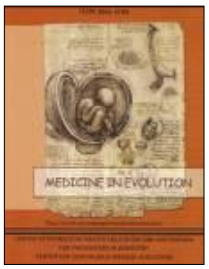
STUDY ON THE PERCEPTION OF SMILE AESTHETICS IN A GROUP OF ROMANIAN PATIENTS



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ABSTRACT

Introduction: *The aesthetic analysis of the smile represents an important step in the diagnosis, treatment and prognosis of any dental disease involving aesthetic objectives.*

Material and method: *The goal of this study is to determine the comparative perception of the smile aesthetics at the level of the orthodontic specialist and other persons not trained in this field. 510 persons, between 19 and 45 years old, from the Victor Babeş University of Medicine and Pharmacy, Timişoara, Department of Dentofacial Aesthetics, were analysed. The inclusion/exclusion criteria were predefined for this study. Two orthodontists and two persons not trained in this field rated then the attractiveness of the smile of patients on a scale from 1 to 4. A database was created in Microsoft Excel and a statistical analysis was performed.*

Results: *While the opinions of the orthodontic specialists as to the aesthetics of the smiles of patients were similar, with no significant differences between them, at the level of the questioned persons, for the ratings of 2 ($p = 0.017497$ S) and 3 ($p = 0.024934$ S) there were significant opinion differences from an aesthetical point of view. At the level orthodontic specialists and questioned persons, there were extremely significant differences ($p<0.001$ ES) for the ratings of 1, 3 and 4.*

Conclusions: *The aesthetic references studied are offered for guidance and have to consider that each person is unique in its own way. Regardless of the clinical state, the most important thing remains restoring proper functionality, and aesthetics will never be considered a top priority in the detriment of function.*

Key terms: *aesthetic analysis, smile, orthodontist.*

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INTRODUCTION

The standards of beauty are different for each and every person, and represent a synthesis of everything the person has lived or experimented during his entire life[3].

The perception of beauty is influenced by several factors, like clothes, make-up or facial expressions, but the primary factor in the conscious of unconscious perception remains the proportion of the physical components of the individual[4]. Cunningham (1986) tried to mathematically quantify beauty. The calculations he made defined the harmony of the dimensions and the features of an attractive person, as well as the deviation from normal[3-4]. Goldstein (1998) described some features of a beautiful smile[3].

The way in which patients perceive their own smile while watching themselves in the mirror differs a great deal from the way in which the orthodontist analyses the position of teeth in occlusion using mouth spreaders[5].

This is why, for a proper aesthetic analysis it was proposed that, when taking a photograph with the smile of the patients, the head of the patient has to be in a normal position, looking in front, towards a distant point.

To capture a natural, free smile of the patient, several photographs will be taken, out of which the one that best corresponds to the real situation will be selected, more precisely that of the natural smile[1].

MATERIAL AND METHOD

The study was made on a group of 510 persons, of which 375 women and 135 men, with ages between 19 and 45, from the Victor Babeş University of Medicine and Pharmacy, Timişoara, Department of Aesthetic Dentistry, all having permanent dentition. Those who had or were having an orthodontic treatment were excluded from the study. The persons with different degrees of anomalies, malformations or surgeries for facial scars, clefts, etc. were also excluded. The presence of the wisdom teeth was not taken into consideration in determining the type of dentition. In order to do this, the photographs chosen from a set of several entries, which best represented the natural smile, were aesthetically analysed.

Two orthodontic specialists and two persons not trained in this field analysed each photograph based on the attractiveness of the smile, by rating them on a scale from 1 to 4 as follows:

Pleasant smile – 1
Quite pleasant smile – 2
Quite unpleasant smile – 3
Unpleasant smile – 4

The statistical analysis of the data was made on a computer, based on the file created in Microsoft Excel with specialised software: SPSS 10, OpenEpi and Epi Info 6.04. This analysis comprised of:

- calculating the frequencies and the percentages for the qualitative variables;
- calculating the arithmetic means and the standard deviations for the quantitative variables;
- the statistical comparison of the percentages with the chi-square test ($\chi 2$ test);
- the statistical estimation of the results was made with the decision criteria of the statistical tests:

- p>0.05 - insignificant difference (NS);
- p<0.05 - significant difference (S);
- p<0.01 - very significant difference (FS);
- p<0.001 - extremely significant difference (ES).

RESULTS AND DISCUSSIONS

By comparing the ratings given by the two orthodontic specialists, no significant statistical differences were noted on the whole. Most patients were given ratings of 2 (quite pleasant smile) and 3 (quite unpleasant smile). The results of the statistical comparative analysis are presented in Table 1.

Table 1 The results of the statistical comparative analysis O1-O2

	Frecv.	Procent	Frecv.	Procent	p	Semnificația
1	51	10,0	63	12,4	0.233058	NS
2	188	36,9	182	35,7	0.695985	NS
3	198	38,8	179	35,1	0.217772	NS
4	73	14,3	86	16,9	0.261807	NS
Total	510	100,0	510	100,0		

If the assessment of the attractiveness of the smile made by the first orthodontic specialist is compared with the assessment of the first questioned person, we can see in Table 2 that the results obtained for the ratings of 1 (pleasant smile), 3 (quite unpleasant smile) and 4 (unpleasant smile) are statistically extremely significant, respectively for category 1 p<0.001 ES, category 3 p<0.001, ES and category 4 p<0.001 ES. It seems the questioned persons were more subjective in giving the ratings, respectively 40% from them and only 10% from the orthodontists gave a rating of 1. The ratings of 3 and 4 were given in smaller proportions by the questioned persons, as compared to the orthodontist, which proved that certain aesthetical references do not affect very much the aesthetics of the smile in the opinion of those unadvised and that small imperfections can be tolerated.

Table 2 The results of the statistical comparative analysis O1-P1

	Frecv.	Procent	Frecv.	Procent	p	Semnificația
1	51	10,0	206	40,4	<0.001	ES
2	188	36,9	217	42,5	0.063481	NS
3	198	38,8	74	14,5	<0.001	ES
4	73	14,3	13	2,5	<0.001	ES
Total	510	100,0	510	100,0		

Similar results were obtained when comparing the responses of the first orthodontist and of the second person (Table 3), respectively statistically extremely significant for the ratings of 1, 3 and 4 (p<0.001 ES).

Table 3 The results of the statistical comparative analysis O1-P2

	Frecv.	Procent	Frecv.	Procent	p	Semnificația
1	51	10,0	209	41,0	<0.001	ES
2	188	36,9	180	35,3	0.601945	NS
3	198	38,8	101	19,8	<0.001	ES
4	73	14,3	20	3,9	<0.001	ES
Total	510	100,0	510	100,0		

Also, when comparing the responses of the second orthodontist with those of the questioned persons (Tables 4 and 5), statistically extremely significant results were obtained for the same ratings of 1, 3 and 4, respectively $p < 0.001$ ES. While the opinions of the orthodontic specialists on the aesthetics of the smile were very similar, without significant differences between them, among the persons questioned, for the ratings of 2 ($p = 0.017497$ S) and 3 ($p = 0.024934$ S) there were significant opinion differences from a statistical point of view (Table 6). This proves that beauty is relative, and that what one person considers aesthetic, the other may consider less attractive.

Table 4 The results of the statistical comparative analysis O2-P1

	Frecv.	Procent	Frecv.	Procent	p	Semnificația
1	63	12,4	206	40,4	<0.001	ES
2	182	35,7	217	42,5	0.02478	S
3	179	35,1	74	14,5	<0.001	ES
4	86	16,9	13	2,5	<0.001	ES
Total	510	100,0	510	100,0		

Table 5 The results of the statistical comparative analysis O2-P2

	Frecv.	Procent	Frecv.	Procent	p	Semnificația
1	63	12,4	209	41,0	<0.001	ES
2	182	35,7	180	35,3	0.895873	NS
3	179	35,1	101	19,8	<0.001	ES
4	86	16,9	20	3,9	<0.001	ES
Total	510	100,0	510	100,0		

Table 6 The results of the statistical comparative analysis P1 -P2

	Frecv.	Procent	Frecv.	Procent	p	Semnificația
1	206	40,4	209	41,0	0.848358	NS
2	217	42,5	180	35,3	0.017497	S
3	74	14,5	101	19,8	0.024934	S
4	13	2,5	20	3,9	0.215439	NS
Total	510	100,0	510	100,0		

CONCLUSIONS

The ideal aesthetic norms should be used as guidelines by the specialists in determining the diagnostic and the treatment plan.

Each doctor has to identify some basic aesthetic references, which can be adapted to the case he is investigating in order to obtain a satisfactory result.

These references are offered for guidance and have to consider that each person is unique in its own way. Regardless of the clinical state, the most important thing remains restoring proper functionality, and aesthetics will never be considered a top priority in the detriment of function.

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