

Marin Vodanović^{1,2}, Antea Barišić³, Andrej Šribar^{4,5}, Oliver Šuman⁶

Are Dentists Hypocrites? Oral Self-care Habits and Self-reported Oral Health Status among Dentists and Non-dentists in Croatia

Jesu li stomatolozi licemjeri? Navike u provođenju oralne higijene i samoprocijenjeni status oralnog zdravlja među stomatolozima i nestomatolozima u Hrvatskoj

¹ Department of Dental Anthropology, University of Zagreb School of Dental Medicine
Zavod za dentalnu antropologiju Stomatološkog fakulteta Sveučilišta u Zagrebu, Hrvatska

² University Hospital Centre Zagreb
Klinički bolnički centar Zagreb, Hrvatska

³ Health Center, Šibenik, Croatia
Dom zdravlja Šibenik, Hrvatska

⁴ Clinical department of Anesthesiology, Resuscitation and Intensive Care Medicine, University Hospital Dubrava, Zagreb, Croatia
Klinički zavod za anesteziologiju, reanimatologiju i intenzivno liječenje KB-a Dubrava, Zagreb, Hrvatska

⁵ Chair of Anesthesiology and Reanimatology, University of Zagreb School of Dental Medicine
Katedra za anesteziologiju i reanimatologiju Stomatološkog fakulteta Sveučilišta u Zagrebu

⁶ Department of Surgery, University Hospital Merkur, Zagreb, Croatia
Klinika za kirurgiju Kliničke bolnice Merkur, Zagreb, Hrvatska

Abstract

Objectives: Dentists provide dental care to their patients and educate them on their oral hygiene and how to maintain oral health. This paper aimed to determine whether dentists are hypocritical when advising their patients on oral hygiene procedures and dental treatments because they do not apply to themselves what they recommend to others. **Material and methods:** This is a self-reported study conducted through an online survey questionnaire completed by 1001 participants, of whom 551 were non-dentists and 450 dentists. This is the first study on oral hygiene habits and oral status among dentists in Croatia. This research included almost 10% of the total number of working dentists in Croatia. **Results:** In terms of dental hygiene habits, dentists brushed, flossed and used interdental brushes more frequently, and they also changed toothbrushes more frequently, whereas they attended check-ups less frequently. Dentists also reported a smaller number of teeth with cavities, a greater number of teeth with fillings, a greater number of extracted teeth, and a greater number of dental crowns, but a smaller number of healthy teeth compared to general population. However, dentists had a much higher proportion of participants over 30 years of age, and when sub-analysis of participants over 30 years of age was performed, dentists had a greater number of healthy teeth compared to the general population. **Conclusions:** The results showed that dentists are aware of the importance of their oral health and that they do not pay attention only to their oral hygiene habits, but also apply advice they give their patients. Therefore, they cannot be considered hypocritical.

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Address for correspondence

Asst. professor Andrej Šribar, MD, PhD
University of Zagreb
School of Dental Medicine
University Hospital Dubrava, Zagreb,
Croatia
asribar@sfzg.unizg.hr

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Marin Vodanović, ORCID 0000-0002-1935-8657
Andrej Šribar, ORCID 0000-0002-6517-9895

Oliver Šuman, ORCID 0000-0001-5034-4993

Introduction

Dentists are health professionals who provide dental care to their patients and educate them on their oral hygiene and how to maintain oral health. Dentists advise their patients on the necessary dental treatment by presenting them recommended and alternative solutions (1). A dentist's beautiful and healthy smile is often perceived by a patient as a role model and incentive in maintaining oral health and achieving oral beauty (2).

Uvod

Stomatolozi su zdravstveni radnici koji svojim pacijentima pružaju stomatološku skrb i educiraju ih o oralnoj higijeni i kako održavati oralno zdravlje. Također savjetuju svojim pacijentima kakvo im je stomatološko liječenje potrebno i prezentiraju im preporučena i alternativna rješenja (1). Lijep i zdrav osmijeh stomatologa pacijenti često doživljavaju kao uzor i poticaj u očuvanju i postizanju svojega oralnog zdravlja (2).

Considering the abovementioned, dentists sometimes advise patients on procedures that they do not perform themselves and, also, dental procedures that they would not undergo themselves. This can be considered hypocritical behavior and unnecessary treatment (overtreatment). Overtreatment is defined as instances where dental treatments are provided in a manner that exceeds its clinical justification, or where there is no justification for that care being provided at all (3). Dentists are one of the few health professions that have a monopoly on treating some parts of our body. Namely, there is no other health expert in Croatia who can competently help us with dental problems. This is a great professional challenge but also a potential ethical trap. The least harm is done if the dentist turns out to be hypocritical and advises patients to do something that he/she does not do, and particularly if it concerns basic oral hygiene habits. It is a much bigger problem if the dentist recommends the patient dental treatments which are not professionally justified but can bring him/her greater material benefits.

The Republic of Croatia is a member state of the European Union with about 4 million inhabitants and about 5,000 dentists (4). In Croatia, dental health care is provided only by dentists (doctors of dental medicine). There are no dental hygienists. This is the first study of oral hygiene habits and oral status among dentists in Croatia.

This paper aimed to determine whether dentists are hypocritical when advising their patients on oral hygiene procedures and dental treatments because they do not apply to themselves something that they recommend to others. Since motivation plays a crucial role in how successful the treatment is, potentially hypocritical behavior of the healthcare provider might be demotivational for the patient, thus reducing the chance for successful treatment. The purpose of this study was to examine the oral health of dentists, compare it with the oral health of laypeople (non-dentists), and try to determine whether there are statistically significant differences in outcomes between laypeople and dentists.

We tested the null hypothesis that there is no difference in the oral health habits and oral health status among the Croatian dentists and laypersons in the general population, expecting that, by considering their knowledge and experience, dentists are not hypocrites.

Material and methods

The first step was to identify what general advice regarding oral hygiene and oral health dentists give their patients. These data were obtained by contacting 20 general dental practitioners from different parts of Croatia who were asked to list the three most common general pieces of advice regarding oral health and oral hygiene that they give their patients. The Delphi method was used to create the questionnaire. In the first step, we identified a group of dental experts on the topic of interest. Subsequently, we presented experts a structured questionnaire to obtain their opinions. Afterwards, the experts' responses were collected and statistically analyzed to identify any patterns in the responses. Based on this, a questionnaire was designed. The questionnaire contained ques-

Na svojem poslu stomatolozi katkad preporučuju pacijentima postupke koje sami ne primjenjuju i one kojima se sami ne bi podvrgnuli. To se može smatrati licemjernim ponašanjem i nepotrebnim liječenjem (pretjeranim liječenjem). Prekomjerno liječenje definira se kao stomatološko liječenje koje nadilazi kliničko opravdanje, ili ako nema opravdanja za pružanje takve skrbi (3). Stomatologija je jedna od rijetkih zdravstvenih profesija koja ima pravo nad liječenjem nekoga dijela našeg tijela. Naime, nema drugoga zdravstvenog stručnjaka koji nam može odgovorno pomoći u slučaju problema sa zubima. Velik je to profesionalni izazov, ali i potencijalna etička zamka. Najmanja je šteta ako se stomatolog čini licemjernim i pacijentima savjetuje nešto što ne bi sam prakticirao, a tiče se osnovnih navika u održavanju oralne higijene. Mnogo je veći problem ako pacijentu preporuči stomatološko liječenje koje nije stručno opravdano, ali mu omogućuje veću materijalnu korist.

Republika Hrvatska, s oko 4 milijuna stanovnika i oko 5000 stomatologa, članica je Europske unije (4). Dentalnu zdravstvenu zaštitu u zemlji obavljaju isključivo stomatolozi (doktori dentalne medicine). Nema dentalnih higijeničara. Ovo je prvo istraživanje o oralno-higijenskim navikama i oralnom statusu stomatologa u Hrvatskoj.

Ovim radom željelo se ustanoviti jesu li stomatolozi licemjerni kada preporučuju svojim pacijentima postupke za provođenje oralne higijene i stomatološko liječenje, a na sebi ne primjenjuju ono što savjetuju drugima. Budući da je motivacija svakoga pacijenta jedan od ključnih čimbenika uspješne terapije, licemjerje liječnika moglo bi demotivirati pacijenta i smanjiti mogućnost za uspješno liječenje. Svrha ovog istraživanja bila je ispitati oralno zdravlje stomatologa i usporediti ga s oralnim zdravljem laika (nestomatologa) te pokušati ustanoviti postoje li statistički značajne razlike u rezultatima između laika i stomatologa.

Testirali smo nultu hipotezu da nema razlike u oralno-higijenskim navikama i statusu oralnog zdravlja između hrvatskih stomatologa i laika u općoj populaciji, očekujući da stomatolozi, s obzirom na svoje znanje i iskustvo, nisu licemjeri.

Ispitanici i metode

Prvi korak bio je utvrditi koje opće savjete o oralnoj higijeni i oralnome zdravlju stomatolozi daju svojim pacijentima. Ti podatci dobiveni su kontaktiranjem s 20 doktora dentalne medicine iz različitih dijelova Hrvatske koji su zamoljeni da nabroje tri najčešća opća savjeta o oralnome zdravlju i oralnoj higijeni koja daju svojim pacijentima. Za izradu upitnika korištena je Delphi metoda. U prvom smo koraku identificirali skupinu stomatoloških stručnjaka za temu koja nas zanima. Zatim smo im prezentirali strukturirani upitnik kako bismo dobili njihovo mišljenje. Nakon toga prikupljeni su odgovori stručnjaka i statistički analizirani kako bi se identificirali bilo kakvi obrasci u odgovorima. Na temelju toga napravljen je upitnik. Sadržavao je pitanja o navikama u provođenju oral-

tions about oral hygiene habits, dental status and satisfaction with oral health. The questionnaires for dentists and laypeople were identical and contained the identical questions.

The research was conducted through an online survey questionnaire developed using Google Forms. Completion of the form was anonymous and voluntary. At the beginning of the questionnaire, the participants were informed about the purpose of the research. Before completing the questionnaire, they had to indicate that they agreed to participate in the research. The questionnaire was distributed to Croatian dentists (but not to any of the experts which were consulted when creating the questionnaire) and laypeople via e-mail and social networks (Facebook and LinkedIn). The questionnaire was available for completion for one month. Ethical approval for conducting the study was obtained from the Ethics Committee of the School of Dental Medicine University of Zagreb, Croatia.

Differences between groups in categorical values were tested for statistical significance using Pearson's chi-squared test or Fisher's exact test for 2x2 tables. Differences in continuous variables were tested for statistical significance using Student's t-test or Wilcoxon rank-sum test (Mann-Whitney U test) for variables that do not follow Gaussian distribution. When differences in continuous variables between more than 2 groups were analyzed, the Kruskal Wallis rank-sum test with post-hoc Dwass Steel Critchlow-Fligner (DSCF) pairwise comparison was used to test for statistical significance. Data are presented as tables. Categorical variables are presented as counts and percentages, while continuous variables are presented as mean and standard deviations (SD) or median and interquartile ranges (IQR), depending on distribution which was tested for normality using the Shapiro-Wilk test. Software package used for statistical analysis jamovi v2.3.0, and p values < 0.05 were considered statistically significant.

Results

The analysis of the obtained answers provided by 20 general dental practitioners from different parts of Croatia identified the six most common instructions that dentists give to their patients. General instructions that Croatian dentists give to their patients regarding oral hygiene and maintaining oral health are shown in Table 1. The questions contained in the questionnaire for dentists and non-dentists are listed in Table 2.

The questionnaire was completed by 1001 participants, of whom 551 non-dentists and 450 dentists. The distribution of respondents by gender and age is shown in Table 3. Distribution of dentists regarding dental specialty is shown in Table 4.

Comparison between general population and dentists

1003 participants answered the questionnaire, of which 2 did not answer all the questions and were excluded from further analyses – in total 1001 subjects were analyzed. In total, there were 551 subjects from the general population (55%) and 450 dentists (45%), Table 3.

There were no statistically significant differences between groups in sex distribution (75% females in the general pop-

ne higijene, dentalnom statusu i zadovoljstvu oralnim zdravljem. Upitnici za stomatologe i laike bili su identični i sadržavali su ista pitanja.

Istraživanje je provedeno putem online anketnoga upitnika izrađenog s pomoću Googleovog obrasca. Ispunjavanje je bilo anonimno i dobrovoljno. Na početku upitnika sudionici su bili obaviješteni o svrsi istraživanja. Prije popunjavanja morali su naznačiti da pristaju sudjelovati u istraživanju. Upitnik je distribuiran hrvatskim stomatolozima (ali nijednom od stručnjaka s kojim se kontaktiralo tijekom izrade upitnika) i laicima putem e-pošte i društvenih mreža (Facebook i LinkedIn). Rok za ispunjavanje bio je mjesec dana. Odobrenje za provedbu istraživanja dalo je Etičko povjerenstvo Stomatološkog fakulteta Sveučilišta u Zagrebu, Hrvatska.

Razlike između skupina u kategoričkim vrijednostima testirane su za statističko značenje koristeći se Pearsonovim hi-kvadrat testom ili Fisherovim egzaktnim testom za tablice 2 x 2. Razlike u kontinuiranim varijablama testirane su za statističko značenje koristeći se Studentovim t-testom ili Wilcoxonovim testom zbroja rangova (Mann-Whitneyjev U-test) za varijable koje ne slijede Gaussovu distribuciju. Kada su analizirane razlike u kontinuiranim varijablama između više od dviju skupina, Kruskal-Wallisov test zbroja rangova s post-hoc usporedbom parova Dwass Steel Critchlow-Fligner (DSCF) korišten je za testiranje statističkog značenja. Podatci su prikazani u obliku tablica. Kategoričke varijable prikazane su kao brojevi i postotci, a kontinuirane varijable kao srednja vrijednost i standardna devijacija (SD) ili medijan i interkvartilni raspon (IQR), ovisno o distribuciji čija se normalnost testira Shapiro-Wilkovim testom. Programski paket koji se koristi za statističku analizu jamovi v2.3.0, a p-vrijednosti < 0,05 smatraju se statistički značajnima.

Rezultati

Analizom dobivenih odgovora od 20 doktora dentalne medicine iz različitih dijelova Hrvatske identificirano je šest najčešćih uputa koje stomatolozi daju pacijentima. Opće upute koje hrvatski stomatolozi preporučuju, kad je riječ o oralnoj higijeni i održavanju oralnog zdravlja, nalaze se u tablici 1. Pitanja sadržana u upitniku za stomatologe i nestomatologe navedena su u tablici 2.

Upitnik je ispunio 1001 sudionik, od kojih 551 nestomatolog i 450 stomatologa. Distribucija ispitanika prema spolu i dobi prikazana je u tablici 3. Distribucija stomatologa prema stomatološkim specijalizacijama nalazi se u tablici 4.

Usporedba između opće populacije i stomatologa

Na upitnik su odgovorila 1003 sudionika, od kojih dva nisu odgovorila na sva pitanja te su isključeni iz daljnjih analiza – ukupno je analiziran 1001 ispitanik. Ukupno je sudjelovao 551 ispitanik iz opće populacije (55 %) i 450 stomatologa (45 %) – tablica 3.

Nije bilo statistički značajnih razlika među skupinama u spolnoj distribuciji (75 % žena u općoj populaciji u uspored-

Table 1 General instruction that Croatian dentists give to their patients regarding oral hygiene and maintaining oral health**Tablica 1.** Opće upute koje hrvatski stomatolozi daju pacijentima o oralnoj higijeni i održavanju oralnoga zdravlja

1. Teeth should be brushed at least twice a day. • Zube treba prati najmanje dva puta na dan.
2. Dental floss and an interdental brush should be used to clean the interdental spaces. • Za čišćenje međuzubnih prostora potrebno je koristiti se koncem za zube i interdentalnom četkicom.
3. The toothbrush should be changed at least once a month. • Četkicu za zube treba mijenjati barem jedanput na mjesec.
4. Dental check-ups should be done once or twice a year. • Kontrolne stomatološke preglede treba obavljati jedanput do dvaput na godinu.
5. Every tooth with caries needs to be repaired. • Svaki zub s karijesom treba popraviti.
6. Each extracted tooth should be replaced with a prosthetic replacement as soon as possible. • Svaki izvađeni zub treba što prije nadomjestiti protetičkim nadomjestkom.

Table 2 Questions contained in the questionnaire**Tablica 2.** Pitanja sadržana u upitniku

1. Sex • Spol
2. Age • Dob
3. Are you a dentist by profession? • Jeste li stomatolog po zanimanju?
4. What is your dental specialization? • Koja je vaša specijalizacija?
5. How many times a day do you brush your teeth? • Koliko puta na dan perete zube?
Offered answers: once daily, twice daily, three times a day, 4 or more times a day, I don't brush my teeth • Ponudeni odgovori: 1 x na dan, 2 x na dan, 3 x na dan, 4 i više puta na dan, ne perem zube
6. How often do you use dental floss? • Koliko se često koristite zubnom svilom (zubni konac)?
Offered answers: daily, 2-3x/day, >3x/day, weekly, 1-3x/week, >4x/week, as needed, the subject does not floss • Ponudeni odgovori: svaki dan, 2 - 3 puta na dan, više od 3 puta na dan, jedanput na tjedan, 1 - 3 puta na tjedan, više od 4 puta na tjedan, prema potrebi, ne upotrebljavam zubni konac
7. Do you use interdental brushes? • Koristite li se međuzubnom četkicom?
Offered answers: Yes, No • Ponudeni odgovori: da, ne
8. I change the toothbrush: • Zubnu četkicu mijenjam:
Offered answers: every month, every 2-3 months, every 6 months, once a year • Ponudeni odgovori: svaki mjesec, svaka 2 - 3 mjeseca, svakih 6 mjeseci, jedanput na godinu
9. I go for dental check-ups: • Na kontrolne stomatološke preglede idem:
Offered answers: once a month, every 2-3 months, every 6 months, once a year, as needed • Ponudeni odgovori: 1 x na mjesec, svaka 2 - 3 mjeseca, svakih 6 mjeseci, jedanput na godinu, prema potrebi
10. How many healthy teeth do you have in your mouth (no caries and no fillings)? • Koliko u ustima imate zdravih zuba (bez karijesa i bez ispuna)?
Self-reported • Samoprocjena
11. How many teeth do you have in your mouth with caries? • Koliko u ustima imate zuba s karijesom?
Self-reported • Samoprocjena
12. How many teeth do you have in your mouth with at least one filling? • Koliko u ustima imate zuba s najmanje jednim ispunom?
Self-reported • Samoprocjena
13. How many of your teeth have been extracted? • Koliko je vaših zuba izvađeno?
Self-reported • Samoprocjena
14. How many teeth with dental crowns do you have in your mouth? • Koliko u ustima imate zuba s krunicama?
Self-reported • Samoprocjena
15. How many teeth do you have in your mouth that has been extracted and replaced with a prosthetic replacement of any kind? • Koliko u ustima imate zuba koji su izvađeni i nadomješteni protetičkim nadomjestkom bilo koje vrste?
Self-reported • Samoprocjena
16. How many dental implants do you have in your mouth? • Koliko u ustima imate zubnih implantata?
Self-reported • Samoprocjena
17. Evaluate your satisfaction with your oral health: • Procijenite zadovoljstvo svojim oralnim zdravljem:
Offered answers: very unhappy, unhappy, neutral, happy, very happy • Ponudeni odgovori: veoma nezadovoljan, nezadovoljan, ni zadovoljan, ni nezadovoljan, zadovoljan, veoma zadovoljan
18. Education level (highest you have completed): • Razina obrazovanja (najviša koju ste završili):
Offered answers: elementary school degree, high school degree, bachelor's degree, university degree, Master of Science, Doctor of Science (PhD) • Ponudeni odgovori: niža stručna sprema, srednja stručna sprema, viša stručna sprema, visoka stručna sprema, magistar znanosti, doktor znanosti

ulation, compared to 70% female dentists), while there was a significantly higher proportion of subjects under the age of 30 in the general population. There was a significant asymmetry between groups in their level of education (naturally, all the dentists received university education, while majority of subjects in the general population obtained high school education), Table 5.

bi sa 70 % žena stomatologa), a u općoj populaciji značajno je veći udio ispitanika mlađih od 30 godina. Postoji značajna asimetrija između skupina u stupnju obrazovanja (naravno, svi stomatolozi imaju visoko obrazovanje, a većina ispitanika u općoj populaciji srednjoškolsko) – tablica 5.

Kad je riječ o navikama u održavanju oralne higijene, stomatolozi su češće prali zube, češće ih čistili zubnim koncem

Table 3 Distribution of participants by gender and age.
Tablica 3. Distribucija ispitanika s obzirom na spol i dob

| Age (years) • Dob (godine) | Laypeople (non-dentists) • Nestomatolozi | | | Dentists • Stomatolozi | | |
|----------------------------|--|-----------------|----------------|------------------------|-----------------|----------------|
| | Female • Žene | Male • Muškarci | Total • Ukupno | Female • Žene | Male • Muškarci | Total • Ukupno |
| 21-30 | 295 | 86 | 381 | 80 | 20 | 100 |
| 31-40 | 52 | 21 | 73 | 113 | 51 | 164 |
| 41-50 | 28 | 11 | 39 | 74 | 35 | 109 |
| 51-60 | 26 | 13 | 39 | 25 | 17 | 42 |
| 60+ | 13 | 6 | 19 | 23 | 12 | 35 |
| Total • Ukupno | 414 | 137 | 551 | 315 | 135 | 450 |

Table 4 Distribution of dentists regarding dental specialty
Tablica 4. Distribucija stomatologa prema specijalizaciji

| Dental specialty • Stomatološka specijalizacija | N | % |
|--|-----|-------|
| General dental practitioner (without dental speciality) • Stomatolog opće prakse (bez specijalizacije) | 329 | 73,1 |
| Pediatric dentistry • Dječja stomatologija | 18 | 4,0 |
| Family dentistry • Obiteljska stomatologija | 3 | 0,7 |
| Oral surgery • Oralna kirurgija | 20 | 4,4 |
| Oral medicine • Oralna medicina | 4 | 0,9 |
| Orthodontics • Ortodonticija | 24 | 5,3 |
| Periodontology • Parodontologija | 5 | 1,1 |
| Endodontics • Endodonticija | 10 | 2,2 |
| Prosthodontics • Stomatološka protetika | 31 | 6,9 |
| Other • Ostalo | 6 | 1,3 |
| Total • Ukupno | 450 | 100,0 |

In terms of dental hygiene habits, dentists brushed, flossed and used interdental brushes more often, and also changed toothbrushes more often, while they attended check-ups less often. Dentists also reported a smaller number of teeth with cavities, a greater number of teeth with fillings, a greater number of extracted teeth, and a greater number of dental crowns, but a smaller number of healthy teeth compared to general population. These are all statistically significant differences. There was no significant difference between groups regarding the number of prostheses or dental implants, Table 5.

In order to eliminate confounding effect of levels of education on differences between dentists and general population, another analysis was performed which compared university educated subgroup of general population with dentists. The results of that analysis yielded similar results as previous analysis, with notable exception of number of removed teeth and frequency of check-ups, where statistical significance was lost, Figures 1-3, Table 6.

Since distribution of age groups between groups was skewed, and subjects aged 21-30 years represented 70% of general population (as opposed to 22% dentists), another analysis was performed but with exclusion of that age subgroup in both groups. There were 350 dentists over 30 years of age and 167 participants from general population. Dentists brushed, flossed and used interdental brushes more often, while there was no statistically significant difference in frequency of check-ups or toothbrush changes. Dentists also had healthier teeth, a smaller number of teeth with cavities and a greater number of teeth with fillings. They had a

i češće se koristili međuzubnim četkicama, te češće mijenjali četkice za zube, a rjeđe su odlazili na kontrolne preglede. Stomatolozi su također prijavili manje zuba s karijesom, više zuba s ispunima, više izvađenih zuba i više zubnih krunica, ali manje zdravih zuba u usporedbi s općom populacijom. Sve su to statistički značajne razlike. Nije bilo značajne razlike između skupina u broju protetičkih nadomjestaka ili dentalnih implantata – tablica 5.

Kako bi se eliminirao zbunjujući učinak razine obrazovanja na razlike između stomatologa i opće populacije, provedena je još jedna analiza kojom se uspoređivala sveučilišno obrazovana podskupina opće populacije sa stomatolozima. Rezultati su bili slični kao i u prethodnoj analizi, uz značajnu iznimku u broju izvađenih zuba i učestalosti kontrolnih pregleda, u kojoj je izgubljeno statističko značenje – slike 1. do 3., tablica 6.

Budući da je distribucija dobnih skupina među skupinama bila iskrivljena, a ispitanici u dobi od 21 do 30 godina predstavljali su 70 % opće populacije (za razliku od 22 % stomatologa), provedena je druga analiza, ali uz isključenje te dobnе podskupine iz obje skupine. Sudjelovalo je 350 stomatologa starijih od 30 godina i 167 sudionika iz opće populacije. Stomatolozi su češće prali zube i češće su se koristili zubnim koncem i interdentalnom četkicom, a nije bilo statistički značajne razlike u učestalosti kontrolnih pregleda ili u promjenama zubne četkice. Stomatolozi su također imali zdravije zube, manje zuba s karijesom i više s ispunima. Imali su manje izvađenih zuba, manje protetičkih nadomjestaka i bili su zadovoljniji svojim oralnim zdravljem. Nije bilo statistički značajne razlike u broju krunica ili implantata – tablica 7.

Table 5 Comparison between dentists and general population in their dental hygiene habits and dental health
Tablica 5. Usporedba stomatologa i opće populacije u njihovim navikama u provođenju oralne higijene i oralnoga zdravlja

| Characteristic • Karakteristike | General • Opća populacija N = 551 (55%) | Dentists • Stomatolozi N = 450 (45%) | p-value • p-vrijednost |
|---|--|---|---------------------------|
| Sex • Spol | | | |
| Male • Muški | 135 (25%) | 135 (30%) | 0.051 |
| Female • Ženski | 416 (75%) | 315 (70%) | |
| Age • Dob | | | |
| 21-30 | 384 (70%) | 100 (22%) | <0.001 |
| 31-40 | 72 (13%) | 164 (36%) | |
| 41-50 | 39 (7.1%) | 109 (24%) | |
| 51-60 | 39 (7.1%) | 42 (9.3%) | |
| 60+ | 17 (3.1%) | 35 (7.8%) | |
| Brushing frequency • Učestalost pranja zuba | | | |
| 1x daily • na dan | 70 (13%) | 22 (4.9%) | <0.001 |
| 2x daily • na dan | 320 (58%) | 255 (57%) | |
| 3x daily • na dan | 135 (25%) | 140 (31%) | |
| 4+ daily • na dan | 19 (3.4%) | 33 (7.3%) | |
| The subject does not brush teeth • Ne pere zube | 7 (1.3%) | 0 (0%) | |
| Floss frequency • Učestalost korištenja zubnim koncem | | | |
| 1x daily • na dan | 57 (10%) | 148 (33%) | <0.001 |
| 2-3x daily • na dan | 0 (0%) | 1 (0.2%) | |
| >3x daily • na dan | 0 (0%) | 1 (0.2%) | |
| 1x weekly • na tjedan | 0 (0%) | 2 (0.4%) | |
| 1-3x weekly • na tjedan | 36 (6.5%) | 65 (14%) | |
| >4x weekly • na tjedan | 29 (5.3%) | 43 (9.6%) | |
| As needed • Prema potrebi | 232 (42%) | 156 (35%) | |
| The subject does not floss • Ne koristi se zubnim koncem | 197 (36%) | 34 (7.6%) | |
| Use of interdental brushes • Korištenje međuzubnih četkica | | | |
| Yes • Da | 111 (20%) | 204 (45%) | <0.001 |
| No • Ne | 440 (80%) | 246 (55%) | |
| Frequency of toothbrush changing • Učestalost mijenjanja zubne četkice | | | |
| Each month • Svaki mjesec | 78 (14%) | 86 (19%) | <0.001 |
| Every 2-3 months • Svaka 2-3 mjeseca | 338 (61%) | 308 (68%) | |
| Every 6 months • Svakih 6 mjeseci | 102 (19%) | 43 (9.6%) | |
| Once yearly • Jedanput na godinu | 33 (6.0%) | 13 (2.9%) | |
| Frequency of dental check-ups • Učestalost kontrolnih stomatoloških pregleda | | | |
| Each month • Svaki mjesec | 9 (1.6%) | 5 (1.1%) | 0.014 |
| Every 2-3 months • Svaka 2-3 mjeseca | 45 (8.2%) | 16 (3.6%) | |
| Every 6 months • Svakih 6 mjeseci | 134 (24%) | 98 (22%) | |
| Once yearly • Jedanput na godinu | 117 (21%) | 116 (26%) | |
| When needed • Prema potrebi | 246 (45%) | 215 (48%) | |
| Number of healthy teeth • Broj zdravih zuba | 23 (16, 27) | 20 (14, 25) | <0.001 |
| Number of teeth with cavities • Broj zuba s karijesom | 0 (0, 2) | 0 (0, 0) | <0.001 |
| Number of teeth with fillings • Broj zuba s ispunima | 4 (2, 8) | 8 (4, 12) | <0.001 |
| Number of removed teeth • Broj izvađenih zuba | 1 (0, 2) | 1 (0, 3) | <0.001 |
| Number of crowns • Broj krunica | 0 (0, 0) | 0 (0, 1) | <0.001 |
| Number of prostheses • Broj protetičkih nadomjestaka | 0 (0, 0) | 0 (0, 0) | 0.26 |
| Number of implants • Broj dentalnih implantata | 0 (0, 0) | 0 (0, 0) | 0.072 |
| How happy is the subject with his/her oral health • Koliko je ispitanik zadovoljan svojim oralnim zdravljem | | | |
| very unhappy • Veoma nezadovoljan/na | 16 (2.9%) | 1 (0.2%) | <0.001 |
| unhappy • Nezadovoljan/na | 59 (11%) | 13 (2.9%) | |
| neutral • Ni zadovoljan/na, ni nezadovoljan/na | 125 (23%) | 50 (11%) | |
| happy • Zadovoljan/na | 240 (44%) | 235 (52%) | |
| very happy • Veoma zadovoljan/na | 111 (20%) | 151 (34%) | |
| Level of education • Razina obrazovanja | | | |
| Doctoral degree • Doktor znanosti | 9 (1.6%) | 43 (9.6%) | <0.001 |
| Master's degree • Magistar znanosti | 17 (3.1%) | 58 (13%) | |
| University degree • Visoka stručna sprema | 181 (33%) | 349 (78%) | |
| Bachelor's degree • Viša stručna sprema | 62 (11%) | 0 (0%) | |
| High school degree • Srednja stručna sprema | 277 (50%) | 0 (0%) | |
| Elementary school degree • Niža stručna sprema | 5 (0.9%) | 0 (0%) | |

¹ n (%); Median (IQR - interquartile range); ² Pearson's Chi-squared test; Fisher's exact test; Wilcoxon rank sum test

Table 6 Comparison between dentists and university educated subgroup of general population in their dental hygiene habits and dental health
Tablica 6. Usporedba stomatologa i fakultetski obrazovane podskupine opće populacije u njihovim navikama u provođenju oralne higijene i oralnoga zdravlja

| Characteristic • Karakteristike | General • Opća populacija N = 207 (32%) | Dentists • Stomatolozi N = 450 (68%) | p-value • p-vrijednost |
|---|--|---|---------------------------|
| Sex • Spol | | | |
| Male • Muški | 53 (26%) | 135 (30%) | 0.25 |
| Female • Ženski | 154 (74%) | 315 (70%) | |
| Age • Dob | | | |
| 21-30 | 113 (55%) | 100 (22%) | <0.001 |
| 31-40 | 44 (21%) | 164 (36%) | |
| 41-50 | 22 (11%) | 109 (24%) | |
| 51-60 | 22 (11%) | 42 (9.3%) | |
| 60+ | 6 (2.9%) | 35 (7.8%) | |
| Brushing frequency • Učestalost pranja zuba | | | |
| 1x daily • na dan | 18 (8.7%) | 22 (4.9%) | 0.027 |
| 2x daily • na dan | 125 (60%) | 255 (57%) | |
| 3x daily • na dan | 52 (25%) | 140 (31%) | |
| 4+ daily • na dan | 10 (4.8%) | 33 (7.3%) | |
| The subject does not brush teeth • Ne pere zube | 2 (1.0%) | 0 (0%) | |
| Floss frequency • Učestalost korištenja zubnim koncem | | | |
| 1x daily • na dan | 25 (12%) | 148 (33%) | <0.001 |
| 2-3x daily • na dan | 0 (0%) | 1 (0.2%) | |
| >3x daily • na dan | 0 (0%) | 1 (0.2%) | |
| 1x weekly • na tjedan | 0 (0%) | 2 (0.4%) | |
| 1-3x weekly • na tjedan | 16 (7.7%) | 65 (14%) | |
| >4x weekly • na tjedan | 12 (5.8%) | 43 (9.6%) | |
| As needed • Prema potrebi | 83 (40%) | 156 (35%) | |
| The subject does not floss • Ne koristi se zubnim koncem | 71 (34%) | 34 (7.6%) | |
| Use of interdental brushes • Korištenje međuzubnih četkica | | | |
| Yes • Da | 48 (23%) | 204 (45%) | <0.001 |
| No • Ne | 159 (77%) | 246 (55%) | |
| Frequency of toothbrush changing • Učestalost mijenjanja zubne četkice | | | |
| Each month • Svaki mjesec | 25 (12%) | 86 (19%) | 0.004 |
| Every 2-3 months • Svaka 2-3 mjeseca | 136 (66%) | 308 (68%) | |
| Every 6 months • Svakih 6 mjeseci | 33 (16%) | 43 (9.6%) | |
| Once yearly • Jedanput na godinu | 13 (6.3%) | 13 (2.9%) | |
| Frequency of dental check-ups • Učestalost kontrolnih stomatoloških pregleda | | | |
| Each month • Svaki mjesec | 3 (1.4%) | 5 (1.1%) | 0.052 |
| Every 2-3 months • Svaka 2-3 mjeseca | 18 (8.7%) | 16 (3.6%) | |
| Every 6 months • Svakih 6 mjeseci | 51 (25%) | 98 (22%) | |
| Once yearly • Jedanput na godinu | 50 (24%) | 116 (26%) | |
| When needed • Prema potrebi | 85 (41%) | 215 (48%) | |
| Number of healthy teeth • Broj zdravih zuba | 21 (15, 26) | 20 (14, 25) | 0.039 |
| Number of teeth with cavities • Broj zuba s karijesom | 0 (0, 2) | 0 (0, 0) | <0.001 |
| Number of teeth with fillings • Broj zuba s ispunima | 5 (2, 8) | 8 (4, 12) | <0.001 |
| Number of removed teeth • Broj izvađenih zuba | 1 (0, 3) | 1 (0, 3) | 0.086 |
| Number of crowns • Broj krunica | 0 (0, 0) | 0 (0, 1) | 0.010 |
| Number of prostheses • Broj protetičkih nadomjestaka | 0 (0, 0) | 0 (0, 0) | 0.57 |
| Number of implants • Broj dentalnih implantata | 0 (0, 0) | 0 (0, 0) | 0.34 |
| How happy is the subject with his/her oral health • Koliko je ispitanik zadovoljan svojim oralnim zdravljem | | | |
| very unhappy • Veoma nezadovoljan/na | 5 (2.4%) | 1 (0.2%) | <0.001 |
| unhappy • Nezadovoljan/na | 21 (10%) | 13 (2.9%) | |
| neutral • Ni zadovoljan/na, ni nezadovoljan/na | 43 (21%) | 50 (11%) | |
| happy • Zadovoljan/na | 92 (44%) | 235 (52%) | |
| very happy • Veoma zadovoljan/na | 46 (22%) | 151 (34%) | |
| Level of education • Razina obrazovanja | | | |
| Doctoral degree • Doktor znanosti | 9 (4.3%) | 43 (9.6%) | 0.010 |
| Master's degree • Magistar znanosti | 17 (8.2%) | 58 (13%) | |
| University degree • Visoka stručna sprema | 181 (87%) | 349 (78%) | |

¹ n (%); Median (IQR - interquartile range); ² Pearson's Chi-squared test; Fisher's exact test; Wilcoxon rank sum test

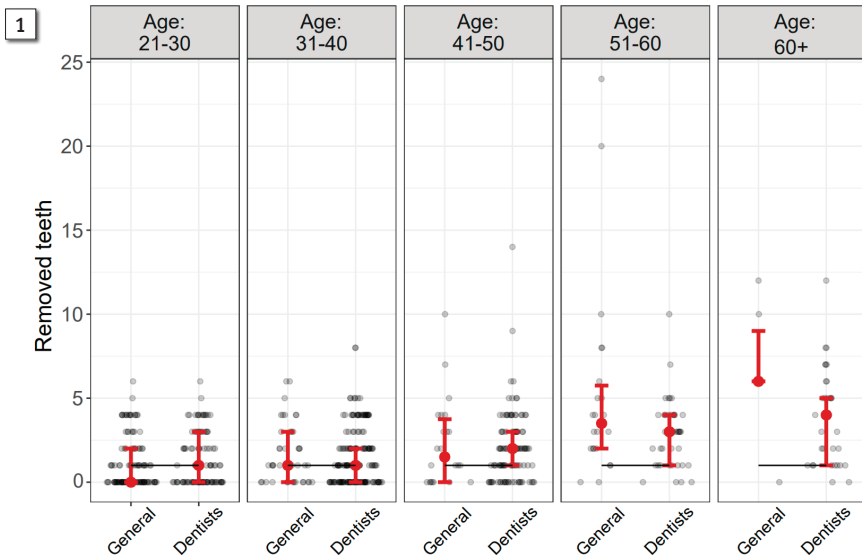


Figure 1 Differences between age subgroups of university educated general population and dentists in number of removed teeth

Slika 1. Razlike između dobnih podskupina fakultetski obrazovane opće populacije i stomatologa u broju izvađenih zuba

Figure 2 Differences between university educated general population and dentists in brushing frequency

Slika 2. Razlike između fakultetski obrazovane opće populacije i stomatologa u učestalosti pranja zuba

Figure 3 Differences between university educated general population and dentists in floss frequency

Slika 3. Razlike između fakultetski obrazovane opće populacije i stomatologa u učestalosti korištenja zubnog konca

Figure 4 DMFT distributions for dentists and non-dentists

Slika 4. DMFT distribucija za stomatologe i nestomatologe

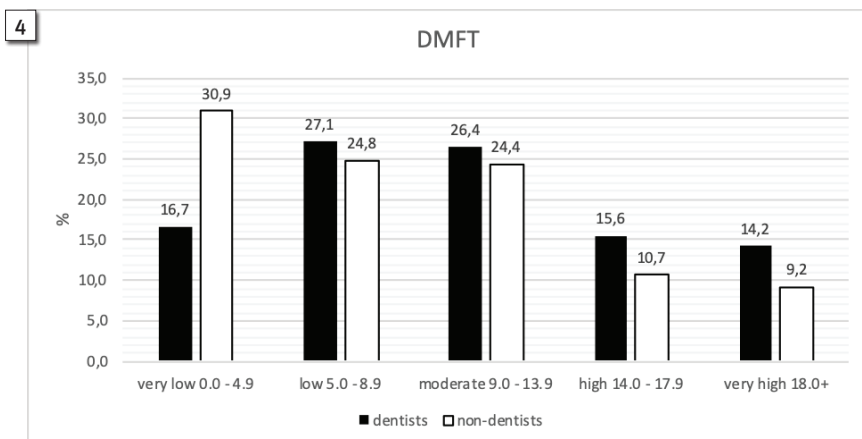
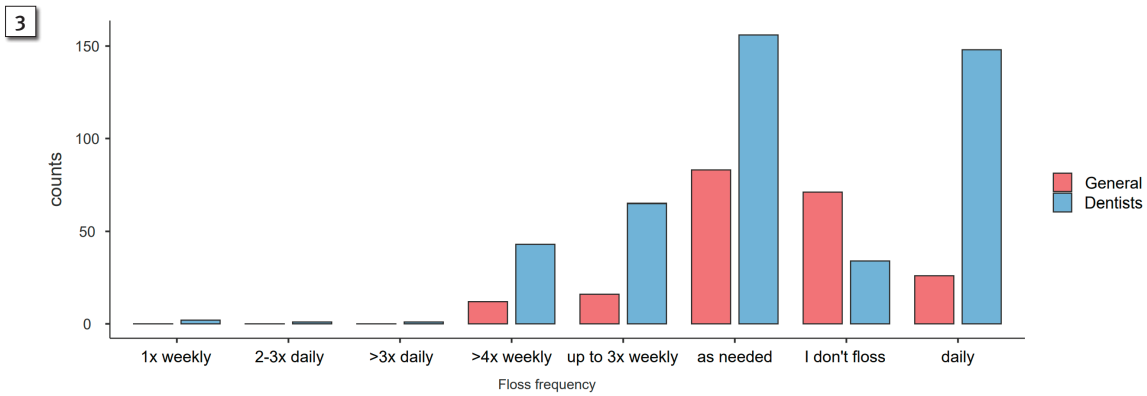
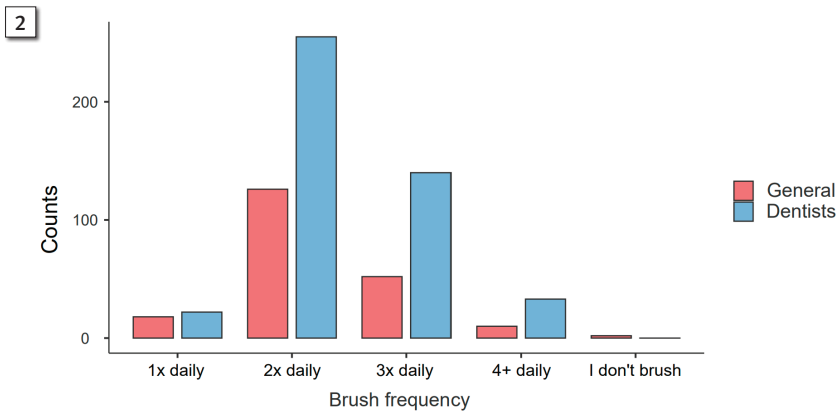


Table 7 Comparison dentists over 30 years of age and general population over 30 years of age in their dental hygiene habits and dental health
Tablica 7. Usporedba stomatologa iznad 30 godina i opće populacije iznad 30 godina u navikama o provođenju oralne higijene i oralnome zdravlju

| Characteristic • Karakteristike | General • Opća populacija N = 167 (32%) | Dentists • Stomatolozi N = 350 (68%) | p-value • p-vrijednost |
|---|--|---|---------------------------|
| Sex • Spol | | | |
| Male • Muški | 50 (30%) | 115 (33%) | 0.51 |
| Female • Ženski | 117 (70%) | 235 (67%) | |
| Brushing frequency • Učestalost pranja zuba | | | |
| 1x daily • na dan | 29 (17%) | 19 (5.4%) | <0.001 |
| 2x daily • na dan | 93 (56%) | 188 (54%) | |
| 3x daily • na dan | 35 (21%) | 113 (32%) | |
| 4+ daily • na dan | 5 (3.0%) | 30 (8.6%) | |
| The subject does not brush teeth • Ne pere zube | 5 (3.0%) | 0 (0%) | |
| Floss frequency • Učestalost korištenja zubnim koncem | | | |
| 1x daily • na dan | 18 (11%) | 112 (32%) | <0.001 |
| 2-3x daily • na dan | 0 (0%) | 1 (0.3%) | |
| >3x daily • na dan | 0 (0%) | 1 (0.3%) | |
| 1x weekly • na tjedan | 0 (0%) | 1 (0.3%) | |
| 1-3x weekly • na tjedan | 14 (8.4%) | 43 (12%) | |
| >4x weekly • na tjedan | 9 (5.4%) | 33 (9.4%) | |
| As needed • Prema potrebi | 70 (42%) | 130 (37%) | |
| The subject does not floss • Ne koristi se zubnim koncem | 56 (34%) | 29 (8.3%) | |
| Use of interdental brushes • Korištenje međuzubnih četkica | | | |
| Yes • Da | 41 (25%) | 159 (45%) | <0.001 |
| No • Ne | 126 (75%) | 191 (55%) | |
| Frequency of toothbrush changing • Učestalost mijenjanja zubne četkice | | | |
| Each month • Svaki mjesec | 24 (14%) | 67 (19%) | 0.056 |
| Every 2-3 months • Svaka 2-3 mjeseca | 107 (64%) | 238 (68%) | |
| Every 6 months • Svakih 6 mjeseci | 26 (16%) | 35 (10%) | |
| Once yearly • Jedanput na godinu | 10 (6.0%) | 10 (2.9%) | |
| Frequency of dental check-ups • Učestalost kontrolnih stomatoloških pregleda | | | |
| Each month • Svaki mjesec | 2 (1.2%) | 3 (0.9%) | 0.47 |
| Every 2-3 months • Svaka 2-3 mjeseca | 6 (3.6%) | 6 (1.7%) | |
| Every 6 months • Svakih 6 mjeseci | 35 (21%) | 63 (18%) | |
| Once yearly • Jedanput na godinu | 48 (29%) | 97 (28%) | |
| When needed • Prema potrebi | 76 (46%) | 181 (52%) | |
| Number of healthy teeth • Broj zdravih zuba | | | |
| | 17 (8, 23) | 18 (12, 24) | 0.010 |
| Number of teeth with cavities • Broj zuba s karijesom | | | |
| | 0 (0, 1) | 0 (0, 0) | <0.001 |
| Number of teeth with fillings • Broj zuba s ispunima | | | |
| | 6 (3, 10) | 8 (5, 13) | <0.001 |
| Number of removed teeth • Broj izvađenih zuba | | | |
| | 3 (1, 6) | 2 (0, 4) | <0.001 |
| Number of crowns • Broj krunica | | | |
| | 0 (0, 2) | 0 (0, 1) | 0.55 |
| Number of prostheses • Broj protetičkih nadomjestaka | | | |
| | 0 (0, 2) | 0 (0, 0) | <0.001 |
| Number of implants • Broj dentalnih implantata | | | |
| | 0 (0, 0) | 0 (0, 0) | 0.953 |
| How happy is the subject with his/her oral health • Koliko je ispitanik zadovoljan svojim oralnim zdravljem | | | |
| very unhappy • Veoma nezadovoljan/na | 5 (3.0%) | 1 (0.3%) | <0.001 |
| unhappy • Nezadovoljan/na | 26 (16%) | 11 (3.1%) | |
| neutral • Ni zadovoljan/na, ni nezadovoljan/na | 46 (28%) | 43 (12%) | |
| happy • Zadovoljan/na | 56 (34%) | 194 (55%) | |
| very happy • Veoma zadovoljan/na | 34 (20%) | 101 (29%) | |
| Level of education • Razina obrazovanja | | | |
| Doctoral degree • Doktor znanosti | 6 (3.6%) | 42 (12%) | <0.001 |
| Master's degree • Magistar znanosti | 7 (4.2%) | 58 (17%) | |
| University degree • Visoka stručna sprema | 81 (49%) | 250 (71%) | |
| Bachelor's degree • Viša stručna sprema | 16 (9.6%) | 0 (0%) | |
| High school degree • Srednja stručna sprema | 56 (34%) | 0 (0%) | |
| Elementary school degree • Niža stručna sprema | 1 (0.6%) | 0 (0%) | |

¹ n (%); Median (IQR - interquartile range); ² Pearson's Chi-squared test; Fisher's exact test; Wilcoxon rank sum test

Table 8 Comparison of dental hygiene habits and dental health between male and female dentists
Tablica 8. Usporedba navika u provođenju oralne higijene i oralnoga statusa između muških i ženskih stomatologa

| Characteristic • Karakteristike | Males • Muškarci N = 135 (30%) | Females • Žene N = 315 (70%) | p-value • p-vrijednost |
|--|-----------------------------------|---------------------------------|---------------------------|
| Age • Dob | | | |
| 21-30 | 20 (15%) | 80 (25%) | 0.11 |
| 31-40 | 51 (38%) | 113 (36%) | |
| 41-50 | 35 (26%) | 74 (23%) | |
| 51-60 | 17 (13%) | 25 (7.9%) | |
| 60+ | 12 (8.9%) | 23 (7.3%) | |
| Brushing frequency • Učestalost pranja zuba | | | |
| 1x daily • na dan | 13 (9.6%) | 9 (2.9%) | <0.001 |
| 2x daily • na dan | 89 (66%) | 166 (53%) | |
| 3x daily • na dan | 27 (20%) | 113 (36%) | |
| 4+ daily • na dan | 6 (4.4%) | 27 (8.6%) | |
| Floss frequency • Učestalost korištenja zubnim koncem | | | |
| 1x daily • na dan | 23 (17%) | 125 (40%) | <0.001 |
| 2-3x daily • na dan | 0 (0%) | 1 (0.3%) | |
| >3x daily • na dan | 1 (0.7%) | 0 (0%) | |
| 1x weekly • na tjedan | 2 (1.5%) | 0 (0%) | |
| 1-3x weekly • na tjedan | 19 (14%) | 46 (15%) | |
| >4x weekly • na tjedan | 9 (6.7%) | 34 (11%) | |
| As needed • Prema potrebi | 62 (46%) | 94 (30%) | |
| The subject does not floss • Ne koristi se zubnim koncem | 19 (14%) | 15 (4.8%) | |
| Use of interdental brushes • Korištenje međuzubnih četkica | | | |
| Yes • Da | 41 (30%) | 163 (52%) | <0.001 |
| No • Ne | 94 (70%) | 152 (48%) | |
| Frequency of toothbrush changing • Učestalost mijenjanja zubne četkice | | | |
| Each month • Svaki mjesec | 22 (16%) | 64 (20%) | 0.002 |
| Every 2-3 months • Svaka 2-3 mjeseca | 84 (62%) | 224 (71%) | |
| Every 6 months • Svakih 6 mjeseci | 24 (18%) | 19 (6.0%) | |
| Once yearly • Jedanput na godinu | 5 (3.7%) | 8 (2.5%) | |
| Frequency of dental check-ups • Učestalost kontrolnih stomatoloških pregleda | | | |
| Each month • Svaki mjesec | 0 (0%) | 5 (1.6%) | 0.20 |
| Every 2-3 months • Svaka 2-3 mjeseca | 5 (3.7%) | 11 (3.5%) | |
| Every 6 months • Svakih 6 mjeseci | 23 (17%) | 75 (24%) | |
| Once yearly • Jedanput na godinu | 42 (31%) | 74 (23%) | |
| When needed • Prema potrebi | 65 (48%) | 150 (48%) | |
| Number of healthy teeth • Broj zdravih zuba | | | |
| Number of teeth with cavities • Broj zuba s karijesom | 20 (15, 26) | 20 (13, 25) | 0.064 |
| Number of teeth with fillings • Broj zuba s ispunima | 0 (0, 0) | 0 (0, 0) | 0.017 |
| Number of removed teeth • Broj izvađenih zuba | 7 (3, 12) | 8 (4, 12) | 0.21 |
| Number of crowns • Broj krunica | 1 (0, 3) | 2 (0, 4) | 0.10 |
| Number of prostheses • Broj protetičkih nadomjestaka | 0 (0, 1) | 0 (0, 1) | 0.59 |
| Number of implants • Broj dentalnih implantata | 0 (0, 0) | 0 (0, 0) | 0.90 |
| How happy is the subject with his/her oral health • Koliko je ispitanik zadovoljan svojim oralnim zdravljem | | | |
| very unhappy • Veoma nezadovoljan/na | 0 (0%) | 1 (0.3%) | 0.58 |
| unhappy • Nezadovoljan/na | 6 (4.4%) | 7 (2.2%) | |
| neutral • Ni zadovoljan/na, ni nezadovoljan/na | 12 (8.9%) | 38 (12%) | |
| happy • Zadovoljan/na | 72 (53%) | 163 (52%) | |
| very happy • Veoma zadovoljan/na | 45 (33%) | 106 (34%) | |
| Level of education • Razina obrazovanja | | | |
| Doctoral degree • Doktor znanosti | 12 (8.9%) | 31 (9.8%) | 0.13 |
| Master's degree • Magistar znanosti | 24 (18%) | 34 (11%) | |
| University degree • Visoka stručna sprema | 99 (73%) | 250 (79%) | |

¹ n (%); Median (IQR - interquartile range); ² Pearson's Chi-squared test; Fisher's exact test; Wilcoxon rank sum test

Table 9 Comparison of dental hygiene habits and dental health between various dental specialties
Tablica 9. Usporedba navika u provođenju oralne higijene i oralnoga zdravlja između različitih specijalizacija

| Dentistry specialty • Specijalizacija | Pediatric dentistry • Dječja stomatologija N = 18 (4.0%) | General dentistry • Opća stomatologija N = 329 (73%) | Family dentistry • Obiteljska stomatologija N = 3 (0.7%) | Oral surgery • Oralna kirurgija N = 20 (4.4%) | Oral medicine • Oralna medicina N = 4 (0.9%) | Orthodontics • Ortodoncija N = 24 (5.3%) | Other • Ostalo N = 6 (1.3%) | Periodontology • Parodontologija N = 5 (1.1%) | Restorative and endodontics • Restaurativna stomatologija i endodoncija N = 10 (2.2%) | Prosthodontics • Stomatološka protetika N = 31 (6.9%) | p-value • p-vrijednost |
|--|--|--|--|---|--|--|--------------------------------|---|---|---|------------------------|
| Age • Dob | | | | | | | | | | | |
| 21-30 | 0 (0%) | 93 (28%) | 0 (0%) | 3 (15%) | 0 (0%) | 2 (8.3%) | 0 (0%) | 0 (0%) | 2 (20%) | 0 (0%) | <0.001 |
| 31-40 | 9 (50%) | 119 (36%) | 1 (33%) | 4 (20%) | 3 (75%) | 9 (38%) | 3 (50%) | 2 (40%) | 4 (40%) | 10 (32%) | |
| 41-50 | 3 (17%) | 67 (20%) | 1 (33%) | 8 (40%) | 1 (25%) | 11 (46%) | 1 (17%) | 2 (40%) | 3 (30%) | 12 (39%) | |
| 51-60 | 0 (0%) | 38 (12%) | 0 (0%) | 3 (15%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 1 (3.2%) | |
| 60+ | 6 (33%) | 12 (3.6%) | 1 (33%) | 2 (10%) | 0 (0%) | 2 (8.3%) | 2 (33%) | 1 (20%) | 1 (10%) | 8 (26%) | |
| Brushing frequency • Učestalost pranja zuba | | | | | | | | | | | |
| 1x daily • na dan | 0 (0%) | 17 (5.2%) | 0 (0%) | 1 (5.0%) | 0 (0%) | 2 (8.3%) | 0 (0%) | 0 (0%) | 0 (0%) | 2 (6.5%) | 0.773 |
| 2x daily • na dan | 10 (56%) | 184 (56%) | 2 (67%) | 17 (85%) | 2 (50%) | 8 (33%) | 3 (50%) | 4 (80%) | 7 (70%) | 18 (58%) | |
| 3x daily • na dan | 6 (33%) | 102 (31%) | 1 (33%) | 2 (10%) | 1 (25%) | 12 (50%) | 3 (50%) | 1 (20%) | 3 (30%) | 9 (29%) | |
| 4+ daily • na dan | 2 (11%) | 26 (7.9%) | 0 (0%) | 0 (0%) | 1 (25%) | 2 (8.3%) | 0 (0%) | 0 (0%) | 0 (0%) | 2 (6.5%) | |
| Floss frequency • Učestalost korištenja zubnog konca | | | | | | | | | | | |
| 1x daily • na dan | 6 (33%) | 115 (35%) | 0 (0%) | 1 (5.0%) | 2 (50%) | 8 (33%) | 3 (50%) | 3 (60%) | 6 (60%) | 4 (13%) | 0.669 |
| 2-3x daily • na dan | 0 (0%) | 1 (0.3%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| >3x daily • na dan | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 1 (3.2%) | |
| 1x weekly • na tjedan | 0 (0%) | 2 (0.6%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| 1-3x weekly • na tjedan | 0 (0%) | 47 (14%) | 1 (33%) | 4 (20%) | 0 (0%) | 4 (17%) | 1 (17%) | 0 (0%) | 1 (10%) | 7 (23%) | |
| >4x weekly • na tjedan | 2 (11%) | 34 (10%) | 0 (0%) | 1 (5.0%) | 1 (25%) | 1 (4.2%) | 0 (0%) | 0 (0%) | 1 (10%) | 3 (9.7%) | |
| As needed • Prema potrebi | 10 (56%) | 101 (31%) | 2 (67%) | 12 (60%) | 1 (25%) | 10 (42%) | 2 (33%) | 1 (20%) | 2 (20%) | 15 (48%) | |
| The subject does not floss • Ne koristi se zubnim koncem | 0 (0%) | 29 (8.8%) | 0 (0%) | 2 (10%) | 0 (0%) | 1 (4.2%) | 0 (0%) | 1 (20%) | 0 (0%) | 1 (3.2%) | |
| Use of interdental brushes • Korištenje međuzubne četkice | | | | | | | | | | | |
| Yes • Da | 6 (33%) | 160 (49%) | 2 (67%) | 5 (25%) | 2 (50%) | 10 (42%) | 1 (17%) | 4 (80%) | 4 (40%) | 10 (32%) | 0.153 |
| No • Ne | 12 (67%) | 169 (51%) | 1 (33%) | 15 (75%) | 2 (50%) | 14 (58%) | 5 (83%) | 1 (20%) | 6 (60%) | 21 (68%) | |
| Frequency of toothbrush changing • Učestalost mijenjanja zubne četkice | | | | | | | | | | | |
| Each month • Svaki mjesec | 1 (5.6%) | 66 (20%) | 0 (0%) | 3 (15%) | 1 (25%) | 5 (21%) | 1 (17%) | 1 (20%) | 2 (20%) | 6 (19%) | 0.988 |
| Every 2-3 months • Svaka 2-3 mjeseca | 15 (83%) | 221 (67%) | 3 (100%) | 13 (65%) | 2 (50%) | 17 (71%) | 4 (67%) | 4 (80%) | 8 (80%) | 21 (68%) | |
| Every 6 months • Svaki 6 mjeseci | 2 (11%) | 32 (9.7%) | 0 (0%) | 2 (10%) | 1 (25%) | 2 (8.3%) | 1 (17%) | 0 (0%) | 0 (0%) | 3 (9.7%) | |
| Once yearly • Jedanput na godinu | 0 (0%) | 10 (3.0%) | 0 (0%) | 2 (10%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 1 (3.2%) | |
| Frequency of dental check-ups • Učestalost kontrolnih stomatoloških pregleda | | | | | | | | | | | |
| Each month • Svaki mjesec | 0 (0%) | 2 (0.6%) | 0 (0%) | 0 (0%) | 0 (0%) | 2 (8.3%) | 0 (0%) | 0 (0%) | 1 (10%) | 0 (0%) | 0.285 |
| Every 2-3 months • Svaka 2-3 mjeseca | 1 (5.6%) | 13 (4.0%) | 0 (0%) | 1 (5.0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 1 (3.2%) | |
| Every 6 months • Svaki 6 mjeseci | 7 (39%) | 76 (23%) | 0 (0%) | 2 (10%) | 1 (25%) | 6 (25%) | 2 (33%) | 0 (0%) | 1 (10%) | 3 (9.7%) | |
| Once yearly • Jedanput na godinu | 2 (11%) | 88 (27%) | 1 (33%) | 7 (35%) | 0 (0%) | 6 (25%) | 0 (0%) | 2 (40%) | 2 (20%) | 8 (26%) | |
| When needed • Prema potrebi | 8 (44%) | 150 (46%) | 2 (67%) | 10 (50%) | 3 (75%) | 10 (42%) | 4 (67%) | 3 (60%) | 6 (60%) | 19 (61%) | |
| N° of healthy teeth • Broj zdravih zuba | 17 (13, 26) | 20 (14, 25) | 18 (18, 20) | 20 (15, 21) | 17 (10, 24) | 19 (15, 23) | 18 (11, 23) | 20 (19, 28) | 16 (11, 22) | 14 (12, 24) | 0.53 |
| N° of teeth with cavities • Broj zuba s karijesom | 0 (0, 0) | 0 (0, 0) | 0 (0, 0) | 0 (0, 1) | 0 (0, 0) | 0 (0, 0) | 0 (0, 2) | 0 (0, 0) | 0 (0, 0) | 0 (0, 0) | 0.087 |
| N° of teeth with fillings • Broj zuba s ispunima | 8 (5, 14) | 7 (4, 12) | 10 (9, 10) | 8 (5, 10) | 4 (3, 5) | 8 (4, 10) | 12 (8, 16) | 11 (4, 14) | 11 (4, 14) | 8 (4, 14) | 0.61 |
| N° of removed teeth • Broj izvađenih zuba | 2 (1, 4) | 1 (0, 3) | 0 (0, 0) | 3 (1, 3) | 3 (2, 4) | 1 (0, 2) | 2 (1, 2) | 1 (0, 2) | 2 (1, 3) | 1 (0, 4) | 0.42 |
| N° of crowns • Broj krunica | 0 (0, 1) | 0 (0, 1) | 1 (0, 2) | 0 (0, 1) | 0 (0, 0) | 0 (0, 1) | 0 (0, 0) | 1 (0, 2) | 0 (0, 0) | 1 (0, 2) | 0.061 |
| N° of prostheses • Broj protetičkih nadomjestaka | 0 (0, 0.75) | 0 (0, 0) | 0 (0, 0) | 0 (0, 1) | 0 (0, 0.25) | 0 (0, 0) | 0 (0, 0) | 0 (0, 2) | 0 (0, 0) | 0 (0, 1) | 0.064 |
| N° of implants • Broj dentalnih implantata | 0 (0, 0) | 0 (0, 0)* | 0 (0, 0.5) | 0 (0, 0.25) | 0 (0, 0) | 0 (0, 0) | 0 (0, 0) | 0 (0, 0) | 0 (0, 0) | 0 (0, 0.5)* | 0.013 |
| How happy is the subject with his/her oral health • Koliko je ispitanik zadovoljan svojim oralnim zdravljem | | | | | | | | | | | |
| very unhappy • Veoma nezadovoljan/na | 0 (0%) | 1 (0.3%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0.855 |
| unhappy • Nezadovoljan/na | 1 (5.6%) | 9 (2.7%) | 0 (0%) | 2 (10%) | 0 (0%) | 0 (0%) | 1 (17%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| neutral • Ni zadovoljan/na, ni nezadovoljan/na | 3 (17%) | 39 (12%) | 0 (0%) | 1 (5.0%) | 0 (0%) | 3 (12%) | 1 (17%) | 0 (0%) | 1 (10%) | 2 (6.5%) | |
| happy • Zadovoljan/na | 10 (56%) | 163 (50%) | 1 (33%) | 14 (70%) | 2 (50%) | 14 (58%) | 4 (67%) | 2 (40%) | 4 (40%) | 21 (68%) | |
| very happy • Veoma zadovoljan/na | 4 (22%) | 117 (36%) | 2 (67%) | 3 (15%) | 2 (50%) | 7 (29%) | 0 (0%) | 3 (60%) | 5 (50%) | 8 (26%) | |
| Level of education • Razina obrazovanja | | | | | | | | | | | |
| Doctoral degree • Doktor znanosti | 6 (33%) | 3 (0.9%) | 0 (0%) | 3 (15%) | 4 (100%) | 5 (21%) | 4 (67%) | 1 (20%) | 5 (50%) | 12 (39%) | <0.001 |
| Master's degree • Magistar znanosti | 3 (17%) | 28 (8.5%) | 0 (0%) | 7 (35%) | 0 (0%) | 7 (29%) | 0 (0%) | 3 (60%) | 0 (0%) | 10 (32%) | |
| University degree • Visoka stručna sprema | 9 (50%) | 298 (91%) | 3 (100%) | 10 (50%) | 0 (0%) | 12 (50%) | 2 (33%) | 1 (20%) | 5 (50%) | 9 (29%) | |

¹ n (%); Median (IQR); ² Kruskal-Wallis rank sum test, *significant DSCF pairwise comparison

Table 10 Comparison of dental hygiene habits and dental health between various dentist age groups
Tablica 10. Usporedba navika u održavanju oralne higijene i oralnoga zdravlja između različitih dobnih skupina stomatologa

| Characteristic • Karakteristike | 21-30 N = 100 (22%) | 31-40 N = 164 (36%) | 41-50 N = 109 (24%) | 51-60 N = 42 (9.3%) | 60+ godina N = 35 (7.8%) | p-value • p-vrijednost |
|---|------------------------|------------------------|------------------------|------------------------|-----------------------------|---------------------------|
| Sex • Spol | | | | | | |
| Male • Muški | 20 (20%) | 51 (31%) | 35 (32%) | 17 (40%) | 12 (34%) | 0.11 |
| Female • Ženski | 80 (80%) | 113 (69%) | 74 (68%) | 25 (60%) | 23 (66%) | |
| Brushing frequency • Učestalost pranja zuba | | | | | | |
| 1x daily • na dan | 3 (3.0%) | 13 (7.9%) | 6 (5.5%) | 0 (0%) | 0 (0%) | 0.008 |
| 2x daily • na dan | 67 (67%) | 99 (60%) | 50 (46%) | 19 (45%) | 20 (57%) | |
| 3x daily • na dan | 27 (27%) | 44 (27%) | 40 (37%) | 17 (40%) | 12 (34%) | |
| 4+ daily • na dan | 3 (3.0%) | 8 (4.9%) | 13 (12%) | 6 (14%) | 3 (8.6%) | |
| Floss frequency • Učestalost korištenja zubnog konca | | | | | | |
| 1x daily • na dan | 36 (36%) | 48 (29%) | 35 (32%) | 20 (48%) | 9 (26%) | 0.023 |
| 2-3x daily • na dan | 0 (0%) | 0 (0%) | 1 (0.9%) | 0 (0%) | 0 (0%) | |
| >3x daily • na dan | 0 (0%) | 0 (0%) | 1 (0.9%) | 0 (0%) | 0 (0%) | |
| 1x weekly • na tjedan | 1 (1.0%) | 0 (0%) | 1 (0.9%) | 0 (0%) | 0 (0%) | |
| 1-3x weekly • na tjedan | 22 (22%) | 28 (17%) | 12 (11%) | 3 (7.1%) | 0 (0%) | |
| >4x weekly • na tjedan | 10 (10%) | 19 (12%) | 11 (10%) | 3 (7.1%) | 0 (0%) | |
| As needed • Prema potrebi | 26 (26%) | 55 (34%) | 41 (38%) | 11 (26%) | 23 (66%) | |
| The subject does not floss • Ne koristi se zubnim koncem | 5 (5.0%) | 14 (8.5%) | 7 (6.4%) | 5 (12%) | 3 (8.6%) | |
| Use of interdental brushes • Korištenje međuzubne četkice | | | | | | |
| Yes • Da | 45 (45%) | 70 (43%) | 44 (40%) | 24 (57%) | 21 (60%) | 0.14 |
| No • Ne | 55 (55%) | 94 (57%) | 65 (60%) | 18 (43%) | 14 (40%) | |
| Frequency of toothbrush changing • Učestalost mijenjanja zubne četkice | | | | | | |
| Each month • Svaki mjesec | 19 (19%) | 22 (13%) | 23 (21%) | 15 (36%) | 7 (20%) | 0.03 |
| Every 2-3 months • Svaka 2-3 mjeseca | 70 (70%) | 125 (76%) | 75 (69%) | 19 (45%) | 19 (54%) | |
| Every 6 months • Svakih 6 mjeseci | 8 (8.0%) | 13 (7.9%) | 9 (8.3%) | 6 (14%) | 7 (20%) | |
| Once yearly • Jedanput na godinu | 3 (3.0%) | 4 (2.4%) | 2 (1.8%) | 2 (4.8%) | 2 (5.7%) | |
| Frequency of dental check-ups • Učestalost kontrolnih stomatoloških pregleda | | | | | | |
| Each month • Svaki mjesec | 2 (2.0%) | 0 (0%) | 2 (1.8%) | 0 (0%) | 1 (2.9%) | <0.001 |
| Every 2-3 months • Svaka 2-3 mjeseca | 10 (10%) | 2 (1.2%) | 2 (1.8%) | 0 (0%) | 2 (5.7%) | |
| Every 6 months • Svakih 6 mjeseci | 35 (35%) | 34 (21%) | 17 (16%) | 8 (19%) | 4 (11%) | |
| Once yearly • Jedanput na godinu | 19 (19%) | 46 (28%) | 26 (24%) | 13 (31%) | 12 (34%) | |
| When needed • Prema potrebi | 34 (34%) | 82 (50%) | 62 (57%) | 21 (50%) | 16 (46%) | |
| N° of healthy teeth • Broj zdravih zuba | 25 (20, 28)* | 21 (16, 26)* | 16 (12, 20) | 14 (10, 16) | 13 (9, 18) | <0.001 |
| N° of teeth with cavities • Broj zuba s karijesom | 0 (0, 0) | 0 (0, 0) | 0 (0, 0) | 0 (0, 0) | 0 (0, 0) | 0.84 |
| N° of teeth with fillings • Broj zuba s ispunima | 4 (2, 8)* | 8 (4, 11)* | 10 (5, 13) | 10 (6, 15) | 10 (5, 14) | <0.001 |
| N° of removed teeth • Broj izvađenih zuba | 1 (0, 3) | 1 (0, 2) | 2 (1, 3) | 3 (1, 4) | 4 (1, 5)* | <0.001 |
| N° of crowns • Broj krunica | 0 (0, 0) | 0 (0, 0) | 0 (0, 1) | 2 (0, 4)* | 2 (0, 5)* | <0.001 |
| N° of prostheses • Broj protetičkih nadomjestaka | 0 (0, 0) | 0 (0, 0) | 0 (0, 0) | 0 (0, 2) | 1 (0, 3)* | <0.001 |
| N° of implants • Broj dentalnih implantata | 0 (0, 0) | 0 (0, 0) | 0 (0, 0) | 0 (0, 0) | 0 (0, 0) | 0.055 |
| How happy is the subject with his/her oral health • Koliko je ispitanik zadovoljan svojim oralnim zdravljem | | | | | | |
| very unhappy • Veoma nezadovoljan/na | 0 (0%) | 1 (0.6%) | 0 (0%) | 0 (0%) | 0 (0%) | 0.001 |
| unhappy • Nezadovoljan/na | 2 (2.0%) | 3 (1.8%) | 4 (3.7%) | 3 (7.1%) | 1 (2.9%) | |
| neutral • Ni zadovoljan/na, ni nezadovoljan/na | 7 (7.0%) | 12 (7.3%) | 23 (21%) | 2 (4.8%) | 6 (17%) | |
| happy • Zadovoljan/na | 41 (41%) | 94 (57%) | 59 (54%) | 23 (55%) | 18 (51%) | |
| very happy • Veoma zadovoljan/na | 50 (50%) | 54 (33%) | 23 (21%) | 14 (33%) | 10 (29%) | |
| Level of education • Razina obrazovanja | | | | | | |
| Doctoral degree • Doktor znanosti | 1 (1.0%) | 13 (7.9%) | 16 (15%) | 2 (4.8%) | 11 (31%) | <0.001 |
| Master's degree • Magistar znanosti | 0 (0%) | 19 (12%) | 21 (19%) | 12 (29%) | 6 (17%) | |
| University degree • Visoka stručna sprema | 99 (99%) | 132 (80%) | 72 (66%) | 28 (67%) | 18 (51%) | |

¹ n (%); Median (IQR - interquartile range); ² Kruskal-Wallis rank sum test, *significant DSCF pairwise comparison

smaller number of removed teeth, a smaller number of prostheses, and were happier with their dental health. There was no statistically significant difference in number of crowns or implants, Table 7.

Comparison between various subgroups of dentists

There were 315 females (70%) dentists and 135 males. Females brushed their teeth, flossed and used interdental brushes more often and also changed toothbrushes more often, and also had marginally a smaller number of teeth with cavities (mean 0.30 vs 0.44, median 0 vs 0). There were no statistically significant differences in other parameters of dental health and interventions between groups (number of healthy teeth, removed teeth, fillings, crowns, prostheses and implants), Table 8.

In terms of various subgroups of dentists according to their specialty, most subjects were general dentists (73%) who were also a majority in younger subgroups, while other specialties were represented in higher proportion in older subgroups. There were no statistically significant differences between groups in their dental hygiene habits, and in terms of dental health and procedures. The only statistical significant difference was number of dental implants which is higher in prosthetics specialists compared to general dentists (mean 0.323 vs 0.112 per patient, median 0 vs 0, $p = 0.049$ after DSCF post-hoc correction), Table 9.

In terms of age groups among dentists, those in their thirties were the most numerous group (36.4%), followed by those in their forties (24.2%). Brushing frequency was highest in dentists aged 41-60, while flossing frequency was highest in dentists under 30 years of age. Dentists aged 51-60 changed their toothbrushes most often, and there was no statistically significant difference between groups in frequency of interdental brush use. Majority of age groups attended dental check-ups when needed, while a relative majority of subjects in 21-30 group attended check-ups every 6 months. Younger age groups had healthier teeth, while older groups had a greater number of fillings, a greater number of removed teeth, a greater number of crowns and a greater number of prostheses. There was no significant difference between groups in number of teeth with cavities or the number of dental implants. Younger dentists were in general happier with levels of their oral health, Table 10.

Discussion

According to data from the literature, compared with other research on oral hygiene habits and oral status of dentists, this research included the largest number of dentists in absolute and relative terms. Namely, this research included almost 10% of the total number of working dentists in Croatia. In addition, this study included 450 dentists, while other similar studies had a significantly smaller sample: Habib et al. 74 dentists from Saudi Arabia (5), Madan et al. 255 dentists from India (6), Wagle et al. 195 dentists from Nepal (7) and Zadik et al. 40 dental surgeons from Israel (8). Some other research such as the research conducted by Ce-

Usporedba između različitih podskupina stomatologa

Među stomatolozima bilo je 315 žena (70 %) i 135 muškaraca. Žene su češće prale zube, češće se koristile zubnim koncem i interdentalnom četkicom, a također su češće mijenjale četkicu za zube, te su imale nešto manje zuba s karijesom (prosjeak 0,30 prema 0,44, medijan 0 prema 0). U ostalim parametrima oralnoga zdravlja i intervencijama između skupina (broj zdravih zuba, izvađenih zuba, ispuna, krunica, protetičkih nadomjestaka i implantata) nije bilo statistički značajnih razlika – tablica 8.

Promatrajući različite podskupine stomatologa prema specijalnosti, najviše ispitanika činili su stomatolozi opće dentalne medicine (73 %) koji su također bili većina u mlađim podskupinama, a ostale su specijalnosti bile zastupljenije u većem udjelu u starijim podskupinama. Nije bilo statistički značajnih razlika među skupinama u njihovim navikama u provođenju oralne higijene, a što se tiče zdravlja zuba i postupaka, jedina statistički značajna razlika bio je broj dentalnih implantata koji je veći kod specijalista protetike u usporedbi s općim stomatolozima (srednja vrijednost 0,323 prema 0,112 po pacijentu, medijan 0 prema 0, $p = 0,049$ nakon DSCF post-hoc korekcije) – tablica 9.

Gledano po dobnim skupinama među stomatolozima, najviše su zastupljeni stomatolozi u tridesetima (36,4 %), a zatim oni u četrdesetima (24,2 %). Učestalost pranja zuba bila je najveća kod stomatologa u dobi od 41 do 60 godina, a učestalost korištenja konca bila je najveća kod stomatologa mlađih od 30 godina. Zubne četkice najčešće su mijenjali stomatolozi u dobi od 51 do 60 godina, a nije bilo statistički značajne razlike među skupinama u učestalosti korištenja interdentalnih četkica. Većina dobnih skupina odlazila je na kontrolne stomatološke preglede prema potrebi, a relativna većina ispitanika u skupini od 21 do 30 godina odlazila je na preglede svakih 6 mjeseci. Mlađe dobne skupine imale su zdravije zube, a starije su imale više ispuna, više izvađenih zuba, više krunica i više protetičkih nadomjestaka. Nije bilo značajne razlike između skupina u broju zuba s karijesom ili broju dentalnih implantata. Mlađi stomatolozi općenito su bili zadovoljniji razinom svojega oralnog zdravlja – tablica 10.

Rasprava

Prema podacima iz literature, u usporedbi s drugim istraživanjima o navikama u provođenju oralne higijene i oralnom statusu stomatologa, ovim je istraživanjem obuhvaćen najveći broj stomatologa u apsolutnom i relativnom smislu. Naime, obuhvaćeno je gotovo 10 % od ukupnoga broja zaposlenih stomatologa u Hrvatskoj. Uz to, ovo je istraživanje obuhvatilo 450 stomatologa, a druga slična istraživanja imala su znatno manji uzorak: Habib i suradnici 74 stomatologa iz Saudijske Arabije (5), Madan i suradnici 255 stomatologa iz Indije (6), Wagle i suradnici 195 stomatologa iz Nepala (7) i Zadik i suradnici 40 dentalnih kirurga iz Izraela (8). U neka

beci et al. (9), Folayan et al. (10), Yao et al. (11), Peker and Alkurt (12) included dental students, but they were not included in our study.

Croatian dentists brush their teeth more often than non-dentists and they usually do it 2 (57%) or 3 (31%) times a day. In Saudi Arabia, 44% of dentists brush their teeth twice a day, and 14% 3 times a day or more than three times a day (5). In Nepal, the percentage of dentists who brush their teeth twice a day, or more than twice a day is 82% (7), in Israel 75% (8). Many dental associations worldwide recommend brushing teeth twice a day with fluoride toothpaste for two minutes each time.

Croatian dentists floss their teeth more often than non-dentists. 92% of dentists use dental floss, of which 33% use it every day and 35% as needed. Non dentists use dental floss less often (64% of them use dental floss) compared to dentists and it is most often used only when needed (42%), only 10% use it every day. In Saudi Arabia, 71% of dentists use dental floss (5), and in India 85% (6). The use of dental floss is very important for maintaining oral and dental health. According to Marchesan et al. flossers showed less periodontal disease, fewer dental caries, and loss of fewer teeth over a 5-y period (13). Interdental brushes are also used statistically significantly more frequently among dentists (45%) than among non-dentists (20%).

Toothbrushes and toothpaste are considered to be the most important and most commonly used means of maintaining oral hygiene. For a toothbrush to effectively remove dental plaque, it must have fibers that are parallel to each other and show no signs of wear. Toothbrush wear is primarily affected by power and brushing techniques. Excessive and improper brushing not only consumes the toothbrush more but also damages the gums and hard tooth tissues. In addition, humid environment is suitable for the bacteria found in used toothbrushes. These are all reasons why toothbrushes should be changed regularly as soon as they show signs of wear. A wide variation in replacement intervals has been reported, averaging 2.5-6 months (14). The majority (68%) of Croatian dentists change their toothbrushes every 2 to 3 months, and there is a statistically significant difference in the frequency of replacement compared to the general population, where the toothbrushes are changed less frequently. In our study, no distinction was made between manual and electric toothbrushes.

In addition to regular oral hygiene, as little consumption of food that is easy to stick to teeth and difficult to remove, regular check-ups at the dentist are one of the three most important factors in maintaining dental health. For people with restored teeth and a healthy oral cavity, it is recommended that follow-up visits to the dentist be every 3 to 6 months. Only a small number of patients come right after three months, but many of them after three months start thinking about having to visit the dentist. Unfortunately, many patients visit their dentists only when necessary for symptomatic and curative purposes. The results of our study showed that in the general population, patients come to the dentist only when needed (45%), and only 24% of them come regularly every 6 months. Among dentists, the share of those

druga istraživanja, poput onih Cebecija i suradnika (9), Folyana i suradnika (10), Yaoa i suradnika (11) te Pekera i Alkurta (12), bili su uključeni studenti stomatologije, ali nisu bili uključeni u naše istraživanje.

Hrvatski stomatolozi peru zube češće nego nestomatolozi i to najčešće dva (57 %) ili tri (31 %) puta na dan. U Saudijskoj Arabiji 44 % stomatologa pere zube dva puta na dan, a 14 % tri puta ili više (5). U Nepalju je postotak stomatologa koji peru zube dva puta na dan ili češće 82 % (7), a u Izraelu 75 % (8). Mnoge stomatološke udruge diljem svijeta preporučuju pranje zuba dva puta na dan pastom za zube s fluorom, po dvije minute.

Hrvatski stomatolozi češće čiste zube zubnim koncem od onih koji to nisu. Koncem za zube koristi se 92 % stomatologa, od kojih 33 % svaki dan, a 35 % prema potrebi. Korištenje konca za zube gotovo je za trećinu manje među nestomatolozima (64 % koristi se zubnim koncem) i najčešće samo prema potrebi (42 %), a samo 10 % upotrebljava ga svaki dan. U Saudijskoj Arabiji 71 % stomatologa koristi se zubnim koncem (5), a u Indiji 85 % (6). Korištenje konca za zube vrlo je važno za očuvanje zdravlja usne šupljine i zuba. Prema Marchesanu i suradnicima, oni koji se koriste koncem za zube imali su manji broj parodontnih bolesti, manje zubnog karijesa i gubitak manjeg broja zuba u razdoblju od pet godina (13). Interdentalne četkice također se statistički znatno češće koriste među stomatolozima (45 %) nego među nestomatolozima (20 %).

Četkice i paste za zube smatraju se najvažnijim i najčešće korištenim sredstvima za održavanje oralne higijene. Da bi četkica za zube učinkovito uklonila zubni plak, vlakna moraju biti paralelna i ne smiju pokazivati znakove istrošenosti. Na trošenje zubne četkice uglavnom utječu snaga i tehnika četkanja. Pretjerano i nepravilno četkanje ne samo da brže i više troši četkicu za zube nego i oštećuje desni i tvrda zubna tkiva. Uz to, vlažno okruženje pogodno je za bakterije koje se nalaze u korištenim četkicama. Sve su to razlozi zašto četkice za zube treba redovito mijenjati čim se pokažu znakovi istrošenosti. Zabilježene su velike razlike u intervalima zamjene, u prosjeku od 2,5 do 6 mjeseci (14). Većina (68 %) hrvatskih stomatologa četkicu mijenja svaka dva do tri mjeseca, a postoji statistički značajna razlika u učestalosti zamjene u odnosu prema općoj populaciji u kojoj se četkice mijenjaju rjeđe. U našem istraživanju nije napravljena razlika između ručnih i električnih četkica za zube.

Uz redovitu oralnu higijenu, što rjeđu konzumaciju hrane koja se lako lijepi za zube, a teško uklanja, redoviti pregledi kod stomatologa jedan su od triju najvažnijih čimbenika u očuvanju zdravlja zuba. Za osobe s popravljenim zubima i zdravom usnom šupljinom preporučuje se kontrola kod stomatologa svakih tri do šest mjeseci. Samo mali broj pacijenata dođe odmah poslije tri mjeseca, no mnogi od njih poslije tri mjeseca počnu razmišljati o odlasku stomatologu. Nažalost, mnogi dolaze stomatologu samo kada je to potrebno radi liječenja. Rezultati našeg istraživanja pokazali su da u općoj populaciji pacijenti odlaze stomatologu samo prema potrebi (45 %), a samo 24 % njih dolazi redovito svakih šest mjeseci. Među stomatolozima nešto je niži udio onih koji redovito idu na preglede (52 %) u odnosu prema općoj popu-

who regularly go for check-ups is slightly lower (52%) compared to the general population (55%). This can be explained by the fact that dentists have a somewhat more pronounced habit of doing self-examinations of their teeth; hence they do not need the professional help of another dentist. According to research by Woolfolk et al., 69.7% of the study population reported having had a dental checkup at least once a year in the past five years (15).

Dentists advise their patients that all dental caries should be removed and that fillings should be made; that teeth that cannot be repaired in any other way should be extracted and replaced with a dental implant or prosthetic appliance. The average number of teeth in the mouth of the dentist is 27 (including healthy teeth, teeth with caries, and teeth with fillings), while the average number of teeth in the non-dentist is 28. Although dentists have statistically significantly healthier teeth than non-dentists, the average number of teeth with caries in dentists is 2.9, and in non-dentists 1.5. Here it is questionable how objective the diagnostic criteria are for non-dentists, but also what are the possibilities of self-diagnosis by dentists. The average number of teeth with at least one filling in dentists is 8.3 and in non-dentists 5.3. This difference is statistically significant. It can be assumed that dentists will find it harder to get into a situation where they will have to remove a tooth and that they will repair dental caries until it has spread. The average number of extracted teeth in dentists is 1.9, and in non-dentists it is 2.0. Although the numbers are similar, the difference is statistically significant and dentists have fewer extracted teeth. It is questionable how accurate the estimates of non-dentists are. It can be assumed that the values for non-dentists are higher. The DMFT index (number of decayed, missing and filled permanent teeth) was calculated. Mean DMFT for dentists is 10.6 and for non-dentists 8.8. Detailed data are shown in Figure 4. According to the World Health Organization, in 1986, in the age group of 35 to 44, Croatia had DMFT 15.6 (16). An epidemiological study of oral health in the Republic of Croatia conducted in 2015 by the Croatian Dental Chamber shows a DMFT value of 16.21 in the age group of 35 to 45 years (17). The difference between the results presented in this study and previous DMFT values can be explained by the fact that this is a self-reported study. Unfortunately, more recent data are not available to the authors. The average number of crowned teeth in dentists is 1.1, and in non-dentists, it is 0.6, with the difference that is not statistically significant. Dentists know that major tooth decay is better repaired with a crown than with a filling, and in addition, dentists can buy crowns at a better price than non-dentists. The average number of extracted teeth that have been prosthetically replaced by dentists is 0.4, and by non-dentists, it is 0.8. The difference is statistically significant and can be related to the smaller number of extracted teeth in the dentist. The average number of dental implants in dentists is 0.1, and in non-dentists, it is 0.2, and the difference is not statistically significant. Since this is a self-reported study, these results, especially among non-dentists, should be taken with a grain of salt. The diagnostic criteria applied by dentists certainly differ significantly from those in the general population which can skew the results.

laciji (55 %). To se može objasniti činjenicom da stomatolozi imaju nešto izraženiju naviku samopregleda zuba, pa im nije potrebna stručna pomoć kolege. Prema istraživanju Woolfolka i suradnika, 69,7 % ispitanane populacije izjavilo je da je bilo na stomatološkom pregledu barem jedanput u godini u posljednjih pet godina (15).

Stomatolozi svojim pacijentima savjetuju uklanjanje svih karijesa i izradu ispuna, da zube koji se nikako ne mogu popraviti treba izvaditi i zamijeniti implantatom ili protetički, nadomjestkom. Prosječan broj zuba u ustima stomatologa je 27 (uključujući zdrave zube, zube s karijesom i zube s ispunima), a prosječan broj zuba kod nestomatologa je 28. Iako stomatolozi imaju statistički znatno zdravije zube od nestomatologa, prosječan broj zuba s karijesom kod stomatologa je 2,9, a kod nestomatologa 1,5. Ovdje je upitno koliko su dijagnostički kriteriji objektivni za nestomatologe, ali i kakve su mogućnosti samodijagnostike kad je riječ o stomatolozima. Prosječan broj zuba s barem jednim ispunom kod stomatologa je 8,3, a kod nestomatologa 5,3. Ta je razlika statistički značajna. Može se pretpostaviti da će stomatolozi teže doći u situaciju da moraju izvaditi zub i da će sanirati karijes dok se nije proširio. Prosječan broj izvađenih zuba kod stomatologa je 1,9, a kod nestomatologa 2,0. Iako su brojevi slični, razlika je statistički značajna i stomatolozi imaju manje izvađenih zuba. Upitno je koliko su točne procjene nestomatologa. Može se pretpostaviti da su vrijednosti za nestomatologe veće. Izračunat je DMFT indeks (broj karioznih, nedostajućih i trajnih zuba s ispunom). Srednji DMFT za stomatologe je 10,6, a za nestomatologe 8,8. Detaljni podatci nalaze se na slici 4. Prema podacima Svjetske zdravstvene organizacije, Hrvatska je 1986. godine u dobnoj skupini od 35 do 44 godine imala DMFT 15,6 (16). Epidemiološko istraživanje oralnoga zdravlja u Republici Hrvatskoj, koje je 2015. godine provela Hrvatska komora dentalne medicine, pokazuje vrijednost DMFT-a od 16,21 u dobnoj skupini od 35 do 45 godina (17). Razlika između rezultata dobivenih u ovom istraživanju i prijašnjih vrijednosti DMFT-a može se objasniti činjenicom da su za ovo istraživanje sudionici sami prijavljivali podatke. Nažalost, noviji podatci nisu dostupni autorima. Prosječan broj okrunjenih zuba kod stomatologa je 1,1, a kod nestomatologa 0,6, pri čemu razlika nije statistički značajna. Stomatolozi znaju da se veliki karijes bolje popravljiva krunicom nego ispunom, a osim toga oni krunice vjerojatno mogu nabaviti po povoljnijoj cijeni od osoba koje nisu stomatolozi. Prosječan broj izvađenih zuba koje su protetički nadomjestili stomatolozi jest 0,4, a kod nestomatologa 0,8. Razlika je statistički značajna i može se povezati s manjim brojem izvađenih zuba kod stomatologa. Prosječan broj dentalnih implantata kod stomatologa je 0,1, a kod nestomatologa 0,2 i razlika nije statistički značajna. Budući da se radi o istraživanju za koje su podatci dobiveni samoprocjenom, te rezultate, osobito među nestomatolozima, treba uzeti sa zadržkom. Dijagnostički kriteriji koje primjenjuju stomatolozi svakako se značajno razlikuju od onih u općoj populaciji, što može iskriviti rezultate.

Conclusions

This research provided data about the oral hygiene habits of dentists and non-dentists and some epidemiological indicators of the oral health of the general adult population in Croatia. Similar data on adults in Croatia have not been reported so far. The obtained epidemiological data can be used to plan preventive activities in the general population that would lead to raising awareness of the importance of oral health and improving oral health indicators. The limitation of the research is that it is a self-reported study. The results showed that dentists are aware of the importance of their oral health and that they pay the necessary attention to oral hygiene habits. Moreover, they apply the advice they give to their patients. Considering the organizational aspects of dental medicine in Croatia, it is encouraging to see that dentists follow their recommendations, and although there is room for improvement, the importance of dental health is recognized not only in preventive manner, but also in early recognition of dental pathology (18, 19).

In the future, further analyses which would compare dentists analyzed in this population to other university educated professionals in the biomedical field (physicians, pharmacists and veterinarians) could provide a more detailed insight.

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Zaključak

Ovim istraživanjem dobiveni su podaci o navikama u provođenju oralne higijene stomatologa i nestomatologa te neki epidemiološki pokazatelji oralnoga zdravlja u općoj odrasloj populaciji u Hrvatskoj. Sličnih podataka o odraslim osobama u Hrvatskoj dosad nije bilo. Dobiveni epidemiološki podaci mogu se koristiti za planiranje preventivnih aktivnosti u općoj populaciji kako bi se podignula svijest o važnosti oralnoga zdravlja i poboljšali pokazatelji oralnoga zdravlja. Nedostatak istraživanja je to što je riječ o studiji na temelju samoprocjene. Rezultati su pokazali da su stomatolozi svjesni važnosti svojega oralnoga zdravlja te da posvećuju potrebnu pozornost navikama oralne higijene, ali i primjenjuju savjete koje daju svojim pacijentima. S obzirom na organizacijske aspekte dentalne medicine u Hrvatskoj, ohrabruje činjenica da se stomatolozi drže svojih preporuka, a iako ima prostora za napredak, važnost zdravlja zuba prepoznata je ne samo u preventivnom smislu, nego i u ranom prepoznavanju dentalne patologije (18, 19).

U budućnosti bi daljnje analize, u kojima bi se usporedili stomatolozi analizirani u ovoj populaciji s drugim sveučilišno obrazovanim stručnjacima iz područja biomedicine (liječnici, farmaceuti i veterinari) mogle pružiti novi, detaljniji uvid.

Izjava o sukobu interesa: Autori nisu bili u sukobu interesa.

Doprinos autora: M. V. – konceptualizacija, pisanje – izvorni nacrt, nadzor; A. B. – upravljanje podacima; istraga; A. Š. – formalna analiza; metodologija; pisanje – izvorni nacrt; O. Š. – resursi, pisanje – pregled i uređivanje.

Sažetak

Ciljevi: Stomatolozi svojim pacijentima pružaju stomatološku njegu i educiraju ih o oralnoj higijeni i održavanju oralnog zdravlja. Ovim se radom željelo ustanoviti jesu li licemjerni kada savjetuju pacijente o postupcima u održavanju oralne higijene i o dentalnom liječenju jer na sebi ne primjenjuju ono što preporučuju drugima. **Ispitanici i metode:** Ovo istraživanje na temelju samoprocjene provedeno je putem online anketnog upitnika koji je ispunio 1001 sudionik, od čega 551 nestomatolog i 450 stomatologa. To je prvo istraživanje oralno-higijenskih navika i oralnoga statusa stomatologa u Hrvatskoj, a obuhvaćeno je gotovo 10 % ukupnoga broja zaposlenih stomatologa u Hrvatskoj. **Rezultati:** Kad je riječ o navikama u provođenju oralne higijene, stomatolozi su češće prali zube, čistili ih zubnim koncem i koristili se interdentalnim četkicama, te su češće mijenjali četkicu za zube, a rjeđe odlazili na kontrolne stomatološke preglede. Stomatolozi su također prijavili manje zuba s karijesom, više zuba s ispunivima, više izvađenih zuba i više zubnih krunica, ali manje zdravih zuba u usporedbi s općom populacijom. No među stomatolozima mnogo je veći udio sudionika starijih od 30 godina, a kada je provedena analiza sudionika starijih od 30 godina, stomatolozi su imali više zdravih zuba u usporedbi s općom populacijom. **Zaključak:** Rezultati su pokazali da su stomatolozi svjesni važnosti svojega oralnog zdravlja te da posvećuju potrebnu pozornost navikama u provođenju oralne higijene, ali i primjenjuju savjete koje daju svojim pacijentima. Zato se ne mogu smatrati licemjernima.

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Adresa za dopisivanje

Doc. dr. sc. Andrej Šribar, dr. med.
Sveučilište u Zagrebu
Stomatološki fakultet
Klinička bolnica Dubrava, Zagreb,
Hrvatska
asribar@sfzg.unizg.hr

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