema školama obuhvaćenim istraživanjem (%)

The average value of oral hygiene index of all children was 0.93. The value of oral hygiene index that ranged from 0.1 to 1.2 (good hygiene) had 75% of respondents, the value of 1.3 to 3.0 (poor hygiene) was found in 23.8%, while the value of 3.1 to 6.0 (very poor hygiene) was obtained from 1.2% of respondents. Girls had better oral hygiene (0.67) than boys (1.11), especially in urban schools (Graph 3).

More than half of the children in this study belonged to the middle socio-economic class. High education of mothers was recorded in 2.5% of examined children, exclusively in urban areas, most of mothers had third and fourth grade of secondary education.

Analysis of data revealed that 90% of respondents had at least one or more visits to the dentist in the past year. Children from urban schools more often visited dentist as opposed to children in rural regions (Graph 4). However, higher percentage of boys in rural areas did not visit a dentist in the past year than the girls of the same region.

The most common reason for visiting a dentist was a toothache in 43.5%, followed by restorative treatments in 29.7% while recall exams were the reason for dental visit in just 26.8% of students. Girls more seriously take the importance of oral health and are more likely go for restorative (15.9%) and recall examinations (3.8%), whereas boys have greater fear of dental visits and they more likely go to see a dentist when they have a toothache (30.5%). Distance from dental clinics, fear of just thinking about the intervention, lack of interest and knowledge about the importance of oral health, as well as the "lack of current painful condition in the mouth" are the reasons why a small group of children have not visited dentist.

DISCUSSION

Dental caries remains a significant social and public health problem in many developed and especially in developing countries. Health Policy of the World Health Organization (WHO) has put the goal of 3 teeth in DMFT (two with fillings and one either extracted or decayed tooth) of twelve year olds until the year 2000. Most European countries have reached this goal long ago. The guidelines for the 21st century were decreasing number of persons with carious teeth and 1.5 of DMFT [7]. Although some countries in our region reached that goal or are close to it [5, 10-13], our study showed that we are still far away from original goals of the WHO.

Average number of affected teeth per child from urban area was lower compared to their peers from rural area. Number of children who attend schools in urban areas is larger and dental clinics are more approachable to them. Also, more frequent presence of dentists in schools and timely information about oral health is available. However, one study from Thailand reported higher values of the average caries index in children from urban areas [14].

National study of the Veneto region (Italy) indicated the average value of caries index of 2.6 in fourteen year olds [15], while it was 0.8 in twelve year olds [16] whereas in Yemen it was 3.22 for 12-14 years old [17], 3.13 in Jordan [18], 1.62 in Iran [19], and 3.11 in Mexico [20].

Preventive and restorative dental visits were the most common for twelve-year old Greeks, 1.6% of them have never visited a dentist, and their ACI was 2.5 [21]. The average caries index in Heidelberg-Germany was 1.5 [22] with observed difference between immigrants who showed higher ACI value compared to children born in Germany [23].

The value of debris index in Yemeni children was slightly higher (1.28) than in our study, while the value of the calculus index was lower 0.02 [17]. In Jordan, the debris index value was 1.46 [18] compared to Pančevo (1.17) [11]. More than half of children from Abu Dhabi showed poor oral hygiene, however their caries index was 3.27 [24]. A study conducted in the Republic of Serbia (2008) showed that twelve year olds have on average 2.8 permanent teeth diseased (from 1.0 to 5.1) in different regions [25].

Children should visit dentist for recall exams at least twice a year, in accordance with the risk for tooth decay. In caries-risk groups the number of visits should be higher. It is unacceptable that children, despite poor oral health, do not go for regular recall exams. The results also showed that children from rural areas had many orthodontic problems, but they rarely went to see dentist. However, such health ignorance is present in other parts of

the world as well. Interesting data is coming from Sudan. More than 50% of twelve years olds have never visited a dentist, while nearly 46% of them went to the dentist for the first time because of a toothache. Apart from irregular visits their average decay index was 0.42 while the value of debris index was 1.30 [26].

Although in most countries a downward trend in the prevalence of caries is recorded, regardless of whether they used prevention program and prevention methods (fluoridation of drinking water, fluoridated salt, fluoridated milk), in the examined region in our study this reduction was not noticed. A large number of decayed teeth can be still found. Instead of the current approach where carious lesions were firstly noted and then treated, new concept of the treatment should be based on early detection of risk factors and their elimination as well as early detection of initial lesion, its inactivation by prophylactic measures, or restoration with minimally invasive methods [4, 13].

CONCLUSION

The results showed that the presence of larger number of dental clinics, better access to the information relevant for oral health resulted in better oral hygiene and lower number of carious teeth in examined children from urban areas. These results are not satisfactory indicating that promotion of oral health is still a goal to be achieved and not just in rural areas but also in urban areas.

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Uticaj oralne higijene na rasprostranjenost karijesa kod dece školskog uzrasta u Foči

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KRATAK SADRŽAJ

Uvod Karijes i parodontopatije su najčešće bolesti koje zahvataju oralna tkiva. Nedovoljno poznavanje uzroka nastanka ovih oboljenja dovodi do neodgovarajućeg ponašanja prema sopstvenom oralnom zdravlju. Cilj ovog rada je bio da se utvrde nivo i uticaj higijene usta i zuba na rasprostranjenost karijesa kod dece školskog uzrasta u Foči.

Materijal i metode rada Ispitivanjem je obuhvaćeno 239 učenika oba pola, uzrasta od 12 godina, iz četiri osnovne škole u Foči. Korišćeni su metodologija i kriterijumi Svetske zdravstvene organizacije za procenu stanja oralnog zdravlja. Za ovaj deo istraživanja označeni su zubi zahvaćeni karijesom, a zatim je izmeren nivo oralne higijene prema indeksu oralne higijene. Na osnovu odgovora iz ankete dobijeni su podaci o navikama u održavanju higijene usta i zuba, razlozima dolazaka na pregled i broju poseta stomatologu.

Rezultati Prosečan broj obolelih zuba kod ispitanika bio je 5,43, a prosečna vrednost indeksa oralne higijene bila je 0,93. Dobra oralna higijena ustanovljena je kod 75% dece. Većina ispitanika je bar jednom došla na pregled kod stomatologa. Zubobolja je bila najčešći razlog poseta, a udaljenost ambulanti i strah od intervencija razlozi za odlaganje posete.

Zaključak U ovom delu Podrinjske regije deca imaju u proseku pet obolelih stalnih zuba, a ispitivana deca iz ruralnih krajeva imaju lošije stanje oralnog zdravlja, kao i manji broj poseta zdravstvenim ustanovama u odnosu na vršnjake iz gradske sredine. S obzirom na to da većina ispitivane dece (75%) dobro održava higijenu usta i zuba, moraju se utvrditi i drugi faktori koji su doveli do značajne rasprostranjenosti karijesa.

Ključne reči: epidemiologija; karijes zuba; oralna higijena; deca

UVOD

Oboljenja usta i zuba su najrasprostranjenija oboljenja čoveka. Stil života, navike, te industrijalizacija i urbanizacija dovele su do promena u stanju oralnog zdravlja ljudi. Sve više prerađena, lepljiva, meka hrana koja se može konzumirati na ulici, a sve manje spremljena u krugu porodice i korišćena u izvornom obliku (sveže voće i povrće), uticala je na povećanu incidenciju pojave bolesti usta i zuba. Nepravilno održavanje higijene usne duplje i zadržavanje naslaga na zubima i oko njih takođe doprinose razvoju ovih bolesti. Dentalni plak obiluje velikim brojem bakterija koje će kad-tad ispoljiti svoja loša svojstva, što je u direktnoj zavisnosti od lokalizacije i mikrobiološkog sastava dentalnog plaka [1]. Veliki je broj faktora koji potpomažu brže stvaranje, akumuliranje i zadržavanje zubnog plaka na karijes-predilekcionim mestima, čime omogućavaju nastanak promena na zubu i oko njega [2]. Zbog toga se za karijes i parodontopatije, kao najčešće bolesti usne šupljine, kaže da su „bolesti uslovljene plakom". Karijes najčešće nastaje usled nedovoljnog poznavanja, a samim tim i neodgovarajućeg ponašanja prema sopstvenom oralnom zdravlju [3]. Etiopatogeneza karijesa je danas relativno dobro poznata. Kariogena oralna flora u prisustvu fermentabilnih ugljenih hidrata stvara organske kiseline koje snižavaju pH vrednost u ustima, narušavaju složenu dinamičku ravnotežu zubnog plaka, izazivaju demineralizaciju gleđi i dovode do pojave inicijalnog karijesa, a vremenom i kaviteta na zubu [4].

Brojna epidemiološka istraživanja urađena kod dece ukazuju na veliku razliku u rasprostranjenosti karijesa među pojedinim zemljama [5]. Istraživači smatraju da se karijes, kao multifaktorska bolest, može sprečiti jedino višestrukim međusobnim dejstvom raznih preventivnih sredstava [6]. Iz toga proizlazi da se odgovarajućom oralnom higijenom, uravnoteženom ishranom, upotrebom fluorske profilakse i kontrolnim pregledima može očuvati zdravlje zuba. Krajem prošlog veka razvijene zemlje Evrope i Amerike, uvidevši problem, počele su s primenom preventivno-profilaktičkih mera radi suzbijanja ovih bolesti [7]. One su problem karijesa stavile pod kontrolu, ali za nerazvijene zemlje to nije slučaj i velika rasprostranjenost karijesa i dalje je veliki ekonomski problem.

Efikasno uklanjanje dentalnog plaka je od presudnog značaja kako za zdravlje zuba, tako i za zdravlje parodontalnih tkiva. Iako su teži oblici oboljenja parodoncijuma manje prevalentni kod dece u odnosu na odrasle, oni počinju sa gingivitisima, te je neophodno prevenciju započeti u najmlađem uzrastu da bi ona bila efikasna [8].

Imajući u vidu činjenicu da je u zdravstvenom sistemu Republike Srpske akcenat dat na sanaciji zatečenog oralnog stanja, a ne na merama prevencije, može se očekivati zadržavanje postojećeg, nezadovoljavajućeg stanja oralnog zdravlja dece.

Cilj ovog rada je bio da se utvrde nivo i uticaj oralne higijene na rasprostranjenosti karijesa kod dece školskog uzrasta u Foči, kao i da se procene navike u očuvanju zdravlja usta i zuba.

MATERIJAL I METODE RADA

Studija je urađena kao deskriptivna studija preseka kojom je obuhvaćeno 239 dece iz Foče oba pola (neznatno veći broj dečaka). Ciljna grupa istraživanja bili su učenici četiri osnovne škole, uzrasta od 12 godina.

Ovaj uzrast je posebno interesantan i važan. To je period intenzivnog razvoja dece, posebno devojčica. U najvećem broju slučajeva u ovom uzrastu dolazi je do smene svih zuba, odnosno prisustva pretežno stalne denticije. Filogenetski jedino nedostaju treći molari. U ovom uzrastu intenzivno se razvijaju

i motoričke veštine, koje mogu uticati i na manuelnu spretnost pri održavanju samostalne oralne higijene. Epidemiološka istraživanja su za ovaj period izuzetno važna, jer daju uvid o stanju stalne denticije (broj, oblik, boja, položaj, raspored, međusobni odnos, postojanje karijesa, izgrađene higijenske navike, način ishrane). Zbog toga su dvanaestogodišnjaci odabrani kao opšti dečji uzrast za nadzor rasprostranjenosti oboljenja usta i zuba, kao i za upoređivanja među zemljama [9].

Podaci o socioekonomskom statusu porodice, broju članova, stručnoj spremi i zaposlenosti roditelja i broju poseta deteta stomatologu u proteklih godinu dana dobijeni su pomoću ankete, koju su popunili roditelji.

Za ovo istraživanje izabrane su četiri osnovne škole – dve koje se nalaze na području grada (urbana sredina) i dve iz prigradskog dela opštine Foča (ruralna sredina). Nakon upoznavanja direktora škola s planom istraživanja i dobijanja saglasnosti roditelja (sve je vršeno u skladu s Helsinškom deklaracijom o poštovanju prava deteta) obavljeni su pregledi dece. Procena stanja oralne higijene i zdravlja zuba vršena je pomoću stomatološkog ogledala i sonde pri dnevnom svetlu u učionicama, što je predviđeno ovom vrstom istraživanja.

Za procenu rasprostranjenosti karijesa korišćen je Klajn–Palmerov (*Klein–Palmer*) sistem (KEP), pomoću kojeg su analizirane i dobijene vrednosti prosečnog karijes-indeksa po osobi (KIp).

Procena stepena higijene usta i zuba vršena je pomoću indeksa oralne higijene (IOH), koji predstavlja zbir vrednosti indeksa mekih naslaga (IMN) po Grin–Vermilionu (*Greene–Vermillion*) i indeksa tvrdih zubnih naslaga (ITN) po Grinu (*Greene*).

REZULTATI

Analizom podataka utvrđeno je da je prosečna vrednost KIp ispitane dece 5,43. Vrednost KIp niža od proseka zabeležena je kod dece iz gradske sredine (4,92), dok je veća bila kod dece iz ruralne sredine (6,09) (Grafikon 1). Prosečne vrednosti KIp bile su približno iste kod oba pola (dečaci 5,40; devojčice 5,58).

Posmatrajući strukturu KEP uočeno je da ima više zuba koji su sanirani. Prosečan broj karijesnih lezija bio je 2,27, prosečan broj ekstrahovanih zuba 0,63, dok je prosečan broj zuba s ispunima bio 2,58 po detetu. Veliki broj dece iz ruralne sredine imao je zube zahvaćene karijesom, dok je kod dece iz gradske sredine bilo više zuba s ispunima (Grafikon 2).

Vrednost IMN u proseku je bila 0,83. Vrednost plak-indeksa u rasponu od 0,1 do 0,6 (dobra higijena) zabeležna je kod 49% učenika, vrednost 0,7–1,8 (loša higijena) kod 45,6%, a vrednost 1,9–3,0 (vrlo loša higijena) kod 5,4% dece.

Vrednost ITN u proseku je bila 0,1. Vrednost kalkulus-indeksa u rasponu od 0,1 do 0,6 (dobra higijena) zabeležena je kod 97,2% učenika, vrednost 0,7–1,8 (loša higijena) kod 2,4%, a vrednost 1,9–3,0 (vrlo loša higijena) kod 0,4% dece. Devojčice su imale manje količine tvrdih zubnih naslaga.

Vrednost IOH u proseku je bila 0,93. Vrednost IOH u rasponu od 0,1 do 1,2 (dobra higijena) zabeležena je kod 75% učenika, vrednost 1,3–3,0 (loša higijena) kod 23,8%, a vrednost 3,1–6,0 (vrlo loša higijena) kod 1,2% dece. Kod devojčica je uočena mnogo bolja higijena usta i zuba (0,67) nego kod dečaka (1,11) (Grafikon 3).

Više od polovine dece obuhvaćene ovom studijom pripadalo je srednjoj socioekonomskoj klasi. Visoku stručnu spremu imalo je 2,5% majki ispitane dece, i to isključivo one koja žive u gradu, dok su ostale majke imale treći i četvrti stepen srednje stručne spreme.

Analizom podataka utvrđeno je da je 90% ispitanika barem jednom u proteklih godinu dana posetilo stomatologa. Deca koja pohađaju gradske škole su češće odlazila na preglede kod stomatologa, za razliku od dece koja idu u prigradske škole (Grafikon 4). Kada je u pitanju razlika između ispitanika po polu, veći procenat dečaka iz ruralnih sredina nije nijednom posetio stomatologa u proteklom periodu u odnosu na devojčice iz iste regije.

Najčešći razlog odlaska kod stomatologa bila je zubobolja (43,5%); slede restaurativni tretmani (29,7%) i kontrolni pregledi (26,8%). Devojčice su ozbiljnije shvatale značaj oralnog zdravlja, pa su češće odlazile na restaurativne i kontrolne preglede (15,9% i 13,8%), dok je kod dečaka zabeležen veći strah od odlaska kod stomatologa, pa su se na preglede najčešće javljali kada imaju zubobolju (30,5%). Udaljenost stomatološke ambulante, strah pri samoj pomisli na intervencije, nezainteresovanost za oralno zdravlje, nepoznavanje važnosti sopstvenog oralnog zdravlja i „nepostojanje trenutnih bolnih stanja u ustima" razlozi su zbog kojih manja grupa dece nije odlazila kod stomatologa.

DISKUSIJA

Karijes je i dalje značajan društveni i zdravstveni problem u velikom broju razvijenih zemalja, a posebno u zemljama u razvoju. Zdravstvena politika Svetske zdravstvene organizacije (SZO) se do 2000. godine zasnivala na postizanju do tri zuba sa KEP (dva sa ispunom i jednim zubom koji je ili izvađen ili zahvaćen karijesom) kod dvanaestogodišnjaka. Većina evropskih zemalja odavno je dostigla postavljeni cilj, pa je u smernicama za 21. vek naznačeno da se očekuje smanjenje broja osoba s karijesom, kao i 1,5 zuba s njegovim obeležjem za referentno godište [7]. Iako su taj cilj dostigle ili mu se približile neke zemlje iz našeg okruženja [5, 10-13], na osnovu ove studije se uočava da je stanje još daleko i od prvobitnih ciljeva SZO.

Prosečan broj obolelih zuba po detetu iz gradske sredine je nešto niži u odnosu na vršnjake iz seoskih područja. Broj dece koja pohađaju škole u gradu je dosta veći, ali su njima pristupačnije stomatološke ambulante, češće škole imaju stomatologa i dostupnije su pravovremene informacije o zdravlju oralnih tkiva. Studija iz Tajlanda ukazuje na veće vrednosti prosečnog KIp kod dece koja žive u gradu [14].

Nacionalna studija iz regiona Veneto, u Italiji, ukazala je na prosečnu vrednost KIp od 2,6 kod četrnaestogodišnjaka [15], dok je kod dvanaestogodišnjaka ona bila 0,8 [16], u Jemenu 3,22 (za uzrast od 12 do 14 godine) [17], u Jordanu 3,13 [18], u Iranu 1,62 [19], a u Meksiku 3,11 [20].

Preventivni i restaurativni pregledi bili su najčešći razlozi posete stomatologu dvanaestogodišnjaka u Grčkoj; 1,6% ispitanika nije posetilo stomatologa, dok je prosečna vrednost KIp bila 2,5 [21]. Prosečna vrednost ovog indeksa kod dece uzrasta od 12 godina u Hajdelbergu, u Nemačkoj, bila je 1,5 [22], s tim da je uočena razlika između doseljenika, kod kojih su zabeležene veće vrednosti KIp, i dece rođene u Nemačkoj, kod koje su prosečne vrednosti ovog indeksa bile manje [23].

Vrednost plak-indeksa kod dece u Jemenu bila je nešto veća (1,28) u odnosu na vrednost zabeleženu u našoj studiji, dok je vrednost kalkulus-indeksa bila niža (0,02) [17]. Kod dece u Jordanu vrednost plak-indeksa je bila 1,46 [18], a kod njihovih vršnjaka iz Pančeva 1,17 [11]. Većina dvanaestogodišnjaka iz Abu Dabija ima lošu oralnu higijenu, ali i pored toga njihov KIp je 3,27 [24]. Istraživanja koja su obavljena u Srbiji 2008. godine za potrebe izrade Preventivnog programa pokazala su da dvanaestogodišnjaci imaju u proseku 2,8 obolelih stalnih zuba (od 1,0 do 5,1) različitog lokaliteta [25].

Na redovne stomatološke preglede deca bi trebalo da odlaze najmanje dva puta godišnje, u skladu s rizikom od nastanka karijesa. Kod dece sklone karijesu broj poseta morao bi biti i veći. Neprihvatljivo je da deca iz ovog regiona, i pored lošeg zdravstvenog stanja zuba, nemaju naviku odlaska na preglede. Iz rezultata se vidi da deca iz ruralnih delova opštine imaju izraženije dentogene probleme, ali baš oni ređe odlaze stomatologu. Međutim, takva zdravstvena neprosvećenost vlada i u drugim krajevima sveta. Zanimljivi su, na primer, podaci iz Sudana. Naime, više od 50% dvanaestogodišnjaka koji žive u ovoj zemlji nikada nije posetilo stomatologa, dok ih se skoro 46% prvi put javilo na pregled zbog zubobolje. Pored neredovnih poseta, prosečna vrednost njihovog KIp bila je 0,42, dok je vrednost plak-indeksa bila 1,30 [26].

Iako je u većini zemalja zabeležen trend pada prevalencije karijesa bez obzira na to da li su te zemlje koristile preventivni program i preventivne metode (fluorisana pijaća voda, fluorisana kuhinjska so, fluorisano mleko) ili ne, uočeno je da u ispitivanom regionu smanjenje rasprostranjenosti karijesa nije tako osetno. I dalje se kod dece beleži veliki broj obolelih zuba. Umesto dosadašnjeg lečenja karijesa, gde se prvo uočavala karijesna lezija, a zatim vršila njena sanacija, novi koncept u lečenju bi trebalo da se zasniva na ranom prepoznavanju faktora rizika i njihovom uklanjanju, kao i ranom otkrivanju početne lezije, njenom inaktivisanju profilaktičkim merama, ili zbrinjavanju minimalno invazivnim metodama [4, 13].

ZAKLJUČAK

Rezultati su pokazali da su postojanje više stomatoloških ambulanti i bolja dostupnost informacija važnih za oralno zdravlje doveli i do bolje oralne higijene i nižeg prosečnog broja karijesnih zuba kod ispitivane dece iz gradske sredine. Dobijene vrednosti nisu zadovoljavajuće, što pokazuje da je na promociji zdravlja usta i zuba potrebno više raditi ne samo kod dece u seoskim sredinama, već i kod dece koja žive u gradu.