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Preventivna stomatologija u privatnim ordinacijama u Bosni

Preventive Dentistry in Bosnian Private Dental Practices

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Sažetak
Svrha istraživanja bila je ispitati stajališta, praksu i znanje općih stomatologa (GDP-a) o primarnim preventivnim mjerama - profesionalnoj topikalnoj fluoridaciji, uputama za oralnu higijenu, uputama o prehrani te pečaćenju fisura - u liječenju pacijenata u ordinacijama. Zato je posebno pripremljen upitnik o preventivnoj stomatologiji poslan na adrese 57 privatnih stomatoloških ordinacija u sarajevskom kantonu (Bosna i Hercegovina), a vraćeno je 46 (80,7 %) ispunjenih. Svi ispitanici tvrdili su da primjenjuju neku od preventivnih mjera, ali samo 26 % napisalo je da se koriste svim preporučenim mjerama. Jedina mjera koju primjenjuju svi opći stomatolozi upute su za oralnu higijenu – 83 % njih topikalno primjenjuje fluoride, a rijetko 40,4 %. Većina redovito daje pacijentima upute o prehrani, a čak 15 % to uopće ne čini. Pečaćenje fisura primjenjuje 72 % ispitanih stomatologa. Svi ispitani znaju temeljna načela preventivne stomatologije, ali im ne posvećuju dovoljno pozornosti. Jedina preventivna mjera koju svi provode, upute su o oralnoj higijeni, a to čine uglavnom verbalno kao mini-predavanja. Profesionalna topikalna primjena fluorida obavlja se na djeci rutinski u stomatološkim ordinacijama. Najčešći savjet o prehrani je naputak da se što rjeđe jedu slastice i piju zaslađeni napici.

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Ključne riječi
preventivna stomatologija; opći stomatolozi; KEP indeks; topikalna fluoridacija

Uvod

U svim razvijenim zemljama posljednjih se godina u svim dobnim skupinama znatno smanjila prevalencija karijesa (1). Stomatološka skrb na temelju dobro organizirane i vođene zdravstvene politike, omogućila je primjenu masovnih i individualnih preventivnih mjera, što je u mnogim državama rezultiralo velikim smanjenjem prevalencije oralnih bolesti. A oralno zdravlje svih dobnih skupina stanovnika Bosne i Hercegovine (BiH), među najlošijim je u Europi (2,3). Još nema preventivnog programa koji bi se provodio u sklopu službene zdravstvene politike u zemlji. Pratimo li vrijednost KEP-ova indeksa kod 12-godišnjaka u BiH, vidjet ćemo kako se on mijenjao u posljednjih ne-

Introduction

In recent times, caries prevalence in developed countries among all age groups dramatically decreased (1). Dental health care system that is based on a well organized and guided health policy allowed implementation of population and individual preventive measures which resulted with huge deterioration of oral disease's prevalence in many countries. Still, oral health situation among citizens of Bosnia and Herzegovina (BH) of all age groups today is among the worst in Europe (2, 3). To present day, there's no existing population's preventive programs lead by official health policy. If we follow DMFT index in 12-year-old Bosnian children, we can see how it changed over the last few

koliko desetljeća. Godine 1999. prosječni KEP 12-godišnjaka iznosio je 7,18 (4), a 1986. bio je 6,3 (5). Srednji indeks KEP-a 12-godišnjaka u Sarajevu iznosio je 2003. godine 4,81 (2). Ti podaci upućuju na to da je danas oralno zdravlje u BiH mnogo bolje, uglavnom zbog uporabe zubnih pasta s fluoridima (2), no još nije zadovoljavajuće. Glavni razlozi za trenutačno stanje su nedostatak bilo kakvog nacionalnog preventivnog programa, kurativno usmjerena stomatološka politika, loše socijalno-ekonomsko stanje stanovništva te promjene životnih uvjeta tijekom rata i nakon njega.

Važan dio stomatološke službe u BiH su opći stomatolozi (GDP-s) koji rade u privatnim ordinacijama. Prema podacima Stomatološke komore Federacije BiH iz godine 2003., u Sarajevu 99 stomatologa radi samo u privatnim ordinacijama (6). Budući da je opći stomatolog važan i integralan dio stomatološke službe naše zemlje, odlučili smo istražiti kolika se pozornost u privatnim ordinacijama posvećuje preventivnim mjerama. Svrha istraživanja bila je ispitati stajališta, praksu i znanje privatnih stomatologa (GDP-a) u liječenju pacijenata primarnim preventivnim mjerama (profesionalna topikalna fluoridacija, upute o oralnoj higijeni, upute o prehrani i pečaćenje fisura).

Materijal i postupci

Upitnik je bio pripremljen posebno za ovo istraživanje i sadržavao je pitanja u vezi sa stajalištima, praksom i znanjem općih stomatologa o primarnim preventivnim mjerama (profesionalnoj topikalnoj fluoridaciji, uputama o oralnoj higijeni, uputama o prehrani te pečaćenju fisura). Pitanja o topikalnoj fluoridaciji odnosila su se na frekvenciju primjene u ordinacijama, vrsti profesionalno primijenjenih fluorida te kriterijima odabira pacijenata za tu uslugu. Pitanja o uputama u vezi s oralnom higijenom odnosila su se na uporabu, vrstu uputa, profil pacijenata te način davanja instrukcija. Pitanja o uputama o prehrani odnosila su se na vrstu i uporabu uputa koje se obično daju pacijentima. Upitnik je sadržavao samo jedno pitanje o pečaćenju fisura. Bilo je postavljeno ukupno 11 pitanja, a trebali su se upisati i podaci o godini diplomiranja i specijalizaciji (Slika 1.). Ispitanici su također na kraju upitnika mogli komentirati odabrane teme.

Ispitanu populaciju činili su opći stomatolozi s područja grada Sarajeva u godini 2003. Upitnik je

decades. In 1999, the mean DMFT in 12-years-old children in Bosnia and Herzegovina was 7.18 (4), compared to 1986 when the mean DMFT in children of the same age group was 6.3 (5). The mean DMFT index for twelve-year-old children of Sarajevo in 2003 was 4.81 (2). This data indicates that the oral health in BH is nowadays better, mostly due to the widespread usage of toothpastes containing fluorides (2), but still not satisfying. Main reasons for the present oral health situation are lack of any population preventive programs, predominantly curative-oriented dental policy, poor socio-economic status, and a change in living conditions during and after the war.

Important part of the dental care system in BH are general dental practitioners (GDPs) who work in private dental practices. According to the Dental chamber of Federation of BH 2003 data, there were 99 dentists in Sarajevo who are employed only in private dental practices (6). Considering how GDPs are important and integral part of dental health service of our country, we set about finding out how widespread primary preventive measures are in private dental practices. The aim of this research was, therefore, to investigate the private general dental practitioners' (GDPs) attitudes, practice and knowledge to primary preventive measures (professional topical fluoridation, oral hygiene instructions, dietary advice and fissure sealing) in treating patients in their practices.

Methods

Questionnaire, specially designed for this research, contained questions related to dental practitioner's attitudes, practice and knowledge about primary preventive measures (professional topical fluoridation, oral hygiene instructions, dietary advice and fissure sealing). Questions about topical fluoridation were related to professional topical fluoridation usage frequency in the practices, a type of professionally applied topical fluorides and selection criteria for patients receiving topical fluoridation. Questions about oral hygiene advice/instructions were about usage, type of instructions, patient profiles and the way how instructions were given. Questions about dietary counseling were related to usage and type of dietary advice usually given to the patients in practices. The questionnaire contained only one question related to the usage of fissure sealing. The questionnaire comprised 11 items, as well as questions about the year of qualification and about particular specialty of the dental practice

Upitnik za stomatologe opće prakse • General dental practitioners questionnaire

Molimo popunite upitnik upisujući odgovore u predviđeni prostor ili označavajući kvadratiće • ***Please complete questions by filling in your answer in the space provided or check the selected box.***

Naziv ordinacije • Practice name.....
Stomatolog • Lead dentist.....
Godina diplomiranja • The year of qualification .....

Da li je Vaša ordinacija ograničena na određenu specijalnosti • Is your dental practice limited to a particular specialty?

- ☐ Da • Yes – Molimo navedite specijalnost • Please specify specialty……...
- ☐ Ne • No

1. Provodite li profesionalnu topikalnu fluoridaciju u Vašoj ordinaciji • Do you perform professional topical fluoridation in your dental office?

- ☐ Da • Yes
- ☐ Ne • No
- ☐ Rijetko • Rarely

2. Ako provodite topikalnu fluoridaciju na kome je primjenjujete? • If you perform topical fluoridation, on whom do you perform it?

- ☐ Djeca • Children
- ☐ Odrasli • Adults
- ☐ Djeca i odrasli • Children and adults

3. Koju vrstu topikalnih fluoride za profesionalnu uporabu koristite u Vašoj ordinaciji? • Which type of professionally applied topical fluorides do you use in your dental office?

- ☐ Lak • Varnish
- ☐ Gel • Gel
- ☐ Pjena • Foam
- ☐ Ostalo • Other

4. U kojim okolnostima provodite profesionalnu topikalnu fluoridaciju? • How do you perform professional topical fluoridation?

- ☐ Rutinska primjena u stomatološkoj ordinaciji • On routine basis in dental practice
- ☐ Ovisno o pacijentovoj predispoziciji za karijes • According to patient's susceptibility to caries

5. Dajete li oralno-higijenske savjete/instrukcije Vašim pacijentima? • Do you give oral hygiene advice/instructions to your patients?

- ☐ Da • Yes
- ☐ Ne • No

6. Kome dajete oralno-higijenske savjete/instrukcije´• To whom do you give oral hygiene advice/instructions?

- ☐ Djeci • Children
- ☐ Odraslima • Adults
- ☐ Djeci i odraslima• Children and adults
- ☐ Ne dajem savjete/instrukcije • I don't give advice/instructions

7. Kakve savjete/instrukcije obično dajete? • Which type of advice/instructions do you usually give?

- ☐ Opće savjete o poboljšanju oralne higijene • General advice about improving oral hygiene
- ☐ Specifične instrukcije (npr. učestalost četkanja, tehnike četkanja, vrijeme i trajanje četkanja, koncentracija i vrsta fluoride, uporaba tekućina za ispiranje usta) • Specific instructions (e.g. frequency of brushing, brushing technique, time and duration, fluoride concentration and type of fluoride, rinsing behavior)

8. Na koji način dajete oralno-higijenske savjete/instrukcije? • How do you give oral hygiene advice/instructions?

- ☐ Verbalno • Verbally
- ☐ Pomoću letaka • Using leaflets
- ☐ Koristeći vizualna pomagala (npro. Dentalne modele) • Using visual aid or props (e.g. dental models)
- ☐ Ostalo (npr. igre, računala) • Other (e.g. games, computers)

9. Da li svojim pacijentima dajete savjete o prehrani? • Do you give dietary advice to your patients?

- ☐ Da • Yes
- ☐ Ne • No
- ☐ Rijetko • Rarely
- ☐ Svakom pacijentu • To each patient

10. Kakve prehrambene savjete obično dajete? • Which type of dietary advice you usually give?

- ☐ Smanjiti ukupan unos zašećerene hrane i pića • Decreasing total intake of sugary foods and drinks
- ☐ Smanjiti učestalost svakodnevnog unosa zašećerene hrane i pića • Reducing the frequency of daily intake of sugary foods and drinks
- ☐ Ostali savjeti (npr. preporuke o alternativama ili zaslađivačima koji ne sadrže šećer, smanjenje unosa kiselih pića, opće nutritivne preporuke) • Other advice (e.g. recommendations for alternative or non-sugar sweeteners, reducing consumption of acid drinks, general nutritional recommendations)

11. Provodite li u Vašoj ordinaciji pečačenje fisura? • Do you perform fissure sealing in your dental office?

- ☐ Da • Yes
- ☐ Ne • No
- ☐ Rijetko • Rarely
- ☐ Kod svakog pacijenta • To each patient

12. Ostali komentari? • Any other comments?

.....
.....

Zahvaljujemo na pomoći! • Thank you for your help!

Slika 1. Upitnik za opće stomatologe
Figure 1 General dental practitioners questionnaire

poslan samo onima koji rade u privatnim ordinacijama. Podaci iz Stomatološke komore Federacije BiH pokazali su da u sarajevskom kantonu u privatnim ordinacijama radi 99 doktora stomatologije (6). Upitnik je poslan na adrese 57 liječnika u tom kantonu (57,5 %) na mješovitom socijalno-ekonomskom području. Opći stomatolozi izabrani su slučajnim odabirom iz popisa Stomatološke komore Federacije BiH. Veličina uzorka bila je reprezentativna s obzirom na populaciju doktora stomatologije u Sarajevu prema spolu i dobi, a uzorak dovoljno velik da obuhvati stajališta, praksu i znanje o primarnim preventivnim mjerama u regiji. Upitnik je poslan između ožujka i svibnja 2003. svim stomatolozima u sarajevskim općinama, a odgovori su bili anonimni.

Rezultati

Od 57 poslanih upitnika, 46 je pravilno ispunjeno i vraćeno (stopa odgovora 80,7 %). Ostalih 19,3 % vraćeno je pogrešno ispunjeno ili neispunjeno, tako da su isključeni iz analize podataka. Iako je među ispitanicima bilo 10 različitih specijalista (pet specijalista stomatološke protetike, dva specijalista dječje i preventivne stomatologije, te po jedan specijalist parodontolog, specijalist oralni kirurg i specijalist endodoncije), ni jedna ordinacija nije bila specijalistička, tako da su i njihovi podaci uključeni u analizu. Stomatolozi koji su ispunili upitnik imali su staž od 5 do 35 godina (srednja vrijednost 17,7 godina). Muških ispitanika bilo je 67% (n=31), a ženskih - 32,6% (n=15).

Profesionalna topikalna fluoridacija

Rezultati istraživanja pokazuju da 42,5% stomatologa obavlja profesionalnu topikalnu fluoridaciju, a oko 17% to ne čini. Među privatnim stomatolozima u ovom je istraživanju bilo 40,4% onih koji taj postupak rijetko obavljaju (Slika 2.). Većina stomatologa provodi topikalnu fluoridaciju samo kod

(Figure1). Respondents were also given an opportunity to make comments at the end of the questionnaire on any issue related to this topic.

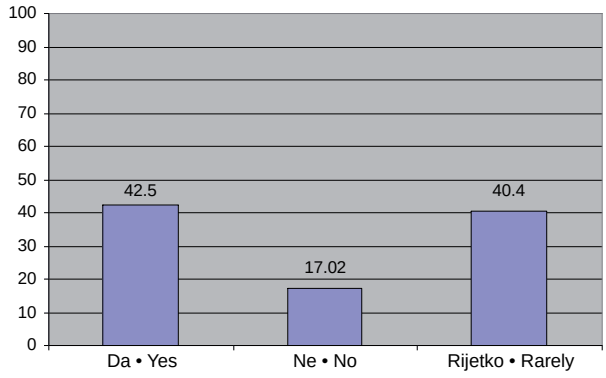
The study population was drawn from GDPs practicing in Sarajevo city area in 2003. The questionnaire was distributed to dentists (GDPs) employed in private dental practices only, where they work for private fees. Data obtained from Dental Chamber of Federation of Bosnia and Herzegovina showed that in 2003 there were 99 dentists employed only in private dental practices in Canton Sarajevo area (6). A questionnaire survey has been distributed to 57 GDPs working in private dental practices in Canton Sarajevo area (57.5%), which serve a large community with mixed socio-economic profile. GDPs were randomly selected from the register of Dental Chamber of FBH. The sample size was representative of the population of dentists in Sarajevo by gender and age group and sufficiently large to capture GDPs attitudes, practice and knowledge about primary preventive measures working in practices within the region. The questionnaires were issued between March 2003 and May 2003, collecting information from GDPs working in all Sarajevo city municipalities. The answers were kept anonymous.

Results

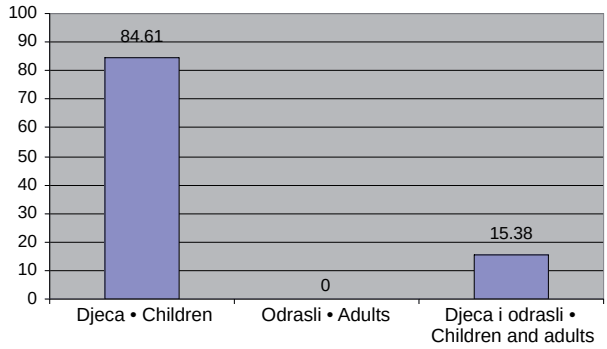
Of the 57 issued questionnaires, 46 were answered and returned satisfactorily completed (response rate of 80.7%). The other 19.3% were sent back poorly completed or uncompleted so they were excluded from the further data analysis. Although there were 10 specialists of different fields among surveyed dentists (5 specialists of dental prosthetic, 2 specialists of preventive and pediatric dentistry, 1 specialist of parodonthology, 1 specialist of oral surgery, and 1 specialist of endodonthic), none of the dental practices wasn't exclusively limited only to a particular specialty, so the information obtained from each dentist entered in final data calculation. Responding GDPs had been qualified for between 5 and 35 years, with a mean of 17.7 years. Sixty seven per cent (n=31) of responding dentists were male and 32.6% (n=15) were female.

Professional topical fluoridation

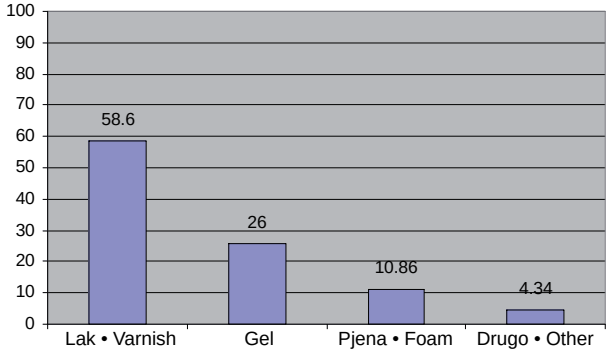
Results from this research showed that 42.5 % of dentists perform professional topical fluoridation in their practices, and about 17% do not. Among private dentists included in this study were about 40.4% GDPs who perform topical fluoridation in their practices rarely (Figure 2). Large majority of dentists per-



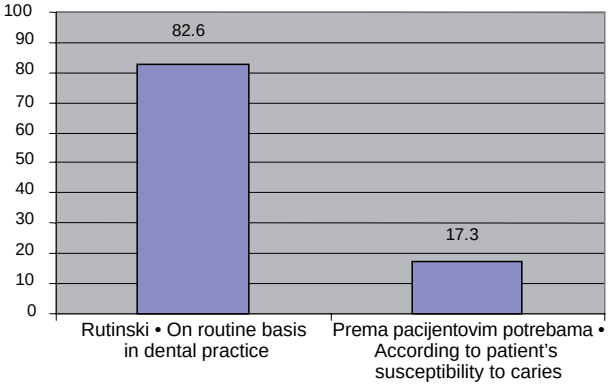
Slika 2. Odgovori na pitanje: „Obavljate li u vašoj ordinaciji profesionalnu topikalnu fluoridaciju ?“
Figure 2 Answers to the question:” Do you perform professional topical fluoridation in your dental practices?”



Slika 3. Odgovor na pitanje: „Ako obavljate topikalnu fluoridaciju, na kome je obavljate?“
Figure 3 Answers to the question: “If you perform topical fluoridation, on whom do you perform it?”



Slika 4. Odgovor na pitanje: „Kojom se vrstom profesionalno primijenjenog topikalnog fluorida koristite u vašoj ordinaciji?“
Figure 4 Answers to the question: “Which type of professionally applied topical fluorides do you use in your dental office?”



Slika 5. Odgovor na pitanje: „Kako obavljate profesionalnu topikalnu fluoridaciju?“
Figure 5 Answers to the question: “How do you perform professional topical fluoridation?”

djece (84,6%), a petnaest posto odgovorilo je da ju obavljaju i na odraslima i na djeci (Slika 3.). Većina stomatologa koristi se fluoridnim lakovima (58,6%) i gelovima (26%). Oko 15% rabi fluoridne pjene i druge profesionalne proizvode koji sadržavaju fluoride (Slika 4.). Profesionalna topikalna fluoridacija obavlja se rutinski u 82,6% ordinacija, a samo 17,3% stomatologa to čini s obzirom na pacijentovu sklonost karijesu (Slika 5.).

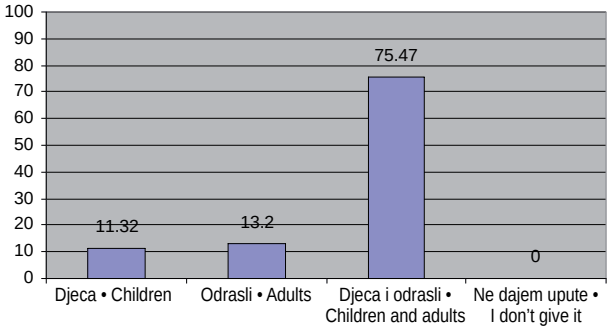
Upute o oralnoj higijeni

Svi ispitani opći stomatolozi pozitivno su odgovorili na pitanje o uputama u vezi s oralnom higijenom. Njih oko 75,5% daje upute i odraslima i djeci. Jedanaest posto ispitanika smatra da se trebaju davati samo djeci, a 13,2% misli da je to potrebno

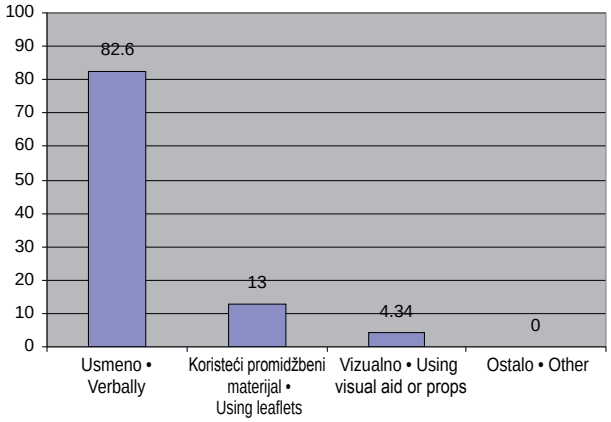
form topical fluoridation only on children (84.6%). Fifteen per cent of GDPs answered that they supplied this service both to adults and children (Figure 3). Most of the dentists use fluoride varnishes (58.6%) and fluoride gels (26%). About fifteen per cent of GDPs use fluoride foams and other types of fluoride for professional usage (Figure 4). Professional topical fluoridation is performed usually on routine basis in dental practices (82.6%) and just 17.3% of GDPs perform topical fluoridation according to patient's susceptibility to caries (Figure 5).

Oral hygiene advice/instructions

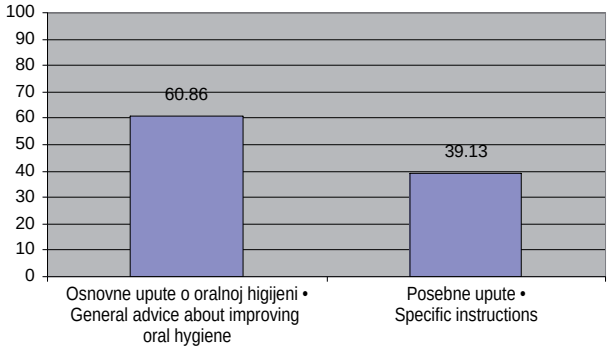
All interviewed dentists gave a positive answer to a question about oral health instructions to patients. None of the dentists answered to this question negatively. About 75.5% of GDPs give oral health instructions to children and adults. Eleven per cent of



Slika 6. Odgovor na pitanje: „Kome dajete upute o oralnoj higijeni?"
Figure 6 Answers to the question: "To whom do you give oral hygiene advice/instructions?"



Slika 7. Odgovor na pitanje: „Kako dajete upute o oralnoj higijeni?"
Figure 7 Answers to the question:" How do you give oral hygiene advice/instructions?"



Slika 8. Odgovor na pitanje: „Koju vrstu savjeta obično dajete?"
Figure 8 Answers to the question:" Which type of advice/ instructions do you usually give?"

samo odraslima (Slika 6.). Upute o oralnoj higijeni obično se daju usmeno (82,6%). Oko 13% stomatologa koristi se lecima, a samo rijetki (4,3%) još nekim vizualnim pomagalima, kao što su modeli, no ni jedan za to nije izabrao igre ili informatičku tehnologiju (Slika 7.). Najveći postotak općih stomatologa daje općenite upute o tome kako poboljšati oralnu higijenu (60,8%), a manji broj (39%) specifične upute, kao što su frekvencija i tehnika četkanja, vrijeme i trajanje četkanja, koncentracija fluorida, vrsta fluorida u pasti i ispiranje usne šupljine (Slika 8.).

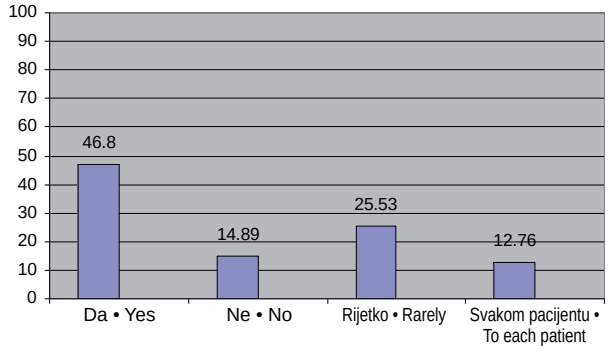
Upute o prehrani

Oko 47% općih stomatologa daje pacijentima upute o prehrani, a 25,5% to čini rijetko. Trinaest posto daje upute svakom pacijentu, a gotovo 15% nikada ne daje takve naputke (Slika 9.). Velika većina općih stomatologa (86%) ističe da se mora jesti što manje slastica i piti što manje zaslađenih pića, a

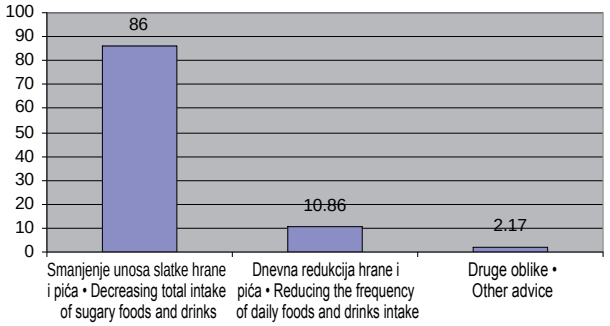
dentists think that those instructions should be given only to children, and 13.2% give those instructions only to adults (Figure 6). Oral health advice/ instructions usually were given verbally (82.6%). About thirteen per cent of dentists used leaflets for that and just small number of GDPs (4.3%) used some visual aid or props like dental models. None of the GDPs used games or computers to give oral health advice/instructions (Figure 7). The greatest percentage of GDPs give general advice about improving oral hygiene (60.8%) and smaller number (39%) give specific instructions like frequency of brushing, brushing technique, time and duration of brushing, fluoride concentration and type of fluoride, rinsing behavior (Figure 8).

Dietary advice/counseling

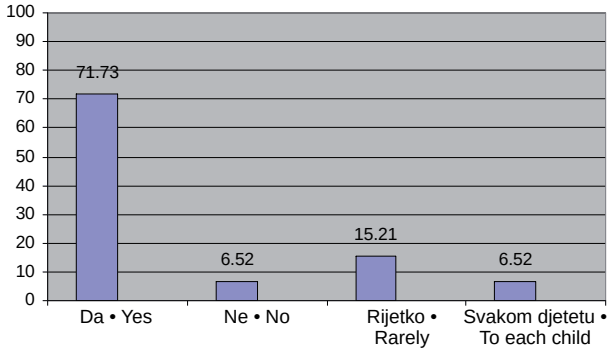
About 47% of dentists give dietary advice/counseling to the patients and 25.5% of dentists give those instructions rarely. Thirteen per cent of GDPs give dietary advice to each patient. Almost 15% of dentists never give any dietary advice (Figure 9). Big majority of GDPs (86 %) give dietary counseling about de-



Slika 9. Odgovor na pitanje: „Dajete li pacijentima savjete o prehrani?“
Figure 9 Answers to the question:" Do you give dietary advice to your patients?"



Slika 10. Odgovor na pitanje: „Koju vrstu savjeta o prehrani obično dajete?“
Figure 10 Answers to the question:" Which type of dietary advice do you usually give?"



Slika 11. Odgovor na pitanje: „Pečatite li fisure u vašoj ordinaciji?“
Figure 11 Answers to the question:" Do you perform fissure sealing in your office?"

11% govori o smanjenju svakodnevnog unosa hrane i pića. Samo 2% stomatologa daje pacijentima i ostale upute, kao što su preporuke o zamjenskim zaslađivačima, o manjem unosu kiselih pića, ili opće prehrambene preporuke (Slika 10.).

Pečaćenje fisura

Pečaćenje fisura obavlja 71% stomatologa, rijetko to radi 15,2%, a 6,2% to ne čini nikada. Čak 6% stomatologa svakom djetetu pečati fisure (Slika 11.).

Rasprava

Četiri su temeljne, praktične preventivne metode u prevenciji karijesa: oralna higijena (kontrola plaka mehaničkim i kemijskim sredstvima), savjeti o prehrani (kariogenost i frekvencija obroka), upora-

creasing total intake of sugary foods and drinks and eleven per cents of dentists give dietary advice about reducing the frequency of daily foods and drinks intake. Only two per cents of dentists (2.17%) give other advice to the patients like recommendations for alternative or non-sugar sweeteners, about reducing consumption of acid drinks or general nutritional recommendations (Figure 10).

Fissure sealing

Seventy one per cent of dentists use fissure sealing in the private dental practices. 15.2% of dentists rarely use sealants in practice and 6.2% never use it. Six per cents of dentists seal fissures to each child (Figure 11).

Discussion

There are four basic practical primary preventive methods in caries prevention: oral hygiene (plaque control by use of mechanical and chemical methods), diet counseling (cariogenity and meals fre-

ba fluorida (sistemske i lokalne metode) te pečaćenje fisura. Redovite kontrole smatraju se posebnom skupinom preventivnih mjera. Sve te metode temelje rezultate u prevenciji karijesa na redukciji broja oralnih patogena, pojačavanju obrane zuba i/ili poboljšanju reparatornih procesa zubnih tkiva. Njihova učinkovitost dobro je dokumentirana i potvrđena u mnogobrojnim istraživanjima (7). Neke preventivne mjere trebale bi se obavljati u stomatološkim ordinacijama, kao sastavni dio svakodnevnog rada općih stomatologa. Ako se koriste tim mjerama, stomatolozi kod pacijenata mogu smanjiti opasnost od karijesa. Rezultati našeg istraživanja pokazuju da se svi stomatolozi koriste nekim preventivnim mjerama, ali samo 26% rabi sve dostupne mjere. Ako se primjenjuje samo jedna mjera, smanjuje se mogućnost za uspješnu prevenciju karijesa.

Upute o oralnoj higijeni jedina su preventivna mjera kojom se koriste svi opći stomatolozi. Ti podaci potvrđuju Chenovo istraživanje iz godine 1990. u kojem se ističe da su najčešća preventivna metoda među američkim stomatolozima upravo upute o pravilnom četkanju i korištenju zubne svile, a najrjeđe one o prehrani (8). U novijem istraživanju Threlfalla i suradnika analizirani su podaci 93 opća stomatologa o skrbi za djecu te je zaključeno da svi daju preventivne savjete te govore pacijentima o sličnim temama, ali sadržaj tih savjeta razlikovao se prema specifičnostima i odabiru (9). No, 11% ispitanika u našem istraživanju smatra da se upute o oralnoj higijeni trebaju davati samo djeci te kako nema potrebe podučavati odrasle. Najveći postotak (75%) ističe da se takve upute trebaju davati svim pacijentima. U Velikoj Britaniji samo se 62% pacijenata poziva na redovite kontrole te dobivaju informacije o četkanju i skrbi za gingivu (10). Rezultati našeg istraživanja pokazuju da se većina općih stomatologa odlučuje uglavnom za općenite naputke o tome kako poboljšati oralnu higijenu, a samo manji broj daje specifične instrukcije o četkanju, tehnikama četkanja, vremenu i trajanju četkanja, koncentraciji i vrsti fluorida te o ispiranju usne šupljine. Kao što se preporučuje u prije spomenutom članku Daviesa i suradnika, upute stomatologa i higijeničara o oralnoj higijeni trebale bi se temeljiti na dostupnim dokazima te biti individualizirane s obzirom na sposobnosti pojedinca da postigne i održava prihvatljivu razinu oralnog zdravlja (10). Velika većina općih stomatologa iz našeg istraživanja upute daje usmeno, poput kratkog predavanja, bez ikakvih drugih pomagala. Samo nekoliko stomatologa koristi se lecima i modelima, a ni jedan za to nije odabrao

quency), fluoride usage (systemic and local methods) and fissure sealing. Regular dental check–ups are considered as special group of preventive measures. All of the mentioned methods base their results of caries prevention on: reduction of numbers of oral pathogens, reinforcing tooth defense and/or improving reparatory processes of tooth tissues. Their efficiency is confirmed by numerous researches and well documented (7).

Some preventive measures should be performed in dental practices, as part of every day's work of general dental practitioners. By using these measures, dentists have an opportunity to deteriorate caries risk in patients. Results of our study show that all dentists use some preventive measures, but only 26% of dentists use all methods available. By applying only one preventive measure, possibility for successful caries prevention will deteriorate.

The only preventive measure used by all general dental practitioners was giving oral health advice/instructions. This data is confirmed by a research by Chen in 1990 who found that the most used method among American dentists is giving instructions to patients about correct brushing and dental flossing, and the least time is given to diet counseling (8). In a recent study done by Threlfall and authors, 93 GDPs were interviewed about the care they provide to children and it has been found that all of them reported giving preventive advice and most covered similar themes but the content of the advice among them differed in terms of specifics and emphasis (9). Yet, 11% of dentists from our study think that instructions about oral hygiene should be given only to children, and that there's no need to provide this information to adults. The greatest percentage (75%) of GDPs correctly thinks that patient's education about oral hygiene must be given to patients of all age groups. In the UK only 62% of dentate adults recalled having been given some advice or information about tooth brushing or gum care (10). Results of our study showed that majority of GDPs usually give only general advice about improving oral hygiene and smaller number give more specific instructions like frequency of brushing, brushing technique, time and duration of brushing, fluoride concentration and type of fluoride, rinsing behavior. As it was suggested in above mentioned paper of Davies and authors, the oral hygiene advice that dental practitioners and hygienists give to their patients should be based on the best available evidence, with due consideration being given to the individual patient's ability to achieve and maintain an

kompjutore ili igre, iako su istraživanja pokazala da specifične metode mogu pojačati savjete, posebice ako su pacijenti djeca (11). Rezultati slični našima opisani su u Threlfallovu istraživanju, u kojem su se preventivni savjeti davali uglavnom bez pomoći vizualnih pomagala i samo je manjina ispitanika dijelila i letke, listove te internetske adrese (9).

Mnogobrojni ispitanici iz našeg istraživanja (83%) obavljaju profesionalnu topikalnu fluoridaciju u ordinaciji, i to većinom kada je riječ o djeci. Takva primjena fluorida rutinska je metoda i trebala bi se obavljati na pacijentima svih dobnih skupina. Ti podaci pokazuju da ni jedan stomatolog ne obavlja fluoridaciju kod svih svojih pacijenata, što je alarmantno, budući da je profesionalna primjena fluorida izvrsna metoda u prevenciji karijesa te bi trebala biti u svakodnevnoj primjeni. Oko 80% stomatologa iz našeg istraživanja rutinski primjenjuje fluoride, ali ne procjenjuje pacijentovu sklonost karijesu. Suvremene preporuke o sigurnoj primjeni topikalnih fluorida govore o njihovoj primjeni s obzirom na pacijentovu sklonost karijesu (12). Kao i u ostalim europskim državama, i bosanski se opći stomatolozi najčešće koriste fluoridnim lakovima (13).

Upute o prehrani temelj su prevencije karijesa. Zato neki autori predlažu da svim pacijentima treba dati prikladne savjete o prehrani. Nakon kliničkoga pregleda, svima bi trebalo reći kako se čuva oralno zdravlje, a moralo bi ih se obavijestiti i o prehrani. (14). Naši ispitanici davali su takve savjete, ali rijetko - to je činilo samo 13% općih stomatologa. Ta je preventivna mjera zanemarena, iako se temelji na pacijentovoj izobrazbi o pravilnoj prehrani s obzirom na kariogenost. Iako prehrana, kao čimbenik rizika za karijes, nema velik utjecaj na razvoj karijesa u zemljama gdje je rasprostranjena uporaba fluorida, a navike oralne higijene dobro razvijene, u našoj zemlji još nije tako. Stanovnici BiH ne koriste se fluoridima koliko bi trebali, a razina oralne higijene je niska (2). To je razlog zbog kojega se velika važnost treba dati uputama o prehrani koje uključuju restrikciju unosa hrane bogate fermentabilnim ugljikohidratima i - što je još važnije – naputke o ograničenom dnevnom unosu hrane. Istraživanja su pokazala da je važnije ograničiti broj obroka na 6 do 7 na dan, negoli smanjiti ukupan dnevni unos ugljikohidrata (15). Naše je istraživanje pokazalo da bosanski stomatolozi radije govore o ukupno manjoj količini hrane i pića koja sadržavaju šećere, nego o smanjenju frekvencije unosa tih proizvoda. Istraživanje Threlfalla i suradnika iz godine 2007. pokazalo je da se u Velikoj Britaniji u savjetima o prehrani

acceptable level of oral health (10). Big majority of GDPs from our study delivered oral hygiene advice verbally in form of short lecture, without any other aids or props. Only few of GDPs use leaflets and dental models while giving oral hygiene instructions. None of the dentists use computers or games for delivering instructions to the patients, although studies showed that usage of some specific methods can reinforce advice given by dentists, especially to young children (11). The results similar to our had been found in Threlfall's study, where preventive advice was usually delivered without any visual aids or props and where only a minority of respondents provided different leaflets, sheets and website addresses (9).

Big number of GDPs from our study (83%) performs professional topical fluoridation in their dental practices. Most of them perform professional topical fluoridation only to children. Topical application of local fluorides is a routine method that should be given to patients of all ages. This research data showed that none of the dentists performed fluoridation on all patients. This data is alarming because professional use of fluoride is a method that showed excellent efficiency in caries prevention, and applying it in everyday work should be necessary. About eighty per cent of dentists from our study apply professional topical fluoridation on routine basis, without assessing patient's susceptibility to caries. Nowadays recommendation for safety use of professional topical fluorides considers delivering of professionally applied topical fluorides according to patient's susceptibility on caries (12). Like in the rest of Europe, fluoride varnishes are the most widely used professional applied topical fluorides among Bosnian GDPs (13).

Dietary counseling is one of the cornerstones of caries prevention. For that reason some authors suggest that all patients should routinely be given appropriate dietary advice to maintain their oral health which will involve a brief mention of any relevant dietary information following their clinical examination (14). Dietary advice is given by surveyed GDPs, but rarely. Only 13% of dentists give dietary advice to all patients in their practices. This preventive measure that considers patient's education on correct dietary habits from cariogenity aspect is neglected. Although diet, as caries risk factor, doesn't have a big influence on caries development in countries where usage of fluorides is wide spread and oral hygiene habits are well established, in our country that is still the case. People in BH don't use fluorides as much as

uglavnom upozorava na potrošnju šećera (9). Bilo kakvi savjeti stomatologa o prehrani trebali bi biti u skladu s općim nutricionističkim preporukama za dobro zdravlje (16).

Pečaćenje fisura specifična je preventivna mjera koja se može koristiti kod djece. Naše je istraživanje pokazalo da većina stomatologa (72%) rabi tu metodu. Taj postotak zadovoljava, ako ga usporedimo s rezultatima iz Malezije gdje je većina stomatologa dobro upućena u primjenu i učinak sredstava za pečaćenje, ali samo se 41% njima i koristi, i to uglavnom u privatnim ordinacijama (17). Kanadsko istraživanje iz 1997. pokazalo je da 90 % stomatologa u privatnim ordinacijama pečati fisure, što je mnogo više nego u našoj zemlji (18).

Rezultati istraživanja u Australiji, koje su obavili Brennan i Spencer, pokazali su da 20 do 25% svih stomatoloških intervencija u privatnim ordinacijama tijekom prosječnog radnog dana čine različiti preventivni postupci (19). Istraživanje u BiH godine 1987. pokazalo je da stomatolozi zaposleni u javnom sektoru manje od 10% radnog vremena iskorištavaju za preventivne mjere (20). O tome tijekom našeg istraživanja nismo mogli dobiti podatke, budući da većina ordinacija nema kartone. Nadalje, na pitanje o količini preventivnih zahvata u svakodnevnom radu, kolege su odgovarali da ih rijetko obavljaju, jer djeca gotovo nikad nisu njihovi pacijenti. Tako je nastala zabluda među stomatolozima da se preventivne mjere mogu provoditi samo na djeci.

Tečajevi trajne izobrazbe o preventivnoj stomatologiji i prevenciji karijesa nužni su za dodatnu edukaciju stomatologa, posebice za one u privatnim ordinacijama (21). Oni koji su pohađali neke tečajeve ili slušali predavanja, svjesniji su koliko je važna preventivna stomatologija te je i provode u svojim ordinacijama (18). Stalna izobrazba i kontakti s kolegama snažno utječu na terapijske odluke (22,23). U skladu s tim dodatni bi tečajevi za bosanske stomatologe predstavljali jednostavan i djelotvoran način prihvaćanja novih znanja, što bi moglo rezultirati širom uporabom preventivnih mjera.

Razlozi za nedovoljnu provedbu preventivnih mjera u bosanskim privatnim stomatološkim ordinacijama mogli bi biti i u financijama. Kurativna stomatologija vrjednija je od preventivne, ako je riječ o općim stomatolozima koji rade u svojim ordinacijama. Zato je razumljivo da obavljaju malo preventivnih zahvata, posebice ako se zna da u službenom cjeniku stomatoloških usluga – tiskala ga je Stoma-

they should, and oral hygiene level is low (2). That is the reason why great importance should be given to dietary counseling. Diet counseling from cariogenic point of view considers patient's education about restriction of food intake which is rich in fermentable carbohydrates, and more importantly - about limitation of daily food intake. Research showed that it is more important to restrict total food intake number to 6-7 per day, than decrease daily intake of total carbohydrate amount (15). Our study showed that Bosnian dentists are more likely to give dietary advice about decreasing total intake of sugary foods and drinks than advice about reducing the frequency of daily intake of sugary foods and drinks. In the study done by Threlfall and authors from 2007, it has been shown that the focus of most dietary advice of UK general dental practitioners was the consumption of sugar, as well (9). Any dietary advice provided by dentists should be in accordance with general nutritional recommendations for good health (16).

Fissure sealing is a specific preventive method that can be used with children. Our research showed that majority of dentists (72%) used this method. That percentage is satisfactory if we compare those results to results of Abdul Razak and Lind from Malaysia, where majority of dentists have good knowledge about application and effects of fissure sealants, but only 41% of dentists use it, mostly in private dental practice (17). Canadian research from 1997 showed that 90% of Canadian dentists use fissure sealants in private practice, which is greater percentage than in our country (18).

Results from an Australian study made by Brennan and Spencer showed that 20-25% of total dental interventions given in private dental practices during average working day are different preventive measures (19). Research done in BH in 1987 showed that dentists who are employed in public dental practices spend less then 10% of their working time on giving preventive measures (20). We couldn't get any information regarding that for our research, because most of dental practices did not have patients' dental records. Furthermore, on the question about quantity of preventive methods in everyday work in their practices, dentists answered that they rarely provided preventive measures because they almost never worked with children as patients. This showed that there exists a delusion among our dentists that preventive dentistry can be performed only on children.

Courses of continuous education about preventive dentistry and caries prevention subjects are

tološka komora Federacije BiH godine 2004. - nema usluge profesionalne fluoridacije. To znači da ta preventivna mjera uopće nije priznata kao stomatološka usluga. No, tamo gdje se ne promiče preventiva, sigurno je da će sljedećih godina stomatologija i dalje biti kurativno usmjerena. Budući da je BiH zemlja u preustroju, naša državna stomatološka politika treba početi uvoditi preventivne strategije, jer je to zalog za budućnost. Kurativno orijentirana državna politika vrjednija je s općenitog financijskog aspekta, čak i za zemlje bogatije od BiH. No, službena politika morala bi se usmjeriti na razvoj i primjenu preventivne stomatologije, a opći stomatolozi bi, kao neodvojiv dio stomatološke skrbi, trebali slijediti te preporuke.

Zaključak

Ispitani stomatolozi znaju temelje načela preventivne stomatologije, ali joj ne posvećuju dovoljno pozornosti u općem tretmanu pacijenata. Jedina preventivna mjera koju svi provode jesu upute o oralnoj higijeni, no one se uglavnom daju usmeno u obliku mini-predavanja. Profesionalna topikalna fluoridacija obavlja se uglavnom na djeci, i to rutinski u ordinacijama. Najčešći savjet o prehrani odnosi se na smanjenje ukupnog unosa slatke hrane i pića.

necessary for dentist's additional education, especially the ones in private dental practices (21). Dentists who participate in more professional courses and meetings are more aware of importance of preventive dentistry, and they use it more in their practice (18). Involvement in continuing education and contacts with dental colleagues had been shown to have important influences on treatment decisions (22, 23). Accordingly, additional courses for Bosnian dentists would be an easy and efficient way of gaining new knowledge, which would lead to a wider usage of preventive measures.

Reasons for insufficient use of preventive measures in Bosnian private dental practices could also be found in financial aspects. Curative dentistry is more worthwhile for general dental practitioners who work in their private dental practices, compared to preventive one. It is understandable why dentists would do very few preventive measures, if we know that in price-list of dental services, which is regulated by Dental chamber of Federation of Bosnia and Herzegovina in 2004 and which is obligatory for each GDP, there is no professional fluoridation. It means that this preventive measure is not recognized as viable dental service. Thus, where preventive dentistry is not promoted and supported by official authorities, it is sure that in years to come dentistry will stay predominantly curative orientated. Considering the fact that Bosnia and Herzegovina is a country in transition, our state dental policy should start introducing preventive strategies as an investment for the future. Curative orientated dental health policy from a general financial aspect is very much worthwhile even for countries richer than Bosnia and Herzegovina. Dental health policy in BH needs to be focused on development and implementation of preventive dentistry, and general dental practitioners as an intricate part of dental care system must follow those recommendations.

Conclusion

Surveyed dentists were familiar with basic principles of preventive dentistry, but they did not give enough importance to it in overall treatment of patients. The only preventive measure delivered by all general dental practitioners was oral health advice/instructions, usually given verbally in a form of mini-lectures. Professional topical fluoridation was performed generally on children, mostly on routine basis in dental practices. The most often given dietary advice was about decreasing total intake of sugary foods and drinks.

Abstract
The aim of this research was to investigate the private general dental practitioners' (GDPs) attitudes, practice and knowledge to primary preventive measures (professional topical fluoridation, oral hygiene instructions, dietary advice and fissure sealing) in treating patients in their practices. Specially designed questionnaire concerning GDP's attitudes, practice and knowledge of preventive dentistry related questions, was distributed to 57 private dental practices in Canton Sarajevo area, Bosnia and Herzegovina. There were 46 (80.7%) completed and returned questionnaires. All of the respondents claimed to have applied some sort of preventive measures in treating their patients, but only 26% of GDPs said they had used all of the recommended measures. The only preventive measure that all of GDPs reported using was giving oral hygiene advice/instruction; 83% of dentists applied topical fluoride, 40.4 % of which admitted to practicing it rarely. Most GDPs give diet counseling to patients regularly while some 15% of them don't practice this at all. Seventy two per cent of dentists used fissure sealants. Surveyed dentists were familiar with basic principles of preventive dentistry, but they did not give enough importance to it in overall treatment of patients. The only preventive measure delivered by all general dental practitioners was oral health advice/instructions, usually given verbally in a form of mini-lectures. Professional topical fluoridation was performed generally on children, mostly on routine basis in dental practices. The most often given dietary advice was about decreasing total intake of sugary foods and drinks.

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References

1. Petersen PE, Bourgeois D, Bratthall D, Ogawa H. Oral health information systems – towards measuring progress in oral health promotion and disease prevention. Bulletin of the World Health Organization. 2005;83(9):686-693.
2. Zukanović A. Efficacy of "Cariogram" model in evaluation of caries risk-factors in 12-years old children [Master Thesis]. Sarajevo: University of Sarajevo; 2005.
3. Vuković A. Oral health status of adult population in Canton Sarajevo in correlation with knowledge, attitudes and practice [Master Thesis]. Sarajevo: University of Sarajevo; 2000.
4. Kobašlija S, Maglajlić N, Huseinbegović A, Tahmiščija H. Caries prevalence of children from Sarajevo. Acta Stomatol Croat. 2000;34(1):83-5.
5. Zukanović A, Kobašlija S, Ganibegović M. Caries risk assessment in Bosnian children using Cariogram computer model. Int Dent J. 2007;57(3):177-83.
6. Dental chamber of Federation of Bosnia and Herzegovina. A list of private dentists in Bosnia and Herzegovina [document on the Internet]. Sarajevo: Dental chamber of Federation of Bosnia and Herzegovina; 2007 [cited 2007 Jun 10]. Available from: http://www.dental-klds.ba/english/sarajevo_canton.htm
7. Harris NO, Christen AG. Primary Preventive Dentistry. 4th ed. Stamford: Appleton & Lange; 1994.
8. Chen M. Preventive dentistry in Texas, USA. Community Dent Oral Epidemiol. 1990;18(5):239-43.
9. Threlfall AG, Milsom K, Hunt C, Tickle M, Blinkhorn AS. Exploring the content of the advice provided by general dental practitioners to help prevent caries in young children. Br Dent J. 2007;202(3):148-9.
10. Davies RM, Davies GM, Ellwood RP. Prevention. Part 4: Toothbrushing: what advice should be given to patients? Br Dent J. 2003;195(3):135-41.
11. Makuch A, Reschke K. Playing games in promoting childhood dental health. Patient Educ Couns. 2001;43(1):105-10.
12. Hawkins R, Locker D, Noble J, Kay EJ. Prevention. Part 7: professionally applied topical fluorides for caries prevention. Br Dent J. 2003;195(6):313-7.
13. Beltran-Aguilar ED, Goldstein JW, Lockwood SA. Fluoride varnishes: a review of their clinical use, cariostatic mechanism, efficacy and safety. J Am Dent Assoc. 2000;131(5):589-96.
14. Watt RG, McGlone P, Kay EJ. Prevention. Part 2: Dietary advice in the dental surgery. Br Dent J. 2003;195(1):27-31.
15. van Loveren C, Duggal MS. The role of diet in caries prevention. Int Dent J. 2001;51(6 Suppl 1):399-406.
16. Health Educational Authority. Eight guidelines for a healthy diet. A guide for nutrition educators. London: Health Educational Authority, 1997.
17. Abdul Razak I, Lind OP. Patient education and preventive care in Malaysian dental practice. J Clin Pediatr Dent. 1994;18(4):313-22.
18. Main PA, Lewis DW, Hawkins RJ. A survey of general dentists in Ontario, Part II: Knowledge and use of topical fluoride and dental prophylaxis practices. J Can Dent Assoc. 1997;63(8):607,610-7.
19. Brennan DS, Spencer AJ. Practice belief scales among private general dental practitioners. Aust Dent J. 2001;46(3):186-93.
20. Hatibović Š. Oral health status and the most suitable preventive measures usage in children and young adults in SRBH [Dissertation]. Sarajevo: University of Sarajevo;1987.
21. Moon H, Paik D, Horowitz AM, Kim J. National survey of Korean dentists' knowledge and opinions: dental caries etiology and prevention. J Public Health Dent. 1998;58(1):51-6.
22. Watt R, McGlone P, Evans D, Boulton S, Jacobs J, Graham S et al. The prevalence and nature of recent self-reported changes in general dental practice in a sample of English general dental practitioners. Br Dent J. 2004;197(7):401-5.
23. Main PA, Lewis DW, Hawkins RJ. A survey of general dentists in Ontario, Part I: Sealant use and knowledge. J Can Dent Assoc. 1997;63(7):542,545-53.