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UPOREĐIVANJE MORFOLOŠKIH PARAMETARA LICA KOD POPULACIJE SA PUNIM ZUBNIM NIZOM

COMPARISON OF THE MORPHOLOGICAL PARAMETERS OF THE FACE IN A POPULATION WITH A FULL DENTAL ARCH

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Sažetak

Uvod: Analiza parametara lica kod mladih osoba sa punim zubnim nizom predstavlja procenu zastupljenosti pojedinih antropoloških odlika na srpskom geografskom području, ali i polaznu tačku za njihovu rekonstrukciju nakon gubitka zuba, u cilju postizanja maksimalnog terapijskog i estetskog efekta.

Cilj rada: Cilj radaje merenje i poređenje parametara lica među ispitanicima sa punim zubnim nizom.

Materijal i metode: U istraživanju je učestvovao 91 student stomatologije–32 (35,2%) studentamuškog i 59 (64,8%) studenataženskog pola. Prosečna starost ispitanika iznosila je 22,16godina±1,53 godine.Mereni su dužina i širina lica, kao i vertikalni i horizontalni parametri,a izračunavan je indeks lica.

Rezultati. Muškarci su imali značajno duže ($Z=4,567$; $p<0,001$) i šire lica ($Z=5,962$; $p<0,001$) nego žene. Nije bilo značajne razlike u indeksu lica između žena i muškaraca ($\chi^2=2,492$; $p=0,666$). Nije postojala značajna razlika u vertikalnoj analizi lica prema polu ($\chi^2=0,065$; $p=0,798$). Kod većine ispitanika, izmerena je kraća srednja trećina lica. U slučaju očekivane podeljenosti donje trećine lica, ona u značajno većoj meri postoji kod pripadnika muškog pola ($\chi^2=5,989$; $p=0,014$). Kod većine ispitanika interkantalna širina odgovarala je širini oka i to kod oba pola, bez statističke značajnosti. Takođe, kod znatno većeg broja ispitanika muškog i ženskog pola utvrđeno je toda bipupilarno rastojanje odgovara interkomisuralnom rastojanju. Interlarno rastojanje, koje odgovara širini oka, bilo je značajnije prisutno kod žena ($\chi^2=5,002$; $p=0,025$).

Zaključak. Merenje parametara lica može značajno unaprediti stomatološku terapiju, omogućavajući optimalan estetski učinak.

Ključne reči: indeks lica, vertikalni i horizontalni parametri lica

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Abstract

Introduction: The analysis of facial parameters in young people with a full dental arch is an assessment of the representation of certain anthropological features in the Serbian geographical area, but also a starting point for their reconstruction after tooth loss in order to achieve the maximum therapeutic and aesthetic effect.

Aim: The aim of the work was to measure and compare facial parameters among respondents with a complete dental arch.

Material and methods: 91 dental students participated in the research, 32 (35.2%) male and 59 (64.8%) female. The average age of the respondents was 22.16±1.53 years. The length and width of the face were measured, as well as the vertical and horizontal parameters, and the facial index was calculated.

Results: Men had a significantly longer ($Z=4.567$; $p<0.001$) and wider face ($Z=5.962$; $p<0.001$) compared to women. There was no significant difference in the face index between women and men ($\chi^2=2.492$; $p=0.666$). There was also no significant difference in the vertical analysis of the face according to gender ($\chi^2=0.065$; $p=0.798$). In the majority of subjects, the shorter middle third of the face was measured. In the case of the expected division of the lower third of the face, it exists in a significantly greater extent in males ($\chi^2=5.989$; $p=0.014$). In the majority of subjects, the intercanthal width corresponded to the width of the eye, in both sexes, without statistical significance. Further, in a significantly larger number of male and female respondents, it was determined that the bipupillary corresponds to the intercommisural distance. The interalar distance corresponding to the width of the eye was more significantly present in women ($\chi^2=5.002$; $p=0.025$).

Conclusion: Measurement of facial parameters can significantly improve dental therapy by enabling optimal aesthetic performance.

Key words: face index, vertical and horizontal face parameters

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Uvod

Zadatak stomatologije, pored okluzalne rehabilitacije, jeste i rekonstrukcija osmeha, čime se celoj terapiji, sem funkcionalnog, daje i socio-emocionalni značaj. Osim vraćanja funkcije orofacijalnom sistemu pacijenta, treba maksimalno zadovoljiti i njegove estetske zahteve, tako da dentalno lečenje, osim zuba, obuhvata i meka tkiva koja ga okružuju¹.

Nakon očiju, zubi su najvidljiviji deo lica, pa su njihov oblik, boja i položaj, sa estetskog stanovišta, veoma bitni i treba da budu usklađeni sa okolnim strukturama usne duplje i lica.

Analiza parametara lica kod mladih osoba sa punim zubnim nizom sa jedne strane predstavlja procenu zastupljenosti pojedinih antropoloških odlika na srpskom geografskom području, ali i orijentir za rekonstrukciju pojedinih od njih nakon gubitka zuba, u cilju postizanja maksimalnog terapijskog efekta. Interdisciplinarnim pristupom treba napraviti sveobuhvatnu pretprotetsku pripremu, kako bi kraj terapije ispunio sve estetske kriterijume².

Antropološki parametri lica mere se spajanjem jasno definisanih antropometrijskih tačaka na tkivu lica horizontalnim i vertikalnim linijama, koje se zatim upoređuju pojedinačno ili nakon formiranja uglova i oblika u svrhu prikazivanja određenih proporcija³. Lice se može posmatrati i analizirati s prednje (en face) ili iz profila, te se u odnosu na smer posmatranja razlikuju horizontalni i vertikalni estetski parametri, koji svakako predstavljaju promenljive varijabile, u zavisnosti od starosnog doba, pola i rase^{4,5}.

Cilj rada bilo je određivanje vrednosti antropoloških parametara lica među mladom populacijom sa punim zubnim nizom i njihovo poređenje u odnosu na pol.

Ispitanici i metode

Ispitivanje je sprovedeno na Klinici za dentalnu medicinu Medicinskog fakulteta Univerziteta u Nišu. U istraživanju je učestvovao 91 student stomatologije. Od njih je 32 (35,2%) bilo muškog, a 59 (64,8%) ženskog pola. Prosečna starost ispitanika iznosila je 22,16 godina \pm 1,53 godine. Najmlađi student imao je 20, a najstariji 27 godina. Starosna struktura bila je ujednačena kod muškaraca i žena ($p=0,918$).

Ispitanicima je bila jasna svrha istraživanja i bili su zamoljeni da potpišu saglasnost, ranije odobrenu od strane Etičkog komiteta ustanove (odluka broj 14/7-2019-5EO).

Introduction

The task of dentistry, in addition to occlusal rehabilitation, is also the reconstruction of the smile, which gives the entire therapy, apart from the functional, a socio-emotional significance. In addition to restoring function to the patient's orofacial system, the patient's aesthetic requirements should be met as much as possible, so dental treatment includes not only the teeth but also the soft tissues that surround them¹.

After the eyes, the teeth are the most visible part of the face, so their shape, color and position are very important from an aesthetic point of view and should be in harmony with the surrounding structures of the oral cavity and face.

The analysis of facial parameters in young people with a complete dental arch represents, on the one hand, an assessment of the representation of certain anthropological features in the Serbian geographical area, but also a landmark on how to reconstruct some of them after tooth loss in order to achieve the maximum therapeutic effect. With an interdisciplinary approach, a comprehensive pre-prosthetic preparation should be made so that the end of therapy meets all aesthetic criteria².

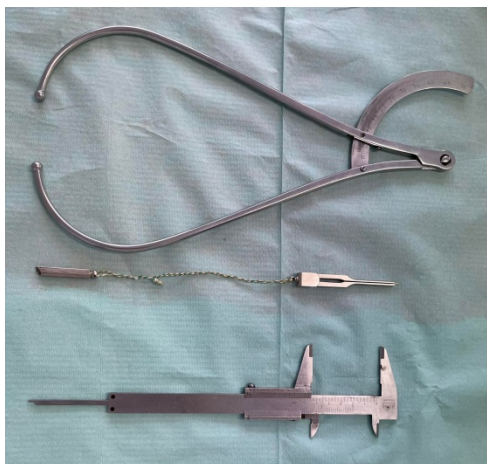
Anthropological parameters of the face are measured by connecting clearly defined anthropometric points on the facial tissue with horizontal and vertical lines, which are then compared individually or after forming angles and shapes in order to show certain proportions³. The face can be observed and analyzed from the front (en face) or from the profile, and in relation to the direction of observation, the horizontal and vertical aesthetic parameters differ, and certainly represent changeable variables depending on age, gender and race^{4,5}.

The aim of the work was to determine the values of the anthropological parameters of the face among the young population with a complete dental arch and to compare them in relation to gender.

Respondents and methods

The examination was conducted at the Clinic of Dental Medicine, Faculty of Medicine, University of Niš. Ninety-one dental students participated in the research. Of them, 32 (35.2%) were male, and 59 (64.8%) were female. The average age of the respondents was 22.16 \pm 1.53 years. The youngest student was 20, and the oldest 27. The age structure was uniform in men and women ($p=0.918$).

Svaki od ispitanika sedeo je na stomatološkoj stolici, sa glavom podupretom naslonom. Okluzalna ravan gornje vilice bila je paralelna sa podom. Merenje dužine i širine lica, kao i vertikalnih i horizontalnih parametara, vršeno je noniusom, kefalometrom ili šestarom (Slika 1 i 2). Mereni su dužina i širina lica, vertikalni i horizontalni parametri lica.



Slika 1. Aparatura za analizu parametara lica

Figure 1. Apparatus for analyzing face parameters

Dužina, širina i indeks lica

Dužina lica definisana je udaljenošću između najposteriornije tačke konkavитета baze nosa (*nasion*) i mandibularne simfize (*gnathion*) (Slika 2), dok je širina lica određena rastojanjem između najlateralnijih tačaka zigomatičnog luka (*zygion*) (Slika 3).

Indeks lica izračunavan je po formuli:

$$\text{indeks lica} = \frac{(N-Gn) \times 100}{(Zg-Zg)}$$

Razlikovana su tri osnovna oblika lica (Slika 3)⁶:

euriprozop (*eurys* = „širok”) – lice je šire u transverzalnoj ravni, dok je vertikalna dimenzija redukovana;

mezoprozop – lice prosečnih proporcija;

leptoprozop (*leptos* = „uzak”) – lice je usko u transverzalnoj ravni, a izduženo u vertikalnoj dimenziji;

hiperleptoprozop – jako usko lice.

The purpose of the research was clear to the respondents and they were asked to sign the consent, previously approved by the ethics committee of the institution (decision number 14/7-2019-5EO).

Each of the subjects sat on a dental chair, with their head supported by a backrest. The occlusal plane of the upper jaw was parallel to the floor. The length and width of the face, as well as the vertical and horizontal parameters, were measured with a vernier, a cephalometer or a divider (Figures 1 and 2). The following were measured: length and width of the face, vertical and horizontal parameters of the face.



Slika 2. Merenje širine lica kefalometrom (Zygion-Zygion)

Figure 2. Measuring the width of the face with a cephalometer (*zygion-zygion*)

Length, width and face index

The length of the face is defined by the distance between the most posterior point of the concavity of the base of the nose (*Nasion*) and the mandibular symphysis (*Gnathion*) (Figure 2), while the width of the face is determined by the distance between the most lateral points of the zygomatic arch (*Zygion*) (Figure 3).

The face index was calculated according to the formula: face index = $\frac{(N-Gn) \times 100}{(Zg-Zg)}$.

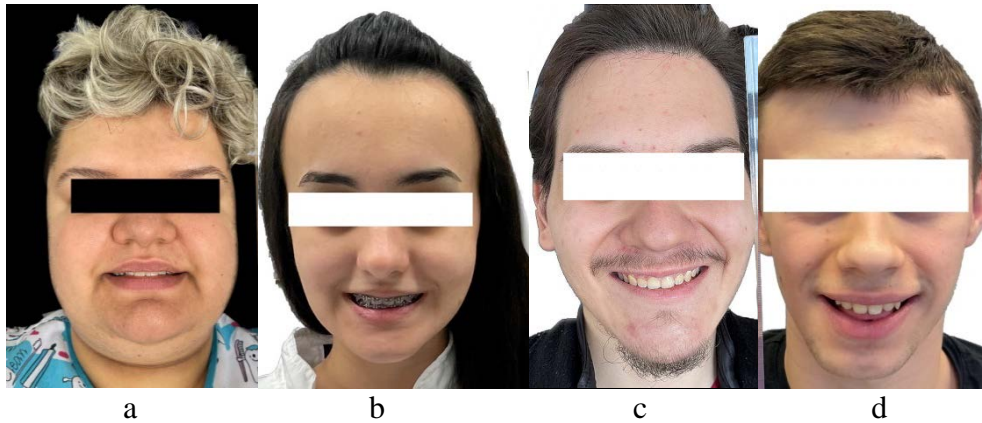
There are three basic face shapes (Figure 3)⁶:

- Euryprosopic ("eurys" = "wide"), the face is wider in the transverse plane, while the vertical dimension is reduced.

- Mesoprosopic - a person of average proportions

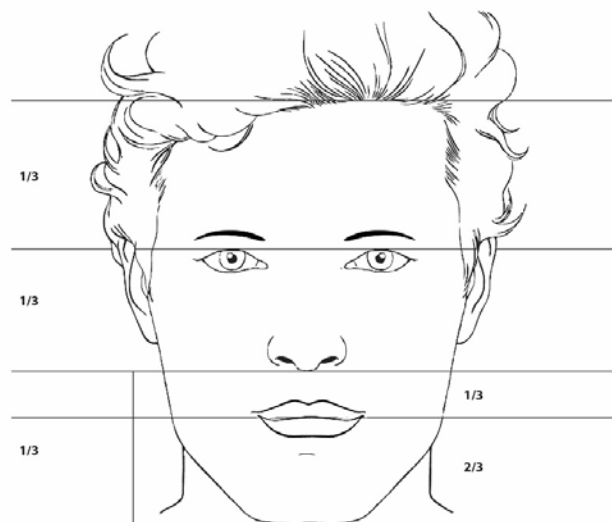
- Leptoprosopic - ("leptos"="narrow"), the face is narrow in the transverse plane, and elongated in the vertical dimension.

- Hyperleptoprosopic - very narrow face.



Slika 3. Osnovni tipovi lica kod ispitanika: a) euriprozop; b) mezoprozop; c) leptoprozop; d) hiperleptoprozop

Figure 3. Basic types of faces in the respondents: a-euryprosopic; b-mesoprosopic, c-leptoprosopic and d-hyperleptoprosopic



Slika 4. Podela celog lica na tri dela

Figure 4. Division of the whole and lower third of the face into three parts

Vertikalni parametri lica

Posmatrano u frontalnoj ravni, lice se može podeliti na trećine: 1) gornja trećina: *trichion – glabella*; 2) srednja trećina: *glabella – subnasale*; 3) donja trećina: *subnasale – menton* (Slika 4).

Donja trećina lica takođe je podeljena na trećine: usne treba da budu na jednoj trećini puta između baze nosa i brade.

Vertical face parameters

Observed in the frontal plane, the face can be divided into three thirds: 1. upper third: *Trichion - Glabella*; middle third: *Glabella - Subnasale*; lower third: *Subnasale - Menton* (Figure 4).

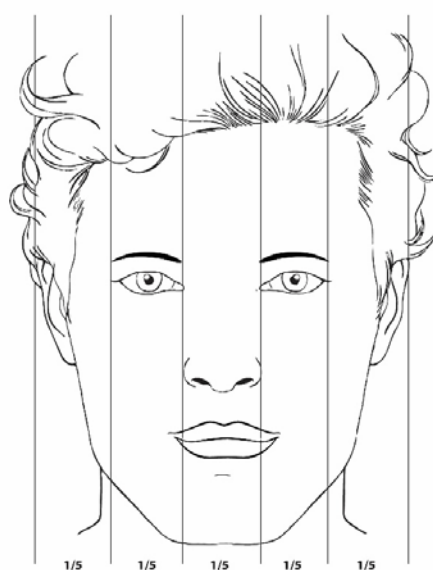
The lower third of the face is also divided into thirds: the lips should be one-third of the way between the base of the nose and the chin.

Horizontalni parametri lica

U idealnom slučaju, širina lica može se podeliti na jednake petine⁵. Jedna petina odgovara širini oka. Središnja petina određuje razmaknutost očiju, koja treba biti jednaka širini jednog oka (Slika 5). Vrednost koja opisuje razmak između zenica (bipupilarno rastojanje) treba da odgovara širini usana. Širina nosa u području nosnih krilaca trebalo bi da bude jednaka jednoj očnoj širini.

Horizontal parameters of the face

The width of the face can ideally be divided into equal fifths⁵. One fifth corresponds to the width of the eye. The central fifth determines the distance between the eyes, which should be equal to the width of one eye (Figure 5). The value that describes the distance between the pupils (bipupillary distance) should correspond to the width of the lips. The width of the nose in the area of the nasal wings should be equal to one eye width



Slika 5. Merenje horizontalnih parametara lica
Figure 5. Measurement of horizontal facial parameters

Statistička obrada podataka

Rezultati statističke analize prikazani su tabelarno. Statistički proračuni vršeni su pomoću programa SPSS, verzija 20. Od osnovnih deskriptivnih statističkih parametara korišćene su standardne statističke metode za kvalitativnu i kvantitativnu procenu dobijenih rezultata: apsolutni brojevi, relativni brojevi (%), aritmetička sredina (\bar{x}) i standardna devijacija (SD). Normalnost distribucije ispitivana je testom Kolmogorov–Smirnov. Upoređivanje aritmetičkih sredina dvaju uzoraka vršeno je T-testom, dok je u slučajevima nepravilne distribucije podataka korišćen neparametrijski Mann–Whitney U test. Za testiranje statističke značajnosti razlika apsolutnih frekvencija među uzorcima korišćen je χ^2 test.

Statistical data processing

The results of the statistical analysis are shown in tabular form. Statistical calculations were performed with SPSS version 20. Of the basic descriptive statistical parameters, standard statistical methods were used for qualitative and quantitative assessment of the obtained results: absolute numbers, relative numbers (%), arithmetic mean (\bar{x}), standard deviation (SD). The normality of the distribution was tested with the Kolmogorov–Smirnov test. Comparison of the arithmetic means of two samples was performed with the t-test, while in cases of irregular data distribution, the non-parametric Mann–Whitney U test was used. The χ^2 test was used to test the statistical significance of absolute frequency differences between samples.

Rezultati

Rezultati ispitivanja prikazani su u Tabelama 1,2 i 3.

U poređenju sa ženama, muškarci su imali značajno duže ($Z=4,567$; $p<0,001$), ali i značajno šire lice ($Z=5,962$; $p<0,001$). Nije bilo značajne razlike u indeksu lica između žena i muškaraca ($\chi^2=2,492$; $p=0,666$).

Nema značajne razlike u vertikalnoj analizi lica prema polu ($\chi^2=0,065$; $p=0,798$). U slučaju očekivane podeljenosti donje trećine lica, ona u značajno većoj meri postoji kod pripadnika muškog pola ($\chi^2=5,989$; $p=0,014$).

Nema značajne razlike u odnosu razmaka između očiju i širine oka prema polu ($\chi^2=0,037$; $p=0,848$), niti u odnosu bipupilarnog i interkomisuralnog rastojanja ($\chi^2=0,591$; $p=0,442$). Interalaro rastojanje koje odgovara širini okazačajnije je prisutno kod žena ($\chi^2=5,002$; $p=0,025$).

Results

The test results are shown in Tables 1, 2 and 3.

Men had a significantly longer face compared to women ($Z=4.567$; $p<0.001$), as well as a significantly wider face ($Z=5.962$; $p<0.001$). There was no significant difference in the face index between women and men ($\chi^2=2.492$; $p=0.666$).

There is no significant difference in the vertical analysis of the face according to gender ($\chi^2=0.065$; $p=0.798$).

In the case of the expected division of the lower third of the face, it exists to a significantly greater extent in males ($\chi^2=5.989$; $p=0.014$).

There is no significant difference in the relationship between the distance between the eyes and the width of the eye according to gender ($\chi^2=0.037$; $p=0.848$), nor in the relationship between the bipupillary and intercommissural distance ($\chi^2=0.591$; $p=0.442$). The interalar distance corresponding to the width of the eye is more significantly present in women ($\chi^2=5.002$; $p=0.025$).

Tabela 1. Dužina, širina i indeks lica prema polu
Table 1. Length, width and facial index according to gender

	Muškarci / Men		Žene / Women		p
	\bar{x}	sd	\bar{x}	sd	
Dužina lica (cm) / Face length (cm)	12.26	0.73	11.49	0.63	<0.001 ¹
Širina lica (cm) / Face width (cm)	13.64	0.49	12.75	0.56	<0.001 ¹
Indeks lica / Face index					
	Euryprosopic	9 (28.1%)	9 (15.5%)		
	Mesoprosopic	4 (12.5%)	12 (20.7%)		
	Leptoprosopic	9 (28.1%)	17 (29.3%)		
	Hyperleptoprosopic	10 (31.2%)	20 (34.4%)		0.477 ²

¹Mann-Whitney U test, ² Hi-kvadrat test

¹Mann-Whitney U test, ² Chi-squared test

Tabela 2. Vertikalna analiza lica
Table 2. Vertical face analysis

	Ukupno / Total		Muškarci / Men		Žene / Women		p*
	n	%	n	%	n	%	
Tri segmenta lica / Three segments of the face							
Nejednaki / Unequal	49	54.4	18	56.2	31	53.4	0.798
Jednaki / Equal	41	45.6	14	43.8	27	46.6	
Očekivana podeljenost donjeg segmenta lica / Expected division of the lower segment of the face							
Ne / No	52	57.8	13	40.6	39	67.2	0.014
Da / Yes	38	42.2	19	59.4	19	32.8	

² Hi-kvadrat test

² Chi-squared test

Tabela 3. Horizontalna analiza lica
Table 3. Horizontal face analysis

	Ukupno / Total		Muškarci / Men		Žene / Women		p*
	n	%	n	%	n	%	
Razmak između očiju odgovara širini oka / The distance between the eyes corresponds to the width of the eye							
Ne / No	27	54.4	10	31.2	17	29.3	0.848
Da / Yes	63	45.6	22	68.8	41	70.7	
Razmak između zenica odgovara širini usana / The distance between the pupils corresponds to the width of the lips							
Ne / No	39	70.0	24	75.0	39	67.2	0.442
Da / Yes	19	30.0	8	25.0	19	32.8	
Interalarno rastojanje odgovara širini oka / The interalar distance corresponds to the width of the eye							
Ne / No	42	46.7	20	62.5	22	37.9	0.025*
Da / Yes	48	53.3	12	37.5	36	62.1	

² Hi-kvadrat test

* Chi-squared test

Diskusija

Lepo se obično poistovećuje sa simetrijom i očekivanom, takoreći uobičajenom srazmerom na licu koje se posmatra. Postoje istraživanja koja navode kako stomatolozi i osobe koje nisu stomatološke struke različito percipiraju estetiku lica^{8,9}. Iskustvo, kao i neka istraživanja pokazuju da su standardi lepog odavno opisani.

Značaj antropometrijskih merenja na licu jeste u kliničkom tretmanu i u forenzičkim slučajevima. Mogu se sprovesti merenjem na samim ispitanicima ili analizom njihovih fotografija (fotometrija)¹⁰. Zhuang i sar. pokazali su statistički značajne razlike u antropometrijskim dimenzijama lica kod muškaraca i žena, kao i kod osoba starosti od 18 do 29 godina, u odnosu na one starije od 45 godina¹¹. Svrha ove studije bila je da se istraže moguće rodne razlike u određenim estetskim parametrima i njihova učestalost u populaciji studenata, odnosno mladih ljudi sa punim zubnim nizom.

Dobijeni rezultati pokazali su da u ispitivanoj populaciji prevladava usko lice (leptoprozop i, neočekivano, hiperleptoprozop) i to kod osoba oba pola. Muškarci su, srazmerno veličini tela, imali značajno veće vrednosti širine i dužine lica.

Što se tiče facijalne trisekcije i pretpostavke da je idealno lice vertikalno podeljeno na tri jednake trećine, rezultati ove studije pokazali su da kod nešto više od polovine ispitanika to nije bio slučaj. Rezultati su bili slični kod ispitanika ženskog i muškog pola, bez statističke značajnosti. Najkraća je bila srednja trećina lica, što se poklapa sa ispitivanjima drugih autora; tako je kod bele rase srednja trećina lica obično kraća u odnosu na ostale dve⁷, što je odnos koji je pokazan i kod muških pripadnika crne rase¹². Farkaseva studija pokazuje da je kod današnje bele rase evropskog porekla donja trećina lica nešto duža¹³. Kod pripadnica žute rase podaci su ukazali na kraću gornju trećinu lica, za razliku od pripadnica crne rase, kod koje je prisutna duža gornja trećina lica¹⁴.

Zanimljiv je i odnos proporcija lica osoba koje se u današnje vreme smatraju atraktivnim i poznatim u odnosu na ove davno utemeljene mere lepote. Milutinović i sar. upoređivali su odnos trećina lica ispitanica iz modnih časopisa i žena iz opšte populacije utvrdili da je grupa anonimnih žena pokazala statistički značajnu razliku između veličina tri segmenta lica, za razliku od grupe poznatih, u kojoj je postojala ujednačenost¹⁵.

Discussion

Beautiful is usually identified with symmetry and the expected, so to speak usual, proportion on the face that is being observed. There are studies that state how dentists and people who are not dental professionals perceive facial aesthetics differently^{8,9}. Experience as well as some research shows that the standards of beauty have long been described.

The importance of anthropometric measurements on the face is in clinical treatment and in forensic cases. They can be carried out by measuring the subjects themselves or by analyzing their photographs (photometry)¹⁰. Zhuang et al. showed statistically significant differences in the anthropometric dimensions of the face in men and women, as well as in persons aged 18 to 29 years compared to those older than 45 years¹¹. The purpose of this study was to investigate possible gender differences in certain aesthetic parameters and their frequency in the population of students, that is, young people with a complete dental arch.

The obtained results showed that the narrow face (leptoprosopy and, unexpectedly, hyperleptoprosopy) predominates in the studied population, in people of both sexes. Men, in proportion to their body size, had significantly higher values of face width and length.

Regarding facial trisection and the assumption that the ideal face is vertically divided into three equal thirds, the results of this study showed that in slightly more than half of the respondents this was not the case. The results were similar for female and male respondents, without statistical significance. The middle third of the face was the shortest, which coincides with the tests of other authors. Thus, in the white race, the middle third of the face is usually shorter compared to the other two⁷, which is a relationship that has also been shown in male members of the black race¹². Farkas's study shows that the lower third of the face is slightly longer in today's white race of European origin¹³. In the case of yellow-skinned women, the data indicated a shorter face, in contrast to black women, who show a longer upper third of the face¹⁴.

Also interesting is the relationship between the proportions of the faces of people who are considered attractive and famous nowadays in relation to these long-established measures of beauty. Milutinović et al. compared the ratio of face thirds of interviewees from fashion magazines and women from the general population, finding

Donja trećina lica takođe se sastoji od trećina. Jednu trećinu čini gornja usna do tačke subnasale, dok donja usna zajedno s bradom čini dve trećine⁶. Rezultati našeg istraživanja pokazali su da je kod muškaraca ovo pravilo značajno češće bilo prisutno. Moerenhout i sar. pokazali su sličan odnos delova donje trećine lica kod više od 60% atraktivnih i poznatih muškaraca i žena i čak 70% antičkih kipova, što govori u prilog nepromenljivosti ovog standarda u estetskom poimanju lica¹⁶.

Druga ispitivana grupa parametara jesu horizontalni parametri, prema kojima je lice podeljeno na petine. Dve najlateralnije petine prostiru se od spirale oba uha do egzokantusa oba oka. Širina očne pukotine (između endokantusa i egzokantusa oka) predstavlja po jednu petinu. Srednja petina je interkantarno rastojanje (između dva endokantusa)¹⁷. Ova udaljenost jednaka je interalarnom rastojanju, odnosno širini nosa¹⁸. Milutinović i sar. našli su veće poklapanje ovih parametara kod poznatih osoba, koje su opšte prihvaćene kao lepe¹⁵.

Kod većine ispitanika interkantarna širina odgovarala je širini oka i to kod oba pola, bez statističke značajnosti. Takođe, kod znatno većeg broja ispitanika muškog i ženskog pola utvrđeno je da bipupilarno rastojanje odgovara širini usana (rastojanje između komisura). Interlarno rastojanje, koje odgovara širini oka značajnije je prisutno kod žena. Kod većeg broja muških ispitanika ovo pravilo nije potvrđeno. I ovde treba u obzir, sem polnih, uzeti i rasne razlike, pa je utvrđeno da je nos crnih muškaraca širi nego nos pripadnika bele rase¹⁹.

Zaključak

Literaturno ustanovljeni i dosta puta ispitani parametri lica predstavljaju opšte postulate, kojih se treba pridržavati prilikom rekonstrukcije osmeha. Dobijeni rezultati među mladom populacijom sa punim zubnim nizom uglavnom se poklapaju sa nalazima drugih autora i ukazuju na opravdanost korišćenja parametara lica u svakodnevnoj kliničkoj praksi.

that the group of anonymous women showed a statistically significant difference between the sizes of the three segments of the face, unlike the group of celebrities where there was uniformity¹⁵.

The lower third of the face is also made up of thirds. One third is the upper lip up to the Subnasale point, while the lower lip together with the chin makes up two thirds⁶. The results of our research showed that in men this rule was present significantly more often. Moerenhout et al. showed a similar ratio of parts of the lower third of the face in more than 60% of attractive and famous men and women and even 70% of ancient statues, which speaks in favor of the immutability of this standard in the aesthetic understanding of the face¹⁶.

The second examined group of parameters are horizontal ones, where the face is divided into five fifths. The two most lateral fifths extend from the spiral of both ears to the exocanthus of both eyes. The width of the eye fissure (between the endocanthus and the exocanthus of the eye) represents one fifth. The middle fifth is the intercanthal distance (between two endocanthus)¹⁷. This distance is equal to the interalar distance, that is, the width of the nose¹⁸. Milutinović et al. found a greater agreement of these parameters in famous persons who are generally accepted as beautiful¹⁵.

In the majority of subjects, the intercanthal width corresponded to the width of the eye, in both sexes, without statistical significance. It was also found that the bipupillary distance corresponds to the width of the lips (the distance between the commissures) in a significantly larger number of male and female subjects. The interalar distance corresponding to the width of the eye is more significantly present in women. This rule was not confirmed in the majority of male respondents. Here too, in addition to gender differences, racial differences should also be taken into account, so it was established that the nose of black men is wider than that of white men¹⁹.

Conclusion

The parameters of the face established in the literature and examined many times represent general postulates that should be adhered to when reconstructing a smile. The obtained results among the young population with a full set of teeth generally coincide with the findings of other authors and indicate the justification of using facial parameters in daily clinical practice.

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