Edentulism in the elderly in Montenegro

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SUMMARY

Introduction For the first time in Montenegro, a survey was conducted to examine the oral health status of the elderly.

Materials and methods The study included 170 subjects of both genders, average age 72.32 ± 6.85 years. The research methodology was in line with the WHO methodological guidelines for epidemiological studies of national oral pathology. For statistical analysis of data IBM STATISTICS 20 was used. Descriptive and inferential statistical methods, Tamhane T2 post hoc tests, χ² test were applied. The homogeneity of the dispersions was checked by the Leven test. The significance level was set to 0.05.

Results The DMFT value was 29.417 ± 3.81 (MT: 26.25 ± 6.95; FT: 2.68 ± 3.98; DT: 0.63 ± 1.56) and it was significantly higher in women, smokers and people who did not visit the dentist regularly. The percentage of edentulous persons was 46.47%. The index of dental rehabilitation - IRD was 73.86%. The average age of dentures was 11 years.

Conclusion The state of oral health of the elderly in Montenegro is not at satisfactory level, which is reflected in the high percentage of edentulous people and unfavorable structure of DMFT.

Keywords: edentulous; elderly; dental rehabilitation; Montenegro

INTRODUCTION

Improving oral health is a basic prerequisite for improving general health [1]. This is especially important for the elderly whose general health is impaired and burdened by chronic diseases. Research in the region [2], Europe [3, 4, 5] and other continents [6–9] has influenced the launch of research on the oral health status of the elderly in Montenegro. Studies of the impact of oral health on the quality of life have been conducted worldwide for more than five decades and a high degree of interdependence between quality of life and oral health has been proven [10–14]. These findings have been implemented in a new definition of oral health [15, 16]. About 30% of Europeans, aged between 65 and 74, no longer have their natural teeth [17]. There is a recommendation for the implementation of oral health in general health prevention programs, which should result in people up to the age of 65 preserving at least 20 natural teeth [18]. Numerous authors have investigated the influence of oral health habits, socio-economic status and other characteristics on the occurrence of oral diseases and consequent edentulousness [5, 6, 7, 17–23]. Demographic data indicate a decades-long trend of population aging [24]. In order to prepare the health system for the increased number of elderly patients in the future, it is necessary to collect data on the state of oral health.

The aim of the research was to examine the state of oral health of the elderly in the central region of Montenegro.

MATERIAL AND METHOD

Prior to the implementation of the research, obligatory measures were taken, such as obtaining approval from the Ethics Committee of the Medical Faculty of the University of Montenegro in Podgorica. A research plan was made, respondents were informed and their consent to participate in the research was obtained.

All clinical examinations were performed by one dentist (a specialist in dental prosthetics, who was trained to analyze oral health data using relevant indices) according to the principles of good clinical practice. Kappa statistics were used to test the reliability of the researcher. The Kappa value estimated after retesting for intra-consistency of the investigator was 0.94.

Sample research

The study included 170 people with an average age of 72.32 ± 6.85. The method of including respondents in the research was based on the following characteristics:

1. Persons aged 65 and over who applied for an examination at the Faculty of Medicine in Podgorica - Study program of dentistry on certain days (Mondays and Wednesdays) in the period from September to December 2016 were included.
2. All users of the services of homes for the elderly “Nana” and “Ljubav spaja” in Spuž and Danilovgrad were included, whose state of general and mental health allowed them to be examined.

All respondents voluntarily agreed to participate in the research after they were explained the purpose of the research, the method of distribution of the obtained data and the anonymity of participation.

The sample was 5% according to the number of inhabitants aged 65 and over in the central part of Montenegro and it was statistically allocated so that the expected coefficient of variation falls between 8 and 11%.

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The first research instrument used was a clinical examination of oral health, according to the WHO methodology, using the methodological guidelines for epidemiological studies of national oral pathology [25].

Data related to the number of carious, extracted and filled teeth, data on present dental restorations (fixed and mobile) and the age of dental restorations were analyzed.

The state of oral health was assessed on the basis of relevant indices, showing the following:

1. Caries status was registered using Klein Palmer's DMF system (D – Decayed, M – Missing, F – Filled) [26]. Caries was diagnosed by inspection with the help of a dental probe and a flat dental mirror, in daylight. Dental caries (K) was characterized by lesions with a clearly formed cavity on the tooth surface. Changes in transparency and initial demineralization of enamel with an intact surface that did not lead to disruption of dental tissue continuity were not registered. The term filling (P) included all permanent and temporary fillings of teeth. Extracted (E) teeth were all extractions caused by caries or periodontal disease. This indicator was presented in total for all respondents, in relation to certain characteristics of the respondents.

2. DMFT index – average caries index (DT – average number of carious teeth, MT – average number of extracted teeth, FT – average number of filled teeth).

3. IRZ index – The dental rehabilitation index was used to express (in percentage) how many lost teeth were replaced by making dental prosthetic restorations (fixed and mobile). It was calculated: number of restored teeth / number of extracted teeth + number of restored teeth x 100.

4. The presence of dental prosthetic restorations (fixed and mobile) and their age were clearly recorded.

The second research instrument was a closed-ended questionnaire with 4 questions:

Q1 – When was the last time you went to the dentist?
Q2 – What are the reasons for your last visit to the dentist?
Q3 – Are you a user of tobacco products?
Q4 – What do you recognize as the main reason for the loss of your teeth?

During the examination, the respondents were given advice on how to properly maintain oral tissue, teeth and dental restorations. Dental restorations were reviewed and advice was given on how to maintain them.

In statistical processing, the collected data were processed using the statistical program IBM STATISTICS 20. Methods of descriptive and inferential statistics were used. Of the descriptive methods, the arithmetic mean and standard deviation were used. As part of inferential statistics, the t test for two independent samples, the χ² test, the Tamhane T2 percent hoc test, and the ANOVA were used. The homogeneity of the dispersions was checked by the Leven test. The significance level was set to 0.05.

RESULTS

Sample structure

A total of 170 people were examined. The structure of respondents by gender showed that there were 89 (52.35%) females and 81 (47.64%) males. The average age of the subjects was 72.32 ± 6.85. Of which 104 (61.17%) were respondents aged 65–74, 53 (31.17%) aged 75–84 and 13 (7.6%) aged 85 and older. According to the place of residence in the cities of the central region of Montenegro: there were 114 (67.05%) from Podgorica, 20 (11.76%) from Danilovgrad, 22 (12.94%) from Nikšić, and 14 from Cetinje (8.23%). The structure of respondents by level of education showed that most respondents had secondary education – 64 (37.64%), 39 (22.94%) had an academic education, 27 (15.88%) had a college degree, 32 (18.82%) were with primary education while 8 (4.70%) were without education.

Analysis of the oral health status of the respondents

Out of 170 examined persons, 79 (46.47%) were edentulous. DMFT was 29.417 ± 3.81 (min 15; max 32). The structure of DMFT showed that the subjects had an average of 26.25 ± 6.95 extracted teeth – MT, 2.68 ± 3.98 filled teeth – FT, while the number of carious teeth per subject was on average 0.63 ± 1.56 (damaged teeth DT). Subjects had an average of 2.39 ± 3.66 healthy teeth and 7.14 ± 9.19 prosthetically unrehabilitated teeth.

The presence of remaining natural teeth expressed according to the segments of dentition (which was important for the planning of prosthetic therapy) showed that the subjects had on average a higher number of teeth in lower dental arch (1.14) compared to the upper dental arch (0.73). In the anterior segments of dental arches, the number of preserved natural teeth was higher than in the posterior. In the lower anterior segments, the average number of natural teeth was the largest and it was 2.22, while in the upper anterior segment it was 1.29. The presence of the first permanent molars was on average 0.41 per subject (25.88% of persons had between 1 and 3 first permanent molars).

DMFT analysis according to the characteristics of the respondents

The study showed that females had statistically higher value of DMFT compared to males (t = -2.593; p = 0.011) (Table 1).

Persons who were users of tobacco products had significantly higher value of DMFT compared to persons who did not use tobacco products (t = 2.279; p = 0.024) (Table 1).

The data showed statistically significant difference in the value of DMFT according to the time elapsed since the last visit to the dentist. People who have visited dentist in the last 12 months had significantly lower DMFT value compared to subjects who have not seen dentist longer (between 1 and 5 years; more than 5 years) (ANOVA; F = 4.805; p = 0.009). Leven test indicated heterogeneity of dispersions (p < 0.001) (Tamhane test, p = 0.009) (Table 2).

There was no statistically significant difference in the values of DMFT in the subjects in relation to age (t = -1.147; p = 0.253).
Presence of dentures

The dental rehabilitation index – IRD was 73.86%. It was found that in 83 (48.82%) persons there were mobile dental restorations in both jaws. Thirty-four (20.00%) subjects had dentures in one jaw and no dental restorations in the other jaw. There were 16 (9.41) persons with fixed prostheses. The number of persons who had dentures in one jaw and a fixed prosthesis in the other jaw was 10 (5.88%) (Table 3).

Table 2. Presence of dental restorations

Table 3. Presence of dental restorations

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The average age of dental prostheses was 11 years: 59 were between 0–5 years old (41%), 36 were 6–10 years old (25%), 19 were 11–19 years old (13%), 18 19–20 years old (12.5%) and 12 were 30+ years old (8%).

Analysis of the answers to the questions from the questionnaire

Reasons for teeth loss: 108 (63.52%) reported caries, while 61 (35.88%) reported periodontitis. One respondent (0.58%) cited trauma as the cause (Table 4). It was noticeable that women had decay more often (63, 71.59%) compared to periodontitis 25 (28.40%). For males, approximately the same number of subjects had decay 45 (54.87%) or periodontal disease 37 (45.12%) as a reason for teeth loss.

The last visit to the dentist in 58 (34.11%) was more than 5 years ago. In 37 (21.76%) subjects 2–5 years have passed since the last visit. In 30 (17.64%) subjects the visit

Table 1. Existence of a statistical difference in the value of DMFT according to the sex of respondents and according to the use of tobacco products

Table 2. Existence of a statistical difference in the value of DMFT according to the time elapsed since the last visit to the dentist

Table 3. Presence of dental restorations
to the dentist was 1-2 years ago. It has been 6–12 months since the last visit for 16 (9.41%) subjects, and less than 6 months for 29 (17.05%) persons (Table 4).

| Questions and offered answers | Pitanja i ponuđeni odgovori | n  | %  |
|--------------------------------|----------------------------|----|----|
| Causes of tooth loss           | Uzroci gubitka zuba         |    |    |
| Caries                        | Karijes                    | 108| 63.52|
| Periodontal disease           | Parodontopatija            | 61 | 35.88|
| Last visit to the dentist     | Poslednja poseta stomatologu|    |    |
| < 6 months                    | < 6 meseci                 | 29 | 17.05|
| 6–12 months                   | 6–12 meseci                | 16 | 9.41|
| 1–2 years                     | 1–2 godine                 | 30 | 17.64|
| 2–5 years                     | 2–5 godina                 | 37 | 21.76|
| > 5 years                     | > 5 godina                 | 58 | 34.11|
| Reasons for last visit to the dentist | Razlozi poslednje posete stomatologu |    |    |
| Pain/problem with mouth teeth and dentures | Bol/problem sa ustima zubima i zubnim nadoknadama | 101 | 59.41|
| Need for treatment            | Stomatološki tretman       | 22 | 12.94|
| Regular control               | Redovni pregled            | 21 | 12.35|
| Consultation/advice           | Konsultacija/savet         | 26 | 15.29|
| Use of tobacco products       | Korišćenje duvanskih proizvoda |    |    |
| Yes                           | Da                         | 54 | 31.76|
| No                            | Ne                         | 116| 68.23|

As the reason for the last visit to the dentist, the majority of respondents 101 (59.41%) reported pain or a problem with teeth, gums or dental prosthesis. The need for consultations as the reason for the last visit to the dentist was stated by 26 (15.29%) respondents. Treatment was the reason for 22 (12.94%) subjects and regular checkup for 21 (12.35%) subjects (Table 4).

The use of tobacco products was confirmed by 54 (31.76%) respondents, while 116 (68.23%) denied their use (Table 4). Among males, there were 33 (40.74%) smokers, while among women, tobacco use was confirmed by 21 (32.59%).

**DISCUSSION**

Research by Petersen PE et al. [8, 27] showed that number of edentulous people age 65 and over in the world is high. Also, WHO data from 2016 [9] showed that about 30% of Europeans (prevalence varies from 5% to 51%) between the ages of 65 and 74 do not have natural teeth. If this is compared with data from Montenegro (46.47%), it can be seen that the situation in Montenegro is worse than the European average. According to Peterson et al. [8], the situation in Europe in 2010 was as follows: in Poland, the prevalence of edentulousness in elderly was 43.9%, in Slovakia 43%, in United Kingdom 37.5%, in Hungary and Denmark 27%, in Austria 15% while in Lithuania it was lower than 13%. On other continents, the percentage of edentulousness among elderly was: in the USA 26%, in India and Indonesia 19%, in Lebanon 20%, while in China the situation was significantly better (11%).

Numerous factors influence the values of DMFT such as demographic and other characteristics of the population, behavior related to oral health, development of health systems [22] and others. In Europe, periodontal disease is the number one problem when it comes to oral health, while the caries rate has decreased significantly compared to previous decades [1, 3]. The reduction in the incidence of caries in these countries is largely the result of decades of continuous use of oral health programs. In Montenegro, caries is the dominant cause of teeth loss. The analysis of the structure of DMFT supports the fact that dental services are available to the population. However, they are much more curative than preventive, and extracted teeth predominated in structure. The existing dental service should be further improved and directed towards preventive and prophylactic methods. Continuity in the promotion of oral health should be insisted on and directed towards all population groups. Emphasis must be placed on health literacy, information and education.

Prosthetic rehabilitation expressed by the rehabilitation coefficient in this study (73.86%) indicated similarity with the results of research in the elderly in Republika Srpska [2] where 31% had an upper complete and 18% had a lower complete dentures. There were 4.6% of persons who had removable denture in one jaw and a fixed one in the other, while a fixed prosthesis was present in 10% of the subjects. In a study by Haikol et al. in Finland [28], fixed prostheses were present in 23.7% of sixty-year-olds and 38.6% of eighty-year-olds (60% of the elderly had mobile dental restorations). Thus, in Montenegro and Republika Srpska, the presence of dentures was higher compared to fixed dental restorations, while in Finland the presence of fixed dental restorations was higher.

The value of DMFT observed in relation to the gender of the subjects in this study was consistent with the results in the study of Baumgartner et al. [4] and Pan et al. [5] and was significantly higher in women than men.

Numerous studies [20, 21, 23] have proven the negative impact of using tobacco products on the increasing incidence of oral diseases, which is in line with the results in Montenegro. A statistical association between the frequency of dental visits and the value of DMFT present in examined subjects was also demonstrated in the study of Nguyen at al. [6], Popović at al. [7], as well as in numerous other studies [17, 20, 22]. DMFT values were lower in individuals who have responsible oral health behaviors.

The significance of this research is that for the first time the state of oral health of the elderly in Montenegro was examined. The obtained results can be considered...
representative for the elderly living not only in the central part of Montenegro, but in the whole territory, because close to two thirds of the country’s population is concentrated in the central part. In search of a specialist dental service, patients from the other two regions are gravitating towards dental practices, most of which are concentrated in Podgorica and Nikšić.

CONCLUSION

The state of oral health of the elderly in the central region of Montenegro is not at a satisfactory level. The loss of natural teeth and its consequences may become a significant public health problem in the future given the increase in the number of older people. Oral health care needs to become an integral part of state general health care and treatment programs. The promotion of healthy lifestyles and the concept of active aging should also contribute to improving oral health status of the entire population, especially the elderly.

REFERENCES

1. Peres M, Macpherson L, Weyant R, Daly B, Venturelli R, Machur M, et al. Oral diseases: a global public health challenge. Lancet 2019;394:249–60. [DOI: 10.1016/S0140-6736(19)31146-8]
2. Radović I, Davidović L, Krunić J, Stojanović N. Dental Status and Prosthetic Rehabilitation in Elderly Population in Relation to Socio-economic Factors in Republica Srpska. Serb Dent J. 2015;62(1):14–7. [DOI: 10.1151/sj/2015-00002]
3. Konopka T, Dembowska E, Pietruska M, Dymalski P, Górska R. Periodontal status and selected parameters of oral condition of Poles aged 65 to 74 year. Przegl Epidemiol. 2015;69(3):537–42. [PMID: 26519852]
4. Baumgartner W, Schimmel M, Müller F. Oral health and dental care of elderly adults dependent on care. Swiss Dent J. 2015;125(4):17–26. [PMID: 2669068]
5. Pan S. Sex differences in denture satisfaction. J Dent. 2008;36(3):301–8. [DOI: 10.1016/j.jdent.2008.02.009] [PMID: 18394770]
6. Nguyen MS, Jagomägi T, Voog-Oras Ü, Nguyen T, Saag M. Oral Health Behavior and Oral Health Status of Elderly Finns. J Oral Rehabil. 2008;35(11):827–35. [PMID: 18623242]
7. Chahar P, Mohantr RV, Aswini YB. Oral health quality of life of elderly patients visiting special clinics in public hospitals in Delhi, India: a cross-sectional study. Indian J Public Health. 2019;63(1):15–20. [DOI: 10.4103/ijph.IJPH3167] [PMID: 30880732]
8. Rosli TI, Chan YM, Kadir RA, Hamid TAA. Association between oral health-related quality of life and nutritional status among older adults in district of Kuala Pilah, Malaysia. BMC Public Health. 2019;19(Suppl 4):547. [DOI: 10.1186/s12889-019-6867-1] [PMID: 3196031]
9. Popović Z, Đurićković D, Jajaljević A, Marjetić S, Obadrović-Durički K. Assessment of reliability and validity of Montenegro version of the oral health impact profile for use among the elderly in Montenegro. Sp Arh Celok Lek. 2019;147(9–10):534–40. [DOI: 10.2298/SARH180528049P]
10. Huber M, Krotzner JA, Green L, van der Horst H, Jadad AR, Kromhout H, et al. How should we define health? BMJ. 2011;343:d4163. [DOI: 10.1136/bmj.d4163] [PMID: 21791490]
11. Marc L. The New Definition of Oral Health. Restor Dent. 2017;37(1):17. [DOI: 10.11670/prd.2017.1]
12. WHO. Oral Health Surveys—Basic Methods. 5th Edition, WHO Library Cataloguing-in-Publication Data, World Health Organization. 2013, ISBN 978 92 4 154864 9 (NLM classification: WU 30) Library Cataloguing-in-Publication Data, World Health Organization. 2013, ISBN 978 92 4 154864 9 (NLM classification: WU 30)
13. Klein H, Palmer CE, Knutson JW. Studies on dental caries. I. Dentin penetration by various acids. Stomatologija. 1938;53:751–6. [DOI: 10.1111/j.1365-2842.2008.001673.x] [PMID: 28944746]
14. Jha P. The hazards of smoking and the benefits of cessation: a critical summation of the epidemiological evidence in high-income countries. eLife. 2020;9:e49979. [DOI: 10.7554/eLife.49979] [PMID: 32207405]
15. UN report: Ageing in the 21st Century: a celebration and a challenge. (2012). p. 111–18; [Online]. ISBN 978-0-89714-981-5 Available from: https://www.researchgate.net/publication/314205132
16. Petersen PE. 21st Century Global Oral Health Policy - Implications for Oral Health Research of the World Health Assembly 2007, World Health Organization. Oral Community epidemic Dent. 2009;37(1):1–8. [DOI: 10.1111/j.1600-0528.2008.00448.x] [PMID: 19046831]
17. WHO. Oral Health Surveys—Basic Methods. 5th Edition, WHO Library Cataloguing-in-Publication Data, World Health Organization. 2013, ISBN 978 92 4 154864 9 (NLM classification: WU 30)
18. Klein H, Palmer CE, Knutson JW. Studies on dental caries in elderly people in Sichuan Province, China: a cross-sectional study. BMJ Open. 2017;7(9):e016557. [DOI: 10.1136/bmjopen-2017-016557] [PMID: 28944746]
19. Jha P. The hazards of smoking and the benefits of cessation: a critical summation of the epidemiological evidence in high-income countries. eLife. 2020;9:e49979. [DOI: 10.7554/eLife.49979] [PMID: 32207405]
20. UN report: Ageing in the 21st Century: a celebration and a challenge. (2012). p. 111–18; [Online]. ISBN 978-0-89714-981-5 Available from: https://www.researchgate.net/publication/314205132
21. WHO. Oral Health Surveys—Basic Methods. 5th Edition, WHO Library Cataloguing-in-Publication Data, World Health Organization. 2013, ISBN 978 92 4 154864 9 (NLM classification: WU 30)
22. Klein H, Palmer CE, Knutson JW. Studies on dental caries in elderly people in Sichuan Province, China: a cross-sectional study. BMJ Open. 2017;7(9):e016557. [DOI: 10.1136/bmjopen-2017-016557] [PMID: 28944746]
23. WHO. Oral Health Surveys—Basic Methods. 5th Edition, WHO Library Cataloguing-in-Publication Data, World Health Organization. 2013, ISBN 978 92 4 154864 9 (NLM classification: WU 30)
24. Klein H, Palmer CE, Knutson JW. Studies on dental caries in elderly people in Sichuan Province, China: a cross-sectional study. BMJ Open. 2017;7(9):e016557. [DOI: 10.1136/bmjopen-2017-016557] [PMID: 28944746]
25. WHO. Oral Health Surveys—Basic Methods. 5th Edition, WHO Library Cataloguing-in-Publication Data, World Health Organization. 2013, ISBN 978 92 4 154864 9 (NLM classification: WU 30)
26. Klein H, Palmer CE, Knutson JW. Studies on dental caries in elderly people in Sichuan Province, China: a cross-sectional study. BMJ Open. 2017;7(9):e016557. [DOI: 10.1136/bmjopen-2017-016557] [PMID: 28944746]
27. Petersen PE. 21st Century Global Oral Health Policy - Implications for Oral Health Research of the World Health Assembly 2007, World Health Organization. Oral Community epidemic Dent. 2009;37(1):1–8. [DOI: 10.1111/j.1600-0528.2008.00448.x] [PMID: 19046831]
28. Haikola B, Oikarinen K, Soderholm AL, Remes-Lyly T, Sipilä K. Prevalence of edentulousness and related factors among elderly Finns. J Oral Rehabil. 2008;35(11):827–35. [DOI: 10.1111/j.1365-2842.2008.001673.x] [PMID: 18482342]

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Bezubost kod starih osoba u Crnoj Gori

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KRATAK SADRŽAJ
Uvod Prvi put u Crnoj Gori rađeno je istraživanje koje je imalo za cilj da ispitajta stanje oralnog zdravlja starih osoba. Metode Obuhvaćeno je 170 ispitanika oba pola, prosečne starosti 72,32 ± 6,85. Instrument istraživanja je usklađen sa metodološkim uputstvom SZO za epidemiološka ispitivanja nacionalne oralne patologije. U statističkoj obradi podataka korišćeni su program IBM Statistics 20, metode deskriptivne i inferencijalne statistike, Tamhane T2 post hoc testovi, χ² test. Homogenost disperzija provjeravana je Levenovim testom. Nivo značajnosti je 0,05.

Rezultati Vrednost DMFT iznosi 29,417 ± 3,81 (MT: 26,25 ± 6,95; FT: 2,68 ± 3,98; DT: 0,63 ± 1,56) i statistički je značajno veća kod žena, kod korisnika duvanskih proizvoda i kod osoba koje neredovno posećuju stomatologa. Bezubih osoba je 46,47%. Indeks reha-
bilitacije zuba je 73,86%. Prosečna starost zubnih nadoknada je 11 godina.

Zaključak Stanje oralnog zdravlja starih osoba u Crnoj Gori nije na zadovoljavajućem nivou, što se ogleda u visokom procentu bezubi osoba i nepovoljnoj strukturi DMFT-a.

Ključne reči: bezubost; stare osobe; Crna Gora

UVOD
Unapređenje oralnog zdravlja osnovni je preduслов za unapređenje zdravlja u celini [1]. Ovo je posebno važno za stare osobe kod kojih je opšte zdravlje narušeno i opterećeno hroničnim oboljenjima. Istraživanja u regionu [2], u Evropi [3, 4, 5] i na drugim kontinentima [6–9] uticala su na pokretanje istraživanja stanja oralnog zdravlja starih u Crnoj Gori. Izičivanja za opšte oralne zdravstvene oboljenja i posledičnu bezubost [5, 6, 7, 17–23].

Brojni autori su istraživali uticaj oralnozdravstvenih navika, da ljudi do 65. godine sačuvaju najmanje 20 prirodnih zuba [18]. Uz kontinuitet njihovog sprovođenja treba da rezultira time oranozdravstvenih u opštezdravstvene preventivne programe, svoje prirodne zube [17]. Postoji preporuka za implementiranje oralno zdravlja na kvalitet života sprovode se u svetu stanja oralnog zdravlja starih u Crnoj Gori. Ispitivanja uticaja koje oralno zdravlje ima na kvalitet života sprovode se u svetu već više od pet decenija i dokazan je visok stepen međuzavi.

nosti kvaliteta života i oralnog zdravlja [10–14]. Ova saznanja implementirana su u novu definiciju oralnog zdravlja [15, 16]. Oko 30% Evropljana, starosti između 65 i 74 godine, nema više svoje prirodne zube [17]. Postoji preporuka za implementaciju oranozdravstvenih prevenitive programa, što uz kontinuitet njihovog sprovođenja treba da rezultira time da ljudi do 65. godine sačuvaju najmanje 20 prirodnih zuba [18]. Brojni autori su istraživali učine oralnozdravstvenih navika, socioekonomskog statusa i drugih karakteristika na pojavu oralnih oboljenja i posledičnu bezubost [5, 6, 7, 17–23].

Demografski podaci ukazuju na višedecenijski trend starenja stanovništva [24]. Da bi se zdravstveni sistem pripremio za po-
većan broj starih pacijenata u budućnosti, potrebno je prikupiti podatke o stanju oralnog zdravlja.

Cilj istraživanja je da ispitajta stanje oralnog zdravlja starih osoba u središnjem regionu Crne Gore. Ista

risivanje je rađeno po metodu analitičke studije preseka, u period od septembra do decembra 2016. u središnjem delu Crne Gore. Pregledi su obavljeni na Medicinskom fakultetu u Podgorici i domovima za stara lica „Ljubav spaja” i „Nana” u Spužu i Danilovgradu. Uzorak istraživanja

Istraživanjem je obuhvaćeno 170 osoba prosečne starosti 72,32 (stand. devij. 6,85). Metoda uključivanja ispitanika u istraživanje je bila zasnovana na sledećim karakteristikama: 1. Uključene su osobe starosti od 65 i više godina koje se javile na pregled na Medicinski fakultet u Podgorici – Studijski program stomatologije određenim danima (ponedjeljkom i sredom) u period od septembra do decembra 2016. 2. Uključeni su svi korisnici usluga domova za stara lica „Nana” i „Ljubav spaja” u Spužu i Danilovgradu čije je stanje opšteg i mentalnog zdravlja dozvoljavalo da budu pregledani. Svi ispitanici su dobroljubno pristali da učestvuju u istraži

vani nakon što su im objašnjeni svrha istraživanja, način distribucije dobijenih podataka i anonimnost učešća. O dobro

volnosti su se izjasnili potpisivanjem informisanog pristanka. Za ispitanike koji su korisnici usluga domova za stara lica prethodno je dobijena saglasnost od uprave domova. Uzorak je 5% prema broju stanovnika starosti 65 i više godina u središnjem delu Crne Gore i statistički je alociran tako da je očekivani koeficijent varijacije između 8 i 11%.

Prvi instrument istraživanja koji je korišćen je klinički pregled oralnog zdravlja, po metodologiji SZO, primenom metodološkog uputstva za epidemiološka ispitivanja nacionalne oralne patologije [25]. Analizirani su podaci vezani za broj karijnih, ekstrahiranih i plombiranih zuba, podaci o prisutnim zubnim nadoknadama (fiksnim i mobilnim) i o starosti zubnih nadoknada. Stanje oralnog zdravlja procenjeno je na osnovu relevantnih indeksa, pri čemu su prikazani sledeći: 1. Karijski status registrao je pomoću Kjalin-Palmerovog sistema DMF (D – decayed, M –missing, F – filled) [26]. Karijes je dijagnostikovan inspekcijom uz pomoć stomatološke sonde i ravnom stomatološkog ogleda, pri dnevnoj svetlosti. Dentalnim karijesom (K) obeležene su lezije sa jasno formiranim...
kavitetom na površini zuba. Promene u transparenciji i početne demineralizacije gledi sa intaktnom površinom koje nisu dovelo do prekida kontinuiteta rubnog tkiva nisu registrovane. Pojam plombe (P) uključuje sve stalne i privremene ispune. Pod ekstahovanim (E) zubima podrazumevaju se sve ekstrakcije nastale kao posledica karijesa ili oboljenja parodoncijuma. Ovaj indikator predstavljen je ukupno za sve ispitanike, u odnosu na određene karakteristike ispitanika.

2. DMFT indeks – indeks karijesa prosećan (DT – prosećan broj karijesnih zuba, MT – prosećan broj ekstrahovanih zuba, FT – prosećan broj plombriranih zuba).

3. IKZ indeks – indeks rehabilitacije zuba korišćen je da se izrazi (u procentima) koliko je izgubljenih zuba nadomešteno izradom stomatoprotetskih nadoknada (fiksnih i mobilnih). Izračunava se: broj nadoknadenih zuba / broj izvađenih zuba + broj nadoknadenih zuba ×100.

4. Evidentirano je prisustvo stomatoprotetskih nadoknada (fiksnih i mobilnih) i njihova starost.

Drugi instrument istraživanja je upitnik zatvorenog tipa sa četiri pitanja:
P1 – Kada ste poslednji put bili kod stomatologa?
P2 – Koji su razlozi Vaše poslednje posete stomatologu?
P3 – Da li ste korisnik duvanskih proizvoda?
P4 – Šta prepoznajete kao glavni razlog gubitka svojih zuba?

Tokom pregleda ispitanicima su pruženi saveti kako da pravilno održavaju higijenu usta, zuba i zubnih nadoknada. Pregledane su zubne nadoknade i dati su saveti za njihovo održavanje.

U statističkoj obradi prikupljeni podaci obrađivani su statističkim programom IBM Statistics 20. Korištene su metode deskriptivne i inferencijalne statistike. Od deskriptivnih metoda upotrebljene su aritmetička sredina i standardna devijacija. U sklopu inferencijalne statistike korišćen je t-test za dva neupotrebljene su aritmetička sredina i standardna devijacija.

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REZULTATI

Demografski podaci

Ukupno je pregledano 170 osoba. Struktura ispitanika prema polu pokazala je da je bilo 89 (52,35%) ispitanika ženskog i 81 (47,64%) ispitanik muškog pola. Prosečna starost ispitanika je 72,32 ± 6,85. Bilo je 104 (61,17%) ispitanika starosti 65–74 godine, 53 (31,17%) starosti 75–84 godine i 13 (7,6%) od 85 godina i starijih. Prema mestu stanovanja u gradovima središnjeg regiona Crne Gore: iz Podgorice je bilo 114 (67,05%) ispitanika, iz Danilovgrada 20 (11,76%), iz Nikšića 22 (12,94%), i sa Cetinja 14 (8,23%) ispitanika. Struktura ispitanika prema mestu stanovanja u gradovima središnjeg regiona Crne Gore pokazala je da je najviše ispitanika – 64 (37,64%) osoba koje u jednoj vilici imaju mobilnu nadoknadu, dok je 34 (20,00%) ispitanika izračunava sa četiri pitanja: broj nadoknadenih zuba / broj izvađenih zuba + broj nadoknadenih zuba ×100.

Analiza stanja oralnog zdravlja ispitanika

Od 170 pregledanih osoba 79 (46,47%) osoba je bez ubora. DMFT iznosi 29,417 ± 3,81 (min. 15; max. 32). Struktura DMFT-a pokazuje da ispitanici u proseku imaju 26,25 ± 6,95 ekstrahovanih zuba, 2,68 ± 3,98 plombriranih zuba, dok je broj karioznih zuba po ispitaniku u proseku 0,63 ± 1,56. Ispitanici su u proseku imali 2,39 ± 3,66 zdravih zuba i 7,14 ± 9,19 protetski nenadoknadenih zuba.

Prisutnost preostalih prirodnih zuba izražena prema segmentima prirodnih zuba (Što je od značaja za planiranje protetske terapije) pokazuje da ispitanici u proseku imaju veći broj prirodnih zuba u donjem zubnom nizu – 1,14 u odnosu na gornji zubni niz – 0,73. U frontalnim segmentima prirodnih zuba luka je broj sačuvanih prirodnih zuba veći nego u bočnim. U donjem frontalnom segmentu prosećan broj prirodnih zuba je najveći i iznosi 2,22 zuba, dok je u gornjem frontalnom segmentu 1,29. Prisutnost prvih stalnih molara je prosečno po ispitaniku 0,41 (25,88% osoba ima između jednog i tri prva stalna mola).
slednje posete prošlo je 2–5 godina. Kod 30 (17,64%) ispitanika odlazak kod stomatologa bio je pre 1–2 godine. Od poslednje posete kod 16 (9,41%) ispitanika proteklo je 6–12 meseci, a kod 29 (17,05%) ispitanika proteklo je manje od šest meseci (Tabela 4).

Kao razlog poslednje posete stomatologu najviše ispitanika – 101 (59,41%) navelo je bol ili problem sa zubima, desnima ili zubnim nadoknadama. Potrebu za konsultacijom ili savetom kao razlog poslednje posete stomatologu navelo je 26 (15,29%) ispitanika. Lečenje kao razlog navela su 22 (12,94%) ispitanika i redovnu kontrolu 21 (12,35%) ispitanik (Tabela 4).

Korišćenje duvanih proizvoda potvrdilo je 54 (31,76%) ispitanika, dok je 116 (68,23%) negiralo njihovu upotrebu (Tabela 4). Među osobama muškog pola je 33 (40,74%) pušača. Žena korisnica duvanih proizvoda je 21 (32,59%).

**DISKUSIJA**

Petersen i saradnici [8, 27] u svojim istraživanjima pokazuju da je broj bezubih osoba starosti 65 i više godina u svetu visok. Takođe, podaci SZO iz 2016. [9] pokazuju da oko 30% Evropljana (prevalenca varira od 5% do 51%) u dobi od 65 do 74 godine nema prirodne zube. Ako se ovo uporedi sa crnogorskim podatkom (46,47%), vidi se da je stanje u Crnoj Gori lošije od evropskog proseka. Prema podacima Petersena i saradnika [8], u Evropi je 2010. stanje bilo sledeće: u Poljskoj je zastupljenost bezubosti kod starih osoba bila 43,9%, u Slovačkoj 43%, u Velikoj Britaniji 37,5%, u Madarskoj i Danskoj 27%, u Austriji 15% dok je u Litvaniji niža od 13%. Na drugim kontinentalima procenat bezubih među starih osobama je sledeći: u SAD 26%, u Indiji i Indoneziji 19%, u Libanu 20%, dok je u Kini stanje značajno bolje – 11%.

Brojni faktori utiču na vrednosti DMFT-a: demografske i druge karakteristike stanovništva, ponašanje u vezi sa oralnim zdravljem, razvijenost zdravstvenih sistema [22] i drugo. U Evropi su oboljenja parodoncijuma problem broj jedan kada je stanje oralnog zdravlja u pitanju, dok je stopa karijesa značajno smanjena u odnosu na prethodne decenije [1, 3]. Redukcija stope karijesa u ovim državama je velikim delom rezultat višedecenijalnog zdravstvenog pravilovanja. U Crnoj Gori je karijes dominantni razlog gubitka zuba. Analiza stvarnosti protječenih brojnih podešenja osnovne zdravstvene politike na broj bezubih starih osoba, je pokazala da je broj bezubih osoba starih 65 i više godina, na celoj teritoriji Crne Gore nije na zadovoljavajućem nivou. Bezubost i njene posledice mogu postati značajniji javni problem u budućnosti, uz određene specifične karakteristike starih, a potencijalnu potrebu za konsultacijom ili savetom kod starih osoba bila je 43,9%, u Slovačkoj 43%, u Velikoj Britaniji 15% i u SAD 26%.

Statistička povezanost između učestalosti poseta stomatologu i DMFT-a pokazuje da je broj bezubih starih osoba visok u zemljama sa visokim vrednostima DMFT-a. U Crnoj Gori je karijes dominantni razlog gubitka zuba, a korišćenje duvanih proizvoda potvrdilo je 54 (31,76%) ispitanika, dok je 116 (68,23%) negiralo njihovu upotrebu (Tabela 4). Među osobama muškog pola je 33 (40,74%) pušača. "Žena korisnica duvanih proizvoda je 21 (32,59%)."

Proteksa rehabilitacija izražena kroz koeficijent rehabilitacije u ovoj studiji (73,86%) ukazuje na sličnost sa rezultatima istraživanja kod starih osoba u Republici Srpskoj [2], gde je 31% osoba imalo gornju totalnu, a 18% donju totalnu protezu. Osoba koje u jednoj vilici imaju mobilnu, a u drugoj fiksnu nadoknadu bilo je 4,6%, dok je publik oznata nadomjera fiksnim nadoknadama imalo 10% osoba. Haikola B. i saradnici u svom istraživanju u Finskoj [28] pokazuju da su fiksne nadoknade zastavljene kod 23,7% poništenih zuba i kod 38,6% osamdesetogodišnjaka (60% starih imali su mobilne i fiksne nadoknade). Dakle, u Crnoj Gori i Republici Srpskoj veća je prisutnost mobilnih u odnosu na fiksne zubne nadoknade, dok je u Finskoj veća zastupljenost fiksnih zubnih nadoknada.

Vrednost DMFT-a potvrđena u odnosu na pol ispitanika u ovom istraživanju saglasna je sa rezultatima istraživanja koje su u Crnoj Gori i Republici Srpskoj veća je prisutnost mobilnih u odnosu na fiksne zubne nadoknade, dok je u Finskoj veća zastupljenost fiksnih zubnih nadoknada.