Facial Analysis: Correlation of the Interlabial Angle with Malocclusions

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INTRODUCTION

The reasons that lead people to seek orthodontic treatment are not necessarily related to functional needs, such as correction of problems with chewing, phonation and breathing. Generally, the search is made with the objective of improving the aesthetic aspect, since the opinions of others have a direct or indirect influence on the individual's self-esteem and on his opinion regarding his own appearance[1,2].

Morphological analysis of the face is a diagnostic resource for determining treatment protocols. It is performed through clinical examination, cephalometry and intra and extra oral photographs. Through cephalometry, data related to craniofacial development, type of occlusion and type of profile are collected. The clinical examination and photographs give an overview of facial harmony in relation to bone bases, teeth and soft tissues[3,4].

The interlabial angle is one of the parameters studied in the facial analysis of soft tissues. It is formed between the upper and lower lips and determines the degree of lip protrusion. This projection directly interferes with facial harmony, being linked to the volume of soft tissue, as well as to the projections of bones and teeth. Lips are currently one of the most striking structures for consolidating people's beauty and self-esteem[1,5].

Considering that the lips are one of the preferred targets of current beauty standards, the objective of this research is to study the relationship between the interlabial angle and malocclusions.

METHODS

A cross-sectional, retrospective, quantitative and analytical research was carried out. The sample consisted of 52 orthodontic documentation from patients between 22 and 36 years of age, of both sexes, attended at the Specialization Course in Orthodontics at UNIFIP / PB, Brazil. Only good quality tests were included, all performed at the same diagnostic center.

Data collection was performed by a single examiner. The following instruments were used: millimeter ruler, dry point compass, ultrafan paper, 0.5 graphite pencil, and form for data tabulation. The variables studied were: sex, skin color, interlabial angle values and malocclusions: open bite, cross bite, overbite, overjet, dental crowding and ogival palate.

The interlabial angle was determined as follows: Interlabial angle (Sn. Ls. Li. Lm) - formed between the upper and lower lips. Determines the degree of lip protrusion. The average value is $133.02° \pm 10.95°$[1].

The data were organized in tables. For statistical analysis, the software IBM SPSS (Statistic Package for Social Sciences) version 20.0 was used, considering a 95% confidence interval (Fisher's Exact test).

RESULTS AND DISCUSSION

The following tables describe the absolute values, using frequencies and percentages; and analytical, through the statistical test.

Table 1 describes the sample according to sex and skin color. The highest frequency was for females (67.4%) and brown color (55.8%).

VARIABLES		FREQUENCY	PERCENTAGE
SEX	Man	17	32,6
	Woman	35	67,4
SCKIN COLOR	Black	04	7,6
	White	19	36,5
	Brown	29	55,8

Table 1: Distribution of the sample according to sex and skin color

Source: Author data (n = 52).

Studies[5,6] indicate that women are more concerned with aesthetics and are, therefore, the majority in the search for treatments related to facial changes. This statement corroborates the values described in the present study, since most of the sample was composed of female individuals.

In addition, a higher frequency of brown patients was observed, demonstrating that the relationship between racial miscegenation and malocclusions is true, as described in the classic and current literature[7,8]. However, other studies[1,8], disagree with these data, and report high rates of malocclusions in white individuals. This disagreement may be due to the differences between the samples studied and the methods adopted in each study.

Table 2 describes the malocclusions: open bite, cross bite, overbite, overjet, dental crowding and ogival palate. The highest frequency occurred for dental crowding (34.4%).

MALOCCLUSIONS	FREQUENCY	PERCENTAGE (%)
Open bite	06	6,5
Cross bite	19	20,4
Overbite	09	6,5
Overjet	11	11,8
Dental crowding	32	34,4
Ogival Palate	16	17,3

Table 2: Distribution of the sample according to malocclusions.

Source: Author data (n = 93). Note: a patient may have more than one malocclusion.

Studies[1,10] indicate that there is a high prevalence of malocclusions in the world population. These changes can range from the simplest dental deviations, to the involvement of bone bases[6]. For some authors[11], the most prevalent malocclusion was deep overbite; while for the present study, the highest frequency was for dental crowding. These data corroborate with the results reported in the literature[12]. Again, it is emphasized that the different samples and methodologies used, can generate differences in the results of scientific research.

Table 3 describes the correlations between variations in the interlabial angle, and malocclusions. Statistically significant differences were found for overbite, overjet and ogival palate.

MALOCCLUSIONS	ANGLE INTERLABIAL Value de P	SIGNIFICANCE
Open bite	$p > 0,05$	No significant
Cross Bite	$p > 0,05$	No significant
Overbite	$p < 0,05$	Significant
Overjet	$p < 0,05$	Significant
Dental crowding	$p > 0,05$	No significant
Ogival palate	$p < 0,05$	Significant

Table 3: Correlation between the interlabial angle and malocclusions

Source: Author data, (n = 93). Note: a patient may have more than one malocclusion. (Fisher's exact test: 95% significance).

The decrease or increase in the interlabial angle was directly related to some malocclusions. The excessive contact of the upper and lower lips in the overbite, and the probable lack of contact in the overhang, generate changes in the interlabial angle, which are reflected directly on the patient's face[13]. In addition, the ogival palate may reflect a maxillary atresia, which may cause a marked overjet, also interfering with the relationship between the lips.

The association between aesthetic concepts and magnitudes of soft tissue analysis is an important premise for the diagnosis and treatment plan for malocclusions[14]. Modernly, it is not possible to perform a facial analysis based only on teeth and bones, it is necessary to associate them with the soft tissue morphology.

CONCLUSIONS

According to the literature consulted and the methodology used, it can be concluded that there was a correlation between the interlabial angle and malocclusions: overbite, overjet and ogival palate.

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