

INFORMISANOST SEDMOGODIŠNJAKA O UTICAJU ISHRANE, ORALNE HIGIJENE I FLUOR PROFILAKSE NA PREVALENCIJU KARIJESA PRVOG STALNOG MOLARA

THE LEVEL OF INFORMATION OF SEVEN YEAR-OLD-CHILDREN ON THE EFFECTS OF PROPER NUTRITION, ORAL HYGIENE AND FLUORIDE PROPHYLAXIS ON THE FIRST PERMANENT MOLAR CARIES PREVALENCE

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Kratak sadržaj

Zdravstveno-vaspitnim radom neophodno je decu informisati o uticaju pravilne ishrane, oralne higijene i fluor profilakse na zdravlje zuba.

Cilj rada je da se utvrdi da li je nedovoljna informisanost sedmogodišnjaka o pravilnoj ishrani, oralnoj higijeni i fluor profilaksi uzrok veće prevalencije karijesa prvog stalnog molara.

Ispitivanjem je obuhvaćeno 450 sedmogodišnjaka urbane sredine. Za ocenjivanje informisanosti sprovedena je anketa kod sedmogodišnjaka, a za procenu stanja prvih stalnih molara korišćen je Klein-Palmerov DMF (KEP) sistem. Prevalencija karijesa je izražena statističkim koeficijentima (KIO i KIZ) i indeksom i merom prosečnih vrednosti karijesa (KIP). Dobijeni rezultati pokazuju da je prevalencija karijesa više izražena kod neinformisanih sedmogodišnjaka o uticaju pravilne ishrane, oralne higijene i fluor profilakse:

- KIP informisanih sedmogodišnjaka o uticaju ishrane na zdravlje zuba je 1,11, a neinformisanih 2,28;*
- KIP informisanih sedmogodišnjaka o uticaju oralne higijene na zdravlje zuba je 1,17, a neinformisanih 1,95;*
- KIP informisanih sedmogodišnjaka o uticaju fluor profilakse na zdravlje zuba je 1,32, a neinformisanih 1,42.*

Zbog toga je neophodno intenzivirati zdravstveno-vaspitni rad i informisati decu o pravilnom načinu ishrane, oralnoj higijeni i profilaktičkim merama i na taj način smanjiti prevalenciju karijesa prvog stalnog molara.

Ključne reči: informisanost, ishrana, oralna higijena, fluor profilaksa, prvi stalni molar

Abstract

Health education is necessary, in order to inform children about the effects of proper nutrition, oral hygiene and fluoride prophylaxis on their dental health.

The goal of this paper is to determine whether caries prevalence of the first permanent molar is caused by insufficient information on the effects of proper nutrition, oral hygiene and fluoride prophylaxis in seven-year-olds.

The research included 450 children from urban environment. A survey was used for the assessment of the information level of seven-year-old children, whereas the health status of first permanent molars was determined by Klein-Palmer's DMF system. Caries prevalence is expressed through statistical coefficients (PCI and TCI), as well as through ACI (Average Caries Index). The results obtained suggest that caries prevalence is greater in urban seven-year-olds who are not informed about the effects of proper nutrition, oral hygiene and fluoride prophylaxis on their dental health:

- PCI of the informed seven-year-olds about the effects of nutrition is 1.11, and that of the non-informed ones is 2.28;*
- PCI of the informed seven-year-olds about the effects of oral hygiene is 1.17, and that of the non-informed ones is 1.95;*
- PCI of the informed seven-year-olds about the effects of fluoride prophylaxis is 1.32, and that of the non-informed ones is 1.42.*

Thus, it is necessary to intensify dental health education, in order to inform children about the importance of proper nutrition, oral hygiene and fluoride prophylaxis in the first permanent molar caries prevention.

Key words: information, nutrition, oral hygiene, fluoride prophylaxis, first permanent molar

Uvod

Zdravstveno vaspitanje, kao jedan od najvažnijih vidova preventivne stomatološke delatnosti, ima izuzetno važnu ulogu u ostvarivanju oralnog zdravlja, podrazumevajući u prvom redu redukciju karijesa kao najmasovnije oralne bolesti. Karijes je najčešće posledica nedovoljnog poznavanja i neodgovarajućeg ponašanja populacije u odnosu na usta i zube. Iz ovoga proizilazi potreba promene ponašanja pojedinca, grupe ili zajednice u celini, u smislu:

- uspostavljanja pravilnog režima ishrane (smanjenje frekvencije unošenja ugljenih hidrata, čvrsta abrazivna hrana i dr.);
- uspostavljanja navike održavanja oralne higijene (redovno održavanje, tehnika, sredstva, kontrola efikasnosti);
- upotrebe fluorida (paste za zube sa fluoridima, fluorisanje vode za piće, korišćenje tableta fluora i sredstva za lokalnu aplikaciju – rastvori za ispiranje usta, lakovi i sl.).¹

Cilj rada

Cilj rada je da se utvrdi da li je nedovoljna informisanost sedmogodišnjaka o pravilnoj ishrani, oralnoj higijeni i fluor profilaksi uzrok veće prevalencije karijesa prvog stalnog molara u urbanoj sredini.

Metodologija

Ispitivanjem je obuhvaćeno 450 sedmogodišnjaka u urbanoj sredini. Za ocenjivanje informisanosti o pravilnoj ishrani, oralnoj higijeni i fluor profilaksi sprovedena je anketa kod sedmogodišnjaka. Anketni list se sastojao iz tri dela: o ishrani, oralnoj higijeni i fluor profilaksi. (Prilog 1) Svaki od navedenih delova sadrži određeni broj pitanja koja su relevantna za ocenu stepena informisanosti u datoj oblasti. Da bi se lakše utvrdio i uporedio stepen informisanosti sedmogodišnjaka, svako pitanje je posebno bodovano.

Za procenu stanja prvih stalnih molara korišćen je Klein-Palmerov DMF (KEP) sistem.

Introduction

Health education, which is one of the most important aspects of preventive action in dentistry, has a very significant role in achieving dental health, primarily in reducing caries as the most widely spread oral disease. Caries is a consequence of insufficient information of the population, as well as improper oral and dental health maintenance. This leads to the necessity of changing individual, group or community behavior, in the following ways:

- establishing proper nutrition habits (less frequent consumption of carbohydrates, solid, abrasive food, etc.);
- establishing proper oral hygiene habits (regular maintenance, techniques, tools, efficiency control);
- using fluorides (fluorinated toothpaste, fluorinated drinking water, fluoride tablets and locally applied fluorinated oral-rinsing solutions, varnishes, etc.).¹

Aim of the paper

The goal of this paper is to determine whether insufficient level of information of seven-year-old children on the effects proper nutrition, oral hygiene and fluoride prophylaxis can be seen as a cause of a greater prevalence of the first permanent molar caries in urban environment.

Material and method

The research included 450 urban seven-year-olds. Their level of information about proper nutrition, oral hygiene and fluoride prophylaxis was determined based on a questionnaire. The questionnaire consisted of three sections: nutrition, oral hygiene and fluoride prophylaxis. (Appendix 1) Each section included questions, relevant for determining the level of information in the given area. In order to better estimate and compare the level of information of seven-year-olds in both urban and rural environments, each question was assigned a certain number of points.

The health status of first permanent molars was determined by Klein-Palmer's DMF sy-

Prilog 1. Upitnik za decu
Appendix 1. Questionnaire for children

ISHRANA / NUTRITION

Da li ishrana ima uticaja na zdravlje zuba?
 Does nutrition affects the health of your teeth?

- a) da / yes
 b) ne / no _____

Da li u ishrani koristiš mleko i mlečne proizvode:
 Does your diet include milk and dairy products:

- a) svakog dana a) every day
 b) jedanput nedeljno b) once a week
 c) nikako c) never _____

Da li u ishrani koristiš sveže voće i povrće:

Does your diet include fresh fruit and vegetable?

- a) svakog dana a) every day
 b) redě b) rarely
 c) nikako c) never _____

Da li više voliš čvrstu ili meku kašastu hranu?

Do you prefer solid or soft food?

- a) čvrsta a) solid
 b) čvrsta i meka b) both
 c) meka c) soft _____

Da li u twojoj ishrani preovladavaju slatkiši (čokolade, bombone, kolači)?

Is your diet predominantly based on sweets (chocolate, candies, cakes)?

- a) da / yes
 b) ne / no _____

Koliko često uzimaš slatkiše?

How often do you eat sweets?

- a) jednom nedeljno a) once a week
 b) jednom dnevno b) once a day
 c) više puta u toku dana c) several times a day _____

HIGLJENA USTA I ZUBA/ORAL AND DENTAL HYGIENE

Da li imas četkicu za zube?

Do you have a toothbrush?

- a) da / yes
 b) ne / no _____

Da li tu istu četkicu koristi još neki član porodice?

Does anyone else in your family use your toothbrush?

- a) da / yes
 b) ne / no _____

Posle koliko vremena korišćenja četkice dobijaš novu?

How often do you replace your toothbrush by a new one?

- a) dok traje a) not as long as it lasts
 b) jedna godina b) once a year
 c) do 6 meseci c) every six months _____

Karijes je dijagnostikovan sistematskim pregledom zuba pomoću stomatološke sonde i ravnog stomatološkog ogledala. Prevalencija karijesa je izražena statističkim koeficijentima (KIO i KIZ) i indeksom i merom prosečnih vrednosti karijesa (KIP).

Rezultati su prikazani tabelarno i grafički. Za određivanje statističke značajnosti upoređenih podataka korišćen je χ^2 test i Studentov t-test.

Sa koliko godina si počeo da pereš zube?

How old were you when you started washing your teeth?

- a) 2-3 godine a) 2-3 years
 b) 4-5 godina b) 4-5 years
 c) 6-7 godina c) 6-7 years _____

Koliko često pereš zube?

How often do you wash your teeth?

- a) jednom dnevno a) once a day
 b) dva puta dnevno b) twice a day
 c) više puta dnevno c) several times a day _____

Koliko dugo pereš zube?

How long does washing your teeth lasts?

- a) pola minuta a) half a minute
 b) 1 minut b) 1 minute
 c) 2 minuta c) 2 minutes
 d) 3 minuta d) 3 minutes _____

Kada je u toku dana najvažnije prati zube?

When is it the most important to wash your teeth?

- a) ujutru a) in the morning
 b) u podne b) at noon
 c) uveče c) in the evening _____

FLUOR PROFILAKSA/FLUORIDE PROPHYLAXIS

Da li uzimaš tablete sa fluorom?

Do you take fluoride tablets?

- a) da / yes
 b) ne / no _____

Da li ove tablete uzimaš svakodnevno?

Do you take these tablets every day?

- a) da / yes
 b) ne / no _____

Od kada uzimaš ove tablete?

When did you start taking them?

- a) od 6. meseca a) since I was 6 months old
 b) od 3. godine b) since I was 3 years old
 c) od 6. godine c) since I was 6 years old _____

Da li pasta kojom pereš zube sadrži fluor?

Does your toothpaste contain fluoride?

- a) da / yes
 b) ne / no _____

Da li koristiš rastvore sa fluorom za ispiranje usta i zuba?

Do you use fluoride-based solutions for rinsing your mouth?

- a) da / yes
 b) ne / no _____

Caries was diagnosed by dental probe and flat dental mirror. Caries prevalence was expressed by statistical coefficients (PCI and TCI), as well as through ACI (Average Caries Index).

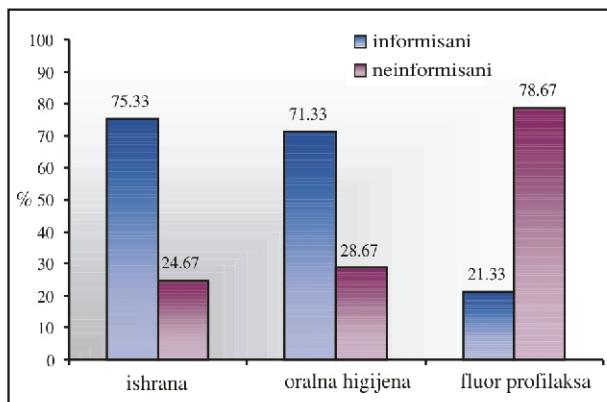
The results are presented in a table, as well as graphically. Statistical significance of the compared data was determined by χ^2 and Student t-test.

Rezultati

Dobra informisanost o pravilnom načinu ishrane, redovnom i pravilnom sprovođenju oralne higijene, kao i primeni profilaktičkih mera, rezultira boljim oralnim zdravljem.

Na osnovu analize upitnika koji su popunili sedmogodišnjaci utvrđeno je da je veći broj dece u urbanoj sredini informisan o uticaju pravilne ishrane (75,33%) i oralne higijene (71,33%) na zdravlje zuba. Što se tiče informisanosti sedmogodišnjaka o uticaju fluor profilakse na zdravlje zuba, manji je broj informisane dece (21,33%). (Grafikon 1)

KIO prvih stalnih molara informisanih sedmogodišnjaka o uticaju ishrane, oralne higijene i fluor profilakse na zdravlje zuba je manji od KIO neinformisanih. (Grafikon 2)



Grafikon 1. Odnos informisanih i neinformisanih sedmogodišnjaka o uticaju ishrane, oralne higijene i fluor profilakse na zdravlje zuba

Graphic 1. The ratio of informed and non-informed seven-year-olds about the effects of proper nutrition, oral hygiene and fluoride prophylaxis on dental health

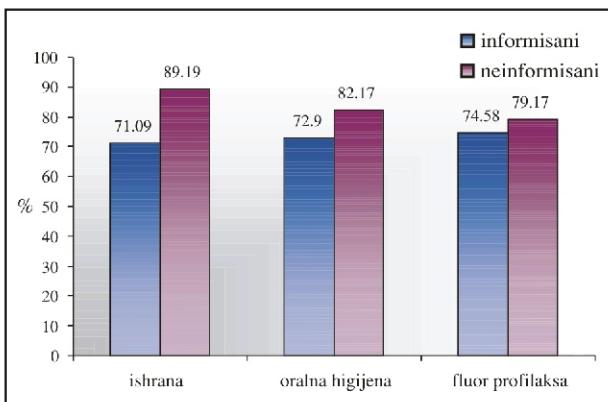
Korišćenjem χ^2 testa dobijena je statistički značajna razlika ($p<0,001$) KIO prvih stalnih molara između informisanih i neinformisanih sedmogodišnjaka o uticaju ishrane na zdravlje zuba. Takođe je utvrđena statistički značajna razlika ($p<0,05$) između KIO informisanih i neinformisanih sedmogodišnjaka o uticaju oralne higijene. Nije dobijena statistički značajna razlika između KIO informisanih i neinformisanih sedmogodišnjaka o uticaju fluor profilakse na zdravlje zuba. (Tabela 1)

Ispitivanjem je utvrđeno da je KIZ prvih stalnih molara neinformisanih sedmogodišnjaka o uticaju ishrane, oralne higijene i fluor profilakse veći od KIZ informisanih. (Grafikon 3)

Results

Good level of information on the effects of proper nutrition, oral hygiene and prophylactic measures, undoubtedly, results in the better dental health status. An analysis of the questionnaire filled by urban seven-year-old children has shown that there is a greater number of well-informed children about the effects of proper nutrition (75.33 %) and oral hygiene (71.33 %) (and less so, when it comes to fluoride prophylaxis 21.33 %) on dental health. (Graph 1)

PCI of the first permanent molars of informed seven-year-olds on the effects of proper nutrition, oral hygiene and fluoride prophylaxis on dental health is smaller than the PCI of non-informed ones. (Graph 2)



Grafikon 2. Odnos KIO prvih stalnih molara informisanih i neinformisanih sedmogodišnjaka o uticaju ishrane, oralne higijene i fluor profilakse na zdravlje zuba

Graphic 2. Ratio the first permanent molar PCI of informed and non-informed seven-year-olds about the effects of proper nutrition, oral hygiene and fluoride prophylaxis on dental health

χ^2 test application showed a statistically significant difference ($p<0.001$) in the first permanent molar PCI between informed and non-informed children about the effects of proper nutrition on dental health. A statistically significant difference ($p<0.05$) was also shown between the PCI of informed and non-informed seven-year-olds about the effects of oral hygiene on dental health. (Table 1)

It was also shown that the first permanent molar TCI of non-informed seven-year olds about the effects of proper nutrition, oral hygiene and fluoride prophylaxis on dental health was greater than the TCI of well-informed ones. (Graph 3)

Tabela 1. KIO prvih stalnih molara informisanih i neinformisanih sedmogodišnjaka o uticaju ishrane, oralne higijene i fluor profilakse na zdravlje zuba

Table 1. The first permanent molar PCI of informed and non-informed seven-year-olds about the effects of proper nutrition, oral hygiene and fluoride prophylaxis on dental health

| KIO PCI | ishrana / nutrition | | | oralna higijena / oral hygiene | | | fluor profilaksa / fluoride prophylaxis | | |
|-------------------------------|---------------------|----------|--------|--------------------------------|----------|--------|--|----------|--------|
| | KIO PCI | χ^2 | P | KIO PCI | χ^2 | P | KIO PCI | χ^2 | P |
| informisani informed | 71.09 | 14.83 | 0.0001 | 72.90 | 4.28 | 0.0385 | 74.58 | 0.86 | 0.3533 |
| neinformisani non-informed | 89.19 | | | 82.17 | | | 79.17 | | |

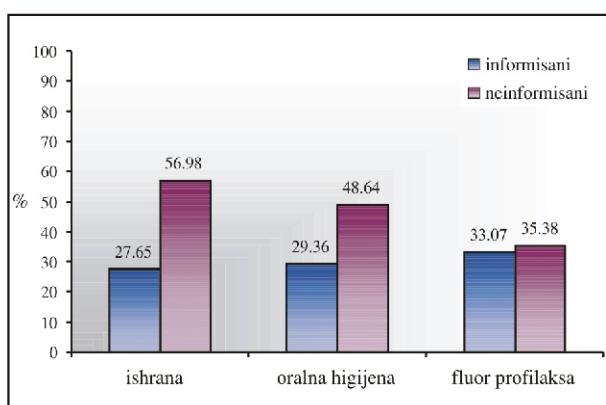
χ^2 testom je dobijena statistički značajna razlika ($p<0,001$) između KIZ prvih stalnih molara informisanih sedmogodišnjaka o uticaju ishrane i oralne higijene na zdravlje zuba. Međutim, utvrđeno je da ne postoji statistički značajna razlika između KIZ prvih stalnih molara informisanih i neinformisanih sedmogodišnjaka o uticaju fluor profilakse na zdravlje zuba. (Tabela 2)

KIP prvih stalnih molara informisanih sedmogodišnjaka o uticaju ishrane, oralne higijene i fluor profilakse na zdravlje zuba je manji od KIP-a neinformisanih. (Grafikon 4)

Tabela 2. KIZ prvih stalnih molara informisanih i neinformisanih sedmogodišnjaka o uticaju ishrane, oralne higijene i fluor profilakse na zdravlje zuba

Table 2. The first permanent molar TCI of informed and non-informed children about the effects of proper nutrition, oral hygiene and fluoride prophylaxis on dental health

| KIZ TCI | ishrana / nutrition | | | oralna higijena / oral hygiene | | | fluor profilaksa / fluoride prophylaxis | | |
|-------------------------------|---------------------|----------|--------|--------------------------------|----------|--------|--|----------|--------|
| | KIZ TCI | χ^2 | P | KIZ TCI | χ^2 | P | KIZ TCI | χ^2 | P |
| informisani informed | 27.65 | 126.6 | 0.0000 | 29.36 | 60.24 | 0.0000 | 33.07 | 0.71 | 0.3999 |
| neinformisani non-informed | 56.98 | | | 48.64 | | | 35.38 | | |

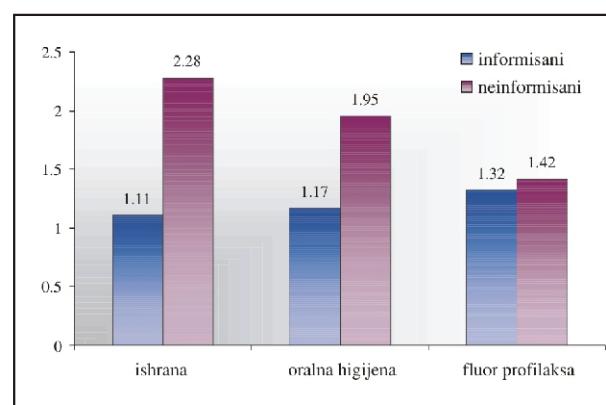


Grafikon 3. Odnos KIZ prvih stalnih molara informisanih i neinformisanih sedmogodišnjaka o uticaju ishrane, oralne higijene i fluor profilakse na zdravlje zuba

Graphic 3. Ratio the first permanent molar TCI of informed and non-informed seven-year-olds about the effects of proper nutrition, oral hygiene and fluoride prophylaxis on dental health

χ^2 test showed a statistically significant difference ($p<0.001$) between the first permanent molar TCI of informed seven-year-olds about the effects of proper nutrition and oral hygiene. However, no statistically significant difference was found between the first permanent molar TCI of well-informed and non-informed seven-year-olds about the effects of fluoride prophylaxis on dental health. (Table 2)

The first permanent molar PCI of informed seven-year-olds about the effects of proper nutrition, oral hygiene and fluoride prophylaxis on dental health is lower than the PCI of non-informed children. (Graph 4)



Grafikon 4. Odnos KIP prvih stalnih molara informisanih i neinformisanih sedmogodišnjaka o uticaju ishrane, oralne higijene i fluor profilakse na zdravlje zuba

Graphic 4. The comparison of the first permanent molar PCI in informed and non-informed seven-year-olds about the effects of proper nutrition, oral hygiene and fluoride prophylaxis on dental health

Korišćenjem Studentovog t-testa dobijena je statistički značajna razlika ($p<0,001$) između KIP prvih stalnih molara informisanih i neinformisanih sedmogodišnjaka o uticaju ishrane i oralne higijene na zdravlje zuba. Utvrđeno je da ne postoji statistički značajna razlika između KIP informisanih i neinformisanih sedmogodišnjaka o uticaju fluor profilakse na zdravlje zuba. (Tabela 3)

Student t-test has shown a statistically significant difference ($p<0,001$) between the first permanent molar PCI in informed and non-informed children about the effects of proper nutrition and oral hygiene.

No statistically significant difference has been found between the PCI of informed and non-informed children about the effects of fluoride prophylaxis on dental health. (Table 3)

Tabela 3. KIP prvih stalnih molara informisanih i neinformisanih sedmogodišnjaka o uticaju ishrane, oralne higijene i fluor profilakse na zdravlje zuba

Table 3. The first permanent molar PCI in informed and non-informed seven-year-olds about the effects of proper nutrition, oral hygiene and fluoride prophylaxis on dental health

| KIP | ishrana / nutrition | | | | | oralna higijena / oral hygiene | | | | | fluor profilaksa / fluoride prophylaxis | | | | |
|-------------------------------|---------------------|------|-----|------|--------|--------------------------------|------|-----|------|--------|---|------|-----|------|--------|
| | X | SD | n | t | P | X | SD | n | t | P | X | SD | n | t | P |
| informisani informed | 1.11 | 0.94 | 339 | 9.97 | 0.0000 | 1.17 | 0.98 | 321 | 6.33 | 0.0000 | 1.32 | 0.98 | 96 | 0.79 | 0.4321 |
| neinformisani non-informed | 2.28 | 1.14 | 111 | | | 1.95 | 1.23 | 129 | | | 1.42 | 1.14 | 354 | | |

Diskusija

Proučavanje karakteristika i frekvencije karijesa prvog stalnog molara od velike je važnosti s obzirom na mnogostruki značaj ovog zuba. Ispitivanja kod većeg broja učenika u Srbiji pokazala su da je karijes na prvom stalnom molaru zastupljen četiri puta više nego na svim ostalim stalnim zubima. U pogledu drugih karakteristika karijesa na prvom stalnom molaru ustanovljeno je da se javlja veoma rano, da je okluzalna površina najviše ugrožena u odnosu na sve druge, da ima akutni tok i uslovjava nastanak čestih komplikacija.²

Ishrana, a naročito ona pravilna ima ogroman značaj za opšti razvoj dečjeg organizma, pa i organa za žvakanje u celini. Sigurna je činjenica, da struktura ishrane, a naročito način na koji se ona spremi i zatim konzumira, još je od većeg uticaja na razvoj organa za žvakanje i čitavog orofacijalnog sistema, pa i na pojavu patoloških stanja na zubima.

Pored značajnog napretka u razumevanju povezanosti ishrane i karijesa i shvatanja karijesa kao oboljenja multifaktoralne etiolo-

Discussion

Research about the characteristics and frequency of the first permanent molar caries prevalence is of great significance, having in mind the multiple importance of this tooth. Lengthy research on Serbian schoolchildren has shown that its incidence is four times more frequent than on all other permanent teeth. Other characteristics are as follows: the first permanent molar caries appears very early, occlusal surface is more jeopardized than other surfaces; caries progression is very rapid in depth and with an appearance of complications.²

Nutrition, especially the proper one, is of utmost importance for the development of a child's body and, particularly digestive tract. It is a proven fact that the structure of nutrition, notably, the way in which food is prepared and then consumed, is even more significant for digestion, oral-facial system as a whole, as well as for the incidence of dental pathological conditions.

Although significant progress has been made in understanding the relationship of nutrition and caries, as well as seeing caries as a disease of

gije, znanja o uticaju ishrane na prevalenciju karijesa su i dalje nedovoljno uključena u preventivne aktivnosti stomatološke zdravstvene zaštite. Zbog toga bi edukacija o ishrani, zajedno sa drugim preventivnim procedurama, obezbedila smanjenje prevalencije karijesa.

Uloga ishrane u pojavi karijesa najveća je neposredno posle nicanja zuba, u vreme kada je zub najosetljiviji na delovanje faktora sredine. Kariogeno delovanje hrane kao egzogenog faktora ne zavisi samo od njene konzistencije, hemijskog sastava, fizičkih svojstava i količine, već i od učestalosti konzumiranja.

Dobra informisanost dece o uticaju ishrane na zdravlje zuba u urbanoj sredini posledica je pored ostalog i postojanja stomatoloških ambulanti u školama u kojima se sprovodi zdravstveno-vaspitni rad. Škole imaju veliki značaj u edukaciji dece o očuvanju zdravlja usta i zuba.^{3, 4} Veoma je važno informisati decu o pravilnom načinu ishrane i na taj način uticati na očuvanje oralnog zdravlja.⁵ Nedostatak informacija o pravilnom načinu ishrane uzrok je loših navika (često konzumiranje rafiniranih ugljenih hidrata), što dovodi do nastanka oboljenja zuba.⁶ Zbog ovoga je edukacija o pravilnoj ishrani (i oralnoj higijeni) metoda prevencije karijesa koja ima prioritet.⁷

Zdravstveno-vaspitni rad koji se sprovodi u školama ima svakako pozitivan efekat na informisanost i znanje dece o oralnoj higijeni,^{8, 4} a informisanje i instrukcije o oralnoj higijeni bi trebalo intenzivirati naročito u periodu nicanja prvih stalnih molara.⁹ Posebnu pažnju treba обратити на motivisanost dece da pozitivno reaguju na savete o pravilnom održavanju oralne higijene.^{10,11} Potvrđeno je da nakon edukacije o dentalnom zdravlju i oralnoj higijeni, deca pokazuju znatno viši nivo znanja vezano za ovaj problem.¹² Takođe je vrlo bitno i permanentno informisanje, čime se postiže mnogo bolji efekat u smislu unapređenja znanja o oralnoj higijeni.¹³

Rezultati informisanosti sedmogodišnjaka o fluor profilaksi pokazuju da je mali broj dece u urbanoj sredini informisan. Osnovne informacije o fluor profilaksi deca dobijaju od stomatologa. Angažovanje stomatologa u pružanju informacija o ulozi fluor profilakse na zdravlje zuba predstavlja prioritet u zdravstveno-vaspitičnim i preventivnim merama.⁷ Zbog toga je

multi-factorial etiology, this knowledge has not been sufficiently applied on preventive activities in dental practice. Thus, more intensive education about proper nutrition, along with other preventive procedures, would contribute to the decrease of caries prevalence.

The role in nutrition is the most significant immediately after tooth growth, which is the period when the tooth is most sensitive to environmental factors. Cariogenic effect of food, as an exogenous factor, is not dependant solely on its consistency, chemical composition, physical features and quantity, but also on the consumption frequency.

Urban children are well-informed about the effects of nutrition on dental health, among other reasons, due to the presence of school dental surgeries, which provide health-education for children. Schools play a significant role in children's education on the effects of proper nutrition on oral and dental health prevention.^{3, 4} Providing information to children on proper nutrition is very important in maintaining oral health.⁵ A lack of information on proper nutrition causes bad habits (frequent consumption of refined carbohydrates), which results in dental diseases.⁶ For this reason, providing information on proper nutrition (and oral hygiene) is a top priority method of caries prevention.⁷

Health education provided at schools has a widely recognized positive effect on good information and knowledge of children about oral hygiene,^{8,4} whereas providing information and instruction on oral hygiene is of greatest importance during the first permanent molar growth.⁹ It is particularly important to motivate children to positively respond to advice on proper oral hygiene maintenance.^{10,11} Research has confirmed that education on dental health and oral hygiene results in a much higher level of knowledge about this topic in children.¹² Continuous provision of information to children is also of utmost importance, which has a much better effect on increasing their level of knowledge about oral hygiene.¹³

As shown in the results, the level of information of urban seven-year-olds on fluoride prophylaxis is very low. Children obtain basic information from their dentists. Engaging dentists in providing information on the effects of fluoride prophylaxis is a priority health-education and preventive measure.⁷ Thus, it is very important to motivate dentists to engage

veoma važna motivisanost stomatologa da se bavi zdravstveno-vaspitnim radom kao i postizanje motivacije kod samih pacijenata kako bi ovladali i primenili odgovarajuće mere zaštite sopstvenog zdravlja. Postavlja se pitanje da li svi stomatolozi pružaju deci adekvatne informacije o fluoru. Ono što je danas sasvim provereno i potvrđeno je da se pravilnom primenom fluorida može izbeći bilo kakav rizik po opšte zdravlje i efikasno, ekonomično i sigurno obezbediti zdravlje usta i zuba brojnim generacijama. Zbog toga se moraju naći načini da se što potpunije prenesu u praksi postojeće norme i da one budu što više prihvачene od strane stomatologa, naročito onih koji rade sa decom.¹⁴

Zaključak

Nedovoljna informisanost sedmogodišnjaka o uticaju pravilne ishrane, oralne higijene i fluor profilakse na zdravlje zuba jedan je od uzroka veće prevalencije karijesa prvog stalnog molara što potvrđuju dobijeni rezultati:

- KIP informisanih sedmogodišnjaka o uticaju ishrane na zdravlje zuba je 1,11, a neinformisanih 2,28;
- KIP informisanih sedmogodišnjaka o uticaju oralne higijene na zdravlje zuba je 1,17, a neinformisanih 1,95;
- KIP informisanih sedmogodišnjaka o uticaju fluor profilakse na zdravlje zuba je 1,32, a neinformisanih 1,42.

Opšte profilaktičke mere odnose se pre svega na podizanje opšteg zdravstvenog stanja, na poboljšanje uslova življenja – pravilne ishrane, njene strukture, a naročito način pripremanja i konzumiranja hrane. Poseban akcenat treba dati zdravstveno-vaspitnom radu koji treba da ukaže na značaj dobro izbalansirane ishrane, uredne oralne higijene i fluor profilakse, a sve sa ciljem prevencije stomatoloških oboljenja, na prvom mestu karijesa. Lanac preventivnih aktivnosti sigurno čine prvo pedontolozи, zatim deca, a i roditelji kao aktivni učesnici u ovom procesu.

themselves in health-education, so that they can motivate their patients to learn and apply adequate measures of their own health protection.

However, it is questionable whether all dentists provide appropriate information to children. One thing which has been checked and confirmed is that proper fluoride application does not have any adverse effects or risks on general health, while it contributes to oral and dental health of many generations in an efficient, economic and safe way. Thus, it is necessary to find ways to include current norms in practice, as well as to actively engage dentists, especially those working with children, in their implementation.¹⁴

Conclusion

Insufficient information of seven-year-old children about the effects of proper nutrition, oral hygiene and fluoride prophylaxis on dental health represents one of the causes of greater first permanent molar caries prevalence (confirmed by the obtained results):

- PCI of the informed seven-year-olds about the effects of nutrition is 1.11, and that of the non-informed ones is 2.28;
- PCI of the informed seven-year-olds about the effects of oral hygiene is 1.17, and that of the non-informed ones is 1.95;
- PCI of the informed seven-year-olds about the effects of fluoride prophylaxis is 1.32, and that of the non-informed ones is 1.42.

General prophylactic measured in caries prevention, mainly include increasing an overall level of health, improving living conditions proper nutrition, its structure and, especially how it is prepared and consumed, as well as promoting health culture. Health education plays a crucial role in this process, as a significant prophylactic measure in oral and dental disease prevention. Thus, health education should focus on the importance of a well-balanced diet, consistent oral hygiene and fluoride prophylaxis in dental disease and, particularly, caries prevention. The chain of preventive activities, primarily, involves pedodontists, then children and, finally, parents as active participants in this process.

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