**RESEARCH ARTICLE**                                    **OPEN ACCESS**

# COMPARATIVE EVALUATION OF THE IMPACT OF THE EVOLUTION OF FIXED ORTHODONTIC TREATMENT ON THE QUALITY OF LIFE OF ADULTS AND ADOLESCENTS: A SECCIONAL STUDY

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## ARTICLE INFO

## ABSTRACT

Oral health related to quality of life (QL) is one of the issues that have recently been highlighted in epidemiological studies. Today, the level of demand of the patients has increased in terms of the desire to improve aesthetics and psychological well-being. It is noteworthy that the human face and smile are fundamental elements of expression, identity and analysis of physical attraction and emotions. Therefore, malocclusion can adversely affect social interaction and psychological well-being.The aim of this study was to comparatively verify the influence of orthodontics on the perception of adults and adolescents in relation to occlusal and esthetic alterations, pain thresholds, social impacts and perception of quality of life.Three hundred eighty-eight (388) individuals of both genders, aged between 9 and 55 years, attending the Postgraduate Clinic in Orthodontics, Dentistry College, Universidade Metropolitana de Santos (SP), were invited to participate in the research. All patients were using fixed orthodontic appliances, in up to five different phases of treatment.One hundred and fifty patients answered the questionnaire and the experiment was divided into two age groups: adolescents and adults. Theselected questionnaires, validated in Portuguese, to measure the influence of orthodontic treatment on Quality of Live (QoL), were the PIDAQ and the OHIP-14. To compare the Adult and Adolescent groups in terms of treatment times (T1 – T5), a non-parametric Mann-Whitney test was performed (comparisons 2 to 2), with an overall significance level of 5%.Regarding adults, there were more negative impacts than in adolescents, showing greater variations. Higher growth was demonstrated in relation to QoLand self-confidence in adults at the beginning of the treatment, highlighting the aesthetic concern. It can be concluded that the fixed orthodontic appliance greatly influences the lives of individuals, particularly adults, especially in social aspects, aesthetics and quality of life.

# INTRODUCTION

The decision regarding the indication of orthodontic treatment depends on both professional judgment and the patient's will. Professional criteria have traditionally been based on the recognition of the presence of a deviation from normal occlusion, based on the morphological criteria of occlusion that, once deviated, would characterize the presence of some type of malocclusion.

Allied to these occlusal parameters, cephalometric and facial analyzes compose the triad of essential morphological information for orthodontic decision-making. Paradoxically, these indices neither provide information about the patient's perception, in terms of self-image and social well-being, nor about their satisfaction or dissatisfaction with the malocclusion or with the performed treatment since such parameters only reflect the professional's point of view. (Who, 1980). Considering that malocclusion can affect the individual, not only in the physical aspect, but also in the psychological and

social aspects, it is urgent to highlight the individual's perception of these factors. The concept that comes closest to this gap regarding the patient's perception is the Quality of Life (QoL) - which is characterized by the "sense of well-being arising from satisfaction or dissatisfaction with areas of life considered important to oneself" (Who, 1980). The expression "Health-Related Quality of Life", or simply the acronym HRQoL, is understood as the value attributed to life, weighted by physical, functional, psychological, social and opportunity limitations that are induced by illness, treatments and care. It is the individual's well-being, built by functional, psychological, social factors, and the experience of pain and discomfort in relation to orofacial conditions – data that can only be obtained from the experience of patients. Several questionnaires were designed to assess health related QoL (Tsakos et al., 2012). Questionnaires can be self-administered or applied through interviews (Oliveira, Nadanovsky, 2005) and are classified, according to the scope of the approach, into generic and specific (Al-Ahmad et al., 2009). Generic questionnaires provide an overview of health linked to QoL and provide guidelines for public health planning. On the other hand, specific instruments are applied in certain interventions, diseases or groups of individuals, as can be seen in studies of Al-Ahmad et al. (2009). Questionnaires require standardization, and validity (really measuring what is proposed) and reliability (measurement reproducibility) are essential characteristics to avoid methodological errors and falsify conclusions (Sardenberg et al., 2012). Each question refers to an item, and some grouped items make up the subscales (domain or dimension). As the individual's perception can change throughout life and depend on the individual's psychological maturity, QoL is measured differently in children, adolescents and adults, and the questionnaires can undergo changes or adaptations to be properly applied in younger patients (Sardenberg et al., 2012).

The questionnaire of our choice, the "Oral Health Impact Profile" (OHIP-49) was developed and tested in Australia by Locker and Allen (2007) as a complement to more traditional objective indicators. The scope of this instrument was to indicate the need perceived by adult and elderly patients regarding the impact on the functional, social and psychological well-being of people related to oral health in their daily activities. The measures were based on the World Health Organization's Classification of impairments, disabilities, and handicaps. The impact of the disease is measured by 49 items, divided into seven domains: 1. functional limitation, 2. physical pain, 3. psychological discomfort, 4. physical incapacity, 5. psychological incapacity, 6. social incapacity and 7. deficiency in the achievement of everyday activities. Impact intensity is based on the five-level Likert scale (0=never, 1=almost never, 2=occasionally, 3=a lot, and 4=always). A shorter version of OHIP-49 is OHIP-14, which is one of the most widely used instruments in Dentistry. Reversed to 14 items, it was developed using epidemiological data from 1,217 Australians with a mean age of 60 years. Despite having been designed for the use in elderly populations, OHIP-14 has been successfully adopted to assess HRQoL in adolescents and young adults (Broder et al., 2000).

Most studies on the impact of oral diseases on quality of life focused on adults. The explanation may be related to the fact that the impact on this group is more evident, due to the accumulation of diseases and their effects on oral tissues. Broder et al. (2000) pioneered the use of OHIP-14 in adolescents aged between 12 and 17 years, concluding that OHIP-14 can be an important screening tool, considered sensitive even in younger age groups. Another questionnaire, that was used in this research, is the "Psychosocial Impact of Dental Aesthetics Questionnaire" (PIDAQ). In 2006, Klages et al.(2015) developed this instrument for measuring QoL in the United Kingdom, to be used in orthodontic patients. The questionnaire is structured into four subscales: self-confidence with teeth, social impact, psychological impact and concern with aesthetics. The authors tested this specific questionnaire in 194 young adult patients aged between 18 and 30 years, of which 70% had already undergone orthodontic treatment. Good validity and reliability were found for application in the young adult population. The translated Brazilian version, cross-culturally

adapted, validated and tested for reliability, was established by Sardenberg et al. (2011). The study showed that the PIDAQ had different scores between the group with and without malocclusion in anterior teeth and satisfactory psychometric properties. This study aims to verify the influence of orthodontics on oral health-related quality of life and to assess the quality of life of orthodontic patients at different times of treatment. We also sought to verify the association between generic and specific questionnaires, and finally, to verify the association between QoL and the use or not of orthodontic appliances.

# MATERIALS AND METHODS

This research had its development project submitted and referral to the Research Ethics Committee of Universidade Metropolitana de Santos, it was approved under the process number 4.028.289. Three hundred eighty-eight (388) individuals of both genders, aged between 9 and 55 years, attending the Postgraduate Clinic in Orthodontics, Dentistry College, Universidade Metropolitana de Santos (SP), were invited to participate in the research. Sociodemographic information was collected in a specific questionnaire – which preceded the Quality of Life (QoL) questionnaires – containing information on 1-age; 2- gender (male and female); 3- city where you live; 4- level of education of the respondent or the head of the family, in addition to items related to the search for understanding the reason why adult patients postpone the treatment of their malocclusions until maturity. The selected questionnaires, validated in Portuguese to measure the influence of orthodontic treatment on QoL, the PIDAQ and the OHIP-14, were sequentially included in the insert to be answered by the patients.The questionnaires would be administered in a reserved and quiet place, without imposing a time limit, and would be self-administered in the presence of the researcher. However, due to the SARS-NCov-2 pandemic period and the consequent social distancing that was encouraged to be adopted as a routine, the questionnaire was included in the Google Forms virtual platform and sent to the sample patients by electronic mail, telephone and/or emails, preceded by a free and informed consent term, so that the patient did not have the option to "skip" its reading or the agreement or not to participate in the survey. The participation of respondents was not linked to the follow-up of the desired treatment, everything was based on full voluntariness.

The PIDAQ with 23 psychometric items was applied to assess specific orthodontic aspects of quality of life, expressed in four domains:1. dental self-confidence (6 items);2. social impact (8 items);3. psychological impact (6 items) and4. aesthetic concern (3 items). Subjects were asked to quantify the positive or negative impact on dental esthetics using a five-point scale ranging from 0-4 according to the agreement with each sentence of the questionnaire (0,not at all; 1, a little; 2,somewhat; 3, strongly; 4,very strongly). A total PIDAQ value must be obtained by the sum of all domains, and the sum of all items must produce the domain value. The PIDAQ score ranges from 0 to 92, with a higher score indicating worse QoL. It must have fast administration and quotation and integrate negative and positive domains. OHIP-14 is a construct based on the International Classification of Impairments, Disabilities and Handicaps (ICIDH) developed by Who (1980). It is a generic approach to oral health. The validated Portuguese version of the OHIP-14 was used to assess the impact of oral health on QoL over the past six months(3). The questions were distributed into seven domains (two items per domain): 1) functional limitation; 2) physical pain; 3) psychological discomfort; 4) physical disability; 5) psychological disability; 6) social disability; 7) limitation. Responses were coded on a Likert scale. The experiment was divided into two age groups: adolescents and adults, and "treatment time" groups were defined with 5 subgroups related to the periods of evolution of fixed orthodontic treatment (less than 6 months, less than one year, more than one year, more than two years, more than three years). Regarding PIDAQ, the questionnaire has the following content:Dental Self-Confidence, Social Impact, Psychological Impact, Aesthetic Concern.

Regarding OHIP-14, participants received the following questionnaire:In the past six months, how often did the following problems occur in your mouth or teeth?There are 14 questions that can be answered from 0 (they never happen) to 4 (they always happen). To compare the Adult and Adolescent groups in terms of treatment times, a non-parametric Mann-Whitney test was performed (comparisons 2 to 2), with an overall significance level of 5%.

# RESULTS

Out of the 388 patients that were invited to participate in the study, 150 individuals answered the form within the requested deadline, with the characteristics verified below. After applying non-parametric statistical analyzes (Mann-Whitney) to the results obtained with the application of PIDAQ, it was possible to verify that:

- Regarding the quality of life of Adolescents while using fixed orthodontic appliances, the first three items of the PIDAQ (self-confidence, social impact and psychological impact) were the same for all periods evaluated, since the differences observed in response to the PIDAQ were not statistically significant between treatment times in this group. (Table 01)

- The concern with aesthetics was greater in the first months of using the appliance, tending to decrease over time. When considering the Adults group, the statistical analysis indicated that all negative aspects tend to decrease over time of treatment. Adult self-confidence seems to be significantly affected with increasing treatment time (Table 01).

- In the comparison between the Adolescent and Adult groups within the same period, the statistical analysis on the PIDAQ indicated that in the Adult group there was a significantly positive impact of orthodontic therapy on dental self-confidence in relation to Adolescents. It was evidenced that dental self-confidence was always greater for Adults than for Adolescents, except in the period between 2 and 3 years of treatment, when Adolescents were more self-confident. Regarding the social impact, Adults were more affected than Adolescents in all periods evaluated, with no statistically significant difference, except for the period from 3 years onwards (Table 02).

- As for the psychological impact and aesthetics concern, the results were statistically equal between the Adults and Adolescents groups, except for the period between 1 and 2 years of treatment. During this period, Adults suffered greater psychological impact and greater aesthetics concern, when compared to Adolescents (Table 02).

- The results of applying the statistical analysis in Table 02 made it evident that Adults tend to have greater behavioral impairment at the beginning of treatment, a condition that extends until the beginning of the 2nd year, compared to Adolescents.

- When evaluating the responses to the OHIP-14 questionnaire, the statistical analysis showed that the Adult group had an average of values that was significantly higher than the Adolescent group, at all times of treatment evaluated, indicating that adults feel more discomfort and greater intolerance levels throughout the treatment than adolescents (Table 03).

- It was not possible to observe a statistically significant differencebetween the Adolescents' treatment periods, but there is a trend towards a decrease in dissatisfaction as the treatment progresses over time, with a numerical decrease in the value of the OHIP-14 score. For Adults, the impact on quality of life is greater at the beginning of treatment (between 0 and 12 months) and statistically smaller in the other periods evaluated, as shown in Table 04 below.

# DISCUSSION

There has been a growing need for the study of the social and psychological impact of oral conditions or diseases on Quality of Life (QoL), and more specifically on Oral Health Related Quality of Life (OHRQoL). The present study aimed to collaborate with data that add to those already published, in the hope of recognizing in what conditions malocclusion and the use of fixed braces affect adults and adolescents differently in their daily activities at home, at work or at school, and in their social relationships. In addition to requiring adequate occlusion, periodontal and joint protection, it is among the main objectives of Orthodontics"to conserve and/or improve dental esthetics and facial expression", and also to "increase self-esteem and the individual's social adaptation"Silva (2003). The prevalence of aesthetic motivation, characterizing the group of patients seeking orthodontic treatment, was found by Soares et al. (2008)who, after analyzing the medical records of a specialization course, had unfavorable aesthetics as the main complaint in 76.82% of the sample, with pain accounting for only 4.32% and difficulty in chewing and phonation 3.27% and 2.32%, respectively. Aware of the prevalence of aesthetics, we decided to apply the PIDAQ questionnaire to our sample, due to its emphasis on the Aesthetics item, althoughthe study by Souza et al. (2013) revealed malocclusion (66.7%) as the main motivation for seeking treatment, followed by aesthetic reasons (48.3%), in a sample of 60 patients aged 18 to 25 years, who were in the final stages of treatment or had already been treated.

The present study used the Brazilian version of the PIDAQ developed by Sardenberg et al. (2011), who found that individuals without malocclusion had lower PIDAQ scores than those with diagnosed malocclusion.PIDAQ has three negative and one positive domains. Some domains had inverted scores in our research, as per the authors' guidelines, to generate the same sense of score for all items. The literature says that, as the PIDAQ is a specific instrument, it may be necessary to associate other instruments to access a greater diversity of information. In our study, we chose OHIP-14 (Oliveira andNadanovsky, 2005; Locker and Allen, 2007), called Short Form, in its brazilian version, translated and validated by Oliveira and Nadanovsky(2005).OHIP-14 was usedin a study that demonstrated that orthodontic treatment caused a significant increase in self-esteem and quality of life in adult patients (Souza et al., 2013; Nascimento et al.,2016). Ribeiro (2010)described the psychometric or clinimetric qualities in a group that took between 5 and 10 minutes to answer the questionnaire in a face-to-face format. In the present study, the time taken to respond was not measured as all patients responded virtually and were free to do so within a period of 6 days (from May 5th to 11th, 2020), including a weekend, due to the social isolation imposed by the Sars-Cov-2 pandemic. As in previous studies, the instrument seems to have been received without suspicion, having been well accepted by the patients, considering that out of the 388 questionnaires that were sent, 150 were answered within the deadline and included in the sample (38.7%).

When asked about the duration of orthodontic treatment to which the patients in this sample are submitted, the answers were quantified in percentages and displayed in Graph 03. The methodology proposed to divide the treatment into five distinct times, interpreted as follows: "Less than 6 months" was the group with fewer patients, only 9 and associated with "Less than 1 year", 19, make up the group that is in the beginning of orthodontic therapy. Forty-seven patients answered "More than 1 year" and are in the middle of treatment, "More than 2 years" gathered 35 patients, who are generally at the end of treatment, and finally, "More than 3 years" sums up 40 patients under long-term treatments. The evaluation of Oral Health Related Quality of Life (OHRQoL) with a sample divided into five periods of orthodontic treatment had already been carried out based on a prospective study, that used OHIP-14 in 250 Chinese patients during the periods of one week, one month, three months, six months of orthodontic treatment, and after completion (Chen et al., 2010). The study demonstrated a significant worsening in OHRQoL during the treatment period,

**Table 01. PIDAQ separated by items. The letters represent the comparison between different periods within the same age group (Adolescents OR Adults). Values followed by the same letter represent the absence of a statistically significant difference (P>0.05).**

| | < 6 Months | | <1 Year | | >1 Year | | > 2 Years | | > 3 Years | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Adolescents | Adults | Adolescents | Adults | Adolescents | Adults | Adolescents | Adults | Adolescents | Adults |
| DENTAL SELF-CONFIDENCE | 1,8 B | 2,7 A | 1,7 B | 2,8 A | 1,7 B | 2,2 A | 2,3 A | 1,7 B | 1,7 B | 2,1 A |
| SOCIAL IMPACT | 0,7 B | 1,9 A | 0,5 B | 1,0 A | 0,6 B | 1,4 A | 0,5 B | 0,6 A | 0,5 A | 0,7 A |
| PSYCHOLOGICAL IMPACT | 1,5 A | 2,5 A | 1,0 A | 1,5A | 1,0 B | 1,7 A | 1,1 A | 1,0 A | 1,0 A | 1,3 A |
| AESTHETIC CONCERN | 2,0 A | 1,7 A | 1,2 A | 1,9 A | 1,1 B | 1,7 A | 0,8 A | 0,7 A | 0,7 A | 1,0 A |

**Table 02. PIDAQ separated by items. The letters represent the comparison between Adolescents and Adults within the same period. Values followed by the same letter represent the absence of a statistically significant difference (P>0.05).**

| | Adolescents | | | | | Adults | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | <6 months | <1 year | >1 year | >2 years | >3 years | <6 months | <1 year | >1year | >2years | >3years |
| DENTAL SELF-CONFIDENCE | 1,8 A | 1,7 A | 1,7 A | 2,3 A | 1,7 A | 2,7 AB | 2,8 A | 2,2BC | 1,7 D | 2,1 C |
| SOCIAL IMPACT | 0,7 A | 0,5 A | 0,6 A | 0,5 A | 0,5 A | 1,9 A | 1,0BC | 1,4AB | 0,6 C | 0,7 C |
| PSYCHOLOGICAL IMPACT | 1,5 A | 1,0 A | 1,0 A | 1,1 A | 1,0 A | 2,5 A | 1,5BC | 1,7 B | 1,0 C | 1,3 C |
| AESTHETIC CONCERN | 2,0 A | 1,2 AB | 1,1 BC | 0,8 C | 0,7 C | 1,7 AB | 1,9 A | 1,7 A | 0,7 C | 1,0 BC |

**Table 03. OHIP-14: The letters represent the comparison between Adolescents and Adults within the same period. Values followed by the same letter represent the absence of a statistically significant difference (P>0.05)**

| | <6 months | | <1 year | | >1 year | | >2 years | | >3 years | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Adolescents | Adults | Adolescents | Adults | Adolescents | Adults | Adolescents | Adults | Adolescents | Adults |
| OHIP-14 | 0,8 B | 1,5 A | 0,7 B | 1,3 A | 0,6 B | 1,1 A | 0,6 B | 1,1 A | 0,5 B | 1,1 A |

**Table 04. Comparison between the two groups valued by OHIP-14 in the five times of treatment (The letters represent the comparison between Adolescents and Adults within the same period. Values followed by the same letter represent the absence of a statistically significant difference) (P>0.05)**
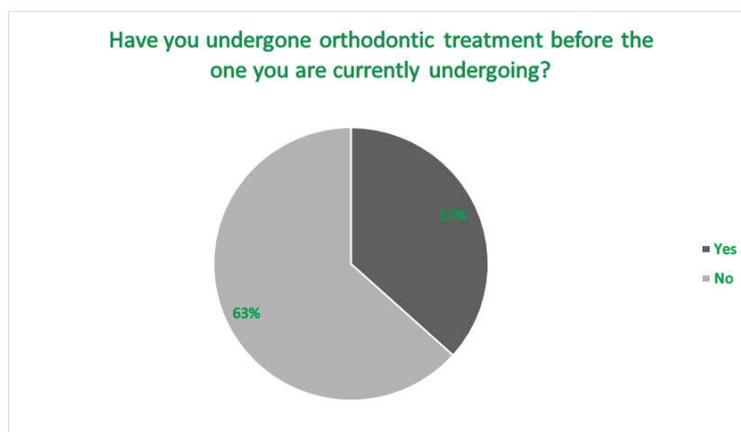
| | Adolescents | | | | | Adults | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | <6months | <1 year | >1 year | >2years | >3years | <6months | <1 year | >1 year | >2years | >3years |
| OHIP 14 | 0,8 A | 0,7 A | 0,6 A | 0,6 A | 0,5 A | 1,5 A | 1,3 AB | 1,1 B | 1,1B | 1,1 B |
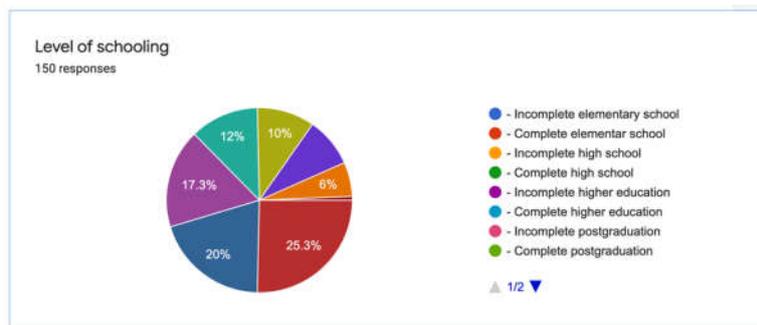


**Graph 01. Schooling level of patients in the sample**



**Graph 02. Percentage of patients in the sample who had undergone prior orthodontic treatment and patients who had not undergone treatment prior to the one being performed during the research**
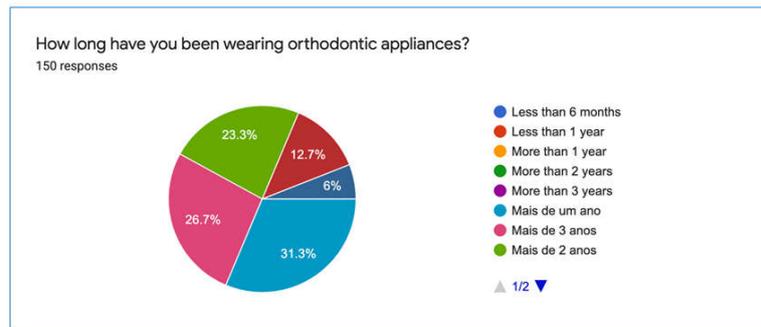
**Graph 03. Sample treatment time duration, in percentage**

especially during the first week. In our research, on the other hand, we sought to verify whether there was a deterioration of OHRQoL in more advanced stages of treatment, in which, in general, it is understood that patients are less motivated and more adapted to the aesthetic changes promoted in the first stages, as much as less complainants in relation to pain in the mouth (Agbaje et al., 2018). The term "self-confidence" that appears as the first item in PIDAQ (dental self-confidence) can be defined as "the conviction that a person has of being able to do or accomplish something"(Agbaje et al., 2018). Dental self-confidence, therefore, means showing self-esteem in terms of your smile, recognizing that your teeth can compose the image that harmonizes with a positive posture and optimistic expectations in relation to your social, relational and professional performance.

González et al. (2019) analyzed the change in perception of the dental psychosocial impact in a sample of adults undergoing orthodontic treatment. They observed a significant increase in the values of dental self-confidence (T0-T1 and T0-T2), similarly to the statistical analysis on the PIDAQ in in our research, in which it was pointed out that in the Adults group there was a positive impact of orthodontic therapy on self-confidence about their teeth when compared to Adolescents. However, adult self-confidence tends to be significantly affected as treatment time increases (between 2 and 3 years), while adolescents are more self-confident. Grewal et al. (2019)studied the psychological impact of orthodontic treatment on quality of life and verified its positive psychological impact, as it was shown to significantly improve individuals' self-esteem and social interaction after orthodontic treatment, with no gender difference. The results of this study indicated that, mainly in the middle of the treatment (period between the 1st and 2nd year), adults suffered greater psychological impact and greater aesthetic concern, when compared to adolescents, similarly to other studies when PIDAQ was applied during orthodontic treatment in adults (Gonzáles et al., 2019; Grewal et al., 2019). Anxiety was positively correlated with social impact, psychological impact and aesthetic concern.

Aesthetic concern was shown to be greater in the first months of using the device for adolescents. Adolescents' desire for orthodontic treatment and better dental appearance can be understood as responses to immediate psychosocial needs, as well as long-term social needs. In relation to adults, Romero-Maroto et al. (2015) found that 28% mentioned the possibility of a long duration of treatment as a demotivating factor. In our research, it was evident, based on the application of the PIDAQ, that concerns about the aesthetics of the smile progressively decreased during treatment, indicating that the progression of malocclusion correction was decisive in the quality of life of individuals, both adults and adolescents. Accordingly, the OHIP indicated that there was a progressive decrease in the negative impact of the use of orthodontic appliances on the quality of life of patients, with no significant difference among Adolescents, and with a significant difference in the Adults group, which reported greater discomfort at the beginning of treatment than in its final years, in similarity to what was also pointed out by Correia (2019). This research compared adults and adolescents undergoing orthodontic treatment.

Broder et al. (2000) used the OHIP-14 in adolescents between 12 and 17 years old, suggesting that the instrument can be an important sensitive tracking tool in this age group. Santos et al. (2016)applied the PIDAQ to 194 Brazilian adolescents aged 11 to 14 years and found satisfactory agreement to be applicable to this age group in Brazil.When statistically evaluating the responses to the OHIP-14, it was found that the Adults group had a significantly higher mean of values than the Adolescents group, at all times of treatment that were evaluated, indicating a worsening in the comparison, similar to the findings of Liu et al. (2019), in which older patients had greater negative impacts on OHIP-14 than younger patients. In the results of the OHIP-14 evaluation, there was a) a non-significant decrease in adult dissatisfaction as the treatment period increases, b) the impact on quality of life was greater at the beginning of treatment (between 0 and 12 months) and statistically lower in the other periods, as was also verified in the study by Kang and Kang (2014). For the adolescents evaluated in this study, the use of orthodontic appliances improved, or did not affect, the self-confidence, social impact and psychological impact PIDAQ items, which were the same for all evaluated treatment periods. Aesthetic concern was greater in the first months of using the device, tending to decrease over time, suggesting that adolescents have esthetic concerns with the very presence of the device and then, probably due to the already visible results, there is an accommodation to the therapy. Likewise, in Adults, the negative aspects tend to decrease over time, except for self-confidence, which tends to be affected as the treatment time increases. Adults suffered greater psychological impact and greater aesthetics concern, when compared to adolescents in the same period of treatment (between 1 and 2 years). But the final PIDAQ value in the comparison between adolescents and adults within each treatment period did not show any statistical difference. In the evaluation of responses to the OHIP-14, it was found that adults feel more discomfort and higher levels of intolerance throughout the treatment than adolescents (Twigge et al., 2016). In the general comparison between the different periods within the same age group, the PIDAQ indicated that Adolescents vary very little in their answers about quality of life, regardless of the time of treatment evaluated. Adults suffer more changes in responses, with significant differences up to 6 months, between 6 months and up to 2 years of treatment, and above 2 years. In the evaluation of the OHIP-14 for Adolescents, it was not possible to observe a statistically significant difference between the periods, but it is possible to observe a trend towards a decrease in dissatisfaction as the treatment period increases, with a numerical decrease in the score value. For adults, the OHIP-14 indicated that the impact on quality of life is greater at the beginning of treatment (between 0 and 12 months) and statistically smaller in the other periods evaluated, which differs from the conclusion of the PIDAQ, that indicates the opposite. PIDAQ and OHIP-14 confirmed their extreme validity, as they assess the perceived need, which can be defined as one that is not verified by professional examination, but rather as something that the patient seeks to resolve due to damage to their quality of life. Hence, it is added that, worldwide, the perceived need has emerged as an important predictor of the use of medical and dental services, making knowledge of the patient's concerns very important. Feu et al. (2010) asserted that the dimensions of dental, functional and social impact have become as relevant as the clinical-orthodontic condition.

In the brazilian reality, where the offer of orthodontic treatment by governmental institutions is restricted or non-existent, it must be considered that the perceived need will express the demand, generating the search for private services or in academic clinics. This study allowed us to understand that there are relevant influences in the relationship between Orthodontics and QoL, for any age group; but the variables showed a greater difference in adults in relation to the Adolescents group, which says a lot about the different social cycles, periods of life and contexts. Regarding the limitations of the study, it is worth noting that, as the sample was composed of patients from the specialization course of a university, the results found are representative of the individuals that were studied and cannot be generalized to the entire population of orthodontic patients from college clinics in Dentistry or private orthodontic clinics. As in any cross-sectional study, the analyzes that were performed are limited by temporality, and besides that, it is a homogeneous sample, particularly in terms of socioeconomic aspects, which certainly influences access to services and the perception of health. In conclusion, adults showed more negative impacts, however, they also showed a higher growth in self-confidence after and during treatment, as well as an increase in quality of life compared to the beginning of the treatment. Regarding adolescents, there is greater aesthetic concern, especially at the beginning of treatment. Issues involving self-confidence, social impact and psychological impact did not change during the use of orthodontic appliances, what differs from adults, who showed great variations.

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