PERIODONTAL PHENOTYPE: A CLINICAL AND CURRENT VIEW

FENÓTIPO PERIODONTAL: UMA VISÃO CLÍNICA E ATUAL

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Resumo

Um dos elementos essenciais para alcançar a estética do sorriso é o fenótipo e o contorno gengival que, com suas arquiteturas, influenciam no tamanho das coroas dentais. O termo "fenótipo periodontal" foi padronizado no Workshop Mundial para a Classificação das Doenças e Condições Periodontais e Peri-Implantares de 2017, porém esse tema já havia sido abordado outras vezes, com outras nomenclaturas. A avaliação dos diferentes fenótipos periodontais é fundamental, pois nos dão informações relacionadas às características dos tecidos periodontais e às formas dentárias, além de tornar o tratamento mais previsível, podendo evitar problemas como: trauma, inflamação e outras complicações clínicas e cirúrgicas. O objetivo desta revisão de literatura é fazer uma pesquisa a respeito do tema fenótipo periodontal por meio dos artigos mais relevantes entre o período de 2017 a 2021, evidenciando sua classificação, prevalência e formas de diagnóstico. Existem várias formas de diagnosticar o fenótipo periodontal, sendo a transparência do sulco gengival por meio da sonda milimetrada a preconizada pelo Workshop Mundial. Podemos observar uma prevalência do fenótipo fino pelo gênero feminino, e o fenótipo espesso pelo gênero masculino. Ainda faltam mais evidências científicas para o correto relacionamento do fenótipo periodontal com outros fatores como idade, tabagismo, hábitos de higiene, alimentação e má oclusão.

Palavras-chave: Periodontia, Gengiva, Fenótipo.

Abstract

One of the essential elements to achieving smile esthetics is the phenotype and gingival contour, which with their architecture influence the size of dental crowns. The term "periodontal phenotype" was standardized in the 2017 World Workshop on the Classification of Periodontal and Peri-Implant Diseases and Conditions. However, much has been said about the topic, with other nomenclatures. Evaluating different periodontal phenotypes is essential, as they provide us with information related to the characteristics of periodontal tissues and dental forms. In addition to making the treatment more predictable, it can avoid problems such as trauma, inflammation, and other clinical and surgical complications. The purpose of this literature review is to research the topic, periodontal phenotype, through the most relevant articles between the period 2017 to 2021, showing its classification, prevalence, and forms of diagnosis. There are several ways to diagnose the periodontal phenotype, and the one recommended by the World Workshop is the transparency of the gingival sulcus using the millimeter probe. We can observe a prevalence of the thin phenotype for the female gender, whereas the thick phenotype is prevalent for the male gender. There is still a lack of scientific evidence for the correct relationship of the periodontal phenotype with other factors such as age, smoking, hygiene habits, diet and, malocclusion.

Keywords: *Periodontics, Gums, Phenotype.*

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How to cite this article:
Gabri LM, Mattos VGG, Barreto LPD, Santos MM. Periodontal phenotype: a clinical and current view. Nav Dent J. 2021; 48(2): .26-36.

Received: 20/04/2021
Accepted: 23/06/2021

INTRODUCTION

The search for esthetics is currently being sought after, linked to the rules and principles of art (1). The essential elements to achieving the esthetics of the smile are the phenotype and the gingival contour, which with its architecture influences the size of dental crowns (2,3). The evaluation of periodontal phenotype is essential in the daily clinic of dentists, especially when planning procedures in the patient's esthetic areas. Therefore, its identification is relevant for a good prognosis, avoiding trauma, inflammation, and other clinical and surgical complications (4).

In 2017, the World Workshop on the Classification of Periodontal and Peri-Implant Diseases and Conditions recommended adopting the term "periodontal phenotype," which combines the gingival phenotype and its bone morphology. Gingival phenotype is constituted by the gingival thickness, its keratinized gingival dimension, and its buccal bone plate thickness. Phenotype indicates a dimension that can change over time depending on environmental factors and clinical interventions, i.e., the phenotype can be modified (5).

There are several classifications of these gingival phenotypes in the literature, the most common being the one that differentiates between thin and thick. The thin gingival phenotype presents small thickness, so its response to inflammation and trauma is more susceptible to recessions. In turn, the thick phenotype presents more fibrous gingiva, and in the presence of an inflammatory reaction or after trauma, the formation of a periodontal pocket may occur (6). During planning to maintain the patient's esthetics, the dentist must also pay attention to the patient's dental arch anatomy, such as its shape and proportions. A thin periodontal phenotype presents triangular crowns with a tapered bone architecture and fine, delicate gingiva. Conversely, the thick phenotype presents more rectangular dental crowns, a more robust alveolar process, and thicker gingiva (7).

Some diagnostic methods are reported in the literature, such as direct measurement of gingival thickness using endodontic files with cursors, ultrasonic determination, gingival transparency evaluations with a millimeter probe, cone beam computed tomography with lip retractors and two-dimensional radiographs to assess the bone thickness, laser scanner, CAD/CAM scanners, and intra-oral photography (8,9).

The diagnosis of the periodontal phenotype is essential for the correct planning of dental treatment. The correct diagnosis can affect the treatment results due to the different forms of inflammatory response that each gingival tissue has (6). Keeping this in mind, the professional can better predict how the periodontal tissue will react during and after the surgical or therapeutic act, avoiding any esthetic defects (7). The purpose of this literature review is to research the topic, periodontal phenotype, through the most relevant articles between the period 2017 to 2021, showing its classification, prevalence, and diagnosis forms.

LITERATURE REVIEW

History of classifications

In the 2000s, new studies emerged investigating the different periodontal phenotypes and proposing a new simple method never used before, the visual method based on the transparency of the periodontal probe through the gingival margin (10,11).

Muller et al. carried out a study to confirm the data obtained in their previous studies and identified three groups called A1, A2, and B, where A1: thin gingival thickness, narrow band of keratinized tissue, more elongated teeth; A2: thin gingival thickness, wide band of keratinized tissue, more elongated teeth; B: thick gingival thickness, wide band of keratinized tissue, more square teeth (12,13).

The beginning of the use of cone-beam computed tomographies (CBCT) brought the opportunity to obtain a more precise visualization and more accurate measurements of periodontal structures, and thus opportunities for future studies on the analysis of periodontal phenotype (14).

De Rouck et al. confirmed the existence of the three groups (A1, A2, B) previously proposed by Muller et al. in a study using the visual method by probing transparency (12,15). Group A1 seemed to correspond to a "scalloped" phenotype, while group B had characteristics of a "thick flat" biotype. However, there was no possible classification for group A2 (15). Eghbali et al. used the same analysis as De Rouck et al. to assess the precision of direct visual inspection as a method to diagnose gingival phenotype (15,16). Finally, the thick phenotype was subclassified into "thick scalloped" and "thick flat," thus considering that that "scalloped" phenotype would have the same characteristics with both other more extreme phenotypes (15,16).

Subsequently, studies investigated the reliability of probe transparency methods and CBCT (soft tissue tomography) for the diagnosis of the gingival biotype, the clinical thickness of the vestibular gingiva and bone (17,18).

Data obtained in previous studies show that the three periodontal phenotypes ("thin scalloped," "thick scalloped," and "thick") are diagnosed based on characteristics such as gingival thickness, gingival morphology, bone morphology, and tooth dimensions (19). Other data report that the thin phenotype is associated with a thinner thickness of the buccal bone plate, different from the thick periodontal phenotype (20).

In the years between 2011 and 2018, especially in 2017, when the World Workshop on the Classification of Periodontal and Peri-Implant Diseases and Conditions took place, there was a significant development in studies on periodontal health and esthetics. With the increase in studies related to the development of gingival recessions associated with the gingival phenotype, Kim et al. highlighted the differences between biotype and phenotype (21). As a term used previously, the biotype is genetically predetermined and cannot be modified by environmental or surgical factors (5). On the other hand, the phenotype can be modified based on the combination of genetic characteristics and environmental factors, i.e., an interaction between the genotype and the environment (22). The recent World Workshop recommended adopting the new term phenotype to describe the combination of the gingival phenotype, which involves gingival thickness, keratinized gingiva width, and bone morphology, i.e., its thickness (5). In addition to the new term, using a periodontal probe in a standardized and reproducible way was also suggested to measure the gingival thickness. The instrument was then evaluated for its transparency after insertion into the sulcus (5).

Table 1 summarizes the methodology and results of studies carried out between 1997 and 2020, presenting the evolution of the classification of periodontal phenotypes over the years.

Classification

The characteristics of the gingival phenotype are directly related to the alveolar process, the morphology of the teeth, events that occur during tooth eruption, and the inclination and position of erupted teeth (23).

The thick gingival phenotype has a dense bone architecture and fibrous gingiva and can be easily observed clinically, following a flat gingival topography (Figure 1).

Figure 1 - Thick periodontal phenotype

Source: Image courtesy of Professor Luis Paulo Barreto and Professor Marcela Melo.

As this has a large amount of inserted gingiva, its response to inflammation is more favorable. Thus, it tends to form periodontal pockets (4) and provides better predictability for surgical procedures. People with thick gingiva often present crowns with square shapes and accentuated convexity. Furthermore, the interproximal papilla is minor, and the contact point is located more apically (23).

The thin gingival phenotype is more delicate and translucent, with a thinner bone architecture. It is usually accompanied by bone fenestrations and dehiscences (Figure 2) (4).

Figure 2 - Thin periodontal phenotype

Source: Image courtesy of Professor Luis Paulo Barreto and Professor Marcela Melo.

Table 1 - History of periodontal phenotype classifications

AUTHORS	METHODOLOGY	RESULTS
Harris RJ, 1997 (10)	Visual method by probing transparency.	Classified as thin phenotype when the thickness was less than 0.5 mm, visible due to the transparency. Classified as thick phenotype when it was not possible to visualize the probing transparency in the sulcus.
Muller et al., 2000 (12)	Evaluation of all teeth by ultrasonic method and caliper.	Group A1: thin gingival thickness, narrow band of keratinized tissue, more elongated teeth; A2: thin gingival thickness, wide band of keratinized tissue, more elongated teeth; B: thick gingival thickness, wide band of keratinized tissue, more square teeth.
De Rouck et al., 2009 (15)	Evaluation of maxillary incisors by the probe transparency method	Scalloped phenotype referring to group A1 (thin); Thick flat phenotype referring to group B (thick).
Eghbali et al., 2009 (16)	Use of slides showing clinical photographs of anterior teeth in the maxillary region.	"Thick scalloped" gingival phenotype; "thick flat" phenotype; "thin scalloped" phenotype.
Kan et al., 2010 (17)	Use of the probe transparency method and calipers with readjusted tension.	Thin phenotype, characterized as thin, friable gingiva, with probing transparency and gingival thickness less than 1.0 mm. Thick phenotype, characterized by fibrotic gingiva, no transparency on probing, gingival thickness greater than 1.0 mm.
Fu et al., 2010 (18)	Evaluation of the teeth of the anterior region of the maxilla in cadavers, using the probe transparency method, CBCT, calipers with readjusted tension.	Thin phenotype, with transparency visible on probing. Thick phenotype, with no transparency visible on probing.
Cook et al., 2011 (20)	Evaluation of the teeth of the anterior region of the maxilla by probe transparency methods, CBCT, scanners.	"Thick/medium" phenotype when there is no transparency on probing: associated with a thicker buccal bone plate. "Thin" phenotype when there is transparency on probing: thinner bone plate.
Zweers et al., 2014 (19)	Collection of several relevant articles on the various forms of periodontal phenotype and their diagnostic methods.	The three periodontal phenotypes are diagnosed based on gingival thickness, gingival morphology, bone morphology, and teeth dimensions from the data obtained in the evaluated studies.
Jepsen et al., 2018 (5)	Collection of a series of studies on periodontal and peri-implant diseases.	Change in the term used before, from "periodontal biotype" to "periodontal phenotype." The term consists of the "gingival phenotype," "bone morphology," and keratinized gingival width.
Kim et al., 2020 (21)	Collection of a series of articles from three questions about the role of periodontal phenotype in maintaining periodontal health.	The data obtained showed that subjects with a thin periodontal phenotype were more susceptible to gingival recessions in case of trauma or surgery.

Table 2 - Characteristics of Thin and Thick Phenotypes

THIN PHENOTYPE	THICK PHENOTYPE
Thin, soft tissue.	Dense and fibrotic soft tissue.
Narrow band of keratinized tissue	Wide band of keratinized tissue
Thickness less than 1.5 mm and width between 3.5 to 5 mm.	Gingival thickness or 2 mm more of and width between 5 to 6 mm.
Scalloped and thin hard tissue (Dehiscences and fenestrations are common findings).	Flat, thick hard tissue.
Thin marginal bone.	Thick marginal bone.
Contact areas in the incisal/occlusal third.	Contact area in the middle/cervical third.
Triangular crowns.	Quadrangular crowns.
Long, narrow papillae.	Short, wide papillae.

Source: Kao e Pasquinelli, 2002 (4)

As a more sensitive tissue, its response to inflammation is more severe, and gingival recessions may occur. Long and thin teeth usually accompany such phenotype with light convexity and triangular shape (23). Table 2 shows the characteristics of each phenotype according to Kao and Pasquinelli, 2002.

Amid et al. showed that the mean age of subjects with different gingival phenotypes around the central and lateral incisors and canines was not significantly different (24). The mean standard deviation of the gingival thickness at 2 mm apical to the gingival margin was 1.35-0.29 mm for the central incisors, 1.23-0.29 for the lateral, and 1.15-0.27 for the canines. These values were significantly different between teeth, and the mean gingival thickness for central incisors was larger than for lateral and canines. Also, this value for lateral was higher than for canines. The frequency of thin and thick phenotype in anterior maxillary teeth showed no different parameters between men and women. The frequency of gingival phenotype was different between canines and central incisors and between central and lateral incisor areas (24).

A 2015 study conducted by Maroso et al. sampled 55 adults (24 men and 31 women) aged between 18 and 35 years (25). Participants had a visible plaque, gingival bleeding, and bleeding on probing of approximately 15-20%. 11.5% of the evaluated teeth showed attachment loss, and an average of 1.01 mm was obtained concerning the gingival recession. The average gingival thickness was from 1 to 1.97 mm, leading to conclude that, as a correlation between gingival thickness and gingival recession, the smaller the gingival thickness, the greater the gingival recession (25).

Later, in the study by Karakis et al. in 2019, a 6-month follow-up was carried out in a group of 31 patients with small keratinized gingival width who underwent free gingival graft surgery (26). The periodontal probe transparency method was used to determine the gingival phenotype. According to their gingival phenotype (thin and thick), patients were divided into two groups, and some clinical parameters were measured. As a result, there were no statistically significant differences in clinical and surgical measures between the groups (26).

In a more recent study by Yuan et al., a total of 40 young volunteers with healthy periodontium participated in the research (27). The gingival phenotype was determined as thick or thin using a periodontal probe. Two recordings were measured by cone-beam computed tomography (CBCT): gingival thickness (GT) at the level of the cementoenamel junction and bone thickness at 3 locations, 1, 3, 5 mm below the alveolar crest. Oral and plaster model measurements were used to analyze the associations of crown width/crown length (CW/CL), keratinized mucosa width (KM), and free gingival margin curvature. Youngsters with thick phenotype had gingival thickness ≥ 1 mm, and those with thin phenotype had gingival thickness < 1 mm. The results show an association between bone thickness with GT, CW/CL, KM, and free gingival margin curvature (27).

Yin et al. studied the correlation between the gingival phenotype in the esthetic zone and the craniofacial profile based on cone-beam computed tomography (28). In total, 56 individuals (13 men and 43 women) participated in this study, with a mean age of 23.6 years. The jaws were scanned using an intraoral scanner. These models used a horizontal reference plane based on the occlusal plane, with 22 landmarks, to describe the positional relationship between the maxillary dentition and the gingival reference points. The results showed that the thick phenotype represented the most significant proportion (69.6%) of the 56 study participants (28).

Diagnosis forms

The periodontal probe is a mandatory instrument for the dentist, playing an indispensable role in the clinical periodontal diagnosis of the patient. This instrument is used for various exams such as pocket depth, clinical attachment level, bleeding on probing, inserted gingival width, and evaluation of the biological space (8). The millimeter probe can also diagnose periodontal phenotype, which is one of the most used and least invasive methods. The technique consists of placing the periodontal probe in the vestibular sulcus on a tooth, and if the probe can be seen through the gum, the gingival phenotype is considered thin. Following the same logic, the phenotype is considered thick if the probe cannot be seen (Figure 3) (8).

The 2017 Workshop recommends using the periodontal probe in a standardized and reproducible way to measure gingival thickness, evaluating the instrument from its transparency after being inserted into the sulcus (5).

Cone-beam computed tomography, using lip retractors, is an exam that allows a three-dimensional view of anatomical structures. The hard and soft tissue radiographic measurements are similar to the clinical ones, producing a predictable and accurate diagnosis (18). In 2018, a study showed that the CT method to classify gingival tissue thickness and width has acceptable reliability values and can be considered clinically helpful, mainly to classify thick periodontal phenotype (9).

The transgingival method (Figure 4) is performed using a number 15 endodontic file with a rubber stop. The file is inserted perpendicularly in the center between the gingival margin and the mucogingival junction. The measurement is recorded with a periodontal probe or with a digital caliper (29).

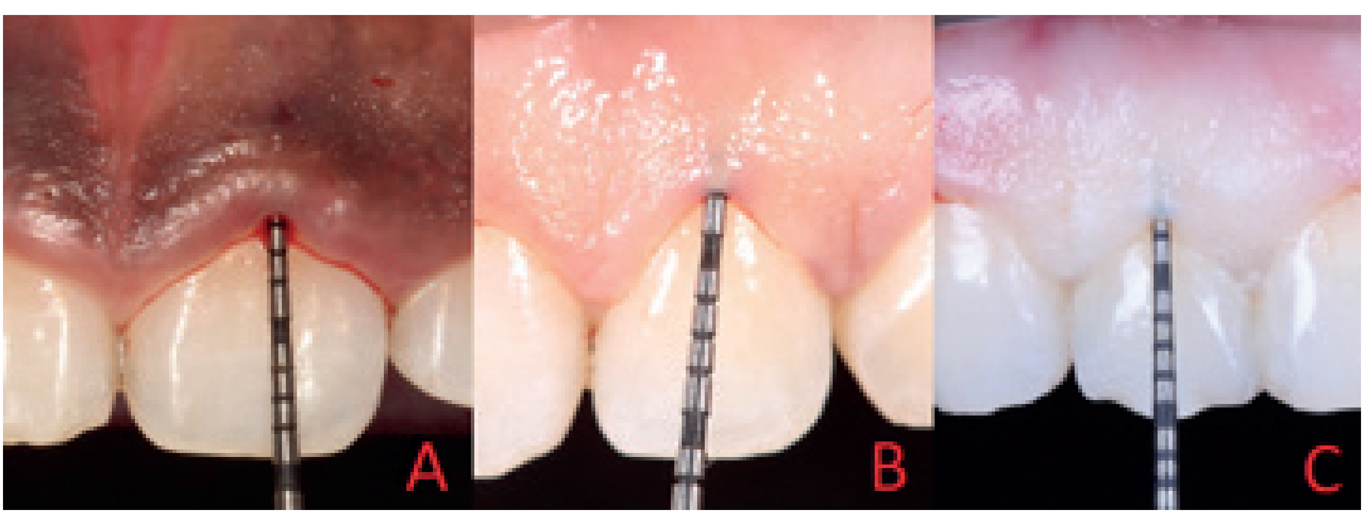

Figure 3 - Diagnosis of periodontal phenotype using the probing technique. Photo A represents the thick phenotype; Photo B represents the intermediate phenotype, and Photo C the thin phenotype.

Source: Image courtesy of Professor Luis Paulo Barreto and Professor Marcela Melo.

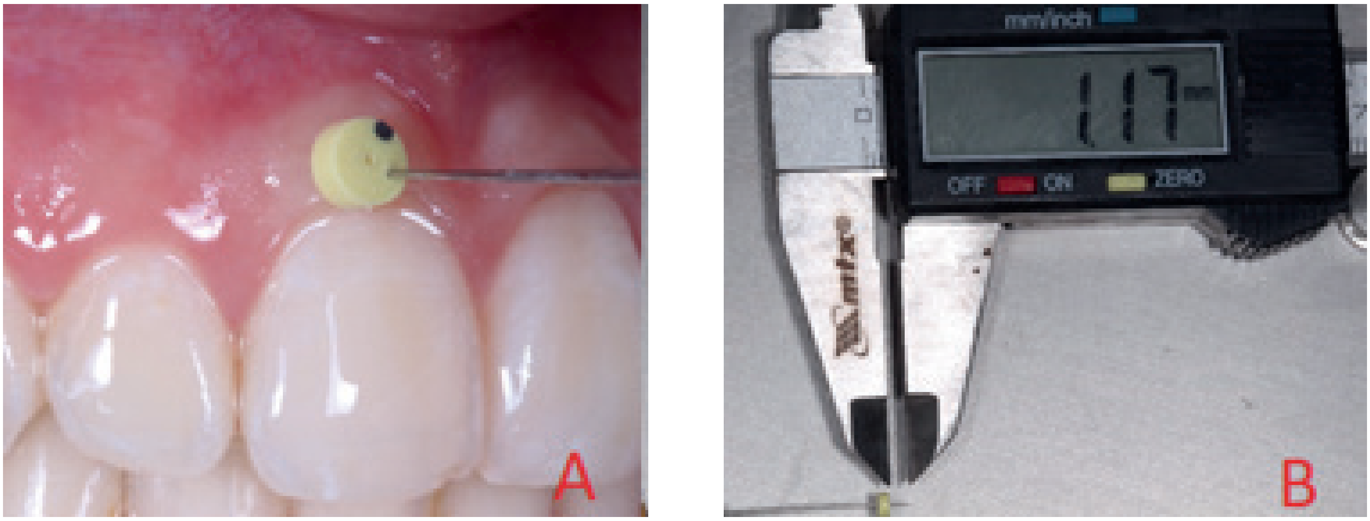

Figure 4 - **Photo A presents the diagnosis of the periodontal phenotype performed using a digital spacer to measure the gingival thickness. Photo B shows the gingival thickness measured with a digital caliper.**
Source: Image courtesy of Professor Luis Paulo Barreto and Professor Marcela Melo.

Before the procedure, the gums should be anesthetized with a topical anesthetic to avoid patient discomfort. The method allows for a good measurement of gingival thickness, but as it is invasive, local anesthesia can interfere as it increases the volume and can generate discomfort during measurements(8). According to Muller et al. the ultrasonic device produces valid and relatively reliable information about the thickness of most parts of the masticatory mucosa of the oral cavity (30). It is a minimally invasive and cost-effective method. It is a device that introduces impulses through the gingival tissue, which reflect on the surface of the bone and tooth. These pulses go back to the device, which displays the results digitally (30).

While intraoral photography is one of the least invasive methods, it requires the professional to know the characteristics and prevalence of periodontal phenotypes and clinical experience for the correct diagnosis. In 2018, Araújo et al. (31) sent questionnaires to trained professionals to evaluate their professional qualification in diagnosing the gingival phenotype of 3 different photographs. In conclusion, dentists who graduated more than ten years ago found it easy to correlate the phenotypes correctly. On the other hand, professionals with fewer years of graduation found it easier to identify the thick phenotype and difficult to differentiate the thin from the intermediate phenotype. However, the difficulty persists even for specialists in periodontics and dental prosthesis (31).

In 2018, Alves et al. (9) carried out a study to assess the properties of methods for evaluating gingival phenotypes. Subjects of both sexes, aged 18 and 65 years, already programmed to perform CT scans, were included. All of them should have a healthy periodontium, no cavities, gingival recessions, prostheses, orthodontic appliances, and no use of medication. Pregnant women and smokers were also excluded. The anterior maxillary teeth of 12 subjects were submitted to evaluate the gingival thickness using the following methods: probing transparency, transgingival, photographic, and cone-beam computed tomography (CBCT). Seven men and five women aged between 24 and 35 years participated in this study, resulting in mean thicknesses of 1.44 mm by the transgingival method and 1.37 mm by CBCT. The most significant agreement between the values obtained was found in the transgingival and CBCT methods. Furthermore, according to a consensus among the three evaluators, the reliability of the photographic method was poor. The CBCT method to classify gingival tissue thickness and width had acceptable reliability values and could be considered clinically helpful, mainly to classify the thick phenotype (9).

In 2020, Gkogkos et al. evaluated the gingival thickness of the lower mandibular central incisors of 20 swine cadavers using different diagnostic methods (32). The evaluation compared the samples using two forms of the transgingival method, one with a periodontal probe and another with an acupuncture needle. The results were almost identical (mean gingival thickness 1.11 mm vs. 1.14 mm for the left incisor and 1.12 mm vs. 1.11 mm for the right incisor, respectively). Another comparison was between ultrasound assessment and cone-beam computed tomography, where ultrasound values exceeded CT measurements, albeit insignificantly (32).

Prevalence

Manjunath et al. collected samples from 336 subjects (186 men and 150 women) (33). The evaluation of the gingival phenotype was through probe transparency. They concluded that the thick phenotype was observed in 76.9% of male subjects and only 13.3% in women. The thin phenotype was seen in 5.4% of men and 44.7% of women (33).

Alkan et al. evaluated the gingival phenotype and keratinized gingiva width of the anterior maxillary region teeth in subjects with different types of malocclusion (34). A total of 181 people were studied, 118 women and 63 men. The group consisted of subjects with healthy periodontium who had not undergone orthodontic treatment. They were divided into groups: Angle class I, class II, and class III. Each group was subdivided into subgroups according to crowding in the anterior maxillary region: mild, moderate, or severe. Dimension measurements of the keratinized gingiva were made using a millimeter probe, and gingival thickness was measured by the transgingival method. The phenotype was classified according to thickness: thin (smaller than 1 mm), thick (greater than 1 mm). The prevalence of the thin gingival phenotype was 29.8%, more common in the Class II group, severe crowding group, and women. For teeth 13 and 23, keratinized gingiva width was narrower in the severe crowding group than in the light and moderate crowding groups. The relationship between the keratinized gingiva width and the Angle classification was not statistically significant (34).

García Cortez et al. collected samples from 550 systemically healthy subjects (35). Overlapped millimeter probe was the parameter for evaluating the phenotype. It was classified as thin when the gingiva showed translucency in the six teeth evaluated, thick when there was no probe translucency in 6 teeth, and mixed when there was no pattern. Women represented 60.2% of the thin phenotype (11). Age, smoking, hygiene habits, diet, and malocclusion had no significant impact. While subjects with oval and triangular teeth (73%) had a thin phenotype, those with square teeth had a thick phenotype (39.4%), especially in men (52.4%) (35).

In 2020, Rathod et al. assessed 110 subjects (57 men and 53 women) divided into two groups according to their malocclusion (36). Then, they were divided according to their level of tooth crowding. The anterior teeth of the esthetic area were evaluated, determining, through the transparency of the periodontal probe, the gingival phenotype and the width of the inserted gingiva using the histochemical staining method. According to the Angle classification, the study resulted in the absence of a significant relationship between gingival phenotype and malocclusion (36).

DISCUSSION

Regarding the prevalence of periodontal phenotype by gender, Manjunath et al. demonstrated that the thick phenotype was observed in 76.9% of men and only 13.3% of women (33). Concerning the thin phenotype, 5.4% of men and 44.7% of women (33). In 2017, in disagreement with the evidence above, Amid et al. showed the thin and thick phenotypes in anterior maxillary teeth did not show different parameters between men and women (24). Alkan et al. found that the thin gingival phenotype was 29.8% more common in the Angle Class II group, severe crowding group, and women (34). In 2020, on the other hand, Rathod et al. concluded there was no significant relationship between the gingival phenotype and malocclusion according to the Angle classification (36).

Further assessing the prevalence, concerning factors other than gender, in 2019, García Cortez et al. noted that age, smoking, hygiene habits, diet, and malocclusion did not significantly impact the association with gingival phenotype (35). A correlation between phenotype and tooth morphology was observed. Therefore, the patient's length of time has had the smoking habit dramatically influences the increase in gingival thickness (35).

Addressing some significant clinical findings of periodontal phenotype, Maroso et al. found a correlation between gingival thickness and the appearance of recessions (25). Yuan et al. discovered a connection between bone thickness and gingival thickness, crown width/crown length, keratinized gingival width, and free gingival margin curvature (27). In 2019, in disagreement with the data above, Karakis et al. found no statistically significant differences in clinical parameters in patients with thick and thin phenotypes who underwent free gingival graft surgery (26).

According to Alves et al., the CBCT method to classify the thickness and width of the gingival tissue presented acceptable reliability values (9). It could be considered clinically helpful regarding how to diagnose the periodontal phenotype (9). In 2020, Gkogkos et al. compared the assessment using ultrasound assessment to the cone-beam computed tomography (32). The ultrasound values exceeded the tomography measurements, albeit insignificantly, which indicates the reliability of the CBCT method for determining gingival thickness (32). However, despite the high credibility in the use of tomography, the 2017 World Workshop on the Classification of Periodontal and Peri-Implant Diseases and Conditions recommended using the gingival transparency method through the periodontal probe (5). In 2018, professionals trained more than ten years ago, regardless of specialization, were concluded to find it easier to diagnose the gingival phenotype correctly (31).

CONCLUSION

Over the years, many authors have adopted different forms of classification of the periodontal phenotype. Recently, at the World Workshop on the Classification of Periodontal and Peri-Implant Diseases and Conditions, in 2017, a single nomenclature was standardized: periodontal phenotype. It's most common classification prevails between the terms "thin" and "thick." In conclusion, there is a high prevalence of thin phenotype in women and thick in men. According to the findings of the present study, the millimeter probe transparency method showed satisfactory results. However, there is still a lack of concrete scientific evidence on the subject, mainly to help professionals conduct and plan treatment in their daily clinical routine.

The authors declare no conflict of interest.

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