

Assessment of Subjective Facial Analysis and its Relation with Dental Relationships

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ABSTRACT

Background: Cephalometric analysis of soft profile was the most influential method in building awareness of the soft tissue as a diagnostic instrument. The present study was conducted to assess subjective facial analysis and its relation with dental relationships.

Materials & Methods: The present study was conducted on 130 orthodontics patients of age ranged 8-14 years. Standardized extraoral and intraoral photographs were taken for the subjective facial and occlusal analysis. Patients with a subdivision Class II or III relationship were classified as Class II or III.

Results: Pattern I individuals were the majority in both classifications (frontal- 94 and profile- 85). In the sagittal analysis, an agreement of 64% between the classification of facial Pattern (I, II and III) and teeth relationship (Class I, II and III) was verified.

Conclusion: Authors found that a significant correlation was observed between profile and frontal subjective facial analysis.

Keywords: Facial analysis, dental relationships, Orthodontics.

INTRODUCTION

The concept of facial beauty is abstract and subjective, but society seems to have an implicit standard for facial esthetics.¹ Photographs are close to the natural state of the subject and show the surface structures of the face in detail. The judgment of facial esthetics from the photographs performed on visual analog scale (VAS) is demonstrated to be valid and reliable.² The advent of cephalometric radiographs solved some shortcomings of Angle classification, incorporating information on hard tissue relationships, but still, little attention was placed on the soft tissues and facial analysis.³ Cephalometric analysis of soft profile was the most influential method in building

awareness of the soft tissue as a diagnostic instrument. Although it was emphasized long time ago that the soft-tissue facial profile may be of equal importance to the craniofacial skeleton in the assessment of orthodontic patients, only more recently did orthodontists recognize the functional and esthetic aspects of the soft tissue as determinants in diagnosis and treatment planning.⁴ For the soft tissue assessment, extensive studies and measurements have been developed by analysis of lateral cephalograms to quantify "facial esthetics" since the 1950s, such as esthetic plane, B-line, H-angle, Z-angle, and nasolabial angle. Several studies have shown the relationship between facial features

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and the skeletal and occlusal changes in malocclusions, concluding that information about skeletal and dental abnormalities can be derived from soft tissue analysis.⁵ The present study was conducted to assess subjective facial analysis and its relation with dental relationships.

MATERIALS & METHODS

The present study was conducted in the department of Orthodontics. It comprised of 130 orthodontics patients of age ranged 8-14 years. The study was approved from institutional ethical committee. Data such as name, age, gender etc. was recorded. Standardized extraoral and intraoral photographs were taken for the subjective facial and occlusal

analysis. The extraoral photographs consisted in the frontal and profile views, and the intraoral set consisted of a frontal, right and left side views. The subjective facial evaluation was performed by a calibrated evaluator who classified the subjects into five groups according to their facial features: Pattern I, II, III; Long or Short Face facial patterns. There is Class I canine relationship when the maxillary canine occludes between the lower deciduous canine and the deciduous first molar. In Class II malocclusions the maxillary canine occludes mesially and, in Class III malocclusions, distally to this position. Patients with a subdivision Class II or III relationship were classified as Class II or III. Results thus obtained were subjected to statistics. P value less than 0.05 was considered significant.

RESULTS

Table 1: Different Facial Patterns according to the frontal and profile analysis.

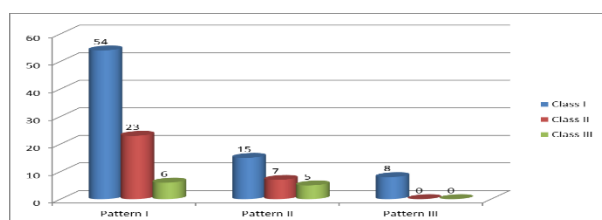
Frontal	Profile pattern I	Profile pattern II	Profile pattern III	Profile Long face	Profile Short face	Total
Pattern I	78	16	0	0	0	94
Pattern II	0	11	2	1	0	14
Pattern III	2	1	0	1	1	5
Long face	2	3	1	1	0	7
Short face	0	0	2	1	1	4
Asymmetry	3	1	2	0	0	6
Total	85	32	7	4	2	130

Table I shows that pattern I individuals were the majority in both classifications (frontal- 94 and profile- 85).

Table 2: Agreement percentage between sagittal dental relationship and the Facial Pattern.

Profile	Class I	Class II	Class III	Total
Pattern I	54	23	6	83
Pattern II	15	7	5	27
Pattern III	8	0	0	8
Total	77	30	11	118

Table II, graph I shows that in the sagittal analysis, an agreement of 64% between the classification of facial Pattern (I, II and III) and teeth relationship (Class I, II and III) was verified.



Graph 1: Agreement percentage between sagittal dental relationship and the Facial Pattern.

DISCUSSION

An examination of the concordance between them was desirable to evaluate the contribution of

objective cephalometric measurements in facial esthetics assessment. Although previous studies have shown that the general public does not rate facial esthetics in the same way as orthodontists.⁶

Facial analysis performed unconsciously and daily by ordinary people, directly influences perception of the characteristics of people we interact with, and is notoriously influenced by the occlusal characteristics and vice versa. It is known that the ratings of

attractiveness, intelligence, conscientiousness, pleasantness and acceptance differed significantly depending on the occlusal status depicted.⁷ Persons with normal occlusion were rated as most attractive, intelligent, agreeable and extraverted, whereas persons with prognathism were rated as least attractive, intelligent, and extraverted. Furthermore, persons with ideal smiles are considered more intelligent and have a greater chance of finding a job when compared with persons with non-ideal smiles.⁸ The present study was conducted to assess subjective facial analysis and its relation with dental relationships.

In present study pattern I individuals were the majority in both classifications (frontal- 94 and profile- 85). Siécola et al⁹ conducted a study which consisted of 151 children without previous orthodontic treatment, analyzed by an orthodontist. Standardized extraoral and intraoral photographs were taken for the subjective facial classification according to Facial Pattern classification and occlusal analyses. It has been researched the occurrence of different Facial Patterns, the relationship between Facial Pattern classification in frontal and profile views, the relationship between Facial Patterns and Angle classification, and between anterior open bite and Long Face Pattern. Facial Pattern I was verified in 64.24% of the children, Pattern II in 21.29%, Pattern III in 6.62%, Long Face Pattern in 5.96% and Short Face Pattern in 1.99%. A substantial strength of agreement of approximately 84% between frontal and profile classification of Facial Pattern was observed (Kappa = 0.69). Agreement between the Angle classification and the Facial Pattern was seen in approximately 63% of the cases (Kappa = 0.27). Long Face Pattern did not present more open bite prevalence.

We found that in the sagittal analysis, an agreement of 64% between the classification of facial Pattern (I, II and III) and teeth relationship (Class I, II and III) was verified. Ajisafe et al¹⁰ in their study a sample of 100 individuals was recruited. Facial axis angle (Ptm-Gn/Ba-N) was used to classify the facial pattern into brachyfacial (<87°), mesofacial (87°–93°), and dolichofacial (>93°). Out of the 84 participants, 60 (71.4%) had mesofacial facial pattern which consisted of 27 (32.1%) males and 33 (39.3%) females. 10 (11.9%) had brachyfacial pattern out of which 9 (10.7%) were male and 1 (1.2%) was a female. This difference between the

males and females in the brachyfacial pattern was statistically significant with a *P* value of 0.014 (*P* ≤ 0.05). 14 (16.67%) participants had dolichofacial pattern with 5 (6.0%) males and 9 (10.7%) females.

CONCLUSION

Authors found that a significant correlation was observed between profile and frontal subjective facial analysis.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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