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HABITS, ATTITUDES AND BEHAVIOR OF REFUGEES AND MIGRANTS IN SERBIA IN RELATION TO ORAL HEALTH

NAVIKE, STAVOVI I PONAŠANJE IZBEGLICA I MIGRANATA U SRBIJI U VEZI SA ORALNIM ZDRAVLJEM

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Apstrakt

Uvod/Cilj: Cilj ovog istraživanja bio je da se ispituju: samoprocena oralnog zdravlja, navike vezane za oralno zdravlje, ishranu i korišćenje stomatoloških usluga izbeglica i migranata u Srbiji.

Metode: U istraživanju je učestvovalo ukupno 226 ispitanika. Učesnici su bili smešteni u migrantskim centrima Obrenovac i Krnjača u Beogradu, Srbiji. Svim ispitanicima je data anketa sa ciljem da se istraže navike, stavovi i ponašanje u vezi sa oralnim zdravljem izbeglica i migranata. Upitnik ima 29 pitanja. SPSS 24 statistički softver je korišćen za analiziranje odgovora dobijenih u anketi.

Rezultati: Od ukupno 226 ispitanika 40 je bilo ženskog, a 186 muškog pola. Većina ispitanika je bilo punoletno (87.6%) i 12.4% su bila deca. Rezultati pokazuju da izbeglice i migranti koji troše 200-300€ mesečno najviše konzumiraju alkohol (33.3%) i duvan (61.5%). Svega 10.8% muškaraca je odgovorilo da je bilo kod stomatologa u Srbiji, dok je 35% žena imalo isti odgovor (p=0.000). Istraživanje takođe pokazuje da većina žena (67.5%) pere zube 2-3 puta dnevno, dok znatno manje muškaraca ima tu naviku (37.1%). Suplemente fluorida koristi 78.8% ispitanika. Kao neki od najčešćih razloga za posetu stomatologu navode se bol (36.9%) i redovna kontrola (22.5%).

Zaključak: Očuvanje oralnog zdravlja izbeglica i migranata u Srbiji zavisi od različitih faktora. Unapređivanje i očuvanje dobrog opšteg i oralnog zdravlja izbeglica i migranata bi trebalo da budu prioriteti javnog zdravlja.

Ključne reči: oralno zdravlje, stomatološka zaštitna, migrantska kriza, javno zdravlje, preventivna stomatologija, oralna higijena

Abstract

Background/Aim: The aim of this study was to investigate: self-reported oral health, oral health related habits, nutrition and use of dental services among refugees and migrants in Serbia.

Methods: Total of 226 migrants participated in the study. Participants were situated in the migrant centers Obrenovac and Krnjaca, in Belgrade, Serbia. All participants were given a
questionnaire in order to examine oral health habits, attitudes and behavior among refugees and migrants. The questionnaire consists of 29 questions. SPSS 24 statistical software was used to analyze answers from the questionnaire.

**Results:** Out of 226 examinees, 40 were female and 186 were male. Majority were adults (87.6%) and 12.4% were children. The results show that refugees and migrants who spend 200-300€ per month consume the most alcohol (33.3%) and tobacco (61.1%). Only 10.8% of men answered they have been to the dentist in Serbia, whereas 35% women had the same answer (p=0.000). The research also showed that most women (67.5%) brush their teeth 2-3 times a day and noticeably less men (37.1%) had the same habit. Fluoride supplements are used by 78.7% of examinees. Among most common reasons for the last visit to the dentist were pain (36.9%) and regular checkups (22.5%).

**Conclusion:** Preservation of oral health of refugees and migrants in Serbia depends on various factors. Improving and preserving good general and oral health of refugees and migrants should be a public healthcare priority.

**Key words:** oral health, dental healthcare, migrant crisis, public health, preventive dentistry, oral hygiene

**Introduction**

Since the peak of the migration crisis in 2015, like many European countries, Serbia was struck with hundreds of thousands of refugees and migrants traveling through European borders\(^1\).

The United Nations High Commissioner for Refugees (UNHCR) stated that there were 30,216 newly arrived asylum seekers and migrants in Serbia in the year 2019. The same year, the number of arrivals of unaccompanied/separated children was almost twice higher than the year before, with a total of 3777 children. Majority of the asylum seekers and migrants were men (76%), and much less women (18%) and children (6%). When talking about nationalities, 51% of them came from Afghanistan, 13% Syria, 7% Pakistan, 6% Bangladesh, 6% Iran, 6% Iraq and 11% other\(^2\).

The effects of the migratory process can be noticed as changes in social determinants of health, lack of access to healthcare, interrupted care, poor living conditions, or other. This
means general health could be at jeopardy. Healthcare systems and healthcare providers are the ones put to the test when this happens.

Most common regional health policies recommend that emergency and urgent care should be available to all refugees and migrants, regardless of their legal status. The Law on Healthcare of Serbia, specifically article 236. of this document, states that a person without a citizenship, refugees, people seeking asylum, registered foreigners seeking asylum, have the rights to healthcare in accordance with this law.

Knowing that oral health is one of the key indicators of general health, well-being and quality of life, we should thoroughly examine the impact of oral health habits in order to preserve and improve oral health among migrants and refugees. The aim of this paper is to provide information about oral health habits, attitudes and behavior towards oral health and indicate in which way public healthcare can contribute to oral health preservation and improvement among refugees and migrants in Serbia.

**Methods**

This study was approved by the Commissariat for Refugees and Migration and the Ministry of Health of the Republic of Serbia. Approval from the University of Belgrade School of Dental Medicine’s Research Ethics Committee was obtained prior to this study (registration number: 36/16). The research took place in refugee centers in Obrenovac and Krnjaca in Serbia, from November through December 2019.

**Participants**

A total of 226 refugees and migrants took part in this exploratory cross-sectional study. Criteria for inclusion of the respondents in the study were: signed consent form and the ability to understand and answer the questions independently or with the help of a qualified translator. Excluding criteria were: refusal to take part in the study and refusal of the parent or guardian to have their child participate in the study. Participation in this study was anonymous and voluntary. All participants were fully informed before giving consent or allowing their children to take part in the research. Parents answered questions on behalf of their children.

**Data collection**
The survey was carried out in migrant centers Obrenovac and Krnjača. To ensure equality, all questions were asked orally. Parents answered questions for children involved in the study. One certified dentist (Zoran Mandinić) conducted the interviews and one dental student (Aleksandra Prokić) noted and saved the data. The interviews were carried out in Serbian, English, Pashto and Farsi, with the help of certified translators in the migrant centers. Each interview took approximately 20 min.

The survey included both closed and open ended questions. Participants were asked if they had any bad oral health habits (teeth grinding/thumb sucking/mouth breathing/chewing on one side of the mouth/no), if they consume tobacco (yes/no) or alcohol (yes/no).

Furthermore, we asked participants concerning their food regimen, such as the frequency of consuming sweetened drinks/juices (daily/several times per week/several times per month/rarely/never), sweets (daily/several times per week/several times per month/rarely/never) and fruits (daily/several times per week/several times per month/rarely/never).

Questions about the frequency of tooth brushing (never/2-3 times per month/once per day/two or more times per day), the use of fluoride supplements (toothpaste/mouthwash/fluoride tablets/fluoride varnish/tooth gel/no) and oral hygiene utensils (tooth brush/interdental brush/oral irrigator/toothpick/dental floss/no) were asked in order to investigate oral hygiene habits of migrants and refugees.

Oral health problems (yes/no/I do not know) and the number of dental visits (once/twice/three or more times/ I have not been to the dentist in the last year) in the year prior to the research were questions of great value for this research. We also inquired the reason for the last visit to the dentist (pain/trauma/swelling/gum bleeding/regular checkup/none of the above). Questions about the satisfaction of overall health (very dissatisfied/dissatisfied/ neither satisfied nor dissatisfied/satisfied/very satisfied) and oral health (very dissatisfied/dissatisfied/ neither satisfied nor dissatisfied/satisfied/very satisfied) were also incorporated in this study.

Specific part of this research was the attitude of migrants and refugees towards dental healthcare in Serbia. We inquired if the participants knew if they were provided free dental care in Serbia (yes/no/I do not know), as well as their thoughts if there is a language barrier
that would endanger their dental treatment (yes/no). Participants were asked if they have been to a dentist in Serbia (yes/no) or have ever been denied dental treatment (yes/no). Those who had dental treatment in Serbia were asked if they were satisfied with the service (very dissatisfied/dissatisfied/neither satisfied nor dissatisfied/satisfied/very satisfied).

The participants were also asked about their age, gender (male/female), marital status (single/married/divorced/widowed), country of origin, time spent in Serbia (under 10 days/10-30 days/1-2 months/more than 2 months), migrant and refugee center they are situated at (Obrenovac/Krnjača) and the amount of money at their disposal per month (less than 100€/100-200€/200-300€/more than 300€). In addition to these questions, participants answered questions about their education level (primary school or less/high school/bachelor’s degree/master’s degree/Ph.D./unknown), level of education of their mother (primary school or less/high school/bachelor’s degree/master’s degree/Ph.D./unknown) and father (primary school or less/high school/bachelor’s degree/master’s degree/Ph.D./unknown).

Statistical analysis

All statistical analyses were performed using of Statistical Package for the Social Sciences (IBM Corp. Released 2016. IBM SPSS Statistics for Windows, version 24.0; Armonk, NY: IBM Corp.) Chi-square test was used to determine the significance of differences between two independent groups. In the process of examining the relationship between variables ANOVA test was used. The level of significance was set at 5% (p<0.05).

Results

Socio-demographic characteristics

In this study participated 226 refugees and migrants staying in migrant centers in Serbia. Single male refugees and migrants were situated in Obrenovac, whereas in Krnjaca were families, children and female refugees and migrants. The average age was 23±8.24 years, aged 1 to 64 years (Table 1). The ages of children that participated in the study were from 1 to 17 with the average age 10±3.87, whereas the youngest adult was 18 and eldest 64. The results show that refugees and migrants originate from Asian and African countries; Afghanistan 73.89%, Iran 7.52%, Pakistan 4.87%, Syria 4.42%, Iraq 3.54%, Somalia 3.1%,
Yemen 0.88%, Cameroon 0.44%, Ethiopia 0.44%, Lebanon 0.44% and Sudan 0.44%.

Concerning educational attainment, participants answered in majority that their mother finished only primary school or less (41.6%). Similar results were obtained when asked about their father, with 38.1% of the participants answering primary school or less and 23.9% high school. As for the participants themselves, 35.8% finished primary school or less, 35.4% finished high school and 25% did not answer the question.

**Habits**

When answering the question about bad habits, most participants (46.5%) answered they did not have any of the following: unilateral chewing, teeth grinding, thumb sucking, mouth breathing. A much smaller percent had bad habits; 22.9% unilateral chewing and 19.8% teeth grinding. A large percent of refugees and migrants consume tobacco (48%). Even though 86.7% of participants do not drink alcohol, refugees and migrants that have 200-300€ per month at their disposal consume alcohol the most as well as tobacco (61.1%).

**Food regimen**

In both migrant centers, Krnjaca and Obrenovac, food is provided. In addition to the provided food, refugees and migrants can buy and consume other foods. A majority of respondents eat sweets on a daily basis or a few times a week (Table 2). Male population drinks sweetened juices more often than female (p=0.008). Statistical analysis showed that the duration of the stay of refugees and migrants in Serbia affects consumption of fruits (p=0.008). According to the results 50% of migrants who stay in Serbia for a longer period of time, longer than 1 month, eat fruits daily and 28.4% of them eat fruits a few times a week.

**Oral hygiene**

Good oral hygiene is a mandatory for good oral health. The results show that 42.5% of participants brush teeth two or more times per day and 19% of refugees and migrants mentioned they brush teeth once a day. There was a statistical significance between men and women concerning the frequency of brushing teeth. (figure 1) The results show a statistical significance of p=0.000 in the correlation between the frequency of tooth-brushing and satisfaction of oral health. Noticeably large percent of participants use
fluoride supplements (79%). The most preferred fluoride supplement among migrants and refugees in Serbia is toothpaste. Based on the results obtained in the research, participants who use a toothbrush are more satisfied about their oral health (p=0.000).

Dental healthcare

Majority of respondents ranked their general health as satisfactory (64.6%). Twice as many men answered that their oral health is dissatisfactory (22%), whereas 10% women had the same answer (p=0.002). Out of the total number of participants, 36.7% refugees and migrants mentioned to have had problems with oral health in the past year. Although there is a widespread need for dental treatment, 57.1% of the participants have not been to the dentist in the past year. The most common reason for their last visit to the dentist was pain (39.2%). Refugees and migrants that have between 200 and 300€ per month at their disposal had the highest percent (50%) of last visits to the dentist caused by pain.

Dental healthcare in Serbia

Majority of the participants answered that they do not know if dental treatment in Serbia is for free (45.5%), the rest were divided, 27.5% stating it is free and 27% stating it is not. Most of the single participants (60%) believe there is not a language barrier that would endanger their dental treatment. However, married participants weren’t as sure with a total of 47.9% answering there is a language barrier. The results show that women have been to a dentist in Serbia more often than men (Table 3). Based on the results obtained, a total of 38 refugees and migrants were in a situation where a dentist refused to give them dental treatment. Most participants are satisfied with dental treatment in Serbia (44.1%).

Discussion

In the year 2019, 14 reception centers and 6 centers for asylum were at disposal for refugees and migrants across Serbia. Total capacity of all available migrant centers is approximately 5890 6. European Union Agency for Fundamental Rights (FRA) report from May 2017 states that majority of refugees and migrants in European Union (EU) countries have only primary school degree 7. UNHCR statistics show that 91% of the world’s children attend primary school, whereas 61% of refugee children have the same chance. Serbia followed other European countries and provides children with primary school education 8. When comparing the monthly budget of refugees and migrants, we should take into consideration that in Serbia in the year 2019 the minimum wage is approximately 30
000 RSD (≈255€) and the basic amount of monthly social assistance is 8 508 RSD (≈72€) ⁹,¹⁰. This information might explain the low amount of money participants had at their disposal. Financial aspect is an ongoing issue when dental healthcare comes to mind. Serbian public dental clinics do not charge only for emergencies, such as trauma, swelling and dental complications directly impacting oral health. This means all other cases are obligated to pay for dental treatment. Not being able to afford dental treatment might lead to deterioration of oral health and later on to a state of a dental emergency. This could all be avoided by introducing adequate preventive measures. Various studies conclude that preventive measures are crucial when aiming to preserve good health among migrants and refugees ¹¹.

The findings gathered in this study show that drinking alcohol among refugees and migrants in Serbia is infrequent. Only 13.3% of participants answered they do consume alcohol, whereas findings from a research from year 2006 show 31.6% of adults in Serbia consumed alcohol 30 days prior to participating in the research ¹². Alcohol consumption is uncommon among refugees and migrants in Belgrade. This can be explained by most of them originating from Muslim countries where alcohol consumption is forbidden. A study conducted in Germany found a strong correlation between alcohol consumption and maximal pocket depth. Furthermore, smoking and maximal periodontal pocket depth were significantly associated ¹₃. The data obtained in this study shows 48% of refugees and migrants consume tobacco. Unfortunately, research conducted by the Institute of Public Health of Serbia in 2016 affirms that many adults in Serbia share the same bad habit (38%) ¹⁴. Consuming tobacco, smoking especially, is known to increase the risk of: periodontal disease, bad breath, tooth discoloration, delayed healing of intraoral wounds, different types of oral carcinoma and many more ¹⁵. People that consume tobacco are prone to having various oral health issues and should therefore be prioritized as at high risk. A public health strategy could be effective in educating and early screening of both tobacco and alcohol consumers.

Nutrition is a key factor of general health. Malnutrition and vitamin D deficiency especially, have been identified among migrant children in northern parts of the WHO European Region ⁴. Findings obtained show that more than one third of the participants consume sweets on a daily basis. Various studies have shown side effects of sweetened juices on oral health ¹⁶. Most common effect of a high consumption of added sugars on oral
health is a greater prevalence of dental caries, but also of periodontal disease. Both dental caries and periodontal disease are a major public health problem globally and are a widespread non-communicable disease. Addressing these health issues and preventing them is of high importance. With a significance of male participants drinking sweetened juices, the findings obtained in this research concur with a study from Udaipur. Our study shows that almost half of the participants consume fruits daily. These results are higher than in a study conducted in Lithuania, but lower than the European Union average fruit intake. Malnutrition can intensify the severity of oral infections and may lead to their evolution into life threatening diseases. Public healthcare should address refugees and migrants suffering either from malnutrition and being overweight/obese, but also educate refugees and migrants on a balanced and healthy diet.

Findings from our study showed less than half of migrants brush their teeth two or more times per day. A study conducted in United Kingdom showed a higher percent (71.5%) of Pakistani/Bangladeshi brushing teeth twice a day. Asylum seekers and immigrants that participated in a research in Finland had similar habit of brushing teeth. Women (75%) brushed teeth more often than men (56%). The same study showed that 57.5% of the participants used toothpastes, whereas 79% of participants in our study used some kind of fluoride supplements. The findings show a large percent of children brushing teeth more than once a day (more than 80%). These findings are much higher than the ones in this study. Recognizing the need for early dental treatment, providing migrants with adequate oral hygiene utensils and promoting good oral hygiene could highly impact oral and therefore general health.

Oral health affects general health by causing considerable pain and suffering and by changing what people eat, their speech and their quality of life and well-being. A comparative study found approximately one third of refugees from the Middle East and Africa that participated in the study had regular oral pain. Oral pain is the most common reason for a visit to the dentist and our research concurs. Postponing dental treatment may lead to higher risk of complications occurring and more difficult treatment procedures. Public healthcare systems should strive to promote early dental treatment and emphasize the importance of prevention.
Some of the principles healthcare in Serbia is based on are solidarity, efficiency and protection of the rights of a patient. Free healthcare is provided to all children under 18 years of age and students till the age of 26 years, as well as people over 65 years of age and people with disabilities. Refugees and migrants in Serbia have the same rights and are included in the public healthcare system. The law concerning free dental treatment applies to trauma, swelling, etc. only at public dental clinics. A low percentage of refugees and migrants going to the dentist in Serbia might as well be due to financial issues, language barriers, fear of the dentist and many more. Conclusions from other studies indicate that financial aspect and the lack of adequate dental insurance is one of the leading issues for not seeking dental treatment. As for language barriers, it is mandatory that refugees and migrants are able to communicate with healthcare workers. Specialized translators should be at disposal at all times when refugees and migrants seek medical treatment.

This study was among the first attempts to tackle habits, attitudes and behavior of refugees and migrants in Serbia in relation to oral health. The study had however certain limitations. The sample size can be considered as a limitation of this study. Since special permissions were necessary to be obtained prior to every visit to the migrant centers, we limited the sample group to two migrant centers situated in Belgrade. In addition to the excluding factors, element that also impacted the sample size was that not all residents of the migrant centers were at the premises at the time of conducting the interview.

The number of male participants was dominant in comparison to the number of female participants which could be seen as a limitation. However, majority of migrants and refugees in Serbia in the year 2019. were male, and our study concurs.

The lack of clinical examinations is one of the shortcomings of this study. Oral status with DMFT and CPITN were not registered and this study did not include radiographs. Obtaining this information about migrants and refugees would further explain how habits, attitudes and behavior impact oral health of migrants and refugees. Clinical examinations should be investigated in future studies.

**Conclusion**

Based on the findings of the study we can understand that in order to provide a safer and healthier environment, attempts should be made to educate and motivate refugees and migrants to maintain oral health. Public healthcare system should focus on refugees and migrants as an at risk population and make a specialized strategy for them. With a large
number of refugees and migrants coming every day to Serbia and other European countries, this public health care issue should be prioritized and further analyzed. Early identification of oral health issues may mean less costly procedures which would be in the best interest of patients in need of dental treatment. Health care providers should have in mind the specifics of the migrant population and adjust procedures and treatment to their needs. The ultimate goal is to preserve and improve oral health among refugees and migrants in Serbia.

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Table 1

| Background of the participants | Male participants (n=186) | Female participants (n=40) |
|-------------------------------|--------------------------|---------------------------|
| Migrant center                |                          |                           |
| Obrenovac                     | 152 (81.7)               | 0 (0)                     |
| Krnjaca                       | 34 (18.3)                | 40 (100)                  |
| Age (years)                   |                          |                           |
| <18                           | 13 (7)                   | 15 (37.5)                 |
| ≥18                           | 173 (93)                 | 25 (62.5)                 |
| Months lived in Serbia        |                          |                           |
| <1                            | 42 (22.6)                | 15 (37.5)                 |
| 1-2                           | 46 (24.7)                | 7 (17.5)                  |
| >2                            | 94 (50.5)                | 17 (42.5)                 |
| No answer                     | 4 (2.2)                  | 1 (2.5)                   |
| Marital status                |                          |                           |
|        | Male participants | Female participants | P-value* |
|--------|-------------------|---------------------|----------|
|        | (n=186)           | (n=40)              |          |
| N      | %                 | N                   | %        |
| Language barrier endangering | 0.16 |
| Dental Treatment                                  | Yes | 34.9 | 14 | 35 |
|--------------------------------------------------|-----|------|----|----|
| No                                               | 98  | 52.7 | 25 | 62.5 |
| No answer                                        | 23  | 12.4 | 1  | 2.5 |

**Visit to a dental office in Serbia**

| Visit to a dental office in Serbia                | Yes | 10.7 | 14 | 35 |
|--------------------------------------------------|-----|------|----|----|
| No                                               | 159 | 85.5 | 26 | 65 |
| No answer                                        | 7   | 3.8  | 0  | 0  |

**Been refused dental treatment in Serbia?**

| Been refused dental treatment in Serbia?         | Yes | 18.8 | 3  | 7.5 |
|--------------------------------------------------|-----|------|----|----|
| No                                               | 143 | 76.9 | 34 | 85 |
| No answer                                        | 8   | 4.3  | 3  | 7.5 |

* Pearson’s chi square test

**p<0.05

Figure 1

Frequency of tooth-brushing among refugees and migrants (%)

![Graph showing frequency of tooth-brushing among refugees and migrants](image-url)
Skraćenice

CPITN-Comunity Periodontal Index of Treatment Needs

DMFT-Decayed, Missing and Filled Teeth

EU-European Union

FRA- European Union Agency for Fundamental Rights

RSDSerbian Dinar

UNHCR- The United Nations High Commissioner for Refugees

€-Euro

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