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KEY DENTAL FACTORS THAT CONTRIBUTE TO THE APPEARANCE OF CRANIOFACIAL ASYMMETRIES

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Abstract:
Facial symmetry is a trait widely valued in the perception of facial beauty and health, and understanding the underlying factors that contribute to craniofacial asymmetry is essential for both oral health professionals and those seeking to improve appearance, and facial functionality. This article focuses on comprehensively analyzing the dental factors that play a fundamental role in the genesis of craniofacial asymmetries. Through a review of the existing literature and the application of the MICMAC technique, the influence of factors such as dental malocclusions, asymmetric dental development, harmful oral habits, and other elements related to oral health on facial symmetry is explored. In addition, a detailed methodology for evaluating and addressing these asymmetries is presented, and the study is contextualized by reviewing previous research related to the topic. This analysis provides a more complete understanding of the interaction between dental factors and craniofacial asymmetry, contributing to knowledge and personalized care in this multidisciplinary field of study.

Key Words: malocclusions, craniofacial functionality, facial appearance, facial symmetry, craniofacial asymmetries.

Introduction

Facial symmetry is a fundamental characteristic in the perception of facial beauty and health (Jones & Jaeger, 2019). The search for a symmetrical and harmonious facial appearance has been a constant concern in the history of humanity and has become a desired goal from both an aesthetic and functional point of view. However, the reality is that few people have perfect facial symmetry, and the appearance of craniofacial asymmetries is a common phenomenon (Hsu, et al., 2019). These

asymmetries can be subtle or pronounced, and their origin can lie in several factors, including dental ones. In this sense, the search for harmony and symmetry in the face has been a constant in the history of humanity, and understanding the factors that contribute to its development is essential to understand the complexity of craniofacial anatomy.

Throughout history, various studies and analyzes have addressed the relationship between dentition and facial symmetry, which has shed light on the complexity of this issue. In (Akbulut & Soğancı, 2022), craniomandibular asymmetry was evaluated in patients with unilateral eruption disorders in their permanent second molars, and observed, among other results, increases in the gonial angle, the length of the condyle head, and the height of the branch on the side with altered eruption compared to the side with normal eruption. Similarly, Lyer et al. (2021) examined the factors that lead to frequent conditions of acquired facial asymmetry and highlighted some factors, including ankylosis of the temporomandibular joint, facial trauma, radiotherapy in children, fibrous dysplasia, facial tumors, and unilateral condylar hyperplasia.

In this context, dental factors play a significant role in the genesis of craniofacial asymmetries, a common phenomenon that can vary in severity and origin. Therefore, this study focuses on analyzing in depth the key dental factors that influence the appearance of craniofacial asymmetries to provide a more complete understanding of their relationship. The interaction between teeth and facial structure is a constantly evolving field of research, and its understanding is essential for both oral health professionals and those seeking to improve their facial appearance and functionality. Through a review of the existing literature and the exploration of previous related studies, this article seeks to provide a comprehensive view of the dental factors that play a role in the genesis of craniofacial asymmetries.

By analyzing the influence of factors such as dental malocclusions, asymmetrical dental development, harmful oral habits, and other elements related to oral health, it is expected to shed light on how dental problems can affect facial symmetry. At the same time, recognize the complexity of this topic and the limitations inherent to the understanding of craniofacial asymmetries, which are the result of a multifactorial interaction between genetic, environmental, and developmental aspects. This article aims to provide a solid foundation for understanding the relationship between dental factors and craniofacial asymmetries, recognizing both their contributions and limitations in the context of facial health and aesthetics.

Methodology

An investigation was carried out from a dental perspective, that had a descriptive and analytical approach. The descriptive nature of this study lies in its ability to detail the characteristics and properties of a specific population, phenomenon, or situation. This type of research is based on direct observation and the collection of relevant data on the topic of study, without the manipulation of variables or the introduction of interventions (Mohajan, 2018). The analytical approach is used to look for cause-and-effect connections or to identify links between different variables (Apuke, 2017). In this case, explore the contribution of dental factors in the appearance of craniofacial asymmetries.

The methodology of this study was based on the exhaustive bibliographic review of the scientific literature related to the contribution of dental factors in the appearance of craniofacial asymmetries and the application of the MICMAC technique (Multiplicative Cross Influence Matrix Applied to a Classification). Data were collected through the identification of relevant previous studies and their analysis based on their influence on craniofacial asymmetries. The MICMAC technique was used in this study to analyze the dental factors that contribute to the appearance of craniofacial asymmetries. This approach allowed to systematically and quantitatively identify the causal relationship and mutual influence between the various factors involved. The phases of the MICMAC technique are described below.

Phase I: Definition of the list of variables or factors

During this stage, the variables that make up the system are identified, generating an enumeration that distinguishes between variables that are intrinsic to the system and those that have an origin external

to it. A thorough analysis of each variable is carried out to facilitate its subsequent evaluation, representation in a diagram, and understanding of the interconnections that exist between them.

Phase II: Description of the relationships between variables or factors

During this stage, questions are raised to discern the existence of a direct connection between variables i and j. A score of 0 is assigned in the absence of a direct relationship, and it is evaluated whether said relationship is weak (1), moderate (2), strong (3), or potential (4), if it exists. These responses are used to complete the direct influence matrix, an essential component in the structural analysis of the system variables.

Phase III: Classification of the variables or factors

In this phase, the identification and categorization of the fundamental variables in the system are carried out, considering their levels of direct and indirect influence and their potential. This classification has the main objective of discerning the importance of certain variables and highlighting the role played by indirectly influencing variables. The results are represented in a four-section diagram: Quadrant I (Controversy Area) for the key, strategic or challenge variables or factors; Quadrant II (Dominance Area) for the determinat or influencing variables or factor; Quadrant III (Autonomous Area) for the autonomous or excluded variables or factors; and Quadrant IV (Results Area) for the dependent or result variables or factors.

Following the described phases, first, the factors were identified, then a matrix was constructed in which the identified dental factors were recorded and their impact on craniofacial asymmetry was evaluated. Specialized software was then used to calculate the multiplicative cross-interactions between these factors, allowing the authors to determine which are the main factors that drive or influence others in the appearance of craniofacial asymmetries. This methodology provides a clear and structured view of the complex network of dental factors involved in craniofacial asymmetries, which facilitates the identification of key points for research and clinical practice. The results obtained were interpreted to identify the key dental factors, considering both their causality and their influence on craniofacial asymmetry.

Results

By examining previous research, several dental factors were identified that influence the appearance of craniofacial asymmetries. These factors have been grouped in Table 1. As seen, the first row is associated with factor one (1) and has been assigned the abbreviated name DM, which reflects Dental malocclusions. The description of this factor is detailed as follows: This factor includes malpositions of the upper and lower teeth, overbite, underbite, and other irregularities in dental alignment. The following rows of the table can be understood analogously.

Table 1. Factors identified to apply MICMAC.

#	Code	Factor	Description
1	DM	Dental malocclusions	This factor includes malpositions of the upper and lower teeth, overbite, underbite, and other irregularities in dental alignment.
2	DA	Dental asymmetry	Inequality in the size or shape of teeth on the right and left sides of the mouth.
3	CB	Crossbite	When the upper teeth bite on the inside of the lower teeth on one side of the mouth and on the outside on the other.
4	BX	Bruxism	Constantly grinding or clenching the teeth can cause uneven tooth wear.
5	HOH	Harmful oral habits	Thumb sucking, or prolonged use of pacifiers, which can affect tooth and jaw growth.
6	TL	Tooth loss	Missing teeth can alter the distribution of chewing load and lead to changes in facial structure.

7	TSS	Tooth size and shape	Differences in tooth size and shape can influence facial harmony.
8	MMD	Maxillary and mandibular development	Problems in the growth or abnormal development of the mandible and maxilla can contribute to craniofacial asymmetry.
9	DT	Dental trauma	Injuries to teeth that affect their position or structure.
10	SA	Skeletal anomalies	Abnormalities in the facial skeleton, such as a larger or smaller than normal upper or lower jaw.
11	TJA	Temporomandibular joint anomalies	Problems in the joint that connects the jaw to the skull can influence the position and function of the jaw.
12	DDA	Asymmetrical tooth development	Uneven development of teeth on the right and left sides of the mouth.

Source: Authors

After compiling the list of dental factors related to the appearance of craniofacial asymmetries, a joint evaluation was carried out with a group of specialists to analyze the interactions of influence and dependence between these factors. To carry out this evaluation, a square matrix corresponding to Phase II of the MICMAC technique was used. Figure 1 shows the matrix of direct influence/dependence, which was completed with the values obtained through the joint evaluation carried out by the experts.

As seen in Figure 1, the first row corresponds to the direct influence relationships of the factor DM (dental malocclusions). In this sense, the relationship with this same factor is zero or null, the same occurs with the factor DA (Dental asymmetry), which means that malocclusion does not influence Dental asymmetry. On the other hand, the influence relationship of the factor DM with the factor CB (Crossbite) is two (2), which means that Dental malocclusion moderately influences Crossbite. The same occurs with the influence relationship with the factor BX (Bruxism), since having a value of two (2), it is moderate because the relationship is complex, and not all cases of bruxism are directly related to malocclusion. In this way, the direct influence/dependence relationships between each factor are described.

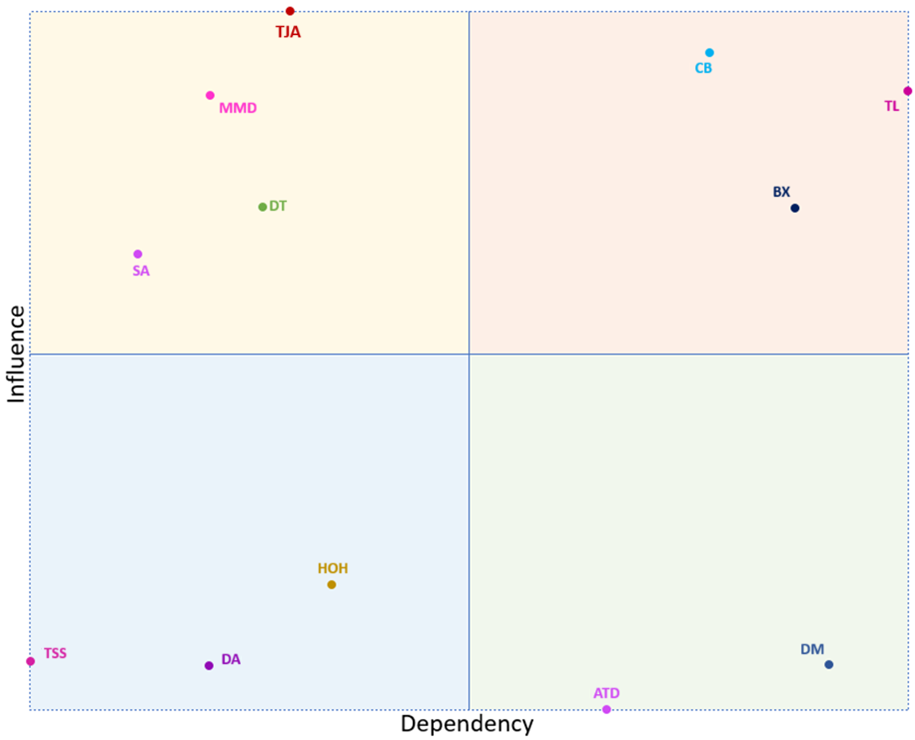
Figure 1. Matrix of direct influence/dependence

Influence ↱	DM	DA	CB	BX	HOH	TL	TSS	MMD	DT	SA	TJA	ATD
DM	0	0	2	2	0	2	0	1	0	1	1	3
DA	3	0	1	2	0	3	0	0	1	0	0	2
CB	2	3	0	2	2	3	2	2	3	2	3	3
BX	2	0	3	0	3	2	2	2	3	1	3	2
HOH	2	0	3	3	0	2	0	1	0	0	1	2
TL	2	2	2	3	3	0	2	2	2	3	3	2
TSS	3	0	2	2	0	3	0	1	0	1	0	0
MMD	2	3	3	2	3	2	2	0	2	2	3	2
DT	3	3	2	2	2	2	2	2	0	3	1	1
SA	2	2	2	3	2	3	1	1	2	0	1	3
TJA	3	3	2	2	3	3	2	3	3	2	0	2
ATD	2	0	2	2	0	2	0	1	1	0	1	0

Source: Authors

After defining values in the matrix of direct influence/dependence, the factors were categorized. These categories are graphically represented on the plane of direct influence/dependence, shown in Figure 2. The analysis revealed three key factors in quadrant I: CB, TL, and BX. In quadrant II, four factors were located, TJA, MMD, DT, and SA, which were considered determinants. In quadrant III, three factors were located: HOH, DA, and TSS considered autonomous. Finally, the factors DM and DDA were located in quadrant IV.

Figure 2. plane of direct influence/dependence



Source: Authors

Below, the results of the classification of the factors using the MICMAC technique are detailed in Table 2.

Table 2. Classification of factors by indirect influences and dependencies

Type of factors	Factors	Code
Key, strategic or challenge factors	Crossbite	CB
	Bruxism	BX
	Tooth loss	TL
Determinant or influencing factors	Maxillary and mandibular development	MMD
	Temporomandibular joint anomalies	TJA
	Dental trauma	DT
	Skeletal anomalies	SA
Autonomous or excluded factors	Tooth size and shape	TSS
	Dental asymmetry	DA
	Harmful oral habits	HOH
Dependent or result factors	Asymmetrical tooth development	DDA
	Dental malocclusions	DM

Source: Authors

Crossbite is considered a key dental factor in the appearance of craniofacial asymmetries due to its ability to influence the position and development of maxillofacial structures. There are some reasons why crossbite can play a significant role in craniofacial asymmetry: according to Ninivaggi (2022), altered dental alignment can place unequal forces on the maxillofacial bones, which can lead to

changes in the position of the mandible and maxilla; according to Monte Callado & Sperandeo (2021), a crossbite can put asymmetrical pressure on the maxillary and mandibular bones; this constant, uneven pressure can influence the growth and development of these structures, thus contributing to facial asymmetry. On the other hand, according to Wang et al (2022), a crossbite can lead to an uneven distribution of the chewing load on the teeth and therefore changes in facial structure over time.

It is important to note that crossbite is a condition that can be treated by oral health professionals, such as orthodontists and maxillofacial surgeons, through orthodontic and orthopedic therapies. Early treatment of crossbite can help correct dental misalignments and prevent or minimize the development of craniofacial asymmetries in the future.

On the other hand, another factor that was key was Bruxism (BX), which is the grinding or clenching of the teeth in a constant and non-functional manner. This factor can influence the appearance of craniofacial asymmetries for several reasons: firstly, Bruxism can cause uneven tooth wear on the upper and lower teeth. When the teeth on one side of the mouth wear down more than the other, it can lead to changes in dental occlusion. According to Shkarin, et al. (2019), this inequality in occlusion can contribute to facial asymmetry. On the other hand, bruxism exerts repeated and excessive pressure on the teeth and maxillofacial bones, which according to Gordon & Perry (2021), can affect the position of the jaw and maxilla, generating changes in facial symmetry. Likewise, chronic bruxism can negatively affect the temporomandibular joint, which is the joint that connects the jaw to the skull. Importantly, chronic and severe bruxism can have a significant impact on facial structure and overall dental health. Oral health professionals, such as dentists and orthodontists, can offer treatments and therapies to address bruxism and minimize its impact on craniofacial asymmetry. Additionally, it is essential to address bruxism early to prevent long-term complications.

On the other hand, tooth loss was key because it plays a crucial role in the genesis of craniofacial asymmetries and it has a substantial impact on the configuration of dental occlusion unless its replacement is carried out. This, according to Waite & Kau (2022), can cause alterations in the intermaxillary and mandibular relationship, possibly leading to the appearance of facial asymmetry. Furthermore, according to Jain et al (2021), the loss of a tooth can induce the displacement or inclination of adjacent teeth to occupy the vacant space, thus altering dentofacial position and alignment. It is important to note, as stated by Thakkar et al (2022), that teeth also play a supporting role for perioral tissues, such as the lips and cheeks. The loss of a tooth, particularly in the anterior region of the oral cavity, can cause a collapse of the surrounding tissues, giving rise to the obvious manifestation of facial asymmetry.

It is crucial to recognize that the contribution of tooth loss to craniofacial asymmetry varies depending on the location and number of missing teeth, as well as the patient's anatomy. In this context, oral rehabilitation, which encompasses the restoration of missing teeth using dental implants, bridges, or dental prostheses, can constitute an effective intervention to correct or minimize the adverse effects of tooth loss on facial structure and masticatory function.

As for the factors that turned out to be determinant or influential, there were four. The first was mandibular and maxillary development, this is due to their fundamental role in the formation and configuration of the facial structure. According to Tamkin (2020), proper development of the upper (maxilla) and lower (mandible) jaws is essential to achieving a symmetrical facial structure. These bones serve as foundations for the arrangement of teeth and facial tissues. On the other hand, Tendencies (2022) explains that if there is an asymmetric or abnormal development of these bones, it can result in malocclusions and bite problems which, in turn, can influence facial asymmetry. Similarly, Williams (2019) points out that abnormal maxillary or mandibular development can alter the way a person chews food, which can lead to an unequal distribution of the chewing load and can affect facial structure.

It is important to highlight that maxillary and mandibular development is a complex process and can be influenced by genetic and environmental factors. When there are imbalances in this development, it is common for craniofacial asymmetries to occur. Oral health professionals, such as orthodontists and maxillofacial surgeons, can evaluate and treat these conditions to correct or minimize facial asymmetry and restore proper function.

For its part, temporomandibular joint anomalies (TJA) are a determinant dental factor in the appearance of craniofacial asymmetries due to the location and critical function of the temporomandibular joint in facial structure and chewing. According to Stelea, et al. (2021), the temporomandibular joint allows movement of the jaw, and any dysfunction in the temporomandibular joint, such as temporomandibular disorders, can affect the position, mobility, and alignment of the jaw. Similarly, Ortún-Terrazas, et al. (2020) state that when there are anomalies in the temporomandibular joint, such as alignment problems or displacement of the jaw, it influences the position of the jaws, which in turn can affect facial symmetry. On the other hand, abnormalities in the temporomandibular joint can result in uneven loading on the teeth and supporting tissues and can cause malocclusions and uneven tooth wear, thus contributing to dental and facial asymmetry.

It is highlighted that TJA can manifest in different ways and have a variety of causes, ranging from stress and muscle tension to structural problems in the joint. Treatment of TJA often involves measures that seek to restore proper joint function and, when necessary, correct the resulting facial asymmetry. Oral health professionals and temporomandibular disorder specialists can provide specific diagnosis and treatment to address these conditions.

Another determinant factor was Dental traumas, this is due to the effects they can have on facial and dental structure. For example, according to Anil, et al. (2021), dental trauma can cause displacement or tooth loss. When a tooth shifts or is lost, it can cause changes in dental alignment and occlusion, which in turn can affect facial symmetry. Likewise, Reddy, et al. (2019), state that trauma to the jaw or teeth can affect the position of the jaw. A jaw that is in an abnormal position can contribute to facial asymmetry. On the other hand, Reddy et al (2019), also explain that dental traumas are often accompanied by damage to the maxillofacial bones, such as the jaw. These bones form the basis of the facial structure and, if injured, can alter facial symmetry.

It may be noted that the severity of craniofacial asymmetry caused by dental traumas can vary depending on the nature and extent of the injury, as well as the age of the patient at the time of the trauma. Oral health professionals, such as dentists and maxillofacial surgeons, can appropriately evaluate and treat dental traumas to minimize long-term effects on facial structure and dental function.

The last factor classified as a determinant factor was Skeletal anomalies, which refer to irregularities or problems in the bone structure of the jaw, maxilla, and other areas of the face. This is a highly influential dental factor in the appearance of craniofacial asymmetries since the bones of the lower jaw and upper jaw form the basis of the facial structure and any abnormalities in these bones can significantly influence the shape and symmetry of the face. According to Xiey et al (2022), skeletal anomalies can cause poor alignment of the teeth, leading to malocclusions and bite problems which, in turn, can influence facial asymmetry. Likewise, Ammoury, et al. (2022) explain that skeletal anomalies in the mandible or maxilla can result in abnormal mandibular position and a mandible that is not correctly aligned with respect to the facial midline can contribute to facial asymmetry.

It is important to note that skeletal anomalies can be congenital (present from birth) or acquired due to factors such as abnormal growth or trauma. Treatment of skeletal anomalies often involves orthodontics, orthognathic surgery, or other procedures to correct the position and alignment of the maxillofacial bones and restore facial symmetry and proper function. Oral health professionals and maxillofacial surgeons are the ones who evaluate and treat these disorders.

Tooth size and shape, compared to other dental factors such as malocclusions or skeletal anomalies, are generally considered autonomous dental factors with a relatively low influence and dependence on the occurrence of craniofacial asymmetries because tooth size and shape of teeth tend to be relatively independent of other dental or craniofacial factors, meaning that these factors tend to be more intrinsic to a person's dental anatomy and are not necessarily related to broader structural problems in the mouth or face.

According to Mitteroecker & Schaefer (2022), there is a wide natural variability in the size and shape of teeth between people. This variability is a normal part of human diversity and does not necessarily lead to significant craniofacial asymmetries. Likewise, Christensen, et al. (2019) state that if problems are identified in the size or shape of the teeth that are contributing to craniofacial asymmetries, they can generally be corrected through relatively simple dental procedures, such as dental restorations,

veneers, or orthodontic treatments. These corrections are typically less invasive than those needed to address severe malocclusions or skeletal anomalies. On the other hand, although the size and shape of teeth can contribute to facial aesthetics, their impact on the overall symmetry of the face tends to be less pronounced than other structural factors, such as the position of the jaw or maxilla.

While tooth size and shape may not be a primary factor in the occurrence of craniofacial asymmetries, it is important to note that they may be relevant to aesthetics and oral function. Tooth size and shape problems can influence patients' smile and facial appearance, as well as chewing function. Therefore, any concerns related to tooth size or shape should be evaluated and treated by an oral health professional to ensure oral health and aesthetic satisfaction.

On the other hand, dental asymmetry, which refers to the discrepancy in the size, shape, or position of the teeth on one side of the mouth compared to the other, was also classified as an autonomous factor in the occurrence of craniofacial asymmetries because dental asymmetry is relatively common and can be found in many people without resulting in significant craniofacial asymmetry. According to McGrath, et al. (2022), natural variability in the shape and position of teeth is normal and does not necessarily cause facial asymmetry. Likewise, compared to other factors such as severe malocclusions or skeletal anomalies, dental asymmetry generally has a minor impact on facial structure and overall facial appearance.

Although dental asymmetry may not be a main dental factor in the appearance of significant craniofacial asymmetries, it may still be relevant from an aesthetic and functional perspective. Concerns related to dental asymmetry can affect smile and facial appearance, as well as chewing function. Therefore, any concerns about dental asymmetry must be evaluated and treated by an oral health professional to ensure the patient's aesthetic satisfaction and oral health.

Harmful oral habits, such as thumb sucking or prolonged use of pacifiers, were the last factor that resulted autonomous in the appearance of craniofacial asymmetries. This is because these habits are common in childhood and often resolve naturally as the child grows. Most children outgrow these habits without the need for medical or dental intervention. These habits usually affect primary teeth (baby teeth) more than permanent teeth. Primary teeth have a limited time in the mouth and therefore changes in their position or alignment do not usually have a long-term impact on facial structure.

According to Erdogan et al. (2021), the influence of these habits on the formation of craniofacial asymmetries can vary significantly from one individual to another. Not all children who have these habits will develop facial asymmetries, and their impact may depend on factors such as the duration of the habit, frequency, and intensity. Although harmful oral habits are not usually a main dental factor in the appearance of craniofacial asymmetries, they can still be a cause for concern in childhood and should be addressed early to prevent future dental and oral problems. Parents and caregivers should be aware of these habits in children and seek guidance from an oral health professional if they persist beyond a certain age.

Regarding result factors, asymmetrical tooth development is considered a dental result factor in the appearance of craniofacial asymmetries due to its direct and visible impact on the symmetry and alignment of teeth and, ultimately, facial appearance. According to Achmad, et al. (2021), dental asymmetry can cause malocclusions and bite problems, which directly affects the position of the teeth and their relationship with the facial structure. Similarly, Ferreira, et al. (2019) explain that dental asymmetry can lead to functional problems in chewing and the temporomandibular joint. These functional problems can influence jaw position and therefore facial symmetry and proper function.

Dental asymmetry can have a significant impact on facial aesthetics. When teeth are not aligned evenly and symmetrically, it can affect the appearance of the patient's smile and, ultimately, their entire face. In this sense, asymmetrical tooth development is a dental result factor that has a high dependence on the appearance of craniofacial asymmetries because its influence is direct and visible on facial structure and appearance. Correcting dental asymmetry generally involves specific treatments to align and level the teeth, which can restore facial symmetry and proper function.

Dental malocclusions resulted as a dental result factor, that is, with a high dependence on the appearance of craniofacial asymmetries due to its direct influence on the alignment of the teeth and its relationship with the facial structure. According to Waite & Kau (2022), they have a high influence

on craniofacial asymmetries due to their direct impact on dental alignment and its relationship with facial structure. They can cause visible dental asymmetries when smiling or speaking, affecting facial appearance. Furthermore, Cenzato, et al. (2021) point out that malocclusions often lead to bite problems, such as crossbite, open, or overbite, which can alter the position of the jaw and maxilla, thus affecting facial symmetry. Importantly, correcting malocclusions not only improves chewing function and oral health but can also restore facial symmetry and improve the patient's aesthetics.

Conclusions

In this article, various dental factors that contribute to the appearance of craniofacial asymmetries have been explored, and their influence and dependence on this process have been evaluated. It has been highlighted that factors such as dental malocclusions and asymmetrical tooth development have a high dependence on the generation of craniofacial asymmetries due to their direct influence on the alignment and position of the teeth, as well as on the facial structure in general. These factors can impact masticatory function, facial esthetics, and oral health, and often require orthodontic correction to restore facial symmetry.

On the other hand, it was discussed that other dental factors, such as the size and shape of the teeth, harmful oral habits, and dental asymmetry, generally have a lower influence and dependence on the appearance of craniofacial asymmetries. Although they may play a role in facial aesthetics and oral function, their impact is often less pronounced and more variable from individual to individual.

It is important to recognize that while these dental factors may contribute to craniofacial asymmetries, their influence may be subject to a number of limitations. Limitations may include individual variability in response to these factors, the spontaneous resolution of certain oral habits in childhood, and the need for specific interventions to correct asymmetric dental problems. Additionally, the interaction of multiple dental and craniofacial factors, as well as genetic and environmental factors, may complicate the understanding and treatment of craniofacial asymmetries.

In conclusion, the appearance of craniofacial asymmetries is a multifactorial process in which dental factors play an important but variable role. Diagnosis and treatment of these asymmetries require detailed evaluation by oral and maxillofacial health professionals, with a focus on correcting dental result factors that have a high dependence on facial symmetry. However, it is essential to consider the limitations and complexity inherent in this process to provide a comprehensive and personalized care approach to each patient.

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