

WHAT AESTHETIC ALTERATION OF THE SMILE IS MORE NOTICEABLE AMONG DENTAL SPECIALTIES?

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ABSTRACT

Introduction: The current beauty patterns have gained great emphasis each day, increasing the search by patients, of this facial beauty, which brings dentistry professionals, as well as the students. **Objective:** Therefore, the aim of this project is to analyze six items that, commonly, are seen in the clinic: Smile Line; Lateral incisor with a canoed autonomic shape; Color alteration; Diatom; Dental alignment and Height/width of the central superior incisors, verifying which one of those items stand out among the different perception of dental specialties. **Methods:** This study was performed by means of a questionnaire composed of six frontal images of dental alterations, which the participant assigned a number from 0 until 10 for each picture. For the result analysis, it was used procedures of the descriptive statistics and Mann-Whitney (for variables with two different groups) and Kruskal-Wallis (for variables with three or more different groups) tests. **Conclusion:** According to dental surgeons perception, between the changes observed, the Diastema is the one that causes more negative impact to the smile's aesthetics, followed by the dental alignment. On the other hand, the smile's lower dental line and its height/width relation of central incisors are the alterations that less affected the smile's aesthetics.

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INTRODUCTION

A healthy and harmonious smile has won great of today. The Moreover, the search for aesthetic standards, considered ideal, has increased significative in recent years, the That Corroborates with Great demands of aesthetic solutions by oral

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health professionals (Panzarini and Poi, 2010). The changes of thought about the aesthetics of the Smile Contribute to the advent of new techniques and procedures that meet the Expectations of each individual (Chimeli et al., 2011; Panzarini and Poi, 2010). By orating the analysis of the smile an important step and sometimes difficult for dental treatment itself (Almeida et al., 2015). It is understood, therefore, that the Aesthetic treatment has gained space also in dentistry. In this sense, the search for increasingly harmonious and

attractive smiles has been highlighted in the scope of work of the dental surgeon CD, since individuals seek tirelessly and a smile that satisfies them, providing them with comfort in the middle where they are inserted. This appreciation, through the patient, ends up contributing to dental success, since it keeps up to date the constant study of aesthetic variations (Kokich, Kokich, and Kiyak, 2006 and Marson *et al.*, 2014). Thus, it is understood that the analysis of the factors that stand out most in the smile is extremely important, since it provides the academic environment, as well as the professional dental class, requirements for further studies and development of new techniques and materials to try to solve these variations and provide Better clinical outcomes. In this sense, this study aims to evaluate, by means of a questionnaire, the perception of different dental areas under the aesthetics of the smile.

METHODOLOGY

This study was initiated after approval by the Research Ethics Committee, according to the current resolution for ethics in research in human beings N ° 466/12 of the National Health Council (Ministry of Health, DF) CAAE 88180418.4.0000.5578, N. Opinion: 2,653,032). Being Regroup with 50 individuals in each of them. Where is a total of 50 Dental Surgeons Registered in the Council Federal Dentistry that acted In two private higher education institutions in the city of Vitoria da Conquista-BA. The professionals were selected from 5 areas of practice: surgery, Dentists, endodontics, orthodontics and prosthesis. The inclusion criteria of the research were: Dental Surgeons duly registered in the Federal Council of Dentistry and working in at least one of the Private Institutions of Higher Education selected, being active in Dentistry, Endodontics, Surgery; Prosthesis and Orthodontics.

In addition to these requirements, the criterion of agreeing to participate in the research was universalized, reading and signing the Informed Consent Term (TCLE) and as exclusion criteria were used: Dental Surgeons who acted exclusively in the Public Health Service; professionals who did not fit into the aforementioned areas of work and professionals who worked in two more of these areas. A questionnaire was used to perform this study. (appendix A) adapted (Kokich *et al.*, 1999, 2006). Divided into two parts, the first referring to the participant's identification and the second, which dealt directly with the research. It was also used a catalogue consisting of 6 photographs of a frontal smile, randomly grouped, which have been modified by Adobe PHOTOSHOP™ (Adobe Systems Software CC 2018 19.0.1.29687), these being: Smile Line; Lateral incisor with conoid anatomical shape; Color change; Diastemas Dental crowding and Height/width of the upper central incisors. Each photo Was Individually and subjectively analyzed by the participant and, at the end, the same assigned a note between 0 and 10 for each image. Descriptive statistics procedures were used to express the results as absolute and relative frequencies, means or medians and standard deviations or interquartile amplitudes. The comparisons of the scores between the images were made using the Friedman test, with comparisons between pairs being performed by the Wilcoxon test. Comparisons between sexes, age groups, time of graduation and dental specialties were conducted using the Mann-Whitney test (for variables with two independent groups) and Kruskal-Wallis (for variables with three or more groups Independent). The significance level adopted was 5% ($\alpha = 0.05$). The data were tabulated and

analyzed in the IBM SPSS Statistics for Windows (IBM SPSS. 21.0, 2012, Armonk, NY: IBM Corp.).

RESULTS

The study included 50 dentists with age and training time varying from 26 to 69 years (mean \pm SD = 36.9 \pm 8.5 years) and 2 to 42 years (mean \pm SD = 13.6 \pm 8.3 years), respectively. The distribution of the main sociodemographic and professional characteristics of the participants are described in Table 1. It is observed that there was a similar distribution between the groups for the variables gender, age group and time of graduation; Among dental specialties, there was a higher frequency of orthodontists compared to other specialties. Figure 1 presents the aesthetic perception of the Dental Surgeons, according to the changes evaluated. The analysis indicated that the aesthetic perception of Dental Surgeons Varied according to the changes in the smile, and, in general, the Diastema was the alteration that most negatively impacted the aesthetics of the smile, followed, in order, by dental crowding, Lateral incisor conoid and color alteration, with the last two alterations not differing significantly. On the other hand, the low smile Line and the Height ratio Width/Of Central incisors were the alterations that least affected the aesthetics of the smile, according to the perception of Dental Surgeons. Differences were tested in the aesthetic perceptions of Dental Surgeons, according to gender, age group, training time and odontological specialty. The results of the analyses indicated that there were no statistical differences ($p > 0.05$) in the Evaluations Of the participants, according to age group, time of training and odontological specialty (Tables 2, 3 and 4). However, it was observed that the perception of Dental Surgeons Differed between the sexes for some types of changes, and the Female Professionals, compared to their male counterparts, attributed lower scores to Lateral incisor conoide, diastema and dental crowding (Table 5).

Table 1. Socio-demographic and professional characteristics of dental surgeons participating in the study

Variable	% response	n	%
Gender	100.0		
Female		26	52.0
Male		24	48.0
Age group	96.0		
26-32 years old		16	33.3
33-40 years old		17	35.4
41-69 years old		15	31.3
Graduated time	98.0		
2-9 years old		17	34.7
10-17 years old		16	32.7
18-42 years old		16	32.7
Odontological Specialty	100.0		
Orthodontics		18	36.0
Surgery		10	20.0
Endodontics		12	24.0
Other		10	20.0

*Includes Dentistics and prosthesis.

DISCUSSION

The smile is currently one of the most important items in the easy expression. Thus in dentistry, the aesthetics of the smile has gained prominence increasingly, making synonymous with a pleasant appearance, in which naturalness and harmonization tend to prevail. To Colombo *et al.* (2004). This situation of a pleasant smile accentuates the acceptance of the individual within a society highly influenced by the established beauty

Table 2. Aesthetic perception of Smile by Dental Surgeons, according to the evaluator's age group and the image evaluated

Age group	Image					
	Lsb	Ilc	Ac	Diastema	Ad	Ciwin
26-32 years old	7,5 ± 1,8	6,0 ± 4,0	5,5 ± 2,0	4,0 ± 2,8	4,5 ± 1,8	8,0 ± 2,8
33-40 years old	8,0 ± 2,0	6,0 ± 2,0	5,0 ± 3,0	4,0 ± 3,0	5,0 ± 3,0	8,0 ± 1,5
41-69 years old	8,0 ± 2,0	6,0 ± 2,0	6,0 ± 3,0	5,0 ± 3,5	5,0 ± 2,0	8,0 ± 2,0
* P-Value	0.920	0.658	0.487	0.252	0.837	0.995

LSB, low smile line; ILC, lateral incisor conoide; AC, color change; AD, dental crowding; Raic, Height/width ratio of central incisors. The results are expressed as medians ± interquartile amplitudes. * Test Kruskal-Wallis.

Table 3. Aesthetic perception of the smile by dental surgeons, according to the time of graduation of the evaluator and image evaluated

Graduated time	Image					
	Lsb	Ilc	Ac	Diastema	Ad	Ciwin
2-9 years old	7,0 ± 2,8	6,0 ± 5,0	5,0 ± 3,0	4,0 ± 3,5	4,0 ± 2,5	9,0 ± 2,5
10-17 years old	7,5 ± 1,0	6,0 ± 2,0	5,0 ± 3,0	4,5 ± 2,0	5,0 ± 2,8	8,0 ± 0,9
18-42 years old	8,5 ± 1,8	6,0 ± 2,0	6,5 ± 3,0	5,0 ± 4,6	5,0 ± 2,8	8,0 ± 2,0
* P-Value	0.216	0.666	0.443	0.272	0.373	0.524

LSB, low smile line; ILC, lateral incisor conoide; AC, color change; AD, dental crowding; Raic, Height/width ratio of central incisors. The results are expressed as medians ± interquartile amplitudes. * Test Kruskal-Wallis.

Table 4. Aesthetic perception of the smile by dentists, according to the odontological specialty of the evaluator and image evaluated

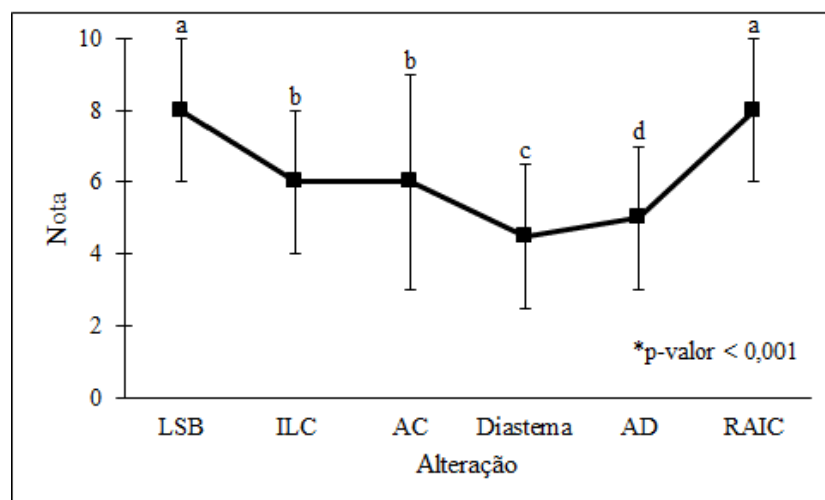
Specialty	Image					
	Lsb	Ilc	Ac	Diastema	Ad	Ciwin
Orthodontics	8,0 ± 2,0	6,0 ± 2,0	5,5 ± 3,0	4,0 ± 3,3	5,0 ± 2,3	8,5 ± 1,3
Surgery	7,0 ± 1,3	6,0 ± 3,0	5,0 ± 3,0	5,0 ± 2,5	5,0 ± 2,3	8,2 ± 1,3
Endodontics	7,5 ± 2,9	6,0 ± 4,0	5,5 ± 3,0	5,0 ± 3,9	5,0 ± 2,8	8,0 ± 2,8
Other	8,5 ± 1,3	6,0 ± 2,0	6,0 ± 2,0	5,0 ± 2,3	4,5 ± 2,9	7,5 ± 1,9
†P-Value	0.272	0.889	0.619	0.304	0.990	0.321

LSB, low smile line; ILC, lateral incisor conoide; AC, color change; AD, dental crowding; Raic, Height/width ratio of central incisors. The results are expressed as medians ± interquartile amplitudes. * Includes dentistics and prosthesis; † Test Kruskal-Wallis.

Table 5. Aesthetic perception of Smile by Dental Surgeons, according to the evaluator's gender and image evaluated

Sex	Image					
	Lsb	Ilc	Ac	Diastema	Ad	Ciwin
Female	8,0 ± 1,1	5,0 ± 3,0	5,5 ± 3,0	3,5 ± 3,0	4,0 ± 2,0	8,0 ± 2,0
Male	8,0 ± 2,0	7,0 ± 2,0	6,0 ± 3,0	5,0 ± 2,4	5,5 ± 1,8	8,3 ± 1,0
* P-Value	0.264	< 0.001	0.193	0.005	0.002	0.162

LSB, low smile line; ILC, lateral incisor conoide; AC, color change; AD, dental crowding; Raic, Height/width ratio of central incisors. The results are expressed as medians ± interquartile amplitudes. * Mann-Whitney test.



LSB, low smile line; ILC, lateral incisor conoide; AC, color change; AD, dental crowding; Raic, Height/width ratio of central incisors. The markers represent the medians and the error bars the interquartile amplitudes. * Friedman Test: ^{A, B, C, D} Distinct letters I Statistical difference between images (Wilcoxon test).

Figure 1. Aesthetic perception of Smile by Dental Surgeons



Apêndice A. Questionnaire

Dentist surgeon
Identification number _____
Age: _____ Genre: M() F()
Year that graduated: _____
Specialty: _____ (in the area)
On a scale of 1 to 10, which note would you give for the smile of the photo?
Image 01 _____
Picture 02 _____
Image 03 _____
Image 04 _____
Picture 05 _____
Image 06 _____

pattern (Colombo, Moro, Rech, Verona, and da Costa, 2004). Pithon *et al.* (2014) it also emphasizes that the appearance of the smile can be determinant in the labor market, in which the one who has a better harmonization of the smile would have the advantage of that individual who does not possess this characteristic (Pithon, Nascimento, Barbosa, and Coqueiro, 2014). Because of its importance, this natural human device has gained prominence in research over decades. Andrade *et al.* (2006). Consider that this is because not always the dental elements are in complete harmony between themselves and between the surrounding structures (Andrade *et al.*, 2006). Demanding a keener critical view, in front of a society so trapped in aesthetic standards, as the present one. Thus, in an attempt to continue the analyses of the smile, this work evaluated the aesthetic perception of the smile among the pre-selected odontological specialties, observing differences in perceptions between them. However, highlighting among the situations presented, in general, the dental diastema and crowding as those less attractive and as more attractive: low smile line and height/width ratio of the upper incisors. The diastema was considered a negative factor in aesthetics by

orthodontists an aesthetic problem, this greater prominence for this clinical situation can be explained by the fact that it is considered normal for children and does not provide a pleasant smile for many. It is worth noting that this alteration draws attention when it comes to adults, where it is sometimes necessary to define their cause to perform effective treatment (Menezes, Cardoso, Mendes, Fried, and Pereira, 2018). Another alteration present in the questionnaire, which was negatively evaluated, was dental crowding. Associate this negativity with the importance of an arrangement of the maxillary incisors. For the authors this situation is closely related to the excellence of the smile, since these dental elements are more visible, playing a larger role, among all the dental elements, in the aesthetics of the smile. In this aesthetic item, dental surgeons acting in dentists and prosthesis were less tolerant; While for orthodontists and surgeons this alteration was not highlighted as less aesthetic (Rosa, Olimpo, Fastuca, and Caprioglio, 2013). The sample of gingival tissue may vary according to the smile, being classified in high, medium and low. In the questionnaire applied, the alteration was of low smile, that is, the one that shows less than 75% of

the clinical crowns of the anterior maxillary teeth and no degree of gingival tissue (Caroli, Moretto, Nagase, and Nóbrega, 2008). For the interviewees, this clinical situation, in view of those presented, was one of the most tolerant, especially among the prosthesis, Dentists and orthodontics. Corroborating this work, the study showed that the exposure of gingival tissue between 0mm and 1mm is relatively aesthetic (Dutra, Ritter, Borgatto, Derech, and Rocha, 2011). While in his study states that, for both sexes, gingival exposure with more than 4mm and less than 4mm is considered antiesthetic (Kokich *et al.*, 2006). Still under an aesthetic look, Rodrigues (2005) affirms that a question of greater preponderance for beautiful smile is the height/width ratio of the above superior elements (Rodrigues, 2005). This relationship is also an important point of the harmony of the smile, and can make the smile attractive or hinder the acceptability of the individual in the social environment (Costa *et al.*, 2017). In view of this aegis, it was possible to demonstrate in this study that the reason for these presented items were considered tolerable, especially in the face of orthodontics (Vicci, Razuk, and Carvalho, 2006). In view of the results found, it was observed greater tolerance and intolerance to the clinical situations presented in this study, by Orthodontists, Protists and those active in Dentistry. This consideration is because these specialties act directly with smile aesthetics. In view of the more and less aesthetic perceptions for dental specialties, it is possible to infer that women were less tolerant of the alterations presented in this study. This may be related to the fact that the female gender has a more sharp and judicious analysis power. Despite the relevance of this work, it was evidenced that the group of respondents could encompass a higher professional quantity. However, for a convenience and ease before the ethics Committee on research with human beings, questionnaires were conducted only in two private schools, which had a small number of selected specialties.

Conclusion

According to the perception of Dental Surgeons, among the alterations evaluated, diastema is the one that most negatively influences the aesthetics of the smile, followed by dental crowding. On the other hand, the low smile line and the height/width ratio of the central incisors are the changes that least affect the aesthetics of the smile. The aesthetic perception of the smile by Dental Surgeons can vary according to the sex of the professional, for some types of alterations, with the women being less tolerant than the men for alterations like conoide lateral incisor, diastema and dental crowding. The perception of the Dental Surgeons for the alterations evaluated is not influenced by the age, training time and dental specialty of the professionals.

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