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Usporedba oralnog statusa studenata četvrte godine različitih fakulteta Sveučilišta u Zagrebu

A Comparison of Oral Status of the Fourth-Year Students of Various Colleges at the University of Zagreb

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Sažetak

Svrha: Svrha istraživanja bila je usporediti oralni status studenata četvrte godine Stomatološkog fakulteta te studenata četvrte godine ostalih fakulteta Sveučilišta u Zagrebu. **Ispitanici i postupci:** Istraživanjem je bilo obuhvaćeno 78 studenata stomatologije i 78 njihovih kolega s ostalih fakulteta Sveučilišta u Zagrebu. Pregledi su obavljeni prema metodologiji i kriterijima SZO-a (WHO-a) stomatološkim zrcalom, a parodontološkom sondom Community periodontal index (CPI). **Rezultati:** Prosječna vrijednost KEP-indeksa svih ispitanika bila 7,97 (s.d.= 4,48), a bila je veća kod muškaraca negoli kod žena ($p=0,043$). Studenti stomatologije imali su prosječan KEP 6,96 (s.d.=4,82), a oni s ostalih fakulteta 8,97 (s.d.=3,88), sa statistički značajnom razlikom ($p=0,005$). Prosječan CPI statistički se značajno razlikovao ($p=0,001$) i kod studenata stomatologije je iznosio 1,91 (s.d.=2,40), a kod ostalih 2,99 (s.d.=2,23). Većina studenata ostalih fakulteta (66 %) treba, osim preventivnog tretmana, i konzervativno liječenje za razliku od studenata stomatologije od kojih 83 posto ne treba nikakvo liječenje ili treba samo preventivno. **Zaključak:** Premda je pojavnost karijesa, parodontnih bolesti i potreba za stomatološkim liječenjem niža kod studenata stomatologije, razmjerno visoka vrijednost KEP-a u objema skupinama ispitanika upućuje na nužnost boljeg preventivnog djelovanja u društvu. Zbog svijesti o oralnom zdravlju i preventivnim mjerama studenti stomatologije mogu biti pozitivan primjer kolegama s ostalih fakulteta.

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Ključne riječi

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Uvod

Bolesti usne šupljine ubrajaju se među najčešće zdravstvene probleme u društvu, a jedna od najrasprostranjenijih u svim populacijama i dobnim skupinama je zubni karijes (1, 2). Teško ga je iskorijeniti zbog interakcije socijalnih, kulturnih i bioloških čimbenika te prehrambenih navika (3).

Istraživanja pokazuju da u razvijenim zemljama karijes kod djece i adolescenata opada, za razliku od zemalja u razvoju gdje je vrlo čest (4). To je bolest koja djeluje na cijeli orofacijalni sustav (5) i na oralno zdravlje te ima niz psihosocijalnih utjecaja na kvalitetu života (6).

Jedan od ključnih razloga za loš oralni status je i strah od stomatologa koji je, između ostaloga, posljedica ranijih neugodnih i bolnih iskustava (7) te je najčešći uzrok neredovitih posjeta stomatologu i otkazivanja dogovorenih termina (8).

Oralni status pojedine osobe uvjetovan je oralno-higijenskim navikama, načinom života, ekonomskim statusom te redovitim posjetima stomatološkoj ordinaciji (9).

Introduction

Caries is one of the most widespread diseases that affect all populations and ages (1, 2). It is hard to eradicate because of the interaction of social, cultural and biological factors and dietary habits (3). Investigations have shown that prevalence of caries in children and adolescents is declining in developed countries, in contrast to underdeveloped countries where caries incidence is very high (4). It is a disease that has an impact on the entire orofacial region and significantly affects oral health thus having numerous psycho-social impacts on the quality of life (5, 6).

One of the crucial reasons of a poor oral status is the fear of dental treatment, which is mostly a consequence of previous unpleasant or painful experiences in a dental office (7). It is a leading cause of infrequent dental visits and cancellations of the appointments already scheduled (8).

Individual oral status is influenced by oral-hygiene habits, lifestyle, economic status and regular visits to the dental office (9).

Vodeću ulogu u podizanju svijesti kad je riječ o oralnom zdravlju imaju zdravstveni djelatnici. Budući stomatolozi su tijekom studiranja obvezni usvojiti znanja o oralnom zdravlju, prevenciji, kontroli i liječenju dentalnih bolesti (10). Zahvaljujući profesionalnoj edukaciji razvijaju bolju percepciju oralnog zdravlja i posvećuju mu veću pozornost, što na kraju rezultira njihovim boljim oralnim statusom (11, 12). Dodatni razlog za bolji oralni status studenata stomatologije jest i taj što su oni uglavnom djeca visoko školovanih zdravstvenih djelatnika, potječu iz urbanih područja i dobrog su socijalno-ekonomskog stanja (13).

Nulta hipoteza ovog istraživanja bila je da nema razlike u oralnom statusu između dviju skupina studenata.

Svrha rada bila je usporediti oralni status studenata četvrte godine Stomatološkog fakulteta te njihovih kolega s ostalih fakulteta Sveučilišta u Zagrebu.

Ispitanici i postupci

U istraživanju je sudjelovalo 156 ispitanika obaju spolova – 78 studenata stomatologije i 78 studenata četvrte godine ostalih fakulteta Sveučilišta u Zagrebu. Odobrilo ga je Etičko povjerenstvo Stomatološkog fakulteta.

Prije početka studentima je objašnjena svrha istraživanja, opisan im je način prikupljanja podataka te su zamoljeni za dobrovoljno sudjelovanje. Odziv studenata stomatologije bio je 79 posto u odnosu prema studentima četvrte godine s ostalih fakulteta. Oni koji su pristali sudjelovati potpisali su informirani pristanak.

Pregledi studenata stomatologije obavljani su u Zavodu za endodonciju i restaurativnu stomatologiju, a studenti ostalih fakulteta, u istim uvjetima kao i studenti stomatologije, pregledani su u stomatološkoj ordinaciji studentskog doma „Stjepan Radić“.

Pregledi su provedeni prema metodologiji i kriterijima SZO-a (WHO-a) te se rabilo stomatološko zrcalo i parodontološka sonda za Community Periodontal Index (CPI), uz standardno stomatološko svjetlo (20 000 luxa). CPI sonda bila je stupnjevana (graduirana) na sljedeći način: kuglasti vrh – 0,5 mm, do prve crne trake 3,5 mm, do kraja prve crne trake – 5,5 mm, prva crna linija – 8,5 mm i druga crna linija – 11,5 mm (14). Treći molari bili su uključeni u istraživanje.

Podaci su uneseni u prilagođeni obrazac SZO-a namijenjen takvim ispitivanjima. Upisani su opći podaci (dob, spol, lokacija), eventualne sustavne bolesti (kardiovaskularne, dijabetes, infektivne bolesti i alergije) i navika pušenja. Provedeno je ekstraoralno i intraoralno ispitivanje statusa zuba (KEP-indeks), oralne sluznice i parodontnog tkiva (CPI). Određene su potrebe za stomatološkim liječenjem i eventualna hitna stanja.

Dobiveni podaci uneseni su u bazu podataka i statistički obrađeni programskim paketom SPSS (verzija 16,0) metodom parametrijske statistike, tj. Student-t testom, i neparametrijske statistike, tj. Pearsonovim Hi-kvadratom i Mann-Whitneyevim testom, ovisno o distribuciji rezultata. Normalnost distribucije ispitana je Kolmogorov-Smirnovim testom.

Dental health professionals have an important role in the improvement of the general public's attitudes towards health. Future dentists, during their educational period, acquire knowledge about oral health, prevention, control and treatment of dental diseases (10). Owing to their professional education, they develop a better perception of oral health and the attention dedicated to it, which finally results in their own better oral status (11, 12). An additional factor that contributes to a better oral status of dental students is their family origin. Their parents are, for the most part, highly educated health professionals of good socio-economic status, and residents of urban regions (13).

The null hypothesis of this study was that no difference in oral status between fourth year dental students and fourth year students of other colleges will be observed.

The aim of this investigation was to compare the oral status of the fourth-year dental students, with the fourth-year students of other colleges of the University of Zagreb.

Material and Methods

A hundred and fifty six students participated in the investigation; 78 of them were dental students and an equal number of students were from other colleges of the University of Zagreb; the subjects were of both genders.

The study was approved by the Ethics Committee of School of Dental Medicine, University of Zagreb. Prior to the investigation, the purpose of investigation and methods of data collection were presented to students, and they were asked for a voluntary participation in the study. The response rate of dental students was 79% compared to all the students of the fourth year. All students willing to participate in the survey gave their written consent.

Dental students were examined at the Department of Endodontics and Restorative Dentistry, while students of other colleges were examined, under the same conditions, in the dental office of the “Stjepan Radić” Student Dormitory house.

Standard dental check-ups were performed following the methodology and criteria set by the WHO and by using a dental mirror and Community Periodontal Index (CPI) probe, under standard dental light source (20 000 lux). CPI probe was graduated as follows: ball top - 0.5 mm, the first black bar 3.5 mm, the end of the first black bar - 5.5 mm, the first black line - 8.5 mm, the second black line - 11.5 mm (14). Third molars were included in the study.

The data were entered into a standardized WHO-form designed for such basic survey of oral health. General data (age, sex, location) were also entered in the form, as well as possible presence of a systemic disease (cardiovascular disease, diabetes, infectious diseases and allergies), and smoking habits. The survey encompassed the extraoral and intraoral examination of dental status (DMFT), oral mucosa and periodontal tissue (CPI), specific needs for dental treatment and existence of emergency situation.

The resulting data were entered into a database and analyzed by statistical software package SPSS (version 16.0) with parametric statistical methods (Student t-test) and non-parametric statistics, i.e., Pearson Chi-square and Mann-Whitney

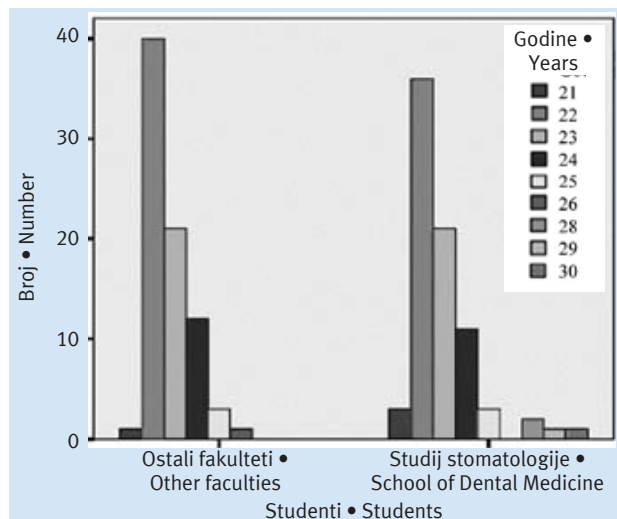
Rezultati

Od ukupno pregledanih studenata Stomatološkog fakulteta 27 ispitanika bili su muškarci, a ostalo su bile žene (njih 51). Sličan omjer bio je i kod studenata ostalih fakulteta (22 studenta i 56 studentica). Raspodjela prema dobi prikazana je na slici 1. Sistemske bolesti nisu zabilježene, osim kod nekoliko sudionika alergijske tegobe i kod jednoga kardiova-

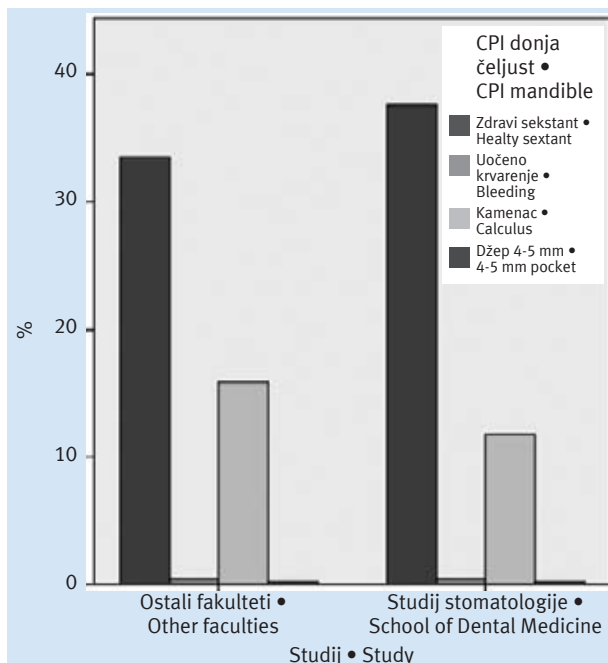
test, depending on the distribution of results. Normality of distribution was tested by Kolmogorov-Smirnov test.

Results

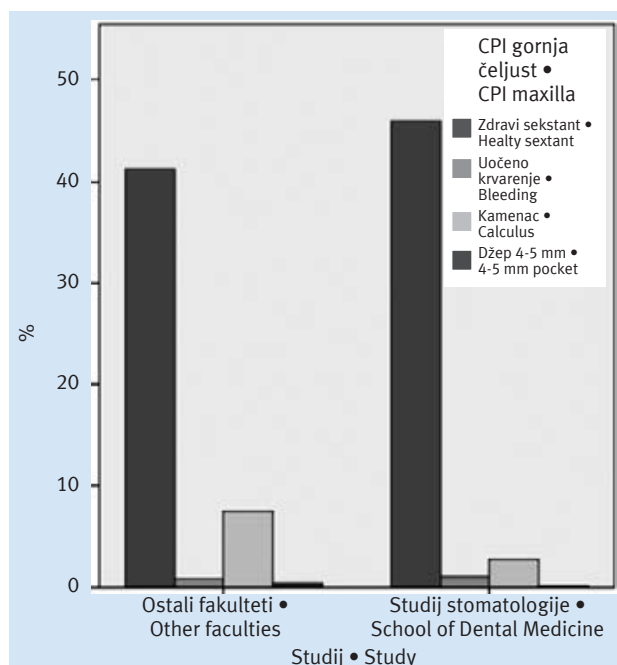
Of the total number of examined students from the School of Dental Medicine, 27 respondents were males and 51 females. A similar distribution by gender was observed in the students of other colleges (22 male and 56 female subjects). The distribution by age is shown in Figure 1. Systemic diseases, other than a statement of allergic problems, and



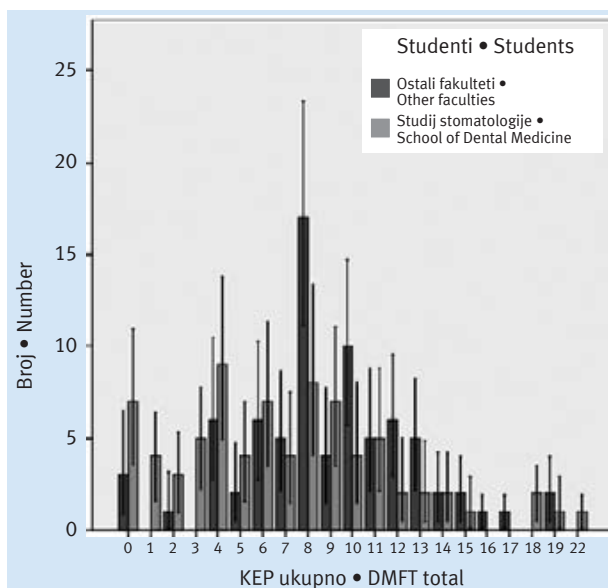
Slika 1. Grafički prikaz dobne raspodjele ispitanika
Figure 1 Age distribution of subjects



Slika 2. Grafički prikaz raspodjele vrijednosti CPI-a sekstanta donje čeljusti.
Figure 2 Distribution of sextant CPI values in the mandible



Slika 3. Grafički prikaz vrijednosti CPI-a sekstanta gornje čeljusti
Figure 3 Distribution of sextant CPI values in the maxilla



Slika 4. Distribucija vrijednosti KEP-indeksa u promatranim skupinama
Figure 4 Distribution of DMFT values in both groups of students

skularna bolest. Učestalost pušenja (studenti stomatologije –18, ostali – 23) statistički je podjednaka u objema skupinama ($\chi^2=0,827$, $df=1$, $p=0,467$). Ekstraoralni status i stanje oralne sluznice kod svih su bili uredni.

Istraživanjem je dobiven prosječan broj KEP-a trajnih zuba 7,97 (s.d.= 4,48) kod svih ispitanika. U ukupnom KEP-u najveći se udjel odnosio na zube s ispunima (7,3, s.d.=4,14), zatim na zube s karijesom (0,76, s.d.=1,53), a najmanje na ekstrahirane zube (0,07, s.d.=0,30). Nešto veći KEP zabilježen je kod muškaraca (9,04, s.d.=4,15), negoli kod žena (7,48, s.d.=4,56), a razlika je statistički značajna ($p=0,043$).

Kod studenata stomatologije prosječan KEP iznosio je 6,96 (s.d.=4,82), a kod studenata ostalih fakulteta 8,97 (s.d.=3,88). Pritom je kod studenata stomatologije bilo sedam ispitanika s KEP-vrijednošću 0, a kod ostalih je bilo troje (slika 4.). Student t-testom utvrđena je statistički značajna razlika ($p=0,005$).

Prosječan CPI studenata stomatologije iznosio je 1,91 (s.d.=2,40), a kod ostalih studenata 2,99 (s.d.=2,23), a pritom nitko nije imao vrijednost indeksa četiri koja odgovara parodontnom džepu dubljem od šest milimetara. Distribucija vrijednosti CPI-a po čeljustima prikazana je na slikama 2. i 3., a prosječan broj sekstanata s određenom vrijednosti CPI indeksa po subjektu i rezultat Mann-Whitneyeva testa nalazi se u tablici 1.

Većina studenata stomatologije treba preventivno ili uopće ne treba stomatološko liječenje, njih 34 (43 %), odnosno 31 (40 %), za razliku od studenata ostalih fakulteta kod kojih 52 (66 %) trebaju osim preventivnog liječenja i konzervativno (ispune). Razlika je statistički značajna ($\chi^2=26,188$, $df=2$, $p=0,001$) (tablica 2.).

a cardiovascular disease, were not observed. The prevalence of smoking (18 dental students, others - 23) was statistically similar in both groups ($\chi^2 = 0.827$, $df = 1$, $p = 0.467$). Pathological changes were absent on the extra-oral area and oral mucosa in all examined subjects.

The average DMFT of all examined subjects was 7.97 (s.d. = 4.48). In total DMFT - the largest share refers to the teeth with fillings (7.13, s.d. = 4.14), then the teeth with caries (0.76, s.d. = 1.53), and least to the missing teeth (0.07, s.d. = 0.30). Higher DMFT was noted in males (9.04, s.d. = 4.15) than females (7.48, s.d. = 4.56), and the difference was statistically significant ($p = 0.043$).

The average DMFT of dental students was 6.96 (s.d. = 4.82), while average DMFT of students from other faculties was 8.97 (s.d. = 3.88). Seven subjects with a DMFT value 0 were recorded in the dental-students group, while in the other students group there were three subjects (Figure 4). Student t-test showed statistically significant difference ($p = 0.005$).

The average CPI for dental students was 1.91 (s.d. = 2.40), for other students 2.99 (s.d. = 2.23), while, at the same time, in any of the respondents we did not find the index corresponding to 4, i.e. periodontal pockets deeper than 6 mm. The distribution of CPI values of the mandible and maxilla is shown in Figure 2 and 3, the average number of sextants with a particular value of the CPI index by subject and the result of Mann-Whitney test is shown in Table 1.

Most dental students needed only preventive (N=34, 43%) or no dental treatment at all (N=31, 40%), unlike students of other colleges where 52 (66%) students also needed, besides the preventive treatment, a conservative treatment (fillings). The difference was statistically significant ($\chi^2 = 26.188$, $df = 2$, $p=0.001$) (Table 2).

Tablica 1. Prosječan broj sekstanata s određenom vrijednošću CPI-a po subjektu

Table 1 Average number of sextants with a particular value of CPI by subject

Studenti • Students	0 - zdravi sekstanti* • 0 - Healthy sextants*	1 - sekstanti s krvarenjem • 1 - Sextants with bleeding	2 - sekstanti s kamencem* • 2 - Sextants with calculus*	3 - džep 4-5mm • 3 - Pocket 4-5mm
Studij stomatologije • School of Dental Medicine	5.01	0.09	0.87	0.03
Ostali fakulteti • Other colleges	4.49	0.08	1.40	0.04
Ukupno • Total	4.75	0.08	1.13	0.03

* Statistički značajna razlika dobivena Mann-Whitneyevim U testom ($p<0,05$) •

Statistically significant difference between student populations obtained by Mann-Whitney U test ($p < 0.05$)

Tablica 2. Potrebe za stomatološkim liječenjem u ispitivanim skupinama

Table 2 Treatment needs of students

Studenti • Students	Nema potrebe • No need	Preventivni tretman • Preventive only	Preventivni tretman i konzervativno liječenje • Preventive and conservative treatment	Ukupno • Total
Studij stomatologije • School of Dental Medicine	31	34	13	78
Ostali fakulteti • Other colleges	11	25	42	78
Ukupno • Total	42	59	55	156

Rasprava

Istraživanje je obuhvatilo 78 ispitanika Stomatološkog fakulteta i 78 ispitanika ostalih fakulteta. Veličina uzorka bila je određena dobrovoljnim pristankom studenata stomatologije. U ovom istraživanju opovrgnuta je nulta hipoteza i pronađene su razlike u oralnom statusu između studenata stomatologije i studenata ostalih fakulteta. Studenti stomatologije imaju bolji oralni status (manji KEP i CPI indeks), što je i razumljivo s obzirom na to da tijekom studija stječu znanja i pojačavaju svijest o lošim posljedicama neadekvatne oralne higijene te na taj način modificiraju vlastiti odnos prema oralnom zdravlju (8, 15, 16, 17). Osim znanja koje su stekli tijekom četverogodišnjeg studiranja, veliku ulogu ima i dostupnost stomatološke usluge jer su mnogim studentima roditelji stomatolozi (18). U ranijem istraživanju o oralno-higijenskim navikama studenata četvrte godine Sveučilišta u Zagrebu, uočena je razlika u stajalištima i navikama u održavanju oralne higijene i posjeta stomatologu u korist studenata stomatologije (18).

Oralno zdravlje uglavnom se procjenjuje prevalencijom karijesa koji se najčešće određuje KEP-indeksom, prisutnošću parodontnih bolesti (CPI indeks), statusom oralne higijene, načinom prehrane i učestalosti posjeta stomatologu (19). Visoke vrijednosti KEP-indeksa u nekoj populaciji najčešće su posljedica loše organizacije i preventivnih mjera stomatološke zaštite i mogu biti pokazatelj i socijalno-gospodarskog razvoja (20). Epidemiologija je dio nastavnog programa Studija dentalne medicine Sveučilišta u Zagrebu, pa tako budući stomatolozi uče svrhu, ciljeve i metode epidemioloških istraživanja bolesti oralne šupljine. Ovo istraživanje rezultat je praktičnog rada u sklopu nastave.

Ako se uspoređuje ukupni KEP-indeks obiju populacija sa sličnim istraživanjima, tada se uočava da je karijesa u našoj studentskoj populaciji više nego u sličnoj ispitivanoj skupini u zapadnoeuropskim zemljama, ali manje negoli u istočnoeuropskim zemljama. KEP studenata prve godine Sveučilišta u Toulouseu, u Francuskoj iznosio je 4,4 (21). Španjolsko istraživanje oralnog zdravlja studenata stomatologije i medicine pokazalo je veću vrijednost KEP-a na početku studiranja kod studenata stomatologije u odnosu prema studentima medicine (5,91 vs. 4,33), sa sličnim udjelom aktivnog karijesa u objema skupinama. No, na petoj godini studenti medicine imali su više zuba s neliječnim karijesom (12). Smanjenje KEP-a zabilježili su finski istraživači kod studenata prvih godina iz Helsinkija u razdoblju od 20 godina (1982–2002) s 11,0 na 2,9. U istraživanju koje su obavili godine 2002. pronašli su 27,9 posto ispitanika s KEP-om 0, a 1982. nisu pronašli nijednog ispitanika bez karijesa (22). Dabrowska sa suradnicima (23) izvijestila je o prosječnoj vrijednosti KEP-a 11,91 u populaciji prve godine poljskih studenata stomatologije, a kod studenata četvrte i pete godine iznosio je 13,56 (24). Istaknula je (23) i češći karijes kod žena, za razliku od ovog istraživanja u kojem je prosječan KEP bio veći kod muškaraca. U susjednoj Bosni i Hercegovini kod studenata medicine i stomatologije (Univerzitet u istočnom Sarajevu) KEP je iznosio 12,8 (2).

Discussion

The study included 78 subjects from the School of Dental Medicine and 78 subjects from the other schools. The sample size was determined by the number of dental students who had agreed to volunteer for the investigation. Dental students usually have a better oral status (DMFT and lower CPI index), which is understandable, given the fact that during the study they acquire knowledge and increase their awareness of the consequences of inadequate oral hygiene, and thereby modify their personal attitude towards oral health (8,15,16,17). In addition to their own knowledge, which they had an opportunity to acquire during the period of four years of study, the very availability of dental services played a significant role in a better oral health, since a large number of dental students come from families where parents are dentists (18). In a previous study of oral hygiene habits of the fourth year students at the University of Zagreb, the differences in attitudes and habits of maintaining oral hygiene and dental visits is observed in favor of dental students (18).

Oral health is usually estimated by prevalence of caries, which is usually determined by the DMFT index, presence of periodontal disease (CPI index), status of oral hygiene, diet and frequency of visits to the dentist (19). High DMFT index values in general population are often a result of poor organization and preventive measure of dental care and can be an indicator of the socio-economic status (20). Epidemiology is part of the curriculum at the School of Dental Medicine at University of Zagreb, where future dentists study the purpose, goals and methods of epidemiological studies of diseases in the oral cavity. This paper is a result of a practical part of teaching this course.

If the total DMFT index of both student populations is compared to DMFT index of similar researches, then the observed prevalence of caries in our student population is higher than that in a similar population of the students in Western European countries, but lower than those in Eastern European countries. DMFT of the first-year students at the University of Toulouse in France amounted to 4.4 (21). A Spanish survey of oral health of dental and medical students showed a higher DMFT value at the beginning of the study by dental students compared to medical students (5.91 vs. 4.33), with a similar share of active caries in both groups. However, in the fifth-year medical students group there was a higher proportion of teeth with untreated caries (12). Finnish researchers have found a DMFT reduction in the first-year students from Helsinki in the period of 20 years (1982-2002) from 11.0 to 2.9. In a study carried out in 2002 they found 27.9% of patients with a DMFT value 0, whereas in 1982 they did not find any subjects without caries (22). Dabrowska *et al.* (23) reported an average value of DMFT to be 11.91 in the first year of Poland's population of dental students, while Polish students of the fourth and fifth year of dentistry had a DMFT value of 13.56 (24). Dabrowska *et al.* (23) also found a higher prevalence of caries in women as opposed to this research, which showed a higher average DMFT in men. In the neighboring Bosnia and Herzegovina in the combined population of students of medicine and den-

Navika pušenja podjednako je zastupljena u objema populacijama, unatoč boljoj informiranosti studenata stomatologije o štetnosti duhana. Prevalencija pušenja kod studenata stomatologije iznosi 23,8 posto i vrlo je velika ako se uspoređi s prevalencijom pušenja među studentima stomatologije u svijetu – kreće se od 4,8 posto do 23 posto. (24, 25, 26, 27, 28)

Parodontni status znatno je bolji kod studenata stomatologije, što se može objasniti češćim četkanjem i korištenjem većeg broja pomoćnih sredstava (interdentalne četkice, zubne svile i otopine za grgljanje) (18).

Iskustva finskih i belgijskih istraživača upućuju na mogućnost poboljšanja oralnog zdravlja, vjerojatno zbog uporabe zubnih pasta s fluoridima i bolje edukacije o oralnoj higijeni (22, 29).

Prehrana je također važan čimbenik dobrog oralnog statusa. Najveća opasnost od karijesa je u slučaju čestog konzumiranja velikih količina rafiniranih ugljikohidrata i to u obliku koji se dugo zadržava u ustima (30). Ako se nedovoljno četkaju zubi, na njima se stvara i zadržava biofilm koji je glavni uzrok za nastanak karijesa i parodontnih bolesti (31).

Potrebe za stomatološkim liječenjem studenata stomatologije u skladu su s nižim KEP- indeksom te potvrđuju njihovu bolju informiranost o oralnoj higijeni. Visok postotak studenata ostalih fakulteta kod kojih je potreban restaurativni zahvat (66 %) upućuje na neadekvatne oralno-higijenske navike i na neredovite kontrolne stomatološke preglede.

Prethodno istraživanje populacije studenata ispitivanih u ovom radu upućuje na to da se mogu poboljšati oralno-higijenske navike u objema skupinama i dodatno smanjiti konzumiranje rafiniranih ugljikohidrata (18), što može rezultirati boljim oralnim statusom u objema populacijama.

Na temelju ovog istraživanja može se zaključiti da je oralno zdravlje studenata četvrte godine stomatologije bolje nego studenata četvrte godine ostalih fakulteta Sveučilišta u Zagrebu. Visoka vrijednost KEP-a u objema skupinama upućuje na to da su potrebne bolje preventivne i edukativne mjere u mlađoj dobi.

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tistry (University of East Sarajevo) the DMFT was 12.8 (2).

When considering smoking habits, there is similar prevalence in both populations despite increased awareness of oral health risks of smoking in dental students group. The prevalence of smokers in dental students group is 23.8%, which is very high when compared with the prevalence of smoking among dental students in the world which ranges between 4.8 % to 23% (24, 25, 26, 27, 28).

The condition of periodontal status was significantly better for dental students, which can be explained by a more frequent brushing and the use of a number of auxiliary oral-hygiene devices (interdental brush, dental floss and mouth-wash) (18).

The experiences of the Finnish and the Belgian researchers suggest the possibility of improving oral health, probably as a result of using fluoride toothpaste and a better education in oral hygiene (22, 29).

Nutrition is also an important factor in good oral status. The greatest risk of caries experience is a frequent consumption of large amounts of refined carbohydrates, especially those which are retained longer in the mouth (30). In case of insufficient brushing, a biofilm is formed and maintained upon the teeth surface, which is the main factor of dental caries and periodontal diseases (31). Treatment needs of dental students are in accordance with the lower DMFT and confirm better awareness of oral hygiene in dental students group. A high percentage of students of other colleges which require conservative treatment (66%) indicates inadequate oral hygiene habits and irregular dental check-ups.

A preliminary survey of the population of students described in this paper indicates the possibility of improving their oral hygiene habits in both groups, as well as further reduction in consumption refined carbohydrates (18), which ultimately can lead to a better oral status in both populations.

It can be concluded that the oral health status of the fourth-year dental-students is better than that of students of other colleges at the University of Zagreb. A high DMFT value in both groups indicates the need for better implementation of preventive and educational measures at a younger age.

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Abstract

Objectives: To compare oral status of the fourth-year students of the School of Dental Medicine, and other fourth year students from the University of Zagreb. **Materials and methods:** Research included 78 dental students and 78 students of other colleges of the University of Zagreb. A standard dental check-up was performed following the WHO-prescribed methodology and criteria, and by using a dental mirror and community periodontal index (CPI) probe. **Results:** Mean DMFT of all examined subjects was 7.97 (s.d. = 4.48), with a higher value for males than females ($p = 0.043$). The dental students had a mean DMFT of 6.96 (s.d. = 4.82) and the non-dental students group DMFT of 8.97 (s.d. = 3.88). This difference was statistically significant ($p = 0.005$). Average CPI indices difference of the examined groups (dental students – 1.91, s.d. = 2.40; non-dental students – 2.99, s.d. = 2.23) was also statistically significant ($p = 0.001$). The majority of non-dental students (66%) needed, in addition to preventive measures, a conservative dental treatment, in contrast to the dental-students group, where 83% required only preventive or no dental treatment at all. **Conclusions:** Although the incidence of dental caries, periodontal diseases and treatment need is lower in dental students, the relatively high value of DMFT indices in both groups indicates the need for better preventive measures. Due to an inherent increased awareness of oral health and preventive measures, the dental students could set a good example to their fellow-students of other colleges.

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Key words

DMFT; Students; CPI; Treatment Need

References

- Selwitz RH, Ismail AI, Pitts NB. Dental caries. *Lancet*. 2007 Jan 6;369(9555):51-9.
- Stojanović N, Krunić J. Prevalenca karijesa u studenata u medicine i stomatologije u opštini Foča. *Serbian Dental J*. 2007;54(2):89-96.
- Ismail AI, Tanzer JM, Dingle JL. Current trends of sugar consumption in developing societies. *Community Dent Oral Epidemiol*. 1997 Dec;25(6):438-43.
- Blinkhorn AS, Davies RM. Caries prevention. A continued need worldwide. *Int Dent J*. 1996 Jun;46(3):119-25.
- Bego K, Njemirovskij V, Pelivan I. Epidemiološko istraživanje oralnog zdravlja u srednjoj Dalmaciji: pilot studija. *Acta Stomatol Croat*. 2007;41(4):337-44.
- Leao A, Sheiham A. Relation between clinical dental status and subjective impacts on daily living. *J Dent Res*. 1995 Jul;74(7):1408-13.
- Locker D, Shapiro D, Liddell A. Negative dental experiences and their relationship to dental anxiety. *Community Dent Health*. 1996 Jun;13(2):86-92.
- Meng X, Heft MW, Bradley MM, Lang PJ. Effect of fear on dental utilization behaviors and oral health outcome. *Community Dent Oral Epidemiol*. 2007 Aug;35(4):292-301.
- Pellizzer C, Pejda S, Špalj S, Plančak D. Nerealni optimizam i demografski utjecaji na oralnohigijenske navike i percepciju adolescenata u Hrvatskoj. *Acta Stomatol Croat*. 2007;41(3):205-15.
- Bertolami CN. Rationalizing the dental curriculum in light of current disease prevalence and patient demand for treatment: form vs. content. *J Dent Educ*. 2001 Aug;65(8):725-35.
- Freeman R. The psychology of dental patient care. 5. The determinants of dental health attitudes and behaviours. *Br Dent J*. 1999 Jul 10;187(1):15-8.
- Cortes FJ, Nevot C, Ramon JM, Cuenca E. The evolution of dental health in dental students at the University of Barcelona. *J Dent Educ*. 2002 Oct;66(10):1203-8.
- Vigild M, Schwarz E. Characteristics and study motivation of Danish dental students in a longitudinal perspective. *Eur J Dent Educ*. 2001 Aug;5(3):127-33.
- World Health Organization. Oral health surveys – basic methods. Geneva: World Health Organization; 1997.
- Rong WS, Wang WJ, Yip HK. Attitudes of dental and medical students in their first and final years of undergraduate study to oral health behaviour. *Eur J Dent Educ*. 2006 Aug;10(3):178-84.
- Polychronopoulou A, Kawamura M. Oral self-care behaviours: comparing Greek and Japanese dental students. *Eur J Dent Educ*. 2005 Nov;9(4):164-70.
- Al-Wahadni AM, Al-Omiri MK, Kawamura M. Differences in self-reported oral health behavior between dental students and dental technology/dental hygiene students in Jordan. *J Oral Sci*. 2004 Sep;46(3):191-7.
- Mostarčić K, Šimat S. Usporedba oralnog-higijenskih navika studenata 4. godine različitih fakulteta Sveučilišta u Zagrebu [rad kandidiran za Rektorovu nagradu u akademskoj 2008/2009 godini]. Zagreb: Stomatološki fakultet; 2009.
- Suman M, Spalj S, Plančak D, Dukic W, Juric H. The influence of war on the oral health of professional soldiers. *Int Dent J*. 2008 Apr;58(2):71-4.
- Lalloo R, Myburgh NG, Hobdell MH. Dental caries, socio-economic development and national oral health policies. *Int Dent J*. 1999 Aug;49(4):196-202.
- Bou C, Miquel JL, Poisson P. Oral health status of 1500 university students in Toulouse France. *Odontostomatol Trop*. 2006 Jun;29(114):29-33.
- Peltola JS, Ventä I, Haahela S, Lakoma A, Ylipaavalniemi P, Turto L. Dental and oral radiographic findings in first-year university students in 1982 and 2002 in Helsinki, Finland. *Acta Odontol Scand*. 2006 Feb;64(1):42-6.
- Dabrowska E, Letko R, Balunowska M. Assessment of dentition status and oral hygiene in first year dental students, Medical University of Białystok. *Adv Med Sci*. 2006;51 Suppl 1:104-5.
- Stypułkowska J, Łyszczarz R, Wichliński J, Pawłowska K, Solska-Kuczerek A. Oral health state in dentistry students of Medical College, Jagiellonian University in Cracow. *Przegl Lek*. 2003;60 Suppl 6:122-5.
- Amemori M, Mumghamba EG, Ruotoistenmäki J, Murtomaa H. Smoking and drinking habits and attitudes to smoking cessation counselling among Tanzanian dental students. *Community Dent Health*. 2011 Mar;28(1):95-8.
- Warren CW, Sinha DN, Lee J, Lea V, Jones N, Asma S. Tobacco use, exposure to secondhand smoke, and cessation counseling training of dental students around the world. *J Dent Educ*. 2011 Mar;75(3):385-405.
- Khami MR, Murtomaa H, Razeghi S, Virtanen JI. Smoking and its determinants among Iranian dental students. *Med Princ Pract*. 2010;19(5):390-4.
- Huang B, Inagaki K, Yoshii C, Kano M, Abbott PV, Noguchi T et al. Social nicotine dependence in Australian dental undergraduate students. *Int Dent J*. 2011 Jun;61(3):152-6.
- Van Nieuwenhuysen JP, Vreven J, D'Hoore W. Dental caries in a Belgian school population of 5-to-21-year-olds. *Rev Belge Med Dent* (1984). 1992;47(2):31-43.
- Tinanoff N, Palmer CA. Dietary determinants of dental caries and dietary recommendations for preschool children. *Refuat Hapeh Vehashinayim*. 2003 Apr;20(2):8-23, 78.
- Axelsson P, Nyström B, Lindhe J. The long-term effect of a plaque control program on tooth mortality, caries and periodontal disease in adults. Results after 30 years of maintenance. *J Clin Periodontol*. 2004 Sep;31(9):749-57.