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Teeth arrangements for denture esthetics: perceptions of dentulous and edentulous individuals

Giselle V. de Moraes,[1] Joel O. Barreto,[1] José Eugênio T. Rocha,[1] Wagner A. de Negreiros,[1] Rayrah Kayane S. Moreira,[1] Rômulo R. Regis[1]*

Abstract

While bearing in mind that differing opinions on esthetic outcomes can emerge among dentists, patients and observers during the rehabilitation of edentulous patients, this study compares esthetic perceptions of and preferences for various anterior teeth arrangements for complete dentures among both dentulous and edentulous individuals. Two edentulous individuals were selected, and four maxillary anterior teeth arrangements ("Classic", "Supernormal", "Senile", "Youthful") were proposed. Photographs were evaluated by the patients, prosthodontists and dentistry predoctoral students, as well as edentulous and dentulous laypeople. In the cases of both patients, most respondents did perceive differences among the arrangements, with no differences among groups (male patient, P=0.353; female patient, P=0.387). Considering all respondents, the "Youthful" and "Classic" arrangements were understood to be the most attractive (33/48%), natural (34/51%), least artificial (34/50%), and the preferred (34/56%) smile for the male and female patient, respectively. Within each rater group, the "Classic" arrangement was rated as the least artificial (P=0.03) for the female patient. The "Senile" and "Youthful" arrangements were favored for the male patient, who preferred the "Senile" one. For the female

patient, the "Classic" and "Supernormal" were favored, and she chose the "Supernormal" smile. The results highlight that esthetic perceptions and preferences can differ among dentulous and edentulous laypeople, dental professionals and patients. In addition, the same observer may have different opinions regarding tooth arrangements for different patients. Therefore, the patient´s opinion must be taken into consideration when determining the esthetic standards of smiles, and professionals should refrain from imposing their own esthetic preferences on patients.

1. Departamento de Odontologia Restauradora, Faculdade de Farmácia, Odontologia e Enfermagem. Universidade Federal do Ceará, Fortaleza, CE Brazil.

*Correspondence address:
E-mail: romuloregis@hotmail.com
ORCID: https://orcid.org/0000-0003-2900-7815

Introduction

An esthetically pleasing smile is crucial for any restorative dental procedure, since this aspect of human appearance directly affects facial harmony, oral health, quality of life, communication, and business relationships.[1-4] To restore oral functions, dental prostheses must ensure harmony

in the shape and color of the teeth, gums, lips, and face. This can be challenging when all maxillary anterior teeth are absent.[5]

The literature presents numerous methods for determining esthetic parameters for anterior teeth. Williams[6] argues that the shape of the face resembles that of the maxillary central incisors, classifying them as square, triangular, or ovoid. Building on this idea, Nelson's "Esthetic Triangle"[7] incorporated the shape of dental arches into the aforementioned concept. Frush and Fischer suggest that factors such as sex,[8] personality,[9] and age[10] influence various tooth parameters, including outlines of incisal angles, size and arrangements, as well as the presence of incisal wear and gingival recessions. Rufenacht's morphopsychology theory[11] links the maxillary central incisors to personality traits such as strength, energy, authoritarianism, magnetism, apathy, or retraction. Meanwhile, the maxillary lateral incisors have been associated with an artistic, emotional, or intellectual personality. Therefore, different dental arrangements have the potential to significantly alter a patient's image.

The requirements for esthetics in restorative procedures have evolved alongside the current trend of increased recourse to anti-aging treatments.[5] In terms of rehabilitation through complete dentures, various concepts — the "natural", "supernormal", and "denture" looks — have been discussed in the literature.[1,2,12] These concepts encompass factors such as the size and proportion of teeth, gingival characterization, occlusal plane, use of diastema, different arrangements of maxillary anterior teeth, and the degree of their exposure, among others. The maxillary central incisors play a significant role in non-verbal communication due to their prominent position in the mouth.[13] The pursuit of younger-looking smile patterns has led to the positioning of maxillary anterior teeth at a more incisal level relative to lateral incisors and canines, with the objective of enhancing their visibility.[14] However, literature that documents the application of this youthful model in the rehabilitation of edentulous elderly patients using complete dentures is lacking.

Ideally, the esthetic parameters employed should align with the demands of patients,[6] given the complex and subjective nature of the concept of beauty.[15] Acknowledging the significance of esthetics in achieving successful treatment outcomes, this study aims to assess how various arrangements of maxillary anterior teeth impact the perceptions and preferences of prosthodontists, predoctoral students in dentistry, dentulous individuals and wearers of complete dentures. The null hypothesis was that the perceptions and preferences of respondents regarding the four esthetic concepts tested would not significantly differ.

Methodology

Following approval by the Institutional Ethics Committee of the local university (#627.841), two completely edentulous patients who were seeking new full dentures were selected for this observational study. They were both aged 60, and one was male (Patient 1) and the other female (Patient 2). Both patients demonstrated good receptiveness and cognitive ability, and no pre-prosthetic interventions were required. The study's nature and all its details were thoroughly explained, and informed consent was obtained.

Complete dentures were fabricated according to the following technique:[16,17] preliminary impressions were taken using stainless steel stock trays, previously modified by the application of peripheral wax to their edges (Asfer Indústria Química Ltda, SP, Brazil), using irreversible hydrocolloid (Dental News Com. Imp. e Exp Ltda, PR, Brazil) as the impression

material. Preliminary casts were obtained using type III plaster (Chaves F/A Mineração e Indústria, CE, Brazil).

Individual trays were then fabricated using colorless acrylic resin. Clinical adjustments were made to the individual trays, and secondary impressions were taken by border molding using a low-fusion stick compound (Nova DFL, RJ, Brazil) and by molding the supporting surface with zinc oxide–eugenol paste (Technew, RJ, Brazil). Working casts were made using type IV plaster (Pasom, Gold Star Brasil Indústria e Comércio Ltda, SP, Brazil).

Record bases with wax rims were created on these casts. The wax rims were individualized, and maxillomandibular relationship recordings were performed. The working casts were transferred to a semi-adjustable articulator by means of a facebow. Adjustments were made to intercondylar distance, condylar guide, and Bennet angles (30 and 15 degrees, respectively).

The artificial teeth (Vipi Dent Plus, VIPI Indústria, Comércio, Exportação e Importação de Produtos Odontológicos Ltda, SP, Brazil) were chosen by three clinical operators based on shape, size, and color. They followed the reference lines marked on the maxillary wax rim and considered each patient's esthetic preferences. An arrangement known as "Classic" for the six maxillary anterior teeth was utilized for placement of the artificial teeth. This arrangement positioned the central incisors and canines at the same incisal level, with the lateral incisors positioned 1mm above [Figure 1a].

Following clinical trials and approval by both participants and operators, three other arrangements were tested on three additional record bases: the "Senile", which is similar to the "Classic" arrangement, but has worn cuspids and the same level for the central, canine, and lateral incisors edges [Figure 1b]; the "Supernormal", in which the teeth were 1.0mm longer and 1.0mm wider than the "Classic" arrangement, with the same ordering of incisal levels [Figure 1c]; and the "Youthful", which is similar to the "Classic" arrangement, except that the incisal edge of the maxillary central incisors was positioned 1mm below the edge of the lateral incisors, and these, in turn, were 1mm below the cuspid of the canines [Figure 1d]. For example, in the case of patient 1, the model of the anterior teeth selected for the "Classic", "Senile", and "Youthful" arrangements measured 8mm in width and 10.4mm in length (model # 264). However, for the "Supernormal" arrangement, the width and length were 9.1mm and 11.4mm, respectively (model #38).
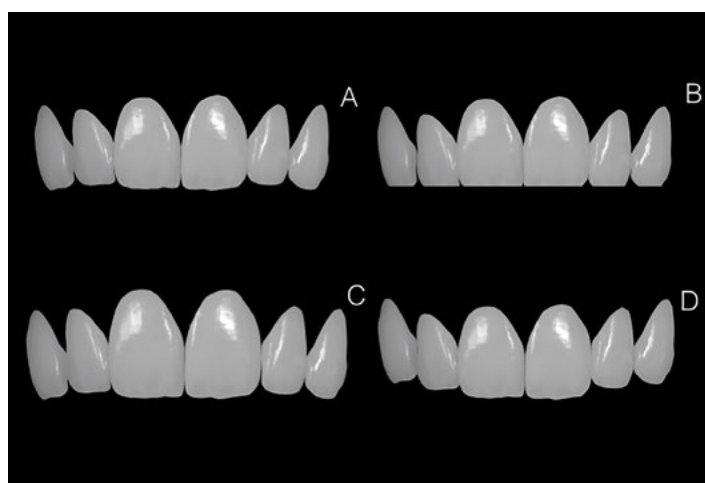

Figure 1. Upper anterior teeth arrangements.

Legend: A: "Classic" arrangement; B: "Senile" arrangement; C: "Supernormal" arrangement; D: "Youthful" arrangement.
Source: The authors (2024).

After esthetic and functional evaluation and approval of artificial teeth in the "Classic" arrangement, the process aimed to standardize the characteristics for the various teeth assemblies. To achieve this, new record bases and wax rims were obtained using the same working cast mounted on the semi-adjustable articulator. This process maintained the previously established vertical dimension and centric relation. The creation of the four maxillary teeth assemblies was conducted in reference to the same lower record base. These assemblies were executed by a single denture technician who was well-versed in the characteristics of the proposed arrangements.

After approval of the different arrangements, digital camera pictures (sized 15 x 10cm) (Nikon Coolpix P510 Nikon Corp., Tokyo, Japan) were captured and organized into a booklet. Each patient's set of four images was presented on a single page to aid visual comparison. To prevent any influence on the raters' responses, the images were randomly labeled with the letters A, B, C, and D (A – "Classic", B – "Senile", C – "Supernormal", and D – "Youthful"). An illustration featuring the application of the four arrangements on patient 1 is depicted in Figures 2a-d.

Figure 2. Frontal view of the smiles composed by the different teeth arrangements.

Legend: composed by A:"Classic" arrangement; B:"Senile" arrangement; C: "Supernormal" arrangement; D: "Youthful" arrangement.

Source: The authors (2020).

The illustrated booklet was presented to 100 individuals, including prosthodontists, predoctoral dentistry students, edentulous individuals, and dentulous laypeople (25 respondents per group). These participants expressed their esthetic perceptions and preferences by filling in a questionnaire[1,2] specially adapted for this study. The response unit used for comparing groups was the evaluation of the following parameters: Noticeable difference among arrangements (question 1 – "Can you perceive a noticeable difference among the four smiles of this patient?"); Attraction (question 2 – "Which smile do you consider the most attractive?"); Naturalness (question 3 – "Which smile do you consider the most natural?"); Artificiality (question 4 – "Which smile do you consider the least artificial?"); Esthetics (question 5 – "Which smile do you consider the most esthetically pleasing?"); Choice of smile (question 6 – "Which smile would you select for this patient?").

Each patient conducted a self-evaluation of the smiles featuring different arrangements using the same questionnaire. They selected their preferred dental arrangement, and the dentures

then underwent the curing cycle. Following this, the dentures were delivered, together with instructions regarding their use and maintenance. In addition, follow-up appointments were scheduled after 1, 7, and 14 days. Further appointments were arranged based on the individual needs of each patient.

Differences among groups were examined using Fisher's exact and Chi-square tests. The analyses were conducted at a significance level of 0.05 utilizing statistical software (SPSS 21.0.0; SPSS Inc., Chicago, IL).

Results

The majority of respondents perceived differences among the four dental arrangements (male patient – 92%, female patient – 99%), with no difference between the two groups (male patient, P=0.353; female patient, P=0.387) [Table 1]. In addition, the frequency of "yes" or "no" answers for question 1 in each group was similar, regardless of the patient ("yes", P=0.745; "no", P=0.996) (Table 1).

Table 1. Frequency of responses to question "Can you perceive a noticeable difference among the four smiles of this patient?" (question 1) in each group of respondents concerning their perceptions of the differences among the four dental arrangements.

Group	Do you perceive a difference?		P
	No	Yes	
Male patient			
Dentulous laypeople	3 (12%)	22 (88%)	
Undergraduates	2 (8%)	23 (92%)	
Edentulous	3 (12%)	22 (88%)	0.353
Prosthodontists	0 (0%)	25 (100%)	
Total	8 (8%)	92 (92%)	
Female patient			
Dentulous laypeople	0 (0%)	25 (100%)	
Undergraduates	0 (0%)	25 (100%)	
Edentulous	1 (4%)	24 (96%)	0.387
Prosthodontists	0 (0%)	25 (100%)	
Total	1 (4%)	99 (99%)	
P*	**0.745**	**0.996**	

Legend: *Fisher's exact test. Non-significant differences (P>0.05).
Source: The authors (2020).

For the male patient, similar opinions for each teeth arrangement regarding all evaluated parameters were obtained from the groups of raters (Table 2). Considering the most frequent

responses from all respondents, the "Youthful" arrangement was identified as the most attractive (33%), the most natural (34%), the least artificial (34%), and the preferred (34%) smile. In the case of the female patient, the smile created with the "Classic" arrangement was identified as the most attractive (48%), the most natural (51%), the least artificial (50%), the most esthetic (59%), and the preferred (56%) smile. For this patient, a statistically significant difference of opinion regarding the "artificiality" parameter ($P=0.03$) was observed within each rater group. The "Classic" arrangement was considered the least artificial by the dentulous (52%), edentulous (48%), and prosthodontists (72%) groups. Undergraduates (36%) selected the "supernormal" arrangement as the least artificial.

Table 3 displays the comparison of preferences and perceptions within each rater group with regard to the patients. Overall, the "Classic" and "Supernormal" arrangements received similar ratings for all questions in both patients. The same trend was noticed for the smiles created with the "Senile" and "Youthful" arrangements. The opinions of the edentulous and prosthodontists groups were aligned — they considered the "Senile" and "Youthful" arrangements

Table 2. Frequency of responses of each rater group for questions 2-6 concerning their perceptions of the differences among the four dental arrangements applied for patients 1 and 2

	Group	Teeth arrangements Male patient				P	Teeth arrangements Female patient				P
		CL	SL	SN	YF		CL	SL	SN	YF	
Most attractive	Dentulous laypeople	7 (28%)	7 (28%)	5 (20%)	6 (24%)		13 (56%)	1 (4%)	11 (44%)	0 (0%)	
	Undergraduates	8 (32%)	4 (16%)	5 (20%)	8 (32%)		8 (32%)	3 (12%)	11 (44%)	3 (12%)	
	Edentulous	5 (20%)	7 (28%)	4 (16%)	9 (36%)	0.943	11 (44%)	3 (12%)	10 (40%)	1 (4%)	0.247
	Prosthodontists	5 (20%)	5 (20%)	5 (20%)	10 (40%)		16 (64%)	1 (4%)	8 (32%)	0 (0%)	
	Total	25 (25%)	23 (23%)	19 (19%)	33 (33%)		48 (48%)	8 (8%)	40 (40%)	4 (4%)	
Most natural	Dentulous laypeople	6 (24%)	4 (16%)	8 (32%)	7 (28%)		12 (48%)	4 (16%)	5 (20%)	4 (16%)	
	Undergraduates	5 (20%)	4 (16%)	7 (28%)	9 (36%)		10 (40%)	5 (20%)	6 (24%)	4 (16%)	
	Edentulous	4 (16%)	8 (32%)	3 (12%)	10 (40%)	0.576	12 (48%)	3 (12%)	8 (32%)	2 (8%)	0.624
	Prosthodontists	3 (12%)	9 (36%)	5 (20%)	8 (32%)		17 (68%)	1 (4%)	5 (20%)	2 (8%)	
	Total	18 (18%)	25 (25%)	23 (23%)	34 (34%)		51 (51%)	13 (13%)	24 (24%)	12 (12%)	
Least artificial	Dentulous laypeople	8 (32%)	3 (12%)	8 (32%)	6 (24%)		13 (52%) a	1 (4%)	2 (8%)	9 (36%)	
	Undergraduates	5 (20%)	4 (16%)	6 (24%)	10 (40%)		7 (28%)	5 (20%)	9 (36%) a	4 (16%)	
	Edentulous	5 (20%)	7 (28%)	5 (20%)	8 (32%)	0.500	12 (48%) a	1 (4%)	9 (36%)	3 (12%)	0.003*
	Prosthodontists	3 (12%)	8 (32%)	4 (16%)	10 (40%)		18 (72%) a	1 (4%)	4 (16%)	2 (8%)	
	Total	21 (21%)	22 (22%)	23 (23%)	34 (34%)		50 (50%)	8 (5%)	24 (24%)	18 (18%)	

Table 2. Frequency of responses of each rater group for questions 2-6 concerning their perceptions of the differences among the four dental arrangements applied for patients 1 and 2 (cont.)

	Group	Teeth arrangements Male patient				P	Teeth arrangements Female patient				P
		CL	SL	SN	YF		CL	SL	SN	YF	
Most esthetic	Dentulous laypeople	6 (24%)	7 (28%)	8 (32%)	4 (16%)		16 (64%)	2 (4%)	7 (28%)	0 (0%)	
	Undergraduates	8 (32%)	7 (28%)	3 (12%)	7 (28%)		11 (44%)	3 (12%)	9 (36%)	2 (4%)	
	Edentulous	5 (20%)	8 (32%)	4 (16%)	8 (32%)	0.367	13 (52%)	2 (4%)	8 (32%)	2 (4%)	0.478
	Prosthodontists	8 (32%)	4 (16%)	6 (24%)	7 (28%)		19 (76%)	1 (2%)	3 (12%)	2 (4%)	
	Total	27 (27%)	26 (26%)	21 (21%)	26 (26%)		59 (59%)	8 (8%)	27 (27%)	6 (6%)	
Smile of choice	Dentulous laypeople	6 (24%)	5 (20%)	8 (32%)	6 (24%)		16 (64%)	1 (4%)	8 (32%)	0 (0%)	
	Undergraduates	6 (24%)	4 (16%)	6 (24%)	9 (36%)		9 (36%)	4 (32%)	9 (36%)	3 (12%)	
	Edentulous	7 (28%)	8 (32%)	2 (8%)	8 (32%)	0.579	12 (48%)	2 (8%)	9 (36%)	2 (8%)	0.175
	Prosthodontists	4 (16%)	5 (20%)	5 (20%)	11 (44%)		19 (76%)	1 (4%)	4 (16%)	1 (4%)	
	Total	23 (23%)	22 (22%)	21 (21%)	34 (34%)		56 (56%)	8 (8%)	30 (30%)	6 (6%)	

Legend: CL - Classic; SN - Supernormal; SL - Senil; YF - Youthful. *Chi-square test; aSignificant differences (P<0.05).
Source: The authors (2020).

more suitable for the male patient; while finding the "Classic" and "Supernormal" arrangements more appropriate for the female patient across all parameters. Similar results were observed for the dentate group, except for the naturalness and artificiality parameters. The undergraduate group was the only one to rate both patients similarly on all parameters.

Table 3. Comparison between both patients within each rater group for questions 2-6.

		P*	Male Patient	Female Patient
Most attractive	Dentulous laypeople	0.002†	CL=SN<SL=YF	CL=SN>SL=YF
	Undergraduates	0.198	ns	ns
	Edentulous	0.005†	CL=SN<SL=YF	CL=SN>SL=YF
	Prosthodontists	0.000†	CL=SN<SL=YF	CL=SN>SL=YF
Most natural	Dentulous laypeople	0.319	ns	ns
	Undergraduates	0.286	ns	ns
	Edentulous	0.003†	CL=SN<SL=YF	CL=SN>SL=YF
	Prosthodontists	0.000†	CL=SN<SL=YF	CL=SN>SL=YF

Table 3. Comparison between both patients within each rater group for questions 2-6 (cont.).

		P*	Male Patient	Female Patient
Least artificial	Dentulous laypeople	0.094	ns	ns
	Undergraduates	0.306	ns	ns
	Edentulous	0.013†	CL=SN<SL=YF	CL=SN>SL=YF
	Prosthodontists	0.000†	CL=SN<SL=YF	CL=SN>SL=YF
Most esthetic	Dentulous laypeople	0.010†	CL=SN<SL=YF	CL=SN>SL=YF
	Undergraduates	0.049†	CL=SN<SL=YF	CL=SN>SL=YF
	Edentulous	0.007†	CL=SN<SL=YF	CL=SN>SL=YF
	Prosthodontists	0.018†	CL=SN<SL=YF	CL=SN>SL=YF
Smile of choice	Dentulous laypeople	0.004†	CL=SN<SL=YF	CL=SN>SL=YF
	Undergraduates	0.241	ns	ns
	Edentulous	0.005†	CL=SN<SL=YF	CL=SN>SL=YF
	Prosthodontists	0.000†	CL=SN<SL=YF	CL=SN>SL=YF

Legend: CL: Classic; SN: Supernormal; SL: Senil; YF: Youthful. *Chi-square test; †Significant differences (P<0.05); ns:– not significant.

Source: The authors (2020).

The male patient preferred the "Senile" smile, considering it the most attractive and natural. The "supernormal" smile was deemed less artificial and more esthetic. In contrast, the female patient found the smile with the "Supernormal" arrangement more attractive, natural, and esthetic, choosing it as their preferred smile. In addition, both patients considered the "Youthful" arrangement to be the least artificial.

Discussion

The primary aim of the current study was to explore the perceptions and preferences of various dentate groups with different levels of dental knowledge, as well as completely edentulous patients wearing complete dentures, with regard to different teeth arrangements during the rehabilitation of edentulous individuals using complete dentures. Although the differences between the smiles in the present study may appear small, 97% of dentulous respondents (dentulous, undergraduates, and prosthodontists groups) and 92% of edentulous individuals perceived distinctions among the four dental arrangements. This suggests that the smiles differ noticeably in the opinion of most observers. Furthermore, this perception within each group was not influenced by the patient's sex. This finding aligns with Waliszewski and cols.[1] who found that 96% of edentulous respondents were able to differentiate between the three proposed dental arrangements ("Natural", "Supernormal", and "Denture look"). In addition, Stockheimer and Waliszewski[2] observed that 96% of both dentulous and edentulous respondents were able to observe differences between such smiles.

In general, significant differences in responses among rater groups for all evaluated parameters were more noticeable in the case of the female patient. Specifically, among edentulous respondents, a majority (48%) preferred the smile with the "Classic" arrangement, aligning with previous findings[1,2] where 55% of edentulous respondents shared this preference. The "Classic" arrangement was also identified as the most attractive (44%), natural (48%), least artificial (48%), and most esthetic (52%). In Waliszewski and cols.[2] study, this smile was chosen by 53.5% of edentulous respondents as the most attractive, 56% as the most natural, and 54% as the least artificial. Furthermore, in Stockheimer and Waliszewski study (2012),[2] the "Classic" smile was selected by most edentulous respondents as the most attractive (53%), natural (55%), and least artificial (53%). Interestingly, only 12% of respondents considered this smile the most artificial, aligning with previous findings of 9%[1] and 11%[2] in earlier studies.

Furthermore, the "Classic" smile was favored by 64% of dentate laypeople, being considered the most attractive (56%), the most natural (48%), the least artificial (52%), and the most esthetically pleasing (64%) arrangement. In a previous study,[2] 53% of dentate participants preferred this smile and regarded it as the most attractive (53%) and most natural (55%). The smile featuring the "Supernormal" arrangement ranked second as the most preferred, most attractive, most natural, and most esthetically pleasing by both groups, but was rated as the third most artificial. This finding contrasts with previous studies,[1,2] in which this arrangement was the least preferred, considered the most artificial, least attractive, and least natural by these groups. These differences may have emerged due to variations in the number of respondents and the inclusion of a fourth smile configuration for evaluation in the present study.

When assessing the responses of all raters, notable differences were observed among patients. The female smile typically features rounded outlines of incisal angles, imparting a more delicate appearance.[13] This may explain why the majority of respondents favored the "Classic" arrangement, characterized by a more controlled display of teeth, for the female patient (56%). This was considered the most attractive (48%), the most natural (51%), the least artificial (50%), and the most esthetically pleasing (59%) arrangement.

Conversely, square and straight incisal angles, lending a more robust appearance,[13] appear to be more appealing in the case of the male patient. This could explain why the "Senile" smile was rated as the most attractive, most natural, least artificial, most esthetically pleasing, and the preferred choice for the male patient, compared to the "Classic" and "Supernormal" arrangements (Table 3). Patient 1 favored the "Senile" arrangement in their smile, considering it the most attractive and natural. Patient 2 expressed a preference for more visible teeth, favoring the "Supernormal" arrangement as the most attractive, natural, esthetically pleasing, and their preferred smile.

The smile design referred to as the "Youthful" arrangement in this study was based on parameters identified as ideal for a youthful smile,[14] where the incisal edges of the upper central incisors are positioned below the edges of the lateral incisors, which, in turn, are positioned below the canine cuspid when viewed from the front. Thus, the acceptance of this youthful setting was evaluated when applied to older adult denture wearers, a demographic group not previously explored in the literature. The low acceptance of this arrangement by these patients could likely be attributed to the youthfulness characteristics it imparts to the smile, rendering it incompatible with older patients. According to Pithon and cols.,[18] an esthetic conflict can arise when restoring the smile of an adult with features more suited to a younger individual, which are easily noticed by any observer. For older edentulous persons, a

satisfactory and pleasing smile might be one that mirrors the characteristics of their natural smile, in alignment with their present age.[12]

The results underscore the divergence regarding the esthetic perceptions and preferences observed among the various individuals surveyed and the rehabilitated patients in this study. The level of "dental knowledge" can potentially influence esthetic preferences, since it involves the consideration of theoretical and anatomical aspects during esthetic evaluations. The opinions of laypeople may differ from those of predoctoral dental students and prosthodontists due to this disparity in knowledge. Therefore, the patient's perspective must be taken into account when establishing esthetic standards for smiles. Professionals should refrain from imposing their own esthetic ideals onto patients, since the perception of beauty is entirely subjective and personal. In addition, one must recognize that differences in perceptions of beauty and naturalness exist not only between sexes and ages but also encompass objective aspects, such as dental lines and angles.

The limitations of the present study include that only two patients, both around 60 years old, were evaluated, and that respondents were asked to assess the images only once. Future studies might consider evaluating these arrangements across different age groups (e.g., around 40 or over 70 years old). Increasing the number of respondents could potentially reveal more significant differences between groups. To validate the reliability of participants´ responses, a second set of identical pictures, presented in different sequences, could be used. In addition, demographic characteristics, such as respondents´ gender, age, duration of edentulism, and denture use, could be included in order to achieve a more comprehensive understanding of how these factors influence esthetic perceptions and preferences.

Conclusions

Regardless of the level of dental knowledge or experience with dental prostheses, all groups of evaluators noticed differences between the proposed dental arrangements. With the exception of undergraduates, both "Senile" and "Youthful" arrangements were preferred for the male patient, who selected the "Senile" smile. In the case of the female patient, the preferred arrangements were "Classic" and "Supernormal", and she chose the "Supernormal" smile. Thus, the same observer may have differing opinions when evaluating tooth arrangements proposed for different patients. These results highlight the importance of taking into consideration the patient´s opinion when determining the esthetic standards of a smile, and the need for professionals to avoid imposing their esthetic preferences on patients.

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