Oral Health Status of People with Mental Disabilities in the Municipality of Banja Luka

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SUMMARY

Introduction Oral health of mentally disabled people in Republika Srpska is on very low level. The greatest number of these persons is often edentulous or with a small number of teeth with extensive caries, high DMFT index and severe periodontal diseases. The aim of this study was to determine oral health status of people with mental disabilities in the municipality of Banja Luka.

Material and Methods Study included 95 patients (45 females and 50 males), aged 15 to 45 years. The subjects were divided into two groups according to the degree of mental impairment: ICD-10 F71 (65 respondents) and F72 (30 respondents). Dental assessment included: number of present teeth, presence of caries, restorations, number of extracted teeth, presence of residual roots, fractures, presence and number of fixed restorations, gingival and plaque index.

Results The mean DMFT index in patients with severe mental disability was high (17.4), while it was 12.3 in patients with mild disability. The mean value of person caries index (PCI) was 100%. In addition, the mean value of teeth caries index (TCI) in severely disabled persons was 58.1 whereas in those with mild intellectual disability it was 42.4. Average caries index (ACI) in patients with severe mental disability was 16.9 while in the group of patients with mild disability this value was 10.2. Plaque index in severely disabled people was 2.4, while in the second group (mild disability) it was 1.9. Gingival index in patients with severe mental disability was 1.8 and in mild disability group it was 1.3.

Conclusion People with mental disabilities in the municipality of Banjaluka have poor oral health. They do not have habits, attitudes and behavior towards oral health.

Keywords: persons with mental disabilities; caries; DMFT; PCI; ACI; TCI

INTRODUCTION

Oral health is an integral part of general health and dental care of persons with physical and mental disabilities is an integral part of comprehensive medical care. The number of persons with mental disabilities has been steadily growing while it has been in contrast with the development of medical care. Depending on the degree of mental disability, affected persons have impaired understanding, reasoning and independently performing daily activities and therefore they require special care provided by trained personnel [1]. Due to their disability these people are not capable of self care and maintaining adequate oral hygiene. In addition to mental development they often have joined kinetic disorders (difficult moving or complete immobility) which further complicate the maintenance of oral hygiene and preservation of oral health [2]. Several studies have reported poor oral health in persons with mental disabilities with dental care most often limited to tooth extraction [3-6].

Research in the world and our country have shown that this population (compared to general population) has more teeth extracted, untreated carious teeth, severe periodontal diseases, poorer oral hygiene, fewer filled teeth and frequent occurrence of xerostomia, burning and tingling in the mouth or bad breath and taste disorders [7, 8, 9]. In their study, Nelson and Van Blaricum [10] indicated that children with severe motor and intellectual disabilities age 14-15 years had lower number of carious teeth compared to their healthy peers. Chu et al. [11] found the mean value of DMFT index in people with mental disabilities of 13.9. In one study conducted in 2004 in Serbia it was found that mentally disabled persons had significantly more untreated caries, fewer filled teeth, more extracted teeth, and significantly worse periodontal status than healthy people [12]. Another study conducted in Croatia in 2007 reported that people with disabilities had significantly lower level of oral hygiene compared to healthy population [13].

Performing proper oral hygiene daily is one of the most important factors in preventing oral diseases and failure to maintain good oral health is a precondition for development and rapid progression of these diseases due to already impaired oral health in people with different disabilities [14, 15]. Moreover, these patients often take various medications which may also affect their oral health due to reduced salivation, increased risk for gingival inflammation that can lead to bone resorption and development of periodontal diseases further worsening their oral health [16]. In most cases it is difficult to establish communi-
cation (sometimes even impossible) with patients with disabilities and sometimes it is only possible to perform interventions under general anesthesia. These interventions require extensive work by the team of doctors under special conditions and often they can be performed in large centers only whereas this treatment is unavailable to people from small and underdeveloped regions [17].

The aim of this study was to determine oral health status of people with mental disabilities in the municipality of Banjaluka.

MATERIAL AND METHODS

The study included 95 patients age 15 to 45 years with mental disability, both living with their parents/guardians or residing in the institutions (Center “Zaštiti me” in Banja Luka and the Institute of Physical Medicine and Rehabilitation “Dr Miroslav Zotic” in Belgrade). According to the degree of mental impairment, all respondents were divided into two groups in regard to the ICD-10 [18]. The first group consisted of 65 respondents with F71 diagnosis, and the second group consisted of 30 respondents with F72 diagnosis. Forty five females and fifty males were included in the study. The status of their oral health was assessed at the Department of Maxillofacial Surgery of the Clinical Center in Banjaluka where after all patients received their dental treatment. According to the WHO guidelines, dental mirror, probe and artificial lighting were used for the clinical assessment [19]. Dental charting was performed (number of teeth, caries lesions, restorations, number of extracted teeth, remaining roots and prosthetic restorations). To assess the status of teeth, the DMFT index was used. For the assessment of the status of gingiva, Löe-Silness index was used whereas for the assessment of dental plaque Silness-Löe index was used. All parents/guardians were informed about the purpose of the study and they signed informed consent for study participation.

All data were analyzed by standard procedures of descriptive and comparative statistics. Within the descriptive statistics the mean value and standard deviation were determined whereas for comparative statistics Kruskal-Wallis’s test, Student’s t test and χ2 test were used.

RESULTS

The study included a total of 50 (52.6%) male and 45 (47.4 %) female patients. In relation to the degree of mental disability respondents were classified into two groups: the first group consisted of persons with mild intellectual disability (F71) 65 (68.4%) and the second group included persons with severe mental disability (F72) 30 (31.6%). Mixed dentition was present in 92 (96.8%) patients (Table 1).

Number of carious teeth in patients with severe mental disability (13.8) was slightly higher than in patients with mild disability (10.1). This difference was statistically significant (p<0.001) (Table 3).

The number of extracted teeth (2.1) was higher in patients with severe mental disability compared to patients with mild disability (0.8) and this difference was statistically significant (p<0.02) (Table 2).

The mean number of restorations in patients with mild mental disability was 1.4, whereas in those with severe disability it was 1.5. This difference was not statistically significant (p<0.173) (Table 2).

The mean value of DMFT in patients with severe disability respondents was 16.9 while it was 10.2 in patients with severe disability (Table 2).

The mean number of restorations in patients with severe mental disability compared to patients with mild disability (0.8) and this difference was statistically significant (p<0.001) (Table 3).

The mean value of PCI index in all patients (mild and severe disability) was 100% (Table 3).

ACI index in patients with mild intellectual disability was 10.2 while it was 16.9 in patients with severe disability. This difference was highly statistically significant (p<0.001) (Table 3).

Table 1. Distribution of respondents based on gender, degree of mental disability and dentition

<table>
<thead>
<tr>
<th>Characteristic Odlika</th>
<th>Number of patients (%)</th>
<th>Broj bolesnika (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>50 (52.6)</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>45 (47.4)</td>
<td></td>
</tr>
<tr>
<td>Degree of mental disability Stepen mentalne ometenosti</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mild</td>
<td>65 (68.4)</td>
<td></td>
</tr>
<tr>
<td>Severe</td>
<td>30 (31.6)</td>
<td></td>
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<tr>
<td>Dentition Denticija</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixed Melovita</td>
<td>3 (3.2)</td>
<td></td>
</tr>
<tr>
<td>Permanent Splana</td>
<td>92 (96.8)</td>
<td></td>
</tr>
</tbody>
</table>

Table 2. DMFT index and degree of mental disability in adult respondents

<table>
<thead>
<tr>
<th>DMFT Index Indeks KEP</th>
<th>Degree of mental disability Stepen mentalne ometenosti</th>
<th>N</th>
<th>X</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carious teeth</td>
<td>Mild Umeren</td>
<td>65</td>
<td>10.138</td>
<td>5.774</td>
</tr>
<tr>
<td></td>
<td>Severe Težak</td>
<td>30</td>
<td>13.800</td>
<td>6.403</td>
</tr>
<tr>
<td>Extracted teeth</td>
<td>Mild Umeren</td>
<td>65</td>
<td>.769</td>
<td>1.637</td>
</tr>
<tr>
<td></td>
<td>Severe Težak</td>
<td>30</td>
<td>2.067</td>
<td>2.180</td>
</tr>
<tr>
<td>Filled teeth</td>
<td>Mild Umeren</td>
<td>65</td>
<td>1.431</td>
<td>1.854</td>
</tr>
<tr>
<td></td>
<td>Severe Težak</td>
<td>30</td>
<td>1.533</td>
<td>2.129</td>
</tr>
<tr>
<td>DMFT KEP</td>
<td>Mild Umeren</td>
<td>65</td>
<td>12.338</td>
<td>6.367</td>
</tr>
<tr>
<td></td>
<td>Severe Težak</td>
<td>30</td>
<td>17.400</td>
<td>7.596</td>
</tr>
</tbody>
</table>

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with this group of patients [22].

The mental status and ability to communicate (interventions) will be chosen for the treatment of this patients. Cooperation with longer and more complex dental interventions or under general anesthesia (lack of financial situation of their parents and guardians who have limited access to dental treatment due to poor oral status in persons with mental disabilities is generally expected due to severe general condition of these patients but also frequent neglect of this aspect of their health. People with mental disabilities are not capable to independently take care of proper oral hygiene which eventually affects their oral health. They also have limited understanding or inability to understand and follow instructions and advice on the prevention measures and oral hygiene [2]. In addition, people with mental disabilities often have limited access to dental treatment due to anxiety (fear of dental intervention) as well as poor financial situation of their parents and guardians who have to pay for dental interventions. There is a limited state health insurance but also low number of trained dentists to provide care to this population [20, 21].

One of the factors that affect the overall oral health of this people is the possibility to perform a therapeutic procedure. Whether the traditional approach (mild forms of disability, short and simple dental interventions), treatment in sedation (difficult cooperation, more demanding dental intervention) or under general anesthesia (lack of cooperation with longer and more complex dental interventions) will be chosen for the treatment of this patients depends on the mental status and ability to communicate with this group of patients [22].

The results of the current study showed that the number of carious teeth in patients with severe degree of mental disability (13.8) was slightly higher than in those with mild impairment (10.1). Also, the number of extracted teeth (2.1) was higher in people with severe mental disability compared to those with mild disability (0.8). Patients with mild mental disability had more filled teeth compared to patients with severe disability. Great difference in the number of carious and extracted teeth between people with mild and severe disability can be explained by the fact that people with severe disability have more difficulties to adopt and learn proper techniques of oral hygiene. Depending on the degree of mental disability these patients have more or less difficulties to understand and independently perform daily activities and accordingly they require more or less care by trained personnel [1].

Several authors suggested that these people have higher prevalence of dental caries compared to healthy population [8, 23] whereas severe periodontal disease reflect poor oral hygiene in these patients [24]. On the other hand, there are studies that indicate caries prevalence similar in healthy subjects and people with mental disabilities [25]. People with mental disabilities, especially those with severe disability, are not able to independently maintain adequate oral hygiene. People with both mental and physical disabilities, in addition to mental development often have kinetic disorders (difficult movements or completely immobile) which further complicates the maintenance of oral hygiene and preservation of oral health [2]. Miller and Taylor [22] showed that physically disabled persons had more cavities than mentally disabled. They explained these results by their physical disability and inability to maintain proper oral hygiene.

The results of the current study showed that patients with severe mental impairment had high value of the DMFT index (17.4) while in mildly disabled people it was 12.3. High average value of the DMFT index indicates poor oral health of these patients which is not only caused by their inability to maintain oral hygiene but also by inadequate availability of dental care [21].

Average value of PCI index in patients with mental disabilities was 100 % suggesting that none of 95 patients included in the study had all healthy teeth. The average TCI in patients with severe mental disability was 58.1 while in mild cases it was 42.4. The mean PCI index in patients with severe mental disability reached 16.9 while it was 10.2 in mildly disabled patients. Results from the literature showed the average value of the DMFT index in mentally impaired patients in Taiwan was 14.9 [26] and Australia 14.6 [27] which is in accordance with our results. Kenkre et al. [28] reported the value of DMFT index of 12.8. Pezzementi and Fisher [29] in similar study in United States found DMFT index of 13.6. In Western European countries, these values were slightly higher (15.85) clearly indicating that in addition to the health care system, the development of the country or region may be one of the most important factors that influence the status of oral health [30].

**DISCUSSION**

Poor oral status in persons with mental disabilities is generally expected due to severe general condition of these patients but also frequent neglect of this aspect of their health. People with mental disabilities are not capable to independently take care of proper oral hygiene which eventually affects their oral health. They also have limited understanding or inability to understand and follow instructions and advice on the prevention measures and oral hygiene [2]. In addition, people with mental disabilities often have limited access to dental treatment due to anxiety (fear of dental intervention) as well as poor financial situation of their parents and guardians who have to pay for dental interventions. There is a limited state health insurance but also low number of trained dentists to provide care to this population [20, 21].

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The results of the current study are consistent with the study by Angelillo et al. [31] conducted in Italy, who reported the mean value of DMFT index of 15.5. Similar findings were reported in the research of Lewis et al. [32] who found the average DMFT value in people with mental disabilities of 17.1. Morgan et al. [33] performed a study in the United States and included 4,732 adult patients with mental disabilities. They found the mean value of DMFT index to be 13.9 and that result is also consistent with our results. Poor oral health in persons with mental disabilities was confirmed in the study performed in Spain by Valesco et al. [34]. In their study, authors found that the mean DMFT index in people with mental disabilities was 24.99. Similar values were reported in studies from Israel where Ramon et al. [35] reported the mean value of the DMFT index in people with mental disabilities of 26.74. Similar values were reported by Zusman et al. [36] in another Israel study where the average value of the DMFT index in people with mental disabilities was 23.8.

One study conducted in Bosnia and Herzegovina in 2009 which included 70 patients from the institution for mentally handicapped people in Visegrad, age 30 to 55 years, reported poor oral health in 90% of patients, 4.3% of patients had satisfactory condition whereas in 5.7% of patients the examination was not possible [37]. Another study conducted in Serbia which examined 114 patients with mental disability from 22 to 71 years of age reported high value of DMFT index of 20.95. The largest portion of the index were extracted teeth (63.76%), then carious teeth (33.48%) and the least number was for filled teeth (2.76%) [38].

According to the data from literature, inadequate nutrition has shown great impact on increased incidence of dental caries in this population [39]. Stanfield [40] in his research concluded that increased incidence of caries in people with mental disabilities was result of excessive consumption of food rich in sugar.

Results of the current study confirmed that people with mental disabilities have poor oral hygiene. All 95 respondents in our study had dental plaque. Plaque index was 2.1 and most of them (56.8%) showed moderate amount of plaque. In addition, gingival index of the respondents was 1.5. Only 4% of patients had healthy gingiva while most of them had moderate inflammation (52%) indicating low level of oral hygiene. Our results are consistent with the findings obtained by Moraru et al. [41] in their study conducted in Romania. They reported plaque present in 90%, calculus in 80% while only 3% of respondents had healthy periodontium. As many as 97% showed gingivitis, supragingival (53%) and subgingival calculus (36%) and 11% showed subgingival and occlusal calculus.

Research conducted by McCreade et al. [42] in the UK showed that 75% of hospitalized patients with schizophrenia regularly maintained oral hygiene. In his reaserach, Hede [43] showed that only 55% of hospitalized patients with psychiatric disorders brushed their teeth. Research in India has indicated poor oral health in people with mental disabilities [44]. Out of 250 respondents, 30% of them had shallow and deep periodontal pockets, indicat-

ing the need for complex periodontal therapy. Angelillo et al. [31] in their research reported 11.1% edentulous persons with mental disabilities, whereas Tang et al. [45] reported 6.6% of edentulous patients. Moraru et al. [41] in their study found that 25% of respondents had complete dentition while 3% were edentulous. In accordance with these findings are the results of Savić-Stanković et al. [39], who reported that only three of 114 respondents had crowns and bridges. These complex dental interventions that require multiple visits can be completed only in special institutions with increased concern and involvement of the therapist as well as family members [46]. Another research conducted in Serbia also showed that 20% of psychiatric patients were edentulous [47].

Preventive dental education is the most important treatment strategy against oral and dental diseases in people with mental disabilities. Oral health of these people can be improved by implementing preventive health programs and education in oral health. Every preventive program requires substantial modification to meet requirements of this population [19, 48, 49].

CONCLUSION

Patients with severe mental disability showed higher DMFT index compared to patients with mild disability. None of respondents had all healthy teeth (PCI=100%). ACI and TCI were also higher in people with severe mental disability than in people with mild disability. Gingival health and oral hygiene were poorer in severely disabled patients then in mildly impaired patients as confirmed by GI and PI.

People with mental disabilities do not have habits, attitudes and behavior towards oral health. It is necessary to organize preventive health education programs to maintain and improve their oral health.

REFERENCES

Stanje oralnog zdravlja osoba ometenih u mentalnom razvoju na području opštine Banja Luka

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KRATAK SADRŽAJ

UVOD
Oralno zdravlje je neodvojiv deo opštega zdravlja čoveka, a stomatološko zbrinjavanje uopšte, pa i osoba s teškim i psihičkim oštećenjima, sastavlja je deo sveobuhvatnog medicinskog zbrinjavanja. Broj osoba ometenih u mentalnom razvoju se povećava u govor način na području Banja Luka.

Materijal i metode rada
Istraživanjem je obuhvaćeno 95 ispitanika (45 ženskog i 50 muškog pola), starsosne dobi od 15 do 45 godina. Ispitanici su svrstani u dve grupe prema stepenu mentalnog oštećenja, koje je prema Duseot rejviziji Međunarodne klasiﬁka- kacije bolesti svrstano u kategorije F71 (umerena duševna zaostalost, 65 ispitanika) i F72 (teška duševna zaostalost, 30 ispitanika). Stomatološkim pregledom su utvrđeni broj zuba, postojanje karijesa, postojanje ispuna, broj izviđenih zuba, postojanje zaostalih korenova, broj fraktura, broj fiksnih nadoknada, te gingoivalni i plak indeks.

Rezultati
Srednja vrednost indeksa KEP kod ispitanika s teškim stepenom ometenosti u mentalnom razvoju bila je 19,9, dok je kod ispitanika s umerenim stepenom mentalnog ometenosti bila 13,9. Vrednost gingoivalnog indeksa kod ispitanika s teškim stepenom mentalnog ometenosti bila je 1,9, a u drugoj grupi 1,3. Zaključak
Ometeni u mentalnom razvoju, osebe s teškim ometenjem unutar zdravstvene zaštite. U zavisnosti od stepena mentalne ometenosti, osobama ometenim u mentalnom razvoju se ugođava razumevanje, rasušivanje i samostalno obavljanje svakodnevnih aktivnosti, pa im je u skladu s tim potrebna veća briga od strane stručnog osoblja [1]. Zbog svog hendikepa, ove osobe nisu sposobne da samostalno brinu o higijeni usta i zuba i na odgovarajući način održavaju oralnu higijenu. Osebe s teškim stepenom poremećaja psihofizičkog razvoja često pored mentalnih imaju i teške poremećaje motorike (teško pokreće, potpuno nepokreće), što dodatno otežava održavanje oralne higijene i očuvanje zdravlja usne dupljije [2]. Nekoliko studija je zabeležilo loše stanje oralnog zdravlja osoba ometenih u mentalnom razvoju, a u stomatološkom zbrinjavanju najčešće je primjenjavana ekstrakcija zuba [3-6].

Istraživanja u svetu i kod nas su pokazala da ova populacija, u poređenju s opštim populacijom, ima više ekstrahovanih zuba, manje plombiranih zuba, više nesaniranih zuba s karijesom, veću rasprostranjenost obolećenja parodonticijuma, znatno niži ni-vi oralne higijene i češću pojavu suvoće usta, žarenja i pečkanja u usnoj dupljii, odnosno zadaha iz usta i poremećaja čula ukusa [7, 8, 9]. Istraživanja Nelsona (Nelson) i Van Blairikuma (Van Blairicum) [10], radena u Sjedinjenim Američkim Državama, pokazala su da obolela deci, posebno ona s teškim motornim i mentalnim hendikepom, uzrasta 14–15 godina, imaju manje karijesa u odnosu na njihove zdrave vršnjake. Ču (Chu) i saradnici [11] su na Tajvanu utvrdili da je proseečna vrednost indeksa KEP osoba ometenih u mentalnom razvoju 13,9. U istraživanjima koja su urađena u Srbiji 2004. godine utvrđeno je da mentalno ometene osebe imaju znatno više nesaniranog karijesa, manje plombiranih zuba i više ekstrahovanih zuba, dok je stanje parodonticijuma bilo znatno gore u odnosu na zdrave osobe [12]. Istraživanja urađena u Hrvatskoj 2007. godine su pokazala da su osebe s poteškoćama u razvoju imala znatno lošiji nivo oralne higijene u poređenju sa zdravim ispitanicima [13].

Uvećan predmet zdravlja oralne higijene je jedan od najvažnijih faktora prevencije nastanka obolećenja usne i zuba, a nje lo neodržavanje značajan preduslov razvoja, ali i brzog napredovanja ovih obolećenja usled već narušenog oralnog zdravlja ovih osoba [14, 15]. Osim toga, ovi pacijenti često uzimaju i druge lekove, koji takođe mogu da učini na njihovo oralno zdravlje (smanjuju lučenje pljuvačke, izazivaju zapatulanje desni, dovode do resorpicije kostiju i pojave paradontopatije) i time do-datno pogoršavaju svoje oralno stanje [16]. U većini slučajeva s takvim pacijentima se vrlo teško uspostavlja kontakt (ponekad je nemoguće postići ga), pa im je nekad teško i pomoći osim intervencijom u opštoj anestezi. Izvođenje ovakve intervencije obično zahteva veliko angažovanje tima lekara i posebne uslove, a često se može realizovati samo u vekim centrima, te su osebe iz manjih i nerazvijenih sredina u ozbiljnom problemu [17].

Materijal i metode rada
U istraživanje je uključeno 95 ispitanika ometenih u mentalnom razvoju starsosne dobi od 15 do 45 godina. Ono je obuhvatilo
osobe koje žive kod roditelja, odnosno staratelja i osobe smeštene u specijalizovanim ustanovama (Centar „Zaštititi me” u Banjoj Luci i Zavod za fizičku medicinu i rehabilitaciju „Dr Miroslav Zotovic” u Beogradu). Ispitanici su, prema stepenu mentalnog oštećenja, na osnovu Desete revizije Međunarodne klasifikacije bolesti (MKB-10) [18], svrstani u dve grupe. Prvu grupu činilo je 65 ispitanika sa dijagnozom F71 (umerena duševna zaostalost), a drugu 30 ispitanika sa dijagnozom F72 (teška duševna zaostalost). Istraživanje je obuhvatilo 45 osoba ženskog i 50 osoba muškog pola. Stanje zuba je utvrđeno na Klinici za maksilofacialnu hirurgiju Kliničkog centra u Banjoj Luci, gde je urađena i sanacija zuba ovih bolesnika. Za pregled su korišćeni stomatološko ogledalice, sonda i vešačko osvetljenje u skladu s uputstvima Svetske zdravstvene organizacije [19]. Pri pregledu je popunjen stomatološki karton (bloc zuba, postojanje karijesa, postojanje ispuna, broj izvadjenih zuba, zaostali korenovi u vilićama i eventualno postojanje proteticih nadoknada). Za procenu stanja zuba primenjen je indeks KEP. Za procenu stanja gingive korišćen je gingivalni indeks po Lou–Silnesu (Löe–Silnes), a prisustvo dentalnog plaka je utvrđeno primenom indeksa po Silnes–Lou (Silnes–Löe). Svi roditelji, odnosno staratelji bili su upoznati sa svrhom istraživanja i svojim potpisom su potvrdili pristanak za učešće bolesnika u ovom ispitivanju.

Svi dobijeni podaci su obrađeni standardnim deskriptivnim i komparativnim statističkim metodama. U okviru deskriptivne statistike određena je srednja vrednost sa standardnom devijacijom, a u okviru komparativne statistike primenjen su Krauskal–Wallis test, Studentov t-test i χ²-test.

**REZULTATI**

Istraživanje je obuhvatilo ukupno 52,6% ispitanika i 47,4% ispitanica. Grupu bolesnika s umerenim stepenom mentalne ometenosti (F71) činilo je 68,4% osoba, a grupu bolesnika s teškim stepenom mentalne ometenosti (F72) 31,6%. Mešovita dentitca je ustanovljena kod 3,2% ispitanika, a stalna dentitca kod 96,8% (Tabela 1).

Broj zuba zahvaćenih karijesom kod osoba s teškim stepenom mentalne ometenosti bio je 13,8, a kod osoba umerenog stepena 10,1 (Tabela 2). Ova razlika je bila statistički značajna (p<0,07).

Ekstrakcijom zuba kod ispitanika s teškim stepenom mentalne ometenosti bilo je 2,1, a u drugoj grupi ispitanika 0,8 (Tabela 2). Ova razlika je bila statistički značajna (p<0,02).

Analiza dobijenih podataka je pokazala da je kod osoba umerenog stepena mentalne ometenosti srednja vrednost pomeranih zuba bila 1,4, a kod osoba s teškim stepenom 1,5 (Tabela 2). Ova razlika nije bila statistički značajna (p<0,173).

Srednja vrednost indeksa KEP kod osoba s teškim stepenom mentalne ometenosti bila je 17,4, a u grupi ispitanika umerenog stepena 12,3 (Tabela 2). Ova razlika je bila visoko statistički značajna (p<0,001).

Prosečna vrednost karijes-indeksa osobe (Kio) bila je 100% i kod ispitanika sa teškim i kod onih s umerenim stepenom ometenosti u mentalnom razvoju (Tabela 3).

Karijes-indeks prospek (Kip) kod osoba s umerenim stepenom mentalne ometenosti bio je 10,2, a kod bolesnika sa teškim stepenom 16,9 (Tabela 3). Ova razlika je bila visoko statistički značajna (p<0,001).

Prosečna vrednost karijes-indeksa zuba (Kiz) kod ispitanika s umerenim stepenom mentalne ometenosti bila je 42,4, dok je kod bolesnika sa teškim stepenom bila 58,1 (Tabela 3). Razlika je takođe bila visoko statistički značajna (p<0,01).

Srednja vrednost gingivalnog indeksa (GI1) kod ispitanika umerenog stepena mentalne ometenosti bila je 1,3±0,7, a ispitanika sa teškim duševnim zaostatkom 1,8±0,8. Ova razlika je bila statistički značajna (p<0,05).

Srednja vrednost plak-indeksa (Pl1) kod ispitanika umerenog stepena mentalne ometenosti bila je 1,9±0,6, a ispitanika sa teškim stepenom 2,4±0,6. Razlika je bila statistički značajna (p<0,001).

**DISKUSIJA**

Loše stanje usta i zuba duševno zaostalih osoba uglavnom je očekivano zbog teškog opšteg stanja ovih bolesnika, ali i čestog zanemarivanja ovog aspekta njihovog zdravlja. Osebe ometene u mentalnom razvoju nisu sposobne da samostalno brinu o pravilnoj higijeni i ostalim aspektima zdravlja. Problemi rješavanja oralnih higijenskih poslova su u većoj mjeri vezani za nedovoljan broj stomatologa, ali i za nesvjesnost osoba o važnosti oralnog zdravlja. Često se ometene osobe ne određuju za da kliničko pregledanje i održavanje oralne higijene. Treba se istaknuti da oralna higijena je važna za održavanje oralnog zdravlja i učestanost oralnih bolesti. Osebe ometene u mentalnom razvoju su izuzetno podrekljivije od druge populacije.

U ovom istraživanju je primenjen indeks KEP, koji je korišćen za ocenjivanje stepena oralne higijene u vezi sa mentalnom ometenostima. Indeks KEP je standardni metod za ocenjivanje oralne higijene i obezbeđuje mogućnost usporedbi rezultata iz različitih istraživanja.

Osim toga, stomatološka higijena je primarna metoda za ohranu oralnog zdravlja, s obzirom da je oralna higijena od velikog važnosti za zdravlje u cjelini. Osim toga, oralna higijena je jedna od ključnih faktora za održavanje oralnog zdravlja u populaciji ometenih u mentalnom razvoju. Osebe ometene u mentalnom razvoju imaju veći broj zuba koji su izvadjeni, a tom se postupkom održava oralna higijena.

**CONCLUSION**

U ovom istraživanju je primenjen indeks KEP, koji je korišćen za ocenjivanje stepena oralne higijene u vezi sa mentalnom ometenostima. Indeks KEP je standardni metod za ocenjivanje oralne higijene i obezbeđuje mogućnost usporedbi rezultata iz različitih istraživanja. Osim toga, stomatološka higijena je primarna metoda za ohranu oralnog zdravlja, s obzirom da je oralna higijena od velikog važnosti za zdravlje u cjelini. Osim toga, oralna higijena je jedna od ključnih faktora za održavanje oralnog zdravlja u populaciji ometenih u mentalnom razvoju. Osebe ometene u mentalnom razvoju imaju veći broj zuba koji su izvadjeni, a tom se postupkom održava oralna higijena.
pokazuju da je prevalecnja karijese slična kod zdravih i duševno zaostalih osoba [25]. Osobe ometene u mentalnom razvoju, naročito one s teškim stepenom zaostalosti, nisu sposobne da samostalno brinu o higiji usta i zuba i na adekvatan način održavaju oralnu higijenu. Osobe s teškim stepenom poresćega psihofizičkog razvoja često pored mentalnih imaju i teže poresća motorike (teško su pokrenuti ili nepokrenuti) [2], što dodatno otežava održavanje oralne higijene i očuvanje zdravlja usne duše. Istraživanje Miler (Miller) i Tejora (Taylor) [24] pokazala su da fizički hendikepirane osobe imaju veći rizik od mentalno hendikepiranih. To su objasnili njihovim fizičkim oštećenjem i slabijom mogućnošću održavanja higijene usta i zuba.

Rezultati našeg istraživanja pokazuju da je kod ispitanika s teškim stepenom ometenosti u mentalnom razvoju srednja vrednost indeksa KEP Bila veoma visoka (17,4), dok je kod ispitanika umerenog stepena zaostalosti bila 12,3. Visoka srednja vrednost indeksa KEP ukazuje na loše stanje oralnog zdravlja ovih bolesnika koje nije uzrokovalo samo njihovom nemogućnosti održavanja oralne higijene, već i neodgovarajućom i ne-dovoljnom stomatološkom zasićenjima [23].

Prosečna vrednost Kio kod svih ispitanika naše studije bila je 100%, što znači da od 95 ispitanika nijedan nije imao zdrave zube. Prosečna vrednost Kiz kod ispitanika s teškom duševnom zaostalošću bila je veća nego kod ispitanika druge grupe (58,1 prema 42,4). Prosečna vrednost Kip takođe je bila veća kod ovih bolesnika nego kod ispitanika umerenе duševne zaostalosti (16,9 prema 10,2). U skladu s ovim rezultatima su i podaci iz literature, koji govore da su vrednosti indeksa KEP kod ovih bolesnika na Tajvanu bile 14,9 [26], a u Australiji 14,6 [27]. Kenkre (Kenkre) i saradnici [28] su u svojim istraživanjima u Indiji dobili vrednosti indeksa KEP od 12,8. Pezementi (Pezzimenti) i Fiserova (Fisher) [29] su uradili slično istraživanje u SAD i dobili vrednosti indeksa KEP od 13,6. U zapadnoevropskim zemljama te vrednosti su bile nešto veće (15,85), što nedvosmisleno upućuje na to da, osim samog sistema zdravstvene zaštite, i razvoj zemlje, odnosno regiona može biti značajan faktor stanja oralnog zdravlja bolesnika [30].

Rezultati našeg istraživanja saglasni su s rezultatima studije Andželila (Angelillo) i saradnici [31], koja je urađena u Italiji, gde je srednja vrednost indeksa KEP bila 15,5. Sličan nalaz pokazuje i istraživanja Luisa (Lewis) i saradnica [32] u Velikoj Britaniji, gde je prosečna vrednost indeksa KEP osoba ometenih u mentalnom razvoju bila 17,1. Morgan (Morgan) i saradnici [33] su u SAD, u studiji koja je obuhvatala 4.732 odrasla ispitanika ometena u mentalnom razvoju, utvrdili da je srednja vrednost ovog indeksa 13,9, što se takođe u skladu sa našim rezultatima. Da je loše stanje usta i zuba osoba ometenih u mentalnom razvoju potvrđuju i nalazi iz Španije, gde su Valesko (Valesco) i saradnici [34] u svojim istraživanjima utvrdili da je srednja vrednost indeksa KEP kod ovih osoba 15,5. Slične nalaze dobili su u Izraelu Ramon (Ramon) i saradnici [35], u čijem je istraživanju je srednja vrednost indeksa KEP kod osoba ometenih u mentalnom razvoju bila 16,8, kao i Zusan (Zusman) i saradnici [36] i 35 osoba, koji su dobili vrednosti od 23,8.

Istraživanje urađeno u Bosni i Hercegovini 2009. godine obuhvatilo je 70 žena starih između 30 i 55 godina koje su bile smeštene u Domu za mentalno hendikepirane osobe u Višegradu [37]. Veoma loše stanje oralnog zdravlja zabeleženo je kod 90% ispitanika, kod 4,3% žena stanje je bilo zadovoljavajuće, a kod 5,7% nije bilo moguće uraditi pregled. Istraživanje urađeno u Srbiji, gde je pregledano 114 ispitanika ometenih u mentalnom razvoju zarađeno dobi od 22 do 71 godine, pokazalo je loš nalaz indeksa KEP kod njih (20,95) [38]. Utvrđeno je najviše ekstrahovanih zuba (63,76%), zuba zahvaćenih karijose bilo je 33,48%, dok je najmanje bilo plombiranih zuba (2,76%).

Prema rezultatima brojnih studija, veliki uticaji na povećanu incidenciju karijese kod ovih bolesnika ima i nepravilna ishrana [39]. U prilog tome govore i rezultati istraživanja Stenfield (Stenfield) [40], koji je zaključio da je povećana incidencija karijese kod osoba ometenih u mentalnom razvoju posledica pretenog jedjenja hrane bogate šećerom.

Rezultati našeg istraživanja su pokazali da duševno zaostale osobe imaju loše navike u pogledu održavanja oralne higijene. Među 95 ispitanika nije bilo nijednog bez dentalnog plašta. Prosečna vrednost PI bila je 2,1, a najviše bolesnika imalo je umerenu količinu dentalnog plašta (56,8%). Prosečna vrednost GI bila je 1,5. Zdrava gingiva utvrđena je kod svega 4% ispitanika, a najviše ih je imalo umerenu inflamaciju (52%), što ukazuje na nizako nivo održavanja oralne higijene. Naša zapažanja su u skladu s nalazima Rumunke Morarove (Morar) i njenih saradnika [41], koji su zabeležili plak kod 90% ispitanika, kamen kod 80%, dok je svega 3% ispitanika imalo zdrav parodont. Čak 97% njih imalo je gingivitis, 53% supragingivalne konkremente, 36% subgingivalne konkremente i 11% subgingivalni i okuluzalni kamenac.

Studija Mekridija (McCreadie) i saradnici [42] u Velikoj Britaniji pokazala je da je 75% hospitalizovanih osoba sa shizofrenijom u određenom zdravlju higijenu usta i zuba. Hede (Hede) [43] je u svom istraživačkom radu pokazao da samo 55% ljudi s psihijatrijskim poremećajima koji borave u bolnici redovno zdravljaju usta i zuba. Istraživanja utvrđena u Indiji ukazuju na loše oralno zdravlje osoba ometenih u mentalnom razvoju [44]. Naime, od 250 ispitanika bolesniko, kod 30% su ustanovljeni plitki i duboki paradontalni džepovi, što ukazuje na potrebu za kompleksnom paradontalnom terapijom. Andželio i saradnici [31] u svojim istraživanjima ukazali su na 11,1% bezubi osoba ometenih u mentalnom razvoju, dok ih je u istraživanjima Tanga (Tang) i saradnika [45] bilo 6,6. Morarove i saradnici [41] su u svojoj studiji uočili da je 25% ispitanika imalo punu denticiju, dok je 3% bilo bez zuba. U skladu s ovim nalazima su i rezultati Saviceve i saradnika [39], koji navode da su samo tri ispitanika iz 114 imala fiksne nadoknade. Naime, ovako složena stomatološka intervencija, koja zahteva više poseta stomatologu, moguća je samo u posebnoj ustanovi i ujedno pojačano terapije i članova porodice [46]. Istraživanja radena u Srbiji isto tako pokazuju da 20% psihijatrijskih bolesnika nema zube [47].

Preventivna stomatološka edukacija je osnova strategije lečenja bolesti usta i zuba osoba ometenih u mentalnom razvoju. Njihovo oralno zdravlje se može poboljšati preventivnim stomatološkim programima i edukacijom u oblasti oralne zdravstvene zaštite. Ali svaki preventivni program za unapređenje oralnog zdravlja u ovoj oblasti zahteva modificaciju u značajnom stepenu, kako bi se mogao prilagoditi potrebama ove populacije [19, 48, 49].
ZAKLJUČAK

Kod bolesnika s teškom duševnom zaostalošću ustanovljene su veće vrednosti indeksa KEP u poređenju sa ispitanicima umerenog oštećenja u mentalnom razvoju. Nijedan ispitanik nije imao sve zdrave zube (Kio=100%). Vrednosti Kip i Kiz su takođe bile veće kod osoba sa težim stepenom ometenosti u mentalnom razvoju nego kod osoba sa blagim invaliditetom. Zdravlje ginge i oralna higijena su isto tako bili lošiji kod njih nego kog umereno hendikepiranih, što potvrđuje i vrednost GI i PI.

Osobe ometene u mentalnom razvoju nemaju odgovarajuće zdravstvene navike, znanja i ponašanje u vezi s oralnim zdravljem. Neophodno je organizovati preventivne zdravstveno-spitne programe, kako bi se poboljšalo, očuvalo i unapredilo njihovo oralno zdravlje.