

Original Research Article

Etiology of Malocclusion and its Relationship with Quality of Life

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Abstract

Malocclusions occupy the third position in the scale of priorities and oral health problems in Brazil and may be caused by atypical neuromuscular patterns determined by deleterious habits, modifying the position of the teeth and promoting changes in the Stomatognathic System. Thus, the concept of oral health-related quality of life emerged in the orthodontic literature to explain the professionally determined variability and the patient's determined need for orthodontic treatment. More precisely, the concept of oral health-related quality of life is the interaction between oral health variables, such as biological and physiological functional status, as well as personal attributes such as function, social and psychological functioning, which represent the multidimensional and individual perception of health. . In this way, it describes the pattern of orality and related tissues that allow an individual to eat, speak, socialize, without active illness, without discomfort or embarrassment, and that contribute to general well-being. And based on the studies researched, it was possible to verify that malocclusion does interfere with the quality of life of individuals.

Keywords: Malocclusion, Orthodontic treatment, Quality of life

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INTRODUCTION

Malocclusion is one of the main oral health conditions, and treatments are commonly performed during adolescence, when teething is emerging. Malocclusion is the bad relationship between the maxilla and the mandible. When there is no perfect design of women and between the developed framework of the face of the temporomandibular joints (TMJ) (Kunz et al., 2018).

Traditionally, malocclusion was described only by

regulations, and the Dental Aesthetics Index (DAI), proposed by Cons.et al. in 1989, the recommended by the World Health Organization (WHO) for epidemiological studies. It is based on aesthetic standards to assess socially and has been used in research that have occlusal conditions and need for treatment (Kunz et al., 2018).

The worldwide malocclusion that influences dental

problems in varying degrees. Many factors contribute to dentition anomalies, including hereditary and environmental aspects. Common dental caries, dental and periapical, trauma, abnormality in development and habits are the most common dental diseases in children that are mainly related to malocclusion (Jaeken et al., 2019).

In Brazil, a survey carried out in 2003 (SB-Brasil 2003) indicated a prevalence of severe and very severe malocclusion of 8.2% and 9.8%, respectively, among 12-year-old adolescents. Results of the most recent Brazilian national survey (SB Brasil 2010) reported a slightly lower prevalence of malocclusion at 12 years of age than in 2003: 7.1% severe and 6.5% very severe malocclusion (Jaeken et al., 2019).

Malocclusion is a physical defect, there are several types, such as: Class II, Class III, Open Bite, Cross Bite, Deep Bite and Crowding (Kunz et al., 2018).

In early childhood, the most prevalent malocclusions are anterior open bite and posterior crossbite, while in school-age children, tooth displacement is more common. The need for orthodontic treatment is usually assessed by rating the severity of the malocclusion. Therefore, when assessing the individual need for treatment, it may be equally important to consider the impact that malocclusion may have on oral self-perception of health-related quality of life (Dogramacı et al., 2017).

The esthetics of patients' smiles are increasingly becoming the main motivation for the diagnosis of malocclusions. The benefits are: improvement of oral function, psychosocial well-being and appearance (Rosa et al., 2015).

The World Health Organization (WHO) defines quality of life as individuals' perception of their position in life, in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. The oral influence of dental conditions on an individual's quality of life is called oral health-related quality of life. Oral health-related quality of life measures are crucial to identify the functional, emotional and social impacts of malocclusion (Rosa et al., 2015).

Therefore, this study aims to investigate the possible relationship between malocclusion and quality of life.

METHODOLOGY

The present study was a literature review that sought to explain the etiology of malocclusion and its relationship with quality of life.

The methodology selected for this work was through a literature review, which addressed the etiology of malocclusion and its relationship with quality of life. With the help of records, the study was carried out by gathering articles in Portuguese, English and Spanish. In

the search method on the topic, the online databases LILACS (Latin American and Caribbean Literature on Health Sciences), PUBMED and GOOGLE ACADEMIC were used.

For the selection of articles, the following inclusion criteria were established: articles available in the databases that addressed the issue of malocclusion etiology independently and its relationship with quality of life. And as exclusion criteria: articles that did not talk about the etiology of malocclusion independently and its relationship with quality of life.

The search time for articles involved the period between 2010 and 2020. Controlled descriptors in health sciences (DeCS) were used: malocclusion, quality of life and orthodontics.

RESULTS

The term malocclusion refers to means all deviations of the teeth and jaws from normal alignment (bad individual position of the teeth, osteo-dental discrepancy and bad relationship of the dental arches, sagittal, vertical and transverse), making it difficult to know their precise cause, as there is a complex interaction of multiple factors and the two basic categories are hereditary and environmental influences (Pinto et al., 2008; Proffit and Fields, 2008).

The findings of some studies confirmed the association between eating habits and the occurrence of malocclusion in the primary dentition. In fact, both breastfeeding and bottle feeding have been associated with an increased chance of crossbite when preschool children are evaluated. In addition, a recent systematic review showed that in the scientific evidence, breastfeeding could protect against malocclusion (Abreu et al., 2015).

Non-nutritive sucking has been suggested as a cause of malocclusion in mixed and permanent dentition. There is also some evidence that biting nails, biting objects, biting cheeks or lips, grinding teeth during the first years of life may be associated with pacifier use or thumb sucking, habits in children which in turn may increase the risk of malocclusion. However, the association between history of eating habits and malocclusion in mixed and permanent dentition has been little discussed so far (Abreu et al., 2015).

In the population studied by Portillo and Paes (2000), the pacifier proved to be the most significant in triggering malocclusions in children aged 24 to 58 months.

Research carried out by Monteiro (Agou et al., 2008) reports that signs suggestive of oral breathing, prolonged bottle feeding, changes in lingual positioning and occlusal changes were statistically significant risk factors for the occurrence of this malocclusion.

Patients with severe or long-term untreated malocclusions may experience pain due to temporo-

mandibular disorders or dental trauma. Malocclusion can also cause functional problems such as problems with speech, chewing and subsequent restricted food choice (Bernabé et al., 2008).

The association of malocclusion and OHRQOL is based on several ideas. For the most part, however, researchers write about the impact of malocclusions on the socio-emotional domain of OHRQOL. This domain reflects the appearance of teething and bullying related to reduced self-esteem, related to oral health and being embarrassed to laugh or interact with peers (Bernabé et al., 2008).

In fact, the literature shows that malocclusion can become very limiting for the individual, not because of possibly related functional issues, but because it often negatively affects the individual's social interaction, psychological well-being, and self-perception (Bernabé et al., 2009; Rodd et al., 2011; Proffit and Fields, 2008) and consequently their quality of life (Arcis et al., 2013).

Sousa et al. (2014) evaluated the impact of malocclusion on the daily activities of adolescents and found that untreated malocclusions have physical, psychological and social consequences on the quality of life of individuals and among daily activities, the smile was the only one impacted.

Another study by Benson et al. (2015) evaluating the same topic on the impact of malocclusion on the daily performance of adolescents, found a prevalence of impact on daily assignments of 26.5%. The results support the idea that malocclusion has physical, psychological and social effects on the quality of life of these individuals.

Kragt et al. (2018) proposed to evaluate the oral health-related quality of life of adolescents in relation to dental appearance. As a conclusion of the study, it was observed that the dental conditions that resulted in visible differences in the position of the incisors were associated with higher levels of dissatisfaction with the appearance, having the potential to have a negative impact on the quality of life related to the oral health of these adolescents.

Adolescents who realized they had a malocclusion reported negative impacts on OHRQoL, corroborating previous studies (Gavric et al., 2015; Taylor et al., 2009; Mandall et al., 1999; Zhang et al., 2006).

In addition, studies showed that self-esteem was related to OHRQoL. Self-esteem is a complex psychological trait relatively unrelated to craniofacial characteristics (Liu et al., 2009).

The study showed that the associations between malocclusions and OHRQOL varied between different subgroups of malocclusion assessments. These assessment methods focus on different aspects of occlusion and therefore associations within these subgroups can be translated to a given OHRQOL domain. The biggest difference in OHRQOL scores between children with and without malocclusions, when

the latter was assessed with the DAI. This supports that malocclusions largely impact the socio-emotional domain of OHRQOL (Bernabé et al., 2008).

Taylor's study (Badran, 2010) was the only one that showed that the effect of malocclusion and its treatment on the quality of life of adolescents and verified in their results that malocclusion does not seem to affect the quality of life related to oral and general health, despite of your treatment to improve appearance, oral function and social well-being.

The aesthetic aspect of teeth can seriously affect an individual's adaptation to life, playing an important role in their social interaction, although the degree of malocclusion may be merely a condition without major consequences for a certain individual, but it can be a serious problem for others. This is due to the fact that each person has a self-perception of their image. The impact of a physical defect on an individual is strongly influenced by their self-esteem (Proffit and Fields, 2008; Bernabé et al., 2009), considered a determining factor in the quality of life related to oral health in individuals seeking orthodontic treatment (Arcis et al., 2013).

In this context, it is important to have a better understanding of the biopsychosocial aspects of malocclusion and its repercussions on the quality of life of individuals, for this it is essential to use instruments that measure the quality of life related to oral health (Arcis et al., 2013).

The aesthetic perception of malocclusion seems to be important when seeking orthodontic treatment (Lin et al., 2016).

Individuals with greater need for orthodontic treatment had a greater negative impact on the esthetic component. With this result, the authors highlight the importance of introducing a measure of perception (subjective component) of the aesthetic impact of malocclusion, in addition to the traditional normative measures (clinical criteria) of the need for orthodontic treatment (Lin et al., 2016).

According to Arcis et al. (2013), self-esteem is a determining factor in children seeking orthodontic treatment. The impact of malocclusion on quality of life is substantial in individuals with low self-esteem. This means that the child's psychological profile can influence the social and emotional impact of malocclusion, suggesting the author that psychological attributes should be considered when assessing the quality of life related to oral health in orthodontics.

DISCUSSION AND CONCLUSION

The oral health condition is a factor of relevant interference in the quality of life of individuals. Review studies on the impact of malocclusion on quality of life concluded that patients are motivated to seek orthodontic

treatment due to the physical, psychological and social effects of malocclusion (Isiekwe et al., 2016).

Thus, the adolescents evaluated in this study reinforce the influence of psychosocial aspects on OHRQoL, such as the orthodontic self-perception of the need for treatment and low self-esteem (Liu et al., 2009).

The subjective experience of the need for orthodontic treatment has more impact on OHRQoL than clinically diagnosed malocclusion. If a person finds their dental esthetics unfavorable, even without a clinical diagnosis, this will affect their OHRQoL negatively (Liu et al., 2009). These psychosocial characteristics are related to the demand for orthodontic treatment.

The authors raise the question whether adolescents considered for orthodontic treatment (normative criteria) should actually receive treatment, since the majority of the study sample had no impact on the performance of their daily activities (Sousa et al., 2014). The authors highlight the deficiency of using only clinical indices to estimate orthodontic treatment needs (Benson et al., 2015).

Based on the main studies carried out, it was possible to verify that malocclusion does interfere in the quality of life of individuals in their most varied age groups. Needing more studies with regard to the orthodontic appliance.

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