

Self-perception and satisfaction with dental appearance and aesthetics with respect to patients' age, gender, and level of education

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SUMMARY

Introduction Patient's subjective evaluation of dental appearance and aesthetics is becoming an increasingly important factor in aesthetic treatments and prosthetic therapy.

Objective The aim of this study was to investigate the influence of age, education level, gender, and different dental status and the appearance of the upper anterior teeth (color, size, shape, position and alignment of the anterior teeth) on the satisfaction of the respondents with dental appearance and aesthetics of their upper anterior teeth and their desire for improvement.

Methods The study encompassed 480 people aged 20 to 50 years with an average age of 30.84 years. There were 236 male and 244 female subjects. The respondents were interviewed using a questionnaire specially designed for the purpose of this research. For the study, the subjects were divided into the following three age groups: the younger age group (20–30 years of age), the middle age group (31–40 years of age), and the older age group (41–50 years of age).

Results The conducted study did not reveal statistical significance with respect to gender in any of the examined parameters ($p > 0.05$). A little more than one half of the respondents in each age group were satisfied with their dental appearance and aesthetics (60.3% of the respondents in the age group of 20–30 years, 55.7% in the age group of 31–40, and 53.7% in the age group of 41–50 years of age). Satisfaction with dental appearance and aesthetics increases linearly with the increase in the level of education and was the highest among the respondents with university degree (33.3%).

Conclusion Female respondents were more dissatisfied with their dental appearance and aesthetics as compared with male respondents, but the difference was found to be non-significant. Patients with higher education level were more satisfied with their dental appearance and aesthetics than those with lower education.

Keywords: dental aesthetics; dental appearance; anterior teeth; self-perception; tooth color

INTRODUCTION

The ultimate objective of aesthetics in dentistry is the creation of a beautiful smile with teeth of pleasing proportions and pleasant mutual relations of teeth in harmony with the gingiva and the patient's face. The difference between the subjective (patient) and objective (dental) assessment of aesthetic appearance of the teeth and the degree of satisfaction represents a very important aspect of aesthetic dental medicine [1]. In everyday practice, it is of utmost importance for the dentist to obtain confirmatory information from patients in order to avoid failures of aesthetic treatments [2]. The appearance of the teeth can play a key role in developing the first impression about another person [3]. It was established that the judgment of some personal characteristics of other people is affected by dental appearance [4, 5]. Physical appearance plays a key role in social interaction and smile and teeth have an important function in determining the level of attractiveness of the face. Among other things, the mouth is considered extremely important in social interaction. Tooth color influences social perception. The results can be explained by negative beliefs

about tooth decay as well as their relationship with poor oral hygiene [6]. Tooth color is the main factor associated with the satisfaction with the aesthetics of teeth. Most patients are interested in teeth whitening to improve their looks [7]. Prior to performing aesthetic treatment for tooth color, the dentist must ascertain and plan treatment to meet the expectations of the patient [8]. The use of questionnaires and written documents for ascertaining patients' expectations has been proposed. These forms should enquire about the aspect of aesthetic treatment that is important to the patient, e.g. the color, shape, alignment of the teeth, etc. [9]. Some studies indicated the correlation between dental appearance and quality of life and general health [10]. Aging is not necessarily associated with negative self-perception of dental appearance or tooth color. Greater dissatisfaction with dental appearance or color in younger ages may suggest that perceived appearance is linked to cognitive factors other than social and cultural ones [11]. The interest in dental aesthetics has increased highly over the past few decades, in both patients and dentists, and natural-looking teeth have become an important task in dentistry, especially in prosthodontics and restorative

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dentistry. In females, psychological elements are the main predictors that influence subjecting to dental treatments. Understanding the prevalence of dissatisfaction with current dental appearance and desire for treatment to improve the aesthetics can be a guide for an intervention strategy to improve the aesthetics [12]. Dental appearance satisfaction is important among young adults because judgment concerning the personal characteristics of individuals is influenced by their dental appearance in the absence of other information. It has been reported that individuals with less dental disease are judged to be more socially competent, show greater intellectual achievement and have better psychologic adjustment [4]. This is further supported by the fact that adults with visible dental problems are reluctant to seek employment because of their looks or damaged speech [3]. The knowledge and understanding of a patient's perception of dental appearance is an important aspect of patient management that can help dentists in the planning of treatment that is acceptable to the patient and achieving the highest level of patient satisfaction [13].

OBJECTIVE

The aim of this study was to investigate the influence of age, education level, gender, and different dental status and the appearance of the upper anterior teeth (color, size, shape, the position and alignment of the front teeth) to the satisfaction of the respondents with their dental appearance and aesthetics of the upper anterior teeth and their desire for improvement.

METHODS

The study included 480 people aged 20 to 50 years. Respondents were interviewed in an urban area – city of Novi Sad, Serbia. There were 236 male and 244 female subjects. Criteria for the selection of the sample were as follows: age (the period after completion of growth and development), eugnathic skeletal jaw relationship, harmony in the area of the face and jaw, the presence of all six anterior upper teeth, lack of temporary prosthetic restorations on anterior teeth, the absence of large abrasion on anterior teeth, the absence of diastema, the absence of fixed orthodontic appliances, unbleached teeth, non-wearing of splint for craniomandibular disorders. The respondents were interviewed using a questionnaire (Table 1) specially made for the purpose of this research. The questionnaire was divided into social part (name, gender, age, level of education, place of birth, and place of residence) and the part related to the satisfaction with dental appearance and aesthetics containing 15 questions related to the satisfaction with the color, shape, size, position and alignment of the teeth, presence of dentures, conservative restoration, orthodontic appliances, desire for a change of dental aesthetics, desire for correction of teeth alignment, and desire for artificial crown. For the study, the subjects were divided into the following three age groups: younger age group (20–30

years of age), middle age group (31–40 years of age), and older age group (41–50 years of age). The Ethics Committee of the Clinic for Dentistry of Vojvodina approved the implementation of this research. Before interviewing, each participant received information for respondents and signed a written consent. Statistical analysis was performed using statistical analysis software SPSS 22.0 (IBM Corp., Armonk, NY, USA). Statistical methods included ANOVA, LSD, and t-test.

RESULTS

Descriptive statistics of demographic variables are shown in Table 2. Of the total of 480 respondents, 50.8% were women and 49.2% men; 60.8% of the respondents belonged to the 20–30 years age group, whereas 22.1% and 17.1% of the respondents were from the 31–40 and 41–50 years age groups, respectively. In regard to the level of education, 1% of the respondents were persons with primary school degree, 31.7% of the respondents had a secondary education degree, 26.3% were university students, 35.2%

Table 1. Questionnaire pertaining to self-perception and satisfaction with dental appearance and aesthetics

Name and surname:					
Age:					
Gender:			M	F	
Place of birth:					
Place of residence:					
Level of education:	primary school	secondary school	student	university	master
Remark: the questionnaire refers to the upper anterior teeth					
1. Are you satisfied with the color of your natural teeth if you have not bleached them?				YES	NO
2. Do you want whiter natural teeth?				YES	NO
3. Are you satisfied with the teeth position and alignment?				YES	NO
4. Are you wearing an orthodontic appliance for correcting the position of teeth?				YES	NO
5. Do you have a desire to correct the position of your teeth?				YES	NO
6. Are you satisfied with the shape of your natural teeth?				YES	NO
7. Are you satisfied with the size of your natural teeth?				YES	NO
8. Do you have the desire to change the size of your natural teeth?				YES	NO
9. Do you have a completely healthy upper anterior teeth without the presence of fillings or artificial dental crowns?				YES	NO
10. Do you have fillings in the front anterior teeth?				YES	NO
11. Do you have an artificial crown on the anterior upper teeth?				YES	NO
12. Do you have a desire for artificial dental restorations?				YES	NO
13. Are you satisfied with the appearance and aesthetics of your teeth?				YES	NO
14. Do you have a desire for aesthetic dental treatment?				YES	NO
15. Are you satisfied with the aesthetics of your smile?				YES	NO

Table 2. Distribution of the respondents according to age, gender, and level of education

Sample		Number of participants	Percentage of participants (%)
Total		480	100
Gender	women	244	50.8
	men	236	49.2
Level of education	primary school	5	1
	secondary school	152	31.7
	student	126	26.3
	university	169	35.2
	master	28	5.8
Age group	20–30	292	60.8
	31–40	106	22.1
	41–50	82	17.1

of the respondents had a university degree, and 5.8% were respondents with a master's degree.

The frequency of each test parameter and crosstabulations by sex is shown in Table 3. Crosstabulations related to gender show very uniform distribution among both sexes. The desire for teeth alignment was higher in women (57.3%) than in men (42.7%) as well as the desire for aesthetic dental treatment, which is also higher among women (54.8%) than in men (45.2%); however, the differences between the sexes were not statistically significant – $p > 0.05$ (Table 3).

Table 4 shows the frequency of each test parameter and crosstabulations with age. Satisfaction with tooth color was expressed by 51.7% of the respondents from the 20–30 age group, 51.9% from the 31–40 age group, and 50% from the 41–50 age group. The desire for whiter teeth was expressed by 48.3% of the respondents from the 20–30 age group, 48.1% from the age group 31–40, and 50% from the 41–50 age group. Satisfaction with dental appearance and aesthetics was recorded in 60.3% of the respondents from the 20–30 age group, 55.7% from the 31–40 age group, and 53.7% from 41–50 age group. Satisfaction with teeth position and alignment was expressed by 65.1% of the respondents from the 20–30 age group, 65.1% from the age group 31–40, and 72.2% from the 41–50 age group. High percentage of satisfaction with the shape of natural teeth was observed in all groups, with 84.6% in the 20–30 age group, 83% in the age group 31–40, and 85.4% in the 41–50 age group. High rate of satisfaction with size of natural teeth was observed in respondents from all the groups, being 86.6% in the 20–30 age group, 84% in the age group 31–40, and 92.7% in the 41–50 age group. High percentage of 'no' as an answer to the question on the desire to change the size of natural anterior teeth was recorded in all the groups, being 86.6%, 84%, and 92.7% in the 20–30, 31–40, and 41–50 age groups, respectively. The presence of artificial crowns on the anterior teeth linearly increases with the age of respondents. In the age group of 20–30, the percent-

Table 3. Results of frequency, crosstabulation, and significance of differences between the sexes

Dependent variable	Sex	Frequency and crosstabulation (%)		t-test			
				X	Mean difference	SE	p
1. Satisfaction with the color of teeth	F	Yes	50.6	1.49	0.005	0.46	0.919
		No	51.5				
	M	Yes	49.4	1.48			
		No	48.9				
2. Desire for whiter teeth	F	Yes	51.1	1.51	-0.005	0.46	0.919
		No	50.6				
	M	Yes	48.9	1.52			
		No	49.4				
3. Satisfaction with the position and alignment of teeth	F	Yes	49.7	1.35	0.030	0.43	0.482
		No	53.1				
	M	Yes	50.3	1.32			
		No	46.9				
4. Previous orthodontic treatment	F	Yes	55.2	1.63	-0.060	0.43	0.169
		No	48.6				
	M	Yes	44.8	1.69			
		No	51.4				
5. Desire for teeth alignment	F	Yes	57.3	1.73	-0.063	0.39	0.110
		No	48.8				
	M	Yes	42.7	1.79			
		No	51.2				
6. Intact natural upper anterior teeth	F	Yes	51.8	1.45	-0.020	0.46	0.667
		No	49.8				
	M	Yes	48.2	1.47			
		No	50.2				
7. Presence of fillings on the upper anterior teeth	F	Yes	52.3	1.58	-0.024	0.45	0.597
		No	49.8				
	M	Yes	47.7	1.60			
		No	50.2				

8. Presence of artificial crowns on the upper anterior teeth	F	Yes	48.7	1.84	-0.014	0.34	0.684
		No	51.2				
	M	Yes	51.3	1.83			
		No	48.8				
9. Desire for artificial crown on the upper anterior teeth	F	Yes	50.0	1.75	0.008	0.40	0.832
		No	51.1				
	M	Yes	50.0	1.74			
		No	48.9				
10. Satisfaction with dental appearance and aesthetics	F	Yes	49.1	1.44	0.40	0.45	0.373
		No	53.2				
	M	Yes	50.9	1.40			
		No	46.8				
11. Desire for aesthetic dental treatment	F	Yes	54.8	1.49	-0.76	0.46	0.097
		No	47.2				
	M	Yes	45.2	1.56			
		No	52.8				
12. Satisfaction with the shape of the teeth	F	Yes	49.9	1.17	0.32	0.33	0.331
		No	56.0				
	M	Yes	50.1	1.14			
		No	44.0				
13. Satisfaction with the size of teeth	F	Yes	50.5	1.14	0.12	0.31	0.687
		No	53.2				
	M	Yes	49.5	1.12			
		No	46.8				
14. Desire to change the size of teeth	F	Yes	53.2	1.86	-0.12	0.31	0.687
		No	55.0				
	M	Yes	46.8	1.88			
		No	49.5				
15. Satisfaction with the aesthetics of smile	F	Yes	49.1	1.67	0.24	0.43	0.581
		No	51.7				
	M	Yes	50.9	1.64			
		No	48.3				

X – mean; SE – standard error; p – value

Table 4. Results of frequency, crosstabulation, ANOVA test, and LSD test in relation to the age group

Dependent variable	Frequency and Crosstabulation					ANOVA test between groups		LSD test multiple comparison	
	(I) Age group	Yes (%)	No (%)			F	Sig.	(J) Age group	Sig.
1. Satisfaction with the colour of teeth	20–30	51.7	51.5	48.3	48.5	0.042	0.959	31–40	0.976
								41–50	0.785
								20–30	0.976
	31–40	51.9	50.0	48.1	51.5			41–50	0.798
								20–30	0.785
								31–40	0.798
2. Desire for whiter teeth	20–30	48.3	48.5	51.7	51.5	0.042	0.959	31–40	0.976
								41–50	0.785
								20–30	0.976
	31–40	48.1	50.0	51.9	51.5			41–50	0.798
								20–30	0.785
								31–40	0.798
3. Satisfaction with the position and alignment of teeth	20–30	65.1	66.2	34.9	33.8	0.716	0.489	31–40	0.996
								41–50	0.246
								20–30	0.996
	31–40	65.1	28.0	34.9	33.8			41–50	0.325
								20–30	0.246
								31–40	0.325
4. Previous orthodontic tretment	20–30	34.6	34.0	65.4	66.0	0.510	0.601	31–40	0.815
								41–50	0.370
								20–30	0.815
	31–40	35.8	70.7	64.2	66.0			41–50	0.346
								20–30	0.370
								31–40	0.346

5. Desire for teeth alignment	20-30	27.4	24.4	72.6	75.6	2.434	0.089	31-40	0.328
	31-40	22.6		77.4				41-50	0.032*
	41-50	15.9		84.1				20-30	0.328
6. Intact natural upper anterior teeth	20-30	56.8	53.5	43.2	46.5	1.661	0.191	41-50	0.282
	31-40	49.1		50.9				20-30	0.032*
	41-50	47.6		52.4				31-40	0.282
7. Presence of fillings on the upper anterior teeth	20-30	38.0	41.0	62.0	59.0	1.691	0.185	31-40	0.169
	31-40	43.4		56.6				41-50	0.137
	41-50	48.8		51.2				20-30	0.169
8. Presence of artificial crowns on the anterior frontal teeth	20-30	9.9	16.2	90.1	83.8	14.161	0.000*	41-50	0.838
	31-40	20.8		79.2				20-30	0.137
	41-50	32.9		67.1				31-40	0.838
9. Desire for artificial crown on the upper anterior teeth	20-30	22.6	25.4	77.4	74.6	1.576	0.208	31-40	0.335
	31-40	29.2		70.8				41-50	0.080
	41-50	30.5		69.5				20-30	0.335
10. Satisfaction with dental appearance and aesthetics	20-30	60.3	58.1	39.7	41.9	0.743	0.476	41-50	0.457
	31-40	55.7		44.3				20-30	0.080
	41-50	53.7		46.3				31-40	0.457
11. Desire for aesthetic dental treatment	20-30	45.5	47.5	54.5	52.5	1.119	0.328	31-40	0.008**
	31-40	47.2		52.8				41-50	0.000***
	41-50	54.9		45.1				20-30	0.008**
12. Satisfaction with the shape of teeth	20-30	54.9	84.4	45.1	15.6	0.109	0.897	41-50	0.022*
	31-40	83.0		17.0				20-30	0.000***
	41-50	85.4		14.6				31-40	0.022*
13. Satisfaction with the size of teeth	20-30	86.6	87.1	13.4	12.9	1.628	0.197	31-40	0.179
	31-40	84.0		16.0				41-50	0.148
	41-50	92.7		7.3				20-30	0.179
14. Desire to change the size of teeth	20-30	13.4	12.9	86.6	87.1	1.628	0.197	41-50	0.846
	31-40	16.0		84.0				20-30	0.148
	41-50	7.3		92.7				31-40	0.846
15. Satisfaction with the aesthetics of smile	20-30	35.3	34.4	64.7	65.6	0.551	0.577	31-40	0.080
	31-40	30.2		69.8				41-50	0.457
	41-50	36.6		63.4				20-30	0.080

I – age group samples; J – age group samples; Sig. – significance; F – value; LSD test – Fisher's least significant difference
* p < 0.05; ** p < 0.01; *** p < 0.001;

age was 9.9%, in the 31–40 age group it was 20.8%, and in the 41–50 age group it reached 32.9%, and the differences between the age groups are statistically significant at the level of $p < 0.05$ (Table 4). The desire for artificial crowns also linearly increases with the age of respondents, ranging from 22.6% in the 20–30 age group, to 29.2% in the 31–40 age group, to 30.5% in the 41–50 age group, but the differences between the age groups were not statistically significant – $p > 0.05$ (Table 4). Desire for teeth alignment linearly decreases with the age of respondents from 27.4% (age group 20–30), to 22.6% (age group 31–40) to 15.9% (age group 31–40). The difference between the age groups 20–30 and 41–50 was statistically significant at the significance level $p < 0.05$ (Table 4). Satisfaction with aesthetics of the smile was reported by 35.3% of respondents from the age group 20–30, 30.2% of respondents from the age group 31–40 and 36.6% of respondents from the age group

41–50. The desire for aesthetic dental treatment was recorded in 45.5% patients from the age group 21–30, 47.2% from the age group 31–40, and 54.9% from the age group 41–50. The presence of fillings linearly increases with age, being 38% in the age group 20–30, 43.4% in the age group 31–40, and 48.8% in the age group 41–50. Intact teeth linearly decrease with the age of respondents, dropping from 56.8% (age group 20–30) to 49.1% (age group 31–40) and 47.6% (age group 41–50); however, the differences were not statistically significant – $p > 0.05$ (Table 4).

Satisfaction with dental appearance and aesthetics, satisfaction with teeth position and alignment, satisfaction with the shape of natural tooth, satisfaction with the size of natural teeth, satisfaction with aesthetics of a smile (Table 5) have a substantially linear rule of increasing satisfaction with the increase the level of education of responders. With respect to the level of education (Table 5), respon-

Table 5. Results of frequency, crosstabulation, ANOVA test, and LSD test in relation to the education level

Dependent variable	Frequency and crosstabulation			ANOVA test between groups		LSD test multiple comparison				
	Education level	Yes (%)	No (%)	F	Sig.	Primary	Secondary	Student	University	Master
						Sig.				
1. Satisfaction with the colour of teeth	primary	0.4	1.7	1.297	0.270		0.229	0.111	0.174	0.094
	secondary	29.1	34.3					0.136	0.529	0.195
	student	28.7	23.6						0.354	0.676
	university	34.8	35.6							0.336
	master	6.9	4.7							
2. Desire for whiter teeth	primary	1.7	0.4	1.297	0.270		0.229	0.111	0.174	0.094
	secondary	34.3	29.1					0.136	0.529	0.195
	student	23.6	28.7						0.354	0.676
	university	35.6	34.8							0.336
	master	4.7	6.9							
3. Satisfaction with the position and alignment of teeth	primary	0.3	2.5	2.567	0.037*		0.051	0.043*	0.015*	0.016*
	secondary	29.6	35.8					0.771	0.050	0.174
	student	25.2	28.4						0.117	0.242
	university	38.4	29.0							0.770
	master	6.6	4.3							
4. Conducted orthodontic tretment	primary	1.8	0.6	2.487	0.043*		0.131	0.447	0.190	0.224
	secondary	25.8	34.7					0.005**	0.412	0.642
	student	33.7	22.4						0.035*	0.243
	university	33.1	36.3							0.984
	master	5.5	6.9							
5. Desire for teeth alignment	primary	2.6	0.6	2.916	0.021*		0.110	0.098	0.034*	0.018*
	secondary	37.6	29.8					0.820	0.036*	0.038*
	student	29.9	25.1						0.079	0.056
	university	27.4	37.7							0.345
	master	2.6	6.9							
6. Intact natural upper anterior teeth	primary	0.8	1.3	1.878	0.113		0.767	0.318	0.557	0.574
	secondary	27.6	36.3					0.008*	0.240	0.503
	student	30.7	21.1						0.107	0.380
	university	35.0	35.4							0.380
	master	5.8	5.8							
7. Presence of fillings on the upper anterior teeth	primary	1.5	0.7	3.401	0.009**		0.610	0.158	0.464	0.305
	secondary	37.6	27.6					0.001**	0.369	0.196
	student	18.3	31.8						0.008**	0.484
	university	37.6	33.6							0.417
	master	5.1	6.4							

8. Presence of artificial crowns on the upper anterior teeth	primary	1.3	1.0	0.458	0.767		0.772	0.771	0.949	0.606
	secondary	29.5	32.1					0.991	0.358	0.562
	student	24.4	26.6						0.377	0.573
	university	41.0	34.1							0.277
	master	3.8	6.2							
9. Desire for artificial crown on the upper anterior teeth	primary	3.3	0.3	4.145	0.003**		0.014*	0.002**	0.005**	0.001**
	secondary	39.3	29.1					0.024	0.163	0.019*
	student	20.5	28.2						0.323	0.310
	university	34.4	35.5							0.108
	master	2.5	7.0							
10. Satisfaction with dental appearance and aesthetics	primary	0.4	2.0	1.760	0.136		0.109	0.049*	0.118	0.046*
	secondary	30.5	33.3					0.159	0.871	0.239
	student	29.0	22.4						0.111	0.729
	university	33.3	37.8							0.202
	master	6.8	4.5							
11. Desire for aesthetic dental treatment	primary	1.8	0.4	1.943	0.102		0.176	0.071	0.217	0.125
	secondary	32.9	30.6					0.082	0.624	0.527
	student	21.5	30.6						0.025*	0.703
	university	38.6	32.1							0.365
	master	5.3	6.3							
12. Satisfaction with the shape of teeth	primary	0.2	5.3	5.215	0.000***		0.000***	0.000***	0.000***	0.000***
	secondary	30.1	40.0					0.206	0.048*	0.220
	student	26.7	24.0						0.560	0.633
	university	36.8	26.7							0.878
	master	6.2	4.0							
13. Satisfaction with the size of teeth	primary	0.2	6.5	9.318	0.000***		0.000***	0.000***	0.000***	0.000***
	secondary	28.9	50.0					0.018*	0.000***	0.048*
	student	26.8	22.6						0.229	0.559
	university	37.8	17.7							0.924
	master	6.2	3.2							
14. Desire to change the size of teeth	primary	6.5	0.2	9.318	0.000***		0.000***	0.000***	0.000***	0.000***
	secondary	50.0	28.9					0.018*	0.000***	0.048*
	student	22.6	26.8						0.229	0.559
	university	17.7	37.8							0.924
	master	3.2	6.2							
15. Satisfaction with the aesthetics of smile	primary	0.0	1.6	1.985	0.096		0.160	0.061	0.131	0.044*
	secondary	27.9	33.7					0.074	0.667	0.098
	student	30.9	23.8						0.155	0.548
	university	33.3	36.2							0.151
	master	7.9	4.8							

Sig. – significance; F – value; LSD test – Fisher's least significant difference
* p < 0.05; ** p < 0.01; *** p < 0.001

dents with university degree reported greatest satisfaction with their dental appearance and aesthetics (33.3%), satisfaction with teeth position and alignment (38.4%), satisfaction with the shape of natural teeth (36.8%), satisfaction with the size of natural teeth (37.8%), satisfaction with the aesthetics of smile (33.3%), and satisfaction with tooth color (34.8%). The intact anterior teeth also showed significant increasing pattern with the increase in the level of education (Table 5), with the highest percentage in respondents with a university degree (35%). University students (Table 5) had the lowest percentage of fillings on anterior teeth (18.3%). As compared with other groups, the respondents with a university degree (Table 5) had the most 'no' answers related to the desire for teeth alignment (37.7%), desire for teeth size change (37.8%), desire for whiter teeth (34.8%), desire for artificial crown

(35.5%). The greatest desire for artificial crowns (Table 5) was expressed by respondents with secondary education degree (39.3%). Previous orthodontic treatment (Table 5) was reported by only one quarter of the total number of respondents, mostly students (33.7%), as compared with all the other groups.

DISCUSSION

Attitudes toward the importance of our dental appearance and aesthetics have shown rapid changes over the past decades. Patient's subjective evaluation and satisfaction with dental appearance and aesthetics is becoming more important factor in aesthetic treatments, restorative procedures, and prosthetic therapy. This is of great importance for a

predictable transition between initial contact insertion to definitive restoration in the therapeutic procedure.

In this study, satisfaction with dental appearance and aesthetics was expressed by 58.1% of respondents from Novi Sad, Serbia (Table 4). This result is similar to data reported by Samorodnitzky-Naveh et al. [7] in Israel (62.7%), Tin-Oo et al. [13] in Malaysia (47.2%), Akarslan et al. [14] in Turkey (57.3%), Lajnert et al. [15] in Croatia (43%), but this percentage is lower than that obtained by Azodo et al. [16] in the study of young adults in Nigeria (79.4%), Alkhatib et al. [11, 17] in the United Kingdom (75%), and Meng et al. [18] in Florida (76%).

Many factors are important for subjective evaluation of dental appearance [5]. Individuals exhibit varying degrees of sensitivity to certain esthetic issues [19]. The results of this study can be explained by the fact that the standard of beauty differs between people of different race, place of residence and period in which the research is being conducted. All this can result in variations in the self-perception and subjective evaluation of dental appearance and aesthetics.

According to the results of Akarslan et al. [14], 55.1% of respondents in Turkey were dissatisfied with the color of their teeth. Study from the United States showed that 34% of adults were dissatisfied with their tooth color [20]. It was reported that 31.6% of the participants in a study conducted in North America and 52.6% in China were dissatisfied with their tooth color [21, 22]. Samorodnitzky-Naveh et al. [7] concluded that 37.3% of respondents in Israel were dissatisfied with their dental appearance and the color of the teeth was the main reason for dissatisfaction in 89.3% of participants. Of the total number of respondents dissatisfied with their tooth color, 88.2% of participants said that they would undergo the procedure of teeth whitening. Similar to the results of previous authors and according to our results, 48.5% of participants were dissatisfied with the color of their teeth (51.1% female and 48.9% male respondents), whereas 48.3% of respondents from the age group 20–30, 48.1% of respondents from the age group 31–40, and 50.1% of respondents from the age group 41–50 desired whiter teeth.

It is commonly considered that women are more interested in their appearance than men. This agrees well with the idea that physical injury affects women's self-esteem more than men's. The conducted study did not reveal statistical significance with respect to gender in any of the examined parameters but female participants were more dissatisfied with their dental appearance and aesthetics (53.2%) as compared with male ones (46.8%). The desire for teeth alignment is higher among women, being 57.3%, compared to 42.7% in men. Desire for aesthetic dental treatment is also higher in women with 54.8%, compared to 45.2% in men. The results of our research are similar to study of Akarslan et al. [14] from Turkey, who established that females were more dissatisfied with the general appearance of their teeth (43%) as compared with males (41.7%), but the difference was found to be non-significant. Tin-Oo et al. [13] reported that dissatisfaction with general dental appearance was more common in females

(79.8%) than in males (20.2%) and differed significantly. Vallittu et al. [23] reported similar results from Eastern Finland. Samorodnitzky-Naveh et al. [7] reported that females (65.4%) were more satisfied with the general appearance of their teeth than males (59.8%) in Israel; however, the sample consisted of more males than females as the participants were selected from patients attending a military clinic. According to Wolfart et al. [24], the degree of satisfaction concerning appearance of anterior incisors in accordance with golden standard values is higher for men than for woman.

According to Vallittu et al. [23], the perception that very white teeth are beautiful decreased with age and young patients expressed greater preference for white teeth than older ones [23]. In the study of Meng et al. [18], 75% of older respondents were satisfied with their dental appearance. Satisfaction with dental appearance and color of teeth was established by Lajnert et al. [15] in 80% of Croatian population, as well as by Alkhatib et al. [11] in 80.3% of the respondents from the 55+ age group in the United Kingdom. According to Alkhatib et al. [11], age had an impact on dissatisfaction with dental aesthetics; they also showed that older people in the United Kingdom were more satisfied with their dental appearance. These findings show a certain degree of agreement with the descriptive outcome of the study of Akarslan et al. [14]. In the present study, satisfaction with dental appearance and aesthetics was expressed by 60.3% of respondents from the 20–30 age group, 55.7% from the age group 31–40, and 53.7% from the 41–50 years of age group. According to our results and the results of the mentioned authors, the age is not necessarily associated with dissatisfaction with dental appearance and aesthetics. Although the dental aesthetic appearance gets worse with age, the level of acceptability of such changes by the elderly is significantly higher than in younger patients. For older patients, the appearance of teeth was not as important as for younger patients. This finding may be due to more advanced cognition in older age which may override effects of cultural or behavioural factors thought to influence self-perceived appearance.

In the present study, respondents with high education levels were more satisfied with their dental appearance and aesthetics than those with lower levels of education. The intact anterior teeth showed significant increasing pattern with the increase in education level. Respondents with a university degree had the most 'no' answers (compared to other groups) related to the desire for teeth alignment, desire for resizing of teeth, desire for whiter teeth, and desire for artificial crown. Respondents with high education levels were more satisfied with the color of the teeth and had no desire for whiter teeth than those with lower levels of education according to studies of Xiao et al. [22] and Akarslan et al. [14]. These findings suggest that higher self-satisfaction with the aesthetics of teeth observed in respondents with higher academic titles may reflect more self-esteem of these respondents. The study of Tin-Oo et al. [13] revealed that satisfaction with tooth shade or general dental aesthetic was not related with educational level of the respondents.

CONCLUSION

Dentists can expect differences in satisfaction with dental appearance and aesthetics depending on the age, gender, and level of education of the patients. The results of this study suggest that dental appearance and aesthetics might be more important for women than for men, with the difference being minor. The age is not necessarily associated with dissatisfaction with dental appearance and aesthetics even though dental appearance deteriorates with age. Respondents with high education levels were more satisfied with their dental appearance and aesthetics than those with lower levels of education. The varying attitudes toward dental appearance and aesthetics must be acknowl-

edged in treatment decisions. Understanding the prevalence of satisfaction with present dental appearance and desired treatments for the improvement of their aesthetics can guide the dentists in planning intervention strategies to improve esthetics. Close communication between the patient and dentist is required when aesthetic restorative procedures of upper front teeth are planned. When planning aesthetic treatments and therapies, the dentist should take into consideration patients' subjective evaluation of the aesthetics to harmonize the function, structure and biology in order to achieve the highest level of patient satisfaction. Improvement in esthetic satisfaction improved the quality of life related to oral health and its dimensions of psychological discomfort and psychological disability.

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Субјективно вредновање и однос према денталном изгледу и естетици у односу на године старости, пол и степен образовања

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КРАТАК САДРЖАЈ

Увод Пацијентово субјективно вредновање денталног изгледа и естетике постаје све важнији фактор приликом естетских третмана и протетских терапија.

Циљ рада Циљ истраживања био је да истражи утицај година старости, нивоа образовања, пола испитаника и различити зубни статус и изглед горњих предњих зуба (боја, величина, облик, поредак предњих зуба) на задовољство испитаника денталним изгледом и естетиком горњих предњих зуба и постојање жеље за унапређењем денталне естетике.

Методе рада Истраживање је спроведено на 480 особа од 20 до 50 година, просечне старости 30,84 година. Било је 236 испитаника мушког пола и 244 испитаника женског пола. Испитаници су интервјуисани путем упитника специјално направљеног за потребе овог истраживања. За потребе истраживања испитаници су подељени према годинама старости у три старосне групе: млађа старосна група (20–30 година), средња старосна група (31–40 година), старија старосна група (41–50 година).

Резултати Спроведена студија није утврдила статистичку сигнификантност у односу на пол ни у једном од испитиваних параметара ($p > 0,05$). Половина испитаника у свакој старосној групи била је задовољна денталним изгледом и естетиком: 60,3% испитаника у старосној групи 20–30 година, 55,7% у старосној групи 31–40 година и 53,7% у старосној групи 41–50 година. Задовољство денталним изгледом и естетиком има линеарно правило пораста задовољства са порастом степена образовања и највеће је код испитаника са завршеним факултетом (33,3%).

Закључак Жене су биле незадовољније својим денталним изгледом и естетиком у односу са мушкарце, али разлика није статистички значајна. Пацијенти са високим степеном образовања били су задовољнији денталним изгледом и естетиком него испитаници са нижим степеном образовања.

Кључне речи: дентална естетика; дентални изглед; предњи зуби; субјективно вредновање; боја зуба

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