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# Procjena straha od stomatologa kod raseljenih osoba u Bosni i Hercegovini

## *Evaluation of Dental Fear and Anxiety in Displaced Persons in Bosnia and Herzegovina*

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### Sažetak

**Uvod:** U Bosni i Hercegovini (BiH), uz stalno stanovništvo, živi i određen broj raseljenih osoba. Najviše ih je na području Tuzlanskog kantona. Oni se ubrajaju u rizičnu skupinu kad je riječ o bolestima općenito, pa i o orofacijalima. Dentalni strah i anksioznost (DSA) pojavljuje se nužno i kod raseljenih osoba i velik je u odnosu na opću populaciju. Na osnovi navedenoga željeli smo evaluirati prisutnost DSA-e i čimbenika za njezin nastanak kod raseljenog stanovništva u Bosni i Hercegovini. **Ispitanici i metode:** U studiji je sudjelovalo 310 osoba u dobi od 35 do 44 godine, a bile su podijeljene u ispitivanu skupinu raseljenih osoba (n = 153) i kontrolnu skupinu domicilnog stanovništva (n = 157) iz gradova Tuzlanskog kantona. Kod ispitanika se procjenjivala prisutnost DSA-e s pomoću prilagođene Korahove ljestvice dentalne anksioznosti te prisutnost čimbenika za njezin nastanak. **Rezultati:** U uzorku je ustanovljena općenito visoka prevalencija DSA-e (38,71 %), a posebno u skupini raseljenih osoba (57,52 %). Pritom raseljeni u uzorku rjeđe posjećuju stomatologa, uglavnom samo kada je to potrebno (najčešće zbog odontalgije) i snažnije reagiraju na stresore koji mogu uzrokovati DSA-e. **Zaključak:** Raseljene osobe ubrajaju se u rizičnu skupinu s visokom prevalencijom DSA-e. To je mogući razlog da ova populacijska skupina ima prosječno lošije parametre oralnoga zdravlja te lošije uzorke ponašanja sa stajališta učestalosti posjeta i razloga za posjete stomatologu. Sve to pojačava začarani krug u kojemu loše oralno zdravlje pospješuje pojavu DSA-e i obrnuto.

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### Uvod

Stanovništvo se razvija i mijenja svoja strukturalna obilježja, a na to utječu mnogobrojni čimbenici. Kretanje ljudi ovisi o prirodnom i mehaničkom kretanju stanovništva, pa pritom uzajamna povezanost raznih kombinacija kretanja izravno djeluje i na promjene u ukupnom broju stanovnika (1).

U Bosni i Hercegovini (BiH), uz stalno stanovništvo, živi i određen broj raseljenih osoba koje su zbog utjecaja sile napustile svoje domove. Raseljena osoba državljanin je Bosne i Hercegovine i nalazi se u toj državi zbog posljedica rata jer je morala napustiti svoje prebivalište ili ga je napustila nakon 30. travnja 1991. godine bojeći se opravdano da će biti proganjana zbog rase, vjere, nacionalnosti i pripadnosti nekoj socijalnoj skupini ili zbog svojih političkih stajališta, i koja se

### Introduction

Populations are developing and changes in their structural characteristics are under the influence of various factors. Population migration depends on natural and mechanic movement of inhabitants, and mutual correlation between various combinations of natural and mechanic movement acts directly to the changes in total number of inhabitants (1).

In Bosnia and Herzegovina (B&H), apart from domicile population, there is still a relatively large number of displaced persons who were forced to leave their homes, mostly due to war. A displaced person in B&H is by definition a citizen of B&H who is placed in B&H but was expelled from or left its original residence after 30th of April 1991 due to war and fear of being pursued or executed because of race, reli-

nije mogla sigurno i dostojanstveno vratiti u svoje prijašnje prebivalište, niti je dobrovoljno odlučila trajno se nastaniti u drugom prebivalištu (2).

Ured za izbjeglice Ujedinjenih naroda (UN) prosljedio je podatak da je potkraj 2009. godine diljem svijeta zbog upotrebe sile bilo raseljeno oko 43,3 milijuna ljudi, što je najviše prognanih i raseljenih još od sredine 1990. Prema podacima Svjetske organizacije u Bosni i Hercegovini žive 113 642 interno raseljene osobe (3).

Prvi sveobuhvatan službeni popis raseljenih osoba na području Bosne i Hercegovine objavljen je potkraj 2000. godine kada ih je bilo evidentirano 556 214, od kojih 183 355 obitelji (4). Prema podacima Federalnog ministarstva raseljenih osoba i izbjeglica, na području Federacije Bosne i Hercegovine u 2008. godini status raseljenika odobren je 50 541 osobi (5). Najviše raseljenih nalazi se na području Tuzlanskog kantona (13,74 % od ukupnog broja raseljenih u toj državi) (6).

Oralno zdravlje svih dobnih skupina bosanskohercegovačkoga stanovništva među najlošijim je u Europi (7, 8). Prema statističkim podacima federalnoga Zavoda za javno zdravstvo od 2005. do 2008. godine, kad je riječ o populaciji odraslih starijih od 19 godina, najčešća oralna bolest bio je karijes – od te je bolest patilo od 33 % do 41 % stanovnika (9 – 12). Raseljene osobe ubrajaju se u rizičnu skupinu za pojavu bolesti općenito, pa i u orofacijalnom području (13).

Dentalni strah i anksioznost (DSA) sveprisutan je klinički dentalni fenomen kod otprilike petine populacije. Različiti su uzroci koji potiču tu pojavu, ali općenito ih možemo podijeliti na izravna i neizravna iskustva. Izravna iskustva najčešći su razlog za pojavu DSA-e kod ljudi, a većina ističe da je njihov strah nastao poslije traumatičnog, teškog i/ili bolnog dentalnog iskustva (14). DSA je svakako prisutna i kod raseljenih osoba čije je prijašnje iskustvo s karijesom, kao najeklatantniji primjer lošega oralnog zdravlja te iskustvo izravnih stresora za nastanak DSA-e, visoko u odnosu na opću populaciju (13). Općenito, a posebno raseljene osobe koje osjećaju strah, zatražit će pomoć stomatologa samo u hitnim slučajevima kao što su zubobolja, trauma, apsces i sl. Ljudi koji se jako boje stomatoloških intervencija često imaju *cikluse izbjegavanja* pa odgađaju stomatološku intervenciju zbog straha i anksioznosti, a dentalnom liječniku odlaze tek kada im je potrebna hitna intervencija i invazivni tretman koji samo može pojačati njihov strah od stomatologa (15).

Na osnovi navedenih činjenica željeli smo evaluirati prisutnost DSA-e i čimbenika za njezin nastanak kod raseljenog stanovništva u Tuzlanskom kantonu.

## Ispitanici i metode

### Ispitanici

U istraživanju je ispitana ciljna skupina bilo odraslo stanovništvo u Bosni i Hercegovini u dobi od 35 do 44 godine i to je bila standardna *monitoring* skupina za ispitivanje stanja oralnoga zdravlja kod odrasle populacije prema kriteri-

gion, nationality, belonging to certain social group or political opinions, and could not safely and proudly come back to former residence, and also decided not to permanently stay in another residence voluntarily (2).

It was stated in the United Nations High Commissioner for Refugees Report that there were about 43.3 millions of forcibly displaced persons worldwide at the end of 2009, which was the largest number of pursued and expelled persons since mid-90's of 20th century (3).

The first comprehensive official registry of displaced persons in B&H was announced at the end of 2000, with 183, 555 displaced families and 556, 214 displaced persons (4). According to the data of the Ministry of Displaced Persons and Refugees of the Federation of B&H, the displaced person status was approved for 50, 541 individuals (5). The greatest number of displaced persons in B&H was within the area of Canton Tuzla, with 13.74% out of its total number in our country (6).

The oral health status of all age groups of B&H citizens is among the worst in Europe (7, 8). According to the statistical data of the Institute for Public Health of the Federation of B&H, the leading oral disease in the population of the people older than 19 years in the period from 2005 up to 2008 was dental caries, with 33-41% involvement in total (9-12). Also, displaced persons belonged to a risk group for appearances of various kinds of illnesses in general, even in the orofacial area (13).

Dental fear and anxiety (DFA) is omnipresent clinical dental phenomenon in about one fifth of the general population. The causes for appearance are various but they are generally divided into direct and indirect experiences. Direct ones are the most often reasons for DFA appearance in persons, and most of them said that their DFA appeared after traumatic, hard and/or painful dental experience (14). The DFA was also inevitably present in displaced persons who had previous caries experience (as the best example of poor oral health status), and also previous experience with the direct stressors for the DFA appearance that were higher than those in general population (13). Generally, and especially in displaced persons, the individual with DFA presence will seek for dental assistance only when there are urgent needs for it such as odontalgia, dental trauma, swelling and/or abscess in the orofacial area, etc. Persons with DFA presence, who experienced dental fear during dental procedures, developed the avoiding cycle, where they did not want to visit the dentist unless there was an urgent need for dental intervention and invasive procedures, which could only strengthen their DFA (15).

Based on above mentioned facts, we wanted to evaluate the presence of DFA and factors for DFA appearance in displaced persons in Canton Tuzla, in B&H.

## Patients and methods

### Participants

The participants in the study were adult inhabitants of Canton Tuzla, B&H, aged between 35 and 44 years. This age group is the standard age group for surveillance of oral health conditions in adults, according to the criteria of World Health

jima Svjetske zdravstvene organizacije (16). Ukupno je tijekom istraživanja ispitano 410 osoba u razdoblju od ožujka do studenoga 2011. godine. Nakon selekcije konačni je uzorak činilo 310 osoba.

Da bi sudjelovali u istraživanju ispitanici su trebali pripadati navedenoj dobnoj skupini i nisu smjeli imati simptome akutne odontalgije ili nekoga drugog urgentnog stanja u stomatologiji, te su trebali biti fizički i mentalno zdravi, tj. nisu smjeli imati dijagnozu neke ozbiljne sistemske bolesti.

Ispitanici koji su činili uzorak u istraživanju bili su podijeljeni u dvije skupine. U prvoj (n = 157) su bile osobe koje su kao kontrolna skupina bile dio domicilnog stanovništva na ispitivanom području. Drugu skupinu (n = 153) činile su raseljene osobe kao ispitivana skupina u području istraživanja. Ispitanici iz kontrolne skupine bili su radnici nekoliko tvrtki koje se bave različitim djelatnostima, a u ispitivanoj su bili pripadnici zajedničkih prihvatilišta u kojima su bile smještene raseljene osobe. Istraživanje je provedeno u nekoliko gradova Tuzlanskog kantona – u Živinicama, Tuzli, Banovićima, Gračanici, Kladnju, Srebreniku i Kalesiji. Istraživanje je obavljeno prema načelima Helsinške deklaracije o pravima pacijenata (17) i odobrilo ga je Etičko povjerenstvo Stomatološkog fakulteta Univerziteta u Sarajevu. Svim ispitanicima ukratko je objašnjena svrha istraživanja u kojem bi trebali sudjelovati nakon čega su potpisali suglasnost.

## Metode

Ispitivanje se u kontrolnoj i ispitivanoj skupini provodilo u dva dijela. U prvom dijelu ispitivala se prisutnost DSA-e s pomoću modificirane Korahove ljestvice dentalne anksioznosti (Modified Corah Dental Anxiety Scale – MCDAS). Navedena ljestvica upotrebljava se za ispitivanje pojave DSA-e kod odraslih. Sastoji se od pet situacija i ponuđenih odgovora koji se ocjenjuju Likertovom ljestvicom od 1 do 5. Granični rezultat za prisutnost dentalne anksioznosti je 17, a ukupni 25. Više vrijednosti upućuju na veću prisutnost DSA-e kod ispitanika (18). Nakon toga se ispitanike kontrolne i ispitivane skupine nastavilo ispitivati koji su to glavni čimbenici koji su im uzrokovali strah ili su mogli uzrokovati pojavu DSA-e – je li to bol, negativno iskustvo i gubitak kontrole tijekom stomatološke intervencije, preneseno iskustvo drugih, primjena lokalne anestezije, zvukovi i mirisi u stomatološkoj ordinaciji ili ponašanje stomatologa i osoblja. Ispitali su se i redovitost i razlog posjeta stomatologu.

## Statistička analiza

Za ispitivanje distribucije dobivenih rezultata korišten je Kolmogorov-Smirnovljev test normalnosti. Iako se pokazalo da varijable nisu normalno raspodijeljene, primijenjen i t-test jednakosti aritmetičkih sredina i F-test jednakosti varijance.

U obradi rezultata istraživanja korišteni su standardni načini prikaza varijabli – tablice, frekvencija i postotak pojavljivanja. Varijable su prikazane i opisnim (deskriptivnim) parametrima (aritmetička sredina i standardna devijacija).

Konačna provjera razlike između distribucija za interesne skupine obavljena je korištenjem neparametrijskoga  $\chi^2$ -testa i Mann-Whitneyeva testa.

Organization (16). During the research that took place in the period between March and November of 2011, 410 persons were interviewed. After their selection, according to the inclusive criteria for the participation in the study that were applied, there were 310 participants left in the study in total.

Inclusive criteria for the participation in the study were physically and mentally healthy persons belonging to the age group between 35 and 44 years, with absence of odontalgia or some other urgent dental interventions, or any other serious systemic diseases.

The study participants were divided in two groups. The first, the control group (n=157) comprised individuals who were domicile inhabitants, factory workers in the area of study research. In the second, the study group (n=153) there were displaced persons from collective accommodation centers from the area of study research. The study has been conducted in several cities of Canton Tuzla: Živinice, Tuzla, Banovići, Gračanica, Kladanj, Srebrenik and Kalesija, according to the principles of Helsinki declaration (17), and also approved by the Ethics Committee of Faculty of Dentistry with Clinics of Sarajevo University. The aim of the study and its content were explained to every participant and their informed consent was obtained prior to the commencement of research.

## Methods

The study research has been performed in two parts simultaneously in the first and second group of participants. In the first study part, the DFA presence in participants was evaluated by the Modified Corah's Dental Anxiety Scale (MCDAS). This psychometric instrument was used for evaluation of DFA presence in adults. It comprised five dental situations and answers to them were ranged by Likert scale and expressed in values from 1 to 5. The total scale score was 25, and the cut off score for DFA presence was 17. The higher MCDAS values were related to stronger DFA presence (18). The second part of the study research was the evaluation of the presence of main factors causing (or could cause) the DFA appearance: pain, local dental anesthesia administration, negative experience, transmitted opinion of other persons, loss of control during dental treatment, sounds and noise within dental office setting, and behavior of the dentist and dental staff. The frequency of dental visits and reasons for dental office visiting were also determined.

## Statistical analysis

The Kolmogorov-Smirnov test was used for determination of data distribution normality. Although it was showed that data were asymmetrically distributed, the t-test for arithmetic means equality and the F-test for variances equality were also used.

Descriptive statistical results were represented in standard ways, by frequencies, percentages, arithmetic means and standard deviations. They are presented in tables.

The existence of statistically significant differences between study research variables was determined by the  $\chi^2$  and Mann-Whitney test. All statistical analyses were performed

Sve statističke analize rađene na razini značajnosti  $p \leq 0,05$ .

Rezultati su dobiveni korištenjem programskih paketa SPSS® Statistics 17.0 za Windowsov operativni sustav.

## Rezultati

Srednja dob svih sudionika studije bila je 40,19 godina,  $\pm 3,60$  godina. U skupini od 153 raseljene osobe srednja dob iznosila je 40,44 godine,  $\pm 3,52$  godine. U skupini od 157 ispitanika domicilnog stanovništva srednja dob je bila 39,94 godine,  $\pm 3,68$  godine.

Prema spolnoj zastupljenosti ukupno je bilo 64,52 % žena i 35,48 % muškaraca. Promatrajući ukupan broj ispitanika u skupini raseljenih osoba, žena je bilo 75,82 %, a muškaraca 24,18 %. Na osnovi spolne zastupljenosti, od ukupnog broja ispitanika u skupini domicilnog stanovništva bilo je 53,50 % žena i 46,50 % muškaraca.

Analizirajući prosječne rezultate odgovora ispitanika u uzorku na pitanja iz MCDAS ljestvice, peto pitanje o lokalnoj anesteziji izazivalo je kod njih najveću DSA-u ( $M = 3,14$ ,  $SD = \pm 1,49$ ), a četvrto pitanje o čišćenju zuba i kamenca poticalo je najmanji ( $M = 2,31$ ,  $SD = \pm 1,17$ ). Ista je situacija, ali s nešto višim skorovima, kod raseljenog stanovništva ( $M = 3,65$ ,  $SD \pm 1,43$ ;  $M = 2,65$ ,  $SD = \pm 1,08$ , respektivno) te kod domicilnog stanovništva s nešto nižim skorovima ( $M = 2,64$ ,  $SD \pm 1,38$ ;  $M = 1,97$ ,  $SD = \pm 1,15$ , respektivno).

Utvrđene su statistički značajne razlike za svako od pet pitanja na MCDAS ljestvici između odgovora koje su dale raseljene osobe i domicilno stanovništvo, s  $\chi^2 = 30,934$ ,  $p < 0,0005$  i Mann-Whitneyjevim  $U = 7963,000$ ,  $p < 0,0005$  na prvo pitanje;  $\chi^2 = 26,074$ ,  $p < 0,0005$  i Mann-Whitneyjev  $U = 8516,500$ ,  $p < 0,0005$  na drugo pitanje;  $\chi^2 = 43,015$ ,  $p < 0,0005$  i Mann-Whitneyjev  $U = 7213,000$ ,  $p < 0,0005$  na treće pitanje;  $\chi^2 = 3,569$ ,  $p < 0,0005$  i Mann-Whitneyjev  $U = 7797,000$ ,  $p < 0,0005$  na četvrto pitanje i s  $\chi^2 = 43,160$ ,  $p < 0,0005$ ; Mann-Whitneyjev  $U = 7406,000$ ,  $p < 0,0005$  na peto pitanje, respektivno. Na osnovi dobivenih rezultata, znatno više raseljenih osoba izjavilo je da osjeća DSA za svaku od ovih pet MCDAS-ovih situacija opisanih u pitanjima, u odnosu na domicilno stanovništvo. Skupina raseljenih imala je i statistički značajno više prosječne rezultate u odgovorima na svako od pet pitanja na MCDAS ljestvici u odnosu na domicilno stanovništvo.

Isto se ponovilo kada se analizirala MCDAS ljestvica u cjelini između ispitivane i kontrolne skupine ispitanika čiji su rezultati prikazani u tablici 1. u kojoj su istaknute slične statistički značajne razlike ( $\chi^2 = 58,928$ ,  $p < 0,005$ ;  $U = 6958,500$ ,  $p < 0,0005$ ). Statistički znatno veći broj ispitanika u ispitivanoj skupini raseljenih osoba izjavio je da osjeća DSA-e kad promatramo MCDAS ljestvicu u cjelini u odnosu na skupinu domicilnog stanovništva. Skupina raseljenih osoba imala je i statistički značajno više prosječne skorove u odgovorima na pitanja na MCDAS ljestvici u odnosu prema skupini domicilnog stanovništva.

Evaluacijom prisutnosti DSA-e s pomoću MCDAS ljestvice, promatrano na razini cjelokupnog uzorka, utvrđena je prisutnost straha i anksioznosti kod 120 ispitanika, odno-

with significance level of  $p \leq 0.05$ , using the SPSS® Statistics 17.0 statistical software for Windows operative system.

## Results

The average age of respondents was 40.19 years  $\pm 3.60$  years, while in the displaced persons group it was 40.44 years  $\pm 3.52$  years, and in the domicile inhabitants group it was 39.94 years  $\pm 3.68$  years. There were also 64.52% of female and 35.48% of male respondents. In the displaced persons group, there were 75.82% of female and 24.18% of male participants, while in the domicile inhabitants group there were 53.50% of female and 46.50% of male participants.

According to the average scores of answers to MCDAS scale questions, the fifth question regarding local dental anesthesia caused the highest feeling of DFA ( $M=3.14$ ,  $SD=\pm 1.49$ ), while the fourth question about teeth scaling and polishing caused the lowest feeling of DFA ( $M=2.31$ ,  $SD=\pm 1.17$ ) in study participants. The same situation was in the displaced persons group with somewhat higher average scores ( $M=3.65$ ,  $SD\pm 1.43$ ;  $M=2.65$ ,  $SD=\pm 1.08$ , respectively), and also in the domicile inhabitants group with somewhat lower average scores ( $M=2.64$ ,  $SD\pm 1.38$ ;  $M=1.97$ ,  $SD=\pm 1.15$ , respectively).

The statistically significant differences were determined to each of five questions of the MCDAS scale, between the answers of the displaced persons group and the domicile inhabitants group, with  $\chi^2 = 30.934$ ,  $p < 0.0005$ ; Mann-Whitney  $U = 7963.000$ ,  $p < 0.0005$  for the first question;  $\chi^2 = 26.074$ ,  $p < 0.0005$ ; Mann-Whitney  $U = 8516.500$ ,  $p < 0.0005$  for the second question;  $\chi^2 = 43.015$ ,  $p < 0.0005$ ; Mann-Whitney  $U = 7213.000$ ,  $p < 0.0005$  for the third question;  $\chi^2 = 3.569$ ,  $p < 0.0005$ ; Mann-Whitney  $U = 7797.000$ ,  $p < 0.0005$  for the fourth question, and  $\chi^2 = 43.160$ ,  $p < 0.0005$ ; Mann-Whitney  $U = 7406.000$ ,  $p < 0.0005$  for the fifth question. According to the above mentioned results, a significantly larger number of displaced persons stated that they felt DFA in each of these five MCDAS scale situations described by questions compared with domicile inhabitants. Besides, displaced persons obtained significantly higher average scores of answers to each of five MCDAS scale questions compared to domicile inhabitants. Also, the same situation repeated with the MCDAS scale itself (Table 1), where similar statistically significant differences were determined ( $\chi^2 = 58.928$ ,  $p < 0.0005$ ; Mann-Whitney  $U = 6958.500$ ,  $p < 0.0005$ ), in a way that significantly larger number of displaced persons stated to feel DFA in total MCDAS scale compared to domicile inhabitants. In addition to that, the displaced persons obtained significantly higher average scores of answers to MCDAS scale questions in total compared to domicile inhabitants.

The DFA presence was determined in 120 study participants, which was prevalence of 38.71%. In the displaced persons group, the DFA prevalence was 57.52%, and in the domicile inhabitants group it was 20.38%, which was statistically significant ( $\chi^2 = 45.037$ ,  $p < 0.0005$ ), hence the

**Tablica 1.** Distribucija ukupnih vrijednosti odgovora na pitanja iz MCDAS ljestvice koje su dali ispitanici u studiji  
**Table 1** Distribution of total values from MCDAS scale given by participants

MCDAS ljestvica (broj bodova) • MCDAS scale (points)	Raseljeni • Displaced		Domicilni • Domicile		Ukupno • Total	
	n	%	n	%	n	%
5	7	4.58	25	15.92	32	10.32
6	4	2.61	12	7.64	16	5.16
7	4	2.61	8	5.10	12	3.87
8	7	4.58	10	6.37	17	5.48
9	4	2.61	8	5.10	12	3.87
10	5	3.27	6	3.82	11	3.55
11	6	3.92	14	8.92	20	6.45
12	9	5.88	12	7.64	21	6.77
13	4	2.61	10	6.37	14	4.52
14	4	2.61	6	3.82	10	3.23
15	7	4.58	10	6.37	17	5.48
16	4	2.61	4	2.55	8	2.58
17	10	6.54	5	3.18	15	4.84
18	10	6.54	5	3.18	15	4.84
19	14	9.15	3	1.91	17	5.48
20	15	9.80	4	2.55	19	6.13
21	9	5.88	4	2.55	13	4.19
22	17	11.11	3	1.91	20	6.45
23	8	5.23	2	1.27	10	3.23
24	3	1.96	1	0.64	4	1.29
25	2	1.31	5	3.18	7	2.26
<b>Ukupno • Total</b>	153	100.00	157	100.00	310	100.00

sno kod njih 38,7 %. Također je utvrđena statistički značajna razlika u prisutnosti straha i anksioznosti između ispitanice i kontrolne skupine ispitanika ( $\chi^2 = 45,037$ , je  $p < 0,0005$ ). Istaknimo da je znatno više ispitanika u skupini raseljenih osoba osjećalo DSA-u (57,52 %) u odnosu na ispitanike iz skupine domicilnog stanovništva (20,38 %).

Statistički značajno veći broj domicilnih osoba češće je posjećivao stomatologa tijekom jedne godine u odnosu na raseljene ( $\chi^2 = 45,285$ ,  $p < 0,0005$ ). Statistički značajno ve-

displaced persons showed significantly higher prevalence of DFA presence.

Significantly greater number of domicile study participants visited annually dental offices more often than the displaced persons ( $\chi^2 = 45.285$ , je  $p < 0.0005$ ). Also, a significantly greater number of domicile study participants visited the dentist more often for regular check-ups than the displaced persons ( $\chi^2 = 28.457$ , je  $p < 0.0005$ ). Yet, numerous study participants stated that toothache or pain in the oro-

**Tablica 2.** Najčešći čimbenici koji mogu potaknuti nastanak DSA-e kod ispitanika u studiji  
**Table 2** Most frequent factors that cause DFA in participants

Čimbenici • Factors	Raseljeni • Displaced		Domicilni • Domicile		Ukupno • Total	
	n	%	n	%	n	%
Bol tijekom stomatološke intervencije • Pain during procedure	78	37.32	58	29.90	136	33.75
Dobivanje anestezije • Anaesthesia	39	18.66	24	12.37	63	15.63
Zvuk instrumenta • Sound of an instrument	13	6.22	18	9.28	31	7.69
Miris u ordinaciji • Smells in the dental office	30	14.35	22	11.34	52	12.90
Zbog iskustva drugih • Experiences of others	11	5.26	8	4.12	19	4.71
Zbog ponašanja stomatologa i drugog osoblja • Dental personel attitude	5	2.39	8	4.12	13	3.23
Gubitak kontrole tijekom stomatološke intervencije • Loss of control during procedure	1	0.48	0	0.00	1	0.25
Negativno iskustvo tijekom stomatološke intervencije • Negative experiences during procedures	20	9.57	33	17.01	53	13.15
<b>Ukupno • Total</b>	209	100.00	194	100.00	403*	100.00

\*Zbroj ne odgovara ukupnom broju ispitanika jer su neki na pojedina pitanja dali nekoliko odgovora • Total does not match the number of participants as some gave multiple answers

ći broj domicilnih osoba također je češće odlazio stomatologu na redoviti pregled u odnosu na raseljene ( $\chi^2 = 28.457$ ,  $p < 0,0005$ ). I dalje je velik broj ispitanika, kako domicilnih tako i raseljenih, posjećivao stomatologa samo kada je morao i kada je osjetio bol, a znatno više bilo ih je u skupini raseljenog stanovništva.

Promatrajući ispitivane čimbenike koji su mogli potaknuti DSA-u kod ispitanika (tablica 2.), utvrđeno je da postoji statistički značajna razlika između ispitivane i kontrolne skupine u odgovorima na pitanja o glavnim čimbenicima koji mogu uzrokovati nastanak straha i anksioznosti ( $\chi^2 = 16,827$ ,  $p = 0,032$ ). Pritom su glavni čimbenici, kad je riječ o skupini raseljenih, bili bol tijekom stomatološke intervencije i dobivanje anestezije, te mirisi u stomatološkoj ordinaciji. Najčešći čimbenici koje su isticali ispitanici u skupini domicilnog stanovništva bili su također bol i negativno iskustvo tijekom intervencije, anestezija i mirisi u stomatološkoj ordinaciji.

## Rasprava

S obzirom na MCDAS ljestvicu, kao instrumenta korištenog za evaluaciju prisutnosti DSA-e kod ispitanika u studiji u kojem se nalaze dva od tri najvažnija invazivna čimbenika koji najčešće uzrokuju nastanak DSA-e (lokalna anestezija, popravljavanje zuba), to je potvrđeno i rezultatima, kako na ukupnom uzorku tako i ispitivanoj i kontrolnoj skupini. Autori mnogobrojnih studija bavili su se uzročnicima nastanka DSA-e, a svi se temelje na ne/uzrokovanju boli tijekom stomatološkog tretmana, pri čemu su najstresniji oni čimbenici koji mogu narušiti tjelesni integritet i nanijeti bol (19).

Nađene su visoke vrijednosti prevalencije DSA-e, kako u ukupnom uzorku tako i u ispitivanoj i kontrolnoj skupini ispitanika. DSA je opisana kao jedan od najčešćih strahova i anksioznosti uopće (20). Strah od stomatološke intervencije, u istoj dobnoj skupini kao u našem istraživanju, u Sarajevskom kantonu istaknulo je 36,7 % ispitanika s nižim obrazovanjem, a u skupini visokoškoloovanih 16 % ispitanika izjavilo da se boji stomatološkog tretmana, što je manje u odnosu na domicilne i raseljene osobe iz našeg istraživanja (8). Rezultati drugih studija također upućuju na niže vrijednosti prevalencije DSA-e kod ispitanika (21 – 24). Već smo istaknuli da se raseljene osobe ubrajaju u rizičnu skupinu kad je riječ o oralnim bolestima, što svakako vodi prema pojavi češće prevalencije DSA-e u odnosu na prosječno stanovništvo (13). Liddel, Walker i suradnici su, ispitujući asocijaciju između nekog traumatskog iskustva tijekom života (koja nije u vezi s dentalnim situacijama) i DSA-e, pokazali da žene koje su doživjele neko negativno iskustvo u djetinjstvu imaju iznimno visoku razinu straha i anksioznosti (25). To se može dovesti u vezu s rezultatom dobivenim za raseljene osobe u našem uzorku u kojemu su više od 75 % ispitanika bile žene koje su prisilno morale napustiti svoje domove.

Analizirajući rezultate o broju posjeta stomatologu, uočava se da su ispitanici rijetko odlazili dentalnom liječniku u odnosu na preporučene mjere u prevenciji oralnih bolesti. Od toga velik broj ispitanika, promatrano kako na cjelokupnom uzorku tako i unutar skupina raseljenih osoba i domicilnog stanovništva, nije posjetio stomatologa ni jedanput

facial area constituted the most common reasons for dental emergency, which was more evident in displaced persons.

Possible factors for the DFA presence and appearance are presented in Table 2. The leading factors in the displaced persons group were as follows: pain during dental treatment, local dental anesthesia administration and various smells in dental office. In the domicile inhabitants group, similar factors played an important role: pain and negative experiences during dental treatment, local dental anesthesia administration and various smells in dental office. The statistically significant differences were determined in answers to these dentally stressful factors ( $\chi^2 = 16.827$ ,  $p = 0.032$ ), where the displaced persons group of study participants reacted more strongly to these factors compared to the domicile inhabitants group.

## Discussion

There were the two (local dental anesthesia, tooth drilling) out of the three most significant invasive factors that could most frequently cause the DFA appearance in MCDAS scale design. This was also confirmed by the study results in the total sample, as well as in the displaced persons group and the domicile inhabitants group of study participants. Numerous studies about the causes of DFA presence and appearance were based on factors which could cause pain during dental treatment. Accordingly, the most stressful dental factors are those having the potential for harming the integrity and normal functioning of one's body and those causing the pain during dental treatment (19).

The DFA prevalence in the total sample, as well as in the sample groups was high. Among all mental diseases, dental anxiety and fear disorder (DFA) has been described as one of the most frequent kinds of fears and anxieties (20). In the study conducted in Canton Sarajevo, the DFA related to dental interventions was found in 36.7% of participants with lower education level, and in 16% of participants with higher educational level, which corresponds to the age group of participants of the present study (8). The scores were lower compared to the above presented results, which was also similar to the results of the studies carried out by other authors who investigated into this particular field (21-24). Also, the displaced persons belonged to the risk group for incidence of many kinds of (oral) diseases, which could inevitably lead to higher DFA appearance and prevalence, compared to average population (13). Lider et al. investigated the association between some traumatic experiences (not related to dental situations) during the lifetime period and the DFA, and showed that women, who suffered some negative experience during the period of their childhood, could have extremely high levels of DFA presence (25). This could be in agreement with the results of the study including displaced persons, where more than 75% of participants were women who had been forcibly expelled from their homes.

Study participants rarely visited the dentist compared to the recommendations for oral health prevention. Also, a great

tijekom godine. Ova pojava bila je izraženija u skupini raseljenih. U istraživanju obavljenom 1996. godine ustanovljena je statistički značajna razlika između dviju populacija – raseljenih i domicilnih osoba, kada je riječ o brizi o oralnom zdravlju. Samo je 38 % raseljenih posjetilo stomatologa u posljednjih 12 mjeseci, a taj postotak kod domicilnih osoba iznosio je 55 % (26). Nalazi potvrđuju zaključke prijašnjih istraživanja da oralno zdravlje kod raseljenih osoba korelira s razinom obrazovanja kao jednom od determinanti (27).

Rezultati o razlozima posjeta stomatologu pokazali su da je vrlo malo redovitih stomatoloških pregleda. Ispitanici u sklopu uzorka, i u skupini raseljenih osoba i u onoj domicilnog stanovništva, posjećivali su stomatologa samo ako su imali razlog za to, a uglavnom zbog odontalgije. Pojava je bila izraženija u skupini raseljenih. Više od 30 % osoba u dobi od 35 do 44 godina imalo je odontalgiju i to u objema skupinama ispitanika u istraživanju iz 1996. godine provedenom među raseljenim i domicilnim osobama u Bosni i Hercegovini (26). Izvještaj o visokoj frekvenciji odontalgije nije neuobičajen za loše oralno zdravlje, što je obilježavalo obje populacije, a posebno raseljenu (28). Čak 41,7 % ispitanika iste dobne skupine u Sarajevskom kantonu odlučilo se na ekstrakciju zuba kao na konačan stomatološki tretman (8).

Najveći broj ispitanika u našoj studiji, kako ukupno tako i unutar skupina raseljenih osoba i domicilnog stanovništva, navodio je bol tijekom stomatološke intervencije kao glavni čimbenik za nastanak DSA-e. Ti su podaci u vezi sa sličnim istraživanjima te upućuju na to da su bolni iritansi i strah od boli u pozadini pojave DSA-e (29, 30). U istraživanju provedenom u Njemačkoj bolno iskustvo tijekom stomatološke intervencije navodi 67 % ispitanika i to je glavni razlog za njihovu DSA-u, a to prati i strah od anestezije (23). Jedan od glavnih čimbenika koji mogu potaknuti dentalni strah jesu zvukovi i mirisi u stomatološkoj ordinaciji (19). Naime, to može, primjerice, kod djece kao stomatoloških pacijenata, potaknuti da počnu odbijati suradnju sa stomatologom (31).

## Zaključak

Raseljene osobe ubrajaju se u rizičnu skupinu s visokom prevalencijom DSA-e. Čimbenici za njezin nastanak jednaki su kao kod prosječnog stanovništva, s tom razlikom da raseljeni na dentalne stresore uglavnom snažnije reaguju. Možda zato ova populacijska skupina ima prosječno lošije parametre oralnoga zdravlja, te lošije obrasce ponašanja kad je riječ o učestalosti posjeta i razloga za odlazak stomatologu. Sve to pojačava začarani krug u kojemu loše oralno zdravlje pospješuje pojavu DSA-e i obrnuto.

## Sukob interesa

Autori izjavljuju da nisu bili ni u kakvom sukobu interesa.

number of study participants, especially those belonging to the displaced persons group, did not have any annual dental visits. In the study conducted in 1996, statistically significant differences were found, where 38% of displaced persons had annual dental visit, compared to the 55% of domicile population (26). These findings were also confirmed by other studies, where oral health status correlated with the educational level as one of the displaced persons determinant (27).

The results of various studies have shown that study participants go rarely for regular dental check-ups. Dental visits are mostly related to reasons such as some urgent needs, or odontalgia. In the study conducted in 1996, more than 30% of participants aged from 35 to 44 years, from the displaced and domicile group, stated that odontalgia was the main reason for their dental visits. (26). High frequency of odontalgia is not unusual finding in poor oral health status, which was typical of both populations, especially of displaced persons (28). Even 41.7% of participants in the study conducted in Canton Sarajevo decided for tooth extraction as final dental treatment (8).

The leading dental factor for the DFA appearance was pain during dental treatment, in the total sample, and in the study groups of participants. Similar studies showed that painful stressors and fear of pain were the main reasons for DFA appearance (29-30). In one study conducted in Germany, 67% of study participants stated that painful experience during dental treatment was the main reason of DFA presence, which was followed with the fear of local dental anesthesia administration (23). Various types of noise and smells in dental offices were also included in the group of stressful dental factors for the DFA appearance, especially in children who started avoiding the dentist, which might lead to minor dental problems becoming major ones (19, 31).

## Conclusions

Displaced persons belonged to the risk group with high DFA prevalence. The factors for the DFA appearance and presence in this group were identical to those related to the average population. However, displaced persons had stronger reactions to them. Possible reasons for this could be that this specific population of individuals had lower average indices of oral health status, and worse behavior patterns related to the frequency of dental visits and the reasons for dental visiting. All of this could lead to strengthening of vicious circle, where poor oral health status mutually anticipated the DFA appearance and presence.

## Conflict of interests

Authors of this paper declare that they do not have financial or any other kind of interest.

**Abstract**

**Introduction:** In Bosnia and Herzegovina, apart from domicile population, there is a certain number of displaced persons. Most of them are situated in the area of Canton Tuzla. These persons are generally at risk of and being watched for various diseases, including the disease of the orofacial area. Dental fear and anxiety (DFA) is also inevitably present in displaced persons, with higher prevalence compared with general population. Therefore, the aim was to evaluate the DFA presence and the most common reasons for dental fear and anxiety in displaced persons in our country. **Patients and methods:** 310 interviewed persons were included in this study, aged 35 to 44 years, from several cities of Canton Tuzla. They were divided in the group of displaced persons (n=153), and the group of domicile inhabitants (n=157). The study participants were interviewed about the DFA presence, as well as about the risk factors for DFA, which was subsequently evaluated by the Modified Corah's Dental Anxiety Scale. **Results:** A high prevalence of DFA presence was determined in the total sample (38.71%), and particularly in the displaced persons group (57.52%). The results showed that displaced persons rarely visited dentists, mainly when it was necessary (odontalgia), with stronger reactions to factors that could cause DFA appearance. **Conclusion:** Displaced persons are regarded as one of the highest risk groups for prevalence of DFA. This could be mainly due to poor oral health status, rare dental office visits and the urgent need for dental treatment, which could lead to vicious circle of mutual strengthening between bad oral health and DFA appearance.

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