PONTIFÍCIA UNIVERSIDADE CATÓLICA DO RIO GRANDE DO SUL
FACULDADE DE ODONTOLOGIA

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AVALIAÇÃO DA QUALIDADE DE VIDA GERAL E RELACIONADA À SAÚDE DE PACIENTES COM DEFORMIDADES DENTOFACIAIS APÓS TRATAMENTO ORTO-CIRÚRGICO

Orientador: Prof. Dr. Rogério Belle de Oliveira

PORTO ALEGRE
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RESUMO GERAL

As deformidades dentofaciais afetam os ossos dos maxilares e dentição, e podem levar a problemas funcionais, sociais e psicológicos. Este estudo avaliou o impacto dos problemas de saúde oral na qualidade de vida de adultos com deformidades dentofaciais, antes e após a cirurgia ortognática, e o impacto desta na qualidade de vida geral e relacionada a saúde bucal. Para isso, foram utilizados os questionários Whoqol-bref, OQLQ e OHIP-14. Foram incluídos neste estudo 74 pacientes que se apresentaram para o tratamento de deformidades dentofaciais e maloclusão tipo Classe I, II e III de Angle, no Departamento de Cirurgia da Faculdade de Odontologia da Pontifícia Universidade Católica do Rio Grande do Sul, no período de 2006 a 2012. Os pacientes realizaram tratamento ortodôntico prévio e eram saudáveis. Foram excluídos deste estudo os pacientes com fissura labial e palatina, síndromes, deformidades faciais decorrente de traumatismo ou má-formação congênita, gestantes, menores de 15 anos e pacientes com doenças sistêmicas pré-existentes. Os sujeitos foram convidados a responder um questionário de perguntas antes do tratamento cirúrgico (T0) e num período médio de acompanhamento pós-operatório de 4 a 6 meses (T1). O grupo estudado era constituído de 49 mulheres (66,2%) e 25 homens (33,8%), com idade variando entre 15 e 53 anos (média de 28,0 ± 9,0), sendo 58 pacientes (78,4%) portadores de deformidade do tipo Classe III de Angle, 11 pacientes Classe II (14,9%) e 05 pacientes Classe I (6,8%). Através do Whoqol-bref, foi observado aumento significativo (WILCOXON, p≤ 0,001) na pontuação dos domínios entre T0 e T1, indicando melhoria significante da qualidade de vida, com exceção dos pacientes classe I. Houve também redução significante (WILCOXON, p ≤ 0,01) entre a pontuação geral média do OQLQ do período pré (T0 = 48,0 ± 22,8) para o pós-operatório (T1 = 7,8 ± 11,9), notando-se melhora significativa da qualidade de vida relacionada a saúde oral após o tratamento cirúrgico. Houve uma redução estatisticamente significante (WILCOXON, p ≤ 0,01) entre a pontuação geral média do OHIP-14 do pré-operatório (T0 = 13,10 ± 6,1) para o período pós-operatório (T1 = 3,20 ± 3,8), e também nos domínios avaliados. Este estudo demonstrou que a cirurgia ortognática teve um impacto positivo sobre a saúde dos pacientes avaliados e se observou mudanças significativas na qualidade de vida geral e relacionada à saúde bucal após o tratamento cirúrgico. Conclui-se que o tratamento ortodôntico combinado à cirurgia ortognática é uma modalidade de tratamento confiável, com impacto positivo na estética facial, função do sistema estomatognático, consciência da aparência facial e vantagens sociais, como melhoria da autoconfiança, indicando que a cirurgia ortognática é uma terapia apropriada para pacientes com deformidade dentofacial, apesar de alguns riscos e morbidade inerentes ao procedimento realizado.

Palavras-chave[1]: Cirurgia Ortognática; Qualidade de Vida; Questionários; Saúde Bucal; Deformidades Dentofaciais.

[1] Descritores em Ciência da Saúde (DeCS), disponível em http://decs.bvs.br. Acesso em: 31 out. 2013.

GENERAL ABSTRACT

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Dentofacial deformities affect the jaws and teeth, and can lead to functional, social and psychological disorders. This study evaluated the impact of oral health problems in related quality of life in adults with dentofacial deformities, before and after orthognathic surgery, and its impact on quality of life in general and related to oral health. For this, there were used the questionnaires Whoqol-bref, OQLQ and OHIP-14. This study included 74 patients who presented for dentofacial deformity treatment and Angle malocclusion Class I, II and III, at the Department of Oral and Maxillofacial Surgery, School of Dentistry of Pontifícia Universidade Católica do Rio Grande do Sul between 2006 and 2012. The patients underwent previous orthodontic treatment and they were healthy. Patients with palate and lip cleft, syndromes, traumatic facial deformities or congenital malformation, pregnants, patients younger than 15 years and patients with pre-existing systemic diseases were excluded. The subjects were asked to answer a questionnaire with questions before surgery (T0) and another in an average of 4-6 months of postoperative follow-up (T1). The study group consisted of 49 women (66.2%) and 25 men (33.8%), with age between 15 and 53 years (mean 28.0 ± 9.0), 58 patients (78.4%) were Angle Class III, 11 patients (14.9%) Angle Class II and 05 patients (6.8%) were Class I. Through the Whoqol-bref, w e noticed a significant increase (WILCOXON, $p \leq 0.01$) of the scores in the domains between T0 and T1, indicating significant improvement in quality of life, with the exception of patients Angle Class I. There was also a significant reduction (WILCOXON, $p \leq 0.01$) between the average overall score OQLQ the preoperative (T0 = 48.0 ± 22.8) to the postoperative (T1 = 11.9 ± 7.8), and a significant improvement in quality of life related to oral health after surgery. There was a statistically significant reduction (WILCOXON, $p \leq 0.01$) between the average overall score of OHIP-14 preoperatively (T0 = 13.10 ± 6.1), for the post-treatment period (T1 = 3.20 ± 3.8), and also in the evaluated domains. This study demonstrated that the orthognathic surgery had a positive impact on the oral health of evaluated patients and it noted significant changes in overall and oral health-related quality of life after surgery. It was concluded that orthodontic treatment combined with orthognathic surgery is a treatment modality reliable, with positive impact on facial aesthetics, oral function, facial appearance and awareness of social benefits, such as improved self-confidence, indicating that orthognathic surgery is appropriate therapy for patients with dentofacial deformity, despite some risks and morbidity related to the procedure performed.

Keywords[2]: Orthognathic Surgery; Quality of Life; Questionnaires; Oral Health; Dentofacial Deformities.

[2] Medical Subject Headings (MeSH), disponível em http://www.ncbi.nlm.nih.gov/mesh Acesso em: 31 out. 2013.

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LISTA DE ABREVIATURAS, SIGLAS E SÍMBOLOS

LISTA DE ABREVIATURAS

ASA	American Society of Anesthesiologist
CEP	Comitê de Ética em Pesquisa
et al.	e colaboradores
F	*Female* - feminino
M	*Male* - masculino
M	*Mean* – média
n	número ou amostra
NS	*Not Significant* – não significante
OHIP	*Oral Health Impact Profile*
OQLQ	*Orthognathic Quality of Life Questionnaire*
p	probabilidade de erro
PUCRS	Pontifícia Universidade Católica do Rio Grande do Sul
Q1	*question 1*
Q2	*question 2*
SD	*Standard Deviation* - desvio padrão
WHO	*World Health Organization*
WHOQOL	*World Health Organization Quality of Life*
WHOQOL-bref	*World Health Organization Quality of Life* - abbreviated version

SUMÁRIO

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1 ANTECEDENTES E JUSTIFICATIVA

A cirurgia ortognática têm se tornado uma importante área da Cirurgia Buco-Maxilo-Facial preocupada com a correção das deformidades do esqueleto facial. O tratamento é planejado e realizado em cooperação com o ortodontista (CHENG; ROLES; TELFER, 1998), e é rotineiramente realizado há mais de 100 anos (CADOGAN; BENNUN, 2011; VARGO; GLADWIN; NGAN, 2003). Seu objetivo é corrigir as deformidades dos maxilares, produzir um aparência mais harmoniosa do esqueleto facial e criar uma oclusão dentária funcional (CHENG; ROLES; TELFER, 1998; MODIG; ANDERSSON; WÅRDH, 2006). É um tratamento eletivo e seguro, apesar da morbidade pós-operatória, desconforto físico durante a fase aguda de recuperação e longo acompanhamento pós-operatório (CADOGAN; BENNUN, 2011; LEE; MCGRATH; SAMMAN, 2008). A convalescença após a cirurgia ortognática é um processo complexo e requer a resolução da etapa pós-operatória, como náusea, edema, dor e desconforto, e retorno a função oral, estilo de vida e nível de atividades pré-operatórias (PHILLIPS; BLAKEY III; JASKOLKA, 2008).

Os motivos que levam os pacientes a optar pela cirurgia ortognática são variados, mas o desejo por melhoria da estética facial e diminuição dos problemas funcionais são as duas razões mais importantes (BURDEN et al., 2010; CHENG; ROLES; TELFER, 1998; GERZANIC; JAGSCH; WATZKE, 2002; MODIG; ANDERSSON; WÅRDH, 2006; VARGO; GLADWIN; NGAN, 2003; WILLIAMS; TRAVESS; WILLIAMS, 2004). A percepção estética é um determinante importante para a motivação do tratamento (RIVERA et al., 2000), e um fator que contribui para o esmagador desejo de mudança facial pode ser a forte ênfase da sociedade na aparência física. As pesquisas psicológicas sobre a satisfação e imagem corporal têm sugerido que os estereótipos da mídia desempenham um papel central na criação e na exacerbação da insatisfação com a autoimagem (NEWTON; MINHAS, 2005).

A decisão do paciente pela cirurgia ortognática também se baseia em múltiplas necessidades e motivações, por exemplo, preocupações psicológicas e sociais, valores culturais, custo do tratamento, tempo de recuperação e benefícios percebidos, tais como melhora da função, aparência e autoestima (RIVERA et al.,

2000). Enquanto a melhora funcional é aguardada e apreciada pelos pacientes, a aparência facial pós-operatória pode não ser previsível com exatidão e nem sempre aceita com facilidade (GERZANIC; JAGSCH; WATZKE, 2002).

A face tem uma característica chave na determinação da atratividade física humana, e pode nos dar informações sobre atributos pessoais, gênero, raça, idade, condição física, emoções e autoestima. Atualmente, a atratividade física é altamente valorizada; no entanto, é difícil de ser qualificada e não há um conjunto de regras que regem a harmonia facial. As anormalidades faciais podem afetar negativamente a imagem corporal e autoconfiança, e pessoas com deformidades e desfigurações podem estar sujeitas a provocações e intimidação (GUHAN et al., 2008; NEWTON; MINHAS, 2005; WILLIAMS et al., 2009).

É compreensível que as pessoas vão tentar alcançar padrões mais elevados de atratividade física em um momento em que a mídia de massa é onipresente, e os ideais de atratividade física podem levar a um ponto de comparação irrealista e exacerbar a insatisfação nos expectadores (WILLIAMS et al., 2009). Um desafio para a equipe de saúde, além de avaliar dentes e maxilares dos pacientes, é julgar o psicológico destes, com vistas a reduzir o risco de uma resposta psicológica desfavorável, que pode ocorrer mesmo quando os objetivos técnicos do tratamento são alcançados (∅LAND et al., 2010; RYAN; BARNARD; CUNNINGHAM, 2012). Devido a estreita interdependência entre aparência facial e parâmetros psicológicos, uma doença psíquica grave pode resultar se o paciente não gostar ou não se adaptar ao resultado estético da cirurgia ortognática (GERZANIC; JAGSCH; WATZKE, 2002). A insatisfação pós-operatória também pode ser resultado da falha de comunicação entre o cirurgião e o paciente (GUHAN et al., 2008).

Há um foco crescente em medir o sucesso do tratamento, não só em termos de resultado clínico, mas também pela avaliação dos pacientes sobre os cuidados prestados (WILLIAMS; TRAVESS; WILLIAMS, 2004). Pesquisas têm focado a satisfação pós-operatória com a cirurgia ortognática e as mudanças na imagem corporal e confiança social (CADOGAN; BENNUN, 2011). A satisfação é o fator predominante pelos quais o sucesso é definido (LITNER et al., 2008), e o impacto das doenças e intervenções orais na percepção de saúde oral do paciente e

qualidade de vida relacionada à saúde bucal é cada vez mais reconhecido como componente importante da saúde (JOHN; PATRICK; SLADE, 2002).

Com base no exposto este trabalho se propôs a avaliar o impacto da cirurgia ortognática, como modalidade de tratamento para as diversas deformidades dentofaciais, na qualidade de vida geral e relacionada a saúde bucal, através de questionários gerais e específicos aplicados no pré e pós-operatórios.


PUCRS

2 ARTIGO I

O artigo a seguir intitula-se "*Changes in health-related quality of life in patients with several dentofacial deformities: a comparision between pre and postoperative findings*". Foi formatado de acordo com as normas do periódico *British Journal of Oral and Maxillofacial Surgery* (Anexo B) e submetido em 31 de outubro de 2013 (Anexo C).

Changes in health-related quality of life in patients with several dentofacial deformities: a comparision between pre and postoperative findings

Abstract: Dentofacial deformities affect the jaws and teeth, and can lead to functional, social and psychological problems. This study evaluated the impact of orthognathic surgery on quality of life in general and related to oral health through questionnaires Whoqol-bref and OQLQ, answered before (T0) and 4-6 months after (T1) surgery in 74 patients (49 women and 25 men), with an average age of 28.0 ± 9.0 years. The dentofacial deformities were Angle Class III (78,4%), Class II (14,9%) and Class I (6,8%). Through the Whoqol-bref, we noticed a significant increase (Wilcoxon, $p \leq 0.001$) of the scores in the domains between T0 and T1, indicating significant improvement in quality of life, with the exception of patients Class I. There was also a significant reduction (Wilcoxon, $p \leq 0.01$) between the average overall score OQLQ the preoperative (T0 = 48.0 ± 22.8) to postoperative (T1 = 11.9 ± 7.8), and a significant improvement in quality of life related to oral health after surgery. We concluded that orthodontic treatment combined with orthognathic surgery is a reliable treatment modality, with positive impact on facial aesthetics, oral function, facial appearance and awareness of social benefits, such as improved self-confidence, indicating that orthognathic surgery is an appropriate therapy for patients with dentofacial deformity, despite some risks and morbidity.

Keywords: orthognathic surgery; quality of life; dentofacial deformity; questionnaire; oral health related quality of life.

Introduction

Dentofacial deformities affect mainly the bones of the jaws and teeth, and lead to significant facial asymmetry, disfigurement and functional problems. Besides the obvious problems, people with dentofacial deformities also tend to have socio-psychological and emotional problems, which can affect their quality of life[1,2].

The orthodontic-surgical treatment is a well-established treatment modality for the correction of moderate to serious dentofacial deformities[3]. Its goal, besides producing a more harmonious skeletal facial appearance[3,4], is to improve the occlusal function and induce a positive impact on the psychological profile of the patient, thus favorably affecting their self confidence[5, 6], personal attitude, social interaction and behavior[7].

The importance of quality of life in dentistry just recently has been considered and given importance. World Health Organization (WHO) defines quality of life as "an individual's perception of their position in life, in the context of culture and value systems in which they live and in relation to their goals, expectations, standards and concerns". However, quality of life can also be defined as a "sense of well-being of a person, which stems from satisfaction or dissatisfaction with areas of life that are important to him/her"[1, 5, 8, 9].

Due to the increase of instruments for assessing quality of life and related subjects, and to the pursuit of an instrument to assess quality of life in an international perspective, WHO has developed an instrument to recognize the multidimensionality and subjectivity of the concept and to include individual perception of health, psychosocial status and other aspects of life[10]. The World Health Organization Quality of Life (Whoqol) evaluates the quality of life perceived by the respondents and the perception of the effects of diseases and health interventions on quality of life of individuals. It is a tool for self evaluation and is self explanatory. The initial version contains 100 items of evaluation, but the need for shorter instruments led to the development of an abbreviated version - Whoqol-bref. This has satisfactory psychometric characteristic, and evaluates four domains: physical, psychological, social relationships and environmental[9].

It is important to analyze the changes that orthognathic surgery produces in order to evaluate the impact of treatment on the lives of the individuals[11]. Some studies have shown that orthognathic surgery as a treatment modality improves the quality of life[1,3,6], increases self-confidence and social skills, as well as adding psychological and appearance improvements[4,5].

In order to assess the quality of life related to oral health in patients with dentofacial deformities, several approaches have been developed and implemented, but there is no consensus about a standard evaluation method[5,7]. *Orthognathic Quality of Life Questionnaire* (OQLQ) has good measurement properties and is suitable as a tool for evaluating the outcome of orthognathic surgery [5, 11, 12,13].

The objective of this research was to use the abbreviated version of The World Health Organization Quality of Life (Whoqol-bref) and Orthognathic Quality of Life Questionnaire (OQLQ) to evaluate the impact of orthognathic surgery as a therapeutic modality on overall quality of life and related oral health in patients with various dentofacial deformities.

Materials and Methods

The study protocol was reviewed and approved by the regional research ethics committee. Informed consent was obtained from each patient, and they were assured of the questionnaires confidentiality. Patients with dentofacial deformities who presented for treatment at the Department of Oral and Maxillofacial Surgery, School of Dentistry of Pontifícia Universidade Católica do Rio Grande do Sul between 2006 and 2012 were recruited for this study. Patients underwent previous orthodontic treatment and were considered healthy, according to the criteria of the American Society of Anesthesiologist (ASA I). There were excluded from this study patients with cleft lip and palate, syndromes, facial deformities due to trauma or congenital malformation, pregnant women, children younger than 15 years and patients with pre-existing systemic disease. The study included patients with dentofacial deformities and Angle malocclusion Classes I, II and III. Patients were asked to answer a questionnaire with questions before surgery (T0) and another in an average of 4-6 months of postoperative follow-up (T1). The questionnaires consisted of questions about treatment motivation, satisfaction with the results, the abbreviated version of The World Health Organization Quality of Life (Whoqol-bref) and Orthognathic Quality of Life Questionnaire (OQLQ) were applied.

Whoqol-bref presents 26 questions - the first two are related to quality of life and general health, and the others are distributed in four areas of evaluation:

physical, psychological, social relationships and environmental. Each question has five possible answers, with scores ranging from 1 to 5. The scores of Whoqol-bref domains are calculated by taking the average of all items included in each domain and multiplying them by a weight attributed to each; these results are then transformed to a scale of 0-100. Lower scores indicate poor quality of life, and higher scores indicate better quality of life.

The OQLQ consists of 22 questions, divided in four areas of evaluation: social aspects of the deformity, facial aesthetics, oral function and awareness of facial deformity. Each question has five possible answers ranging from "not applicable/does not disturb" (score zero) to "very uncomfortable" (score 4). Lower scores indicate better quality of life related to oral health, and higher scores indicate poor quality of life.

The Statistical Package for Social Sciences (SPSS version 16.0, SPSS Inc, Chicago, IL) was used to perform the data analysis. We used the Fisher exact test, t-student comparison test for paired data and Wilcoxon nonparametric test.

Results

Seventy four patients took part in this study and answered the questionnaires before (T0) and after surgery (T1). They were 49 women (66.2%) and 25 men (33.8%), with an average age of 28.0 ± 9.0 (15-53 years). Regarding the type of deformity, 58 patients (78.4%) had Angle Class III dentofacial deformity, 11 patients (14.9%) had Class II and 5 had Class I (6.8%). Bimaxillary surgeries were performed in 87.8% of cases. Through the results of the Fisher exact test, there were found that variables such as gender and age had no significant association with the type of deformity and type of surgery performed. All patients reported that they would recommend the surgery to other people and 97.3% said they would do the surgery again.

Whoqol-bref questionnaire

Using the t-student comparison test for paired data, there were found a significant increase in the scores of the domains of the Whoqol-bref, between T0 and T1, indicating significant improvement in quality of life after the surgery (Table 1).

There was no difference between genders and types of surgeries performed, observing the improvement of the quality of life in all domains. However, when the age range was studied, it was observed that patients older than 36 showed no improvement in the quality of life in social relationships (Table 2). And, regarding the type of dentofacial deformity, patients with Class I dentofacial deformities showed no significant improvement after surgery (Table 3).

OQLQ questionnaire

There was a statistically significant reduction ($p \leq 0.01$) between the average overall score of OQLQ from the preoperative period (T0 = 48.0 ± 22.8) to the post-treatment period (T1 = 7.8 ± 11.9), and also in the four domains assessed (Table 4), with a significant improvement in quality of life related to oral health after surgery, in a similar way amongst genders, age groups and types of surgery performed (unimaxilar/bimaxilar). However, there was a variation among the types of deformities: the results of the nonparametric Wilcoxon test showed that the group of patients Angle Class I had lower change after treatment and reported no significant improvement in oral function domain (Table 5).

The results for the overall scores and domains before and after surgical correction of dentofacial deformities in several studies in the literature were presented in Table 6.

Discussion

There is a growing interest in the impact of dental and dentofacial conditions on the quality of life of patients[1,5,7,12]. Clinical researches have focused on the evaluation of the subjective findings of health and therapeutic effects reported by

patients[7]. Change measurement is important to evaluate the impact of treatment[11], and to determine and prioritize the needs of correction[12].

Patients seek treatment for dentofacial deformities due to functional problems and dissatisfaction with facial aesthetics, and it is known that these deformities can have profound psychological and social effects on the quality of life[7,12,] on interpersonal relationships and on the professional career opportunities[1]. It is important to determine and report the effects of orthognathic surgery on the patients' quality of life, specially what to expect from the surgery and what to go through in order to achieve the final result[3,13], because patients who report unexpected effects after orthognathic surgery are more susceptible to dissatisfaction with the treatment[13]. For this, several measuring devices have been developed and used to measure the result of various medical and surgical interventions, and it is recommended to use a specific and a generic tool for a more reliable and embracing recognition of quality of life[7].

This study used the Orthognathic Quality of Life Questionnaire (OQLQ), which is a specific instrument for evaluating quality of life related to oral health in orthognathic surgery, but also used the abbreviated version of The World Health Organization Quality of Life (Whoqol-bref), which is a generic, non-specific tool, for evaluating the overall quality of life perceived by the respondents. In choosing the questionnaire, one should consider that the items evaluated are representative of the area of interest, covering all material respects and that make sense to the interviewee. The OQLQ produces key data that can be used to compare the effectiveness of various procedures and provides a basis for efficient allocation of resources in health system[5]. This instrument is more sensitive to changes that are important to the individual than other questionnaires[1], has validity and reliability, can be used along with other instruments, presents clinical relevance and quality assurance. The OQLQ questions specifically relate to dentofacial experiences, and this approach has greater ability to distinguish changes in the quality of life in a more complete way than the generic health questionnaires[2].

In this study, there were observed a significant reduction between the average overall score in OQLQ from the preoperative period to the post-treatment period,

showing significant improvement in quality of life related to oral health after surgery. This results agrees with most of the works in the area, whether in early periods of postoperative recovery, with remarkable improvements in six weeks after surgery[13], or even involving or not the occlusion, with a global effect on the general health of the patient[2]. The OQLQ is able to differentiate patients with and without dentofacial deformities, showing low level of quality of life for patients with deformity[7,12]. The improvement of the quality of life found in this study was similar for both genders, across the age groups and between the types of surgery performed, but the literature reports a substantial deterioration in the immediate postoperative period, because pain, swelling and neurosensory disorders are common surgical morbidities, as well as temporary limitation of mouth opening and decreased masticatory efficiency[3].

This study showed improvements in all of the evaluated domains, but it can be observed that awareness of dentofacial appearance does not change significantly after treatment[1,11]. This can be explained by the personal adjustment of facial self-image - patients may take a longer time to undergo an internal adjustment to their new dentofacial postoperative features, so much that this fact has not yet reflected significantly in their responses and their lives. The impact on facial aesthetics happens because the changes in facial appearance are immediate and obvious after orthognathic surgery, but may cause some patients to be more cautious in social interaction, and thus temper the impact on the domain. That may improve with time, as the patient becomes more confident.

Some patients alluded to ideals of attractiveness of society and the pressure that the media has on aesthetics[14]. Many patients reported that adapting to the new face was a confusing process, but felt more confident and less insecure. Perhaps for this reason, some studies have shown improvements in the matter of dentofacial appearance consciousness. While our study and others report that most people benefit physically and psychologically from the procedure, the adjustment process of internal self-perception to a change of an external appearance is sometimes problematic. Orthognathic surgery requires rapid integration of new facial features on self-perception, thus placing immediate demands on the patient's adaptation skills. Besides, the body image is shaped by past and present variables, such as the opinion of the family about appearance, interpersonal experiences, degree of

psychological development and resilience. The opinion of one's own appearance is often different from the way others see the person. For many people, the judgment of others is important in forming a sense of identity, social identity and body image. Patients decide to look attractive because they see what others see, and are directly or indirectly affected by the reactions of others to their appearance.

Overall, this research has shown positive impact on facial aesthetics, oral function and facial appearance awareness, and found social benefits, such as improved self-confidence. The orthodontic treatment combined with orthognathic surgery is a reliable treatment modality, leading to improved quality of life related to oral health, as demonstrated by the significant decrease in scores OQLQ, and improving the overall quality of life, as seen by the significant increase score in the domains of the Whoqol-Bref. The general and oral "health gain", which was observed after surgery, indicates that the treatment is an appropriate therapy for patients with dentofacial deformities, despite some risks and morbidity. But, it is important that patients have realistic expectations of treatment, that they are sufficiently prepared and informed and given an opportunity to discuss psychosocial issues and that they receive additional support if needed.

Conflict of interest statement

The authors declare that they have no conflicts of interest related to this study.

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Table 1. Comparision of the Whoqol-bref domanis preoperatively (T0) and postoperative (T1) (n=74).

Domain	Group T0	Group T1	P value
	Mean (SD)	Mean (SD)	
Physical	62.7 (17.9)	82.1 (12.9)	0.000**
Psychological	56.0 (17.3)	82.4 (11.1)	0.000**
Social	61.9 (18.8)	82.7 (12.9)	0.000**
Environment	53.0 (16.5)	68.5 (12.7)	0.000**
Q1 – quality of life	12.9 (6.1)	21.1 (3.5)	0.000**
Q2 – health	12.8 (6.8)	20.9 (3.8)	0.000**

SD – standard deviation ** significant at p≤0.001

Table 2. Comparision of the Whoqol-bref domanis preoperatively (T0) and postoperative (T1), regarding the patients' age (n=74).

Domains	<25 (n=39)			26-35 (n=23)			>36 (n=12)		
	T0 Mean (SD)	T1 Mean (SD)	P value	T0 Mean (SD)	T1 Mean (SD)	P value	T0 Mean (SD)	T1 Mean (SD)	P value
Physical	63.6 (17,8)	81.9 (14.6)	0.000**	63.7 (19.6)	83.1 (12.5)	0.000**	58.0 (15.5)	81.0 (7.4)	0.000**
Psychological	58.4 (16.7)	83.0 (12.7)	0.000**	54.0 (18.1)	83.0 (9.2)	0.000**	51.7 (17.6)	79.2 (8.7)	0.002**
Social	64.5 (18.9)	82.7 (12.9)	0.000**	56.9 (20.7)	87.0 (11.7)	0.000**	63.2 (13.0)	74.3 (12.0)	0.071^{NS}
Environment	56.7 (15.8)	70.2 (13.3)	0.000**	50.5 (17.9)	68.6 (13.2)	0.000**	45.8 (13.8)	62.5 (7.8)	0.004**
Q1 – quality of life	13.6 (6.2)	21.0 (3.7)	0.000**	12.5 (6.3)	21.5 (3.7)	0.000**	11.5 (5.9)	20.8 (3.1)	0.000**
Q2 – health	13.6 (6.7)	21.3 (3.4)	0.000**	12.0 (7.0)	20.4 (4.7)	0.000**	11.5 (7.0)	20.8 (3.1)	0.001**

SD – standard deviation ** significant at p≤0.001 ^{NS} – not significant

Table 3. Comparision of the Whoqol-bref domanis preoperatively (T0) and postoperative (T1), regarding the patients' deformities (n=74).

Domains	T0	T1	P value
	Mean (SD)	Mean (SD)	
Physical			
Class I	61.4 (23.6)	77.1 (11.2)	0.182 ^{NS}
Class II	57.8 (16.7)	82.8 (10.6)	0.000**
Class III	63.7 (17.8)	82.4 (13.6)	0.000**
Psychological			
Class I	60.8 (13.0)	77.5 (12.4)	0.072 ^{NS}
Class II	55.7 (13.6)	81.4 (9.0)	0.001**
Class III	55.6 (18.3)	83.0 (11.4)	0.000**
Social			
Class I	55.0 (19.2)	76.7 (3.7)	0.090 ^{NS}
Class II	62.9 (13.6)	80.3 (9.3)	0.007**
Class III	62.4 (19.7)	83.6 (13.9)	0.000**
Environment			
Class I	50.6 (14.4)	62.5 (11.9)	0.038*
Class II	52.8 (15.3)	68.5 (9.0)	0.010**
Class III	53.3 (17.1)	69.0 (13.4)	0.000**
Q1-quality of life			
Class I	12.5 (6.3)	21.3 (3.4)	0.052 ^{NS}
Class II	13.1 (5.9)	20.5 (2.9)	0.003**
Class III	12.9 (6.3)	21.2 (3.7)	0,000**
Q2 – health			
Class I	13.8 (8.1)	21.3 (3.4)	0.070 ^{NS}
Class II	13.6 (6.1)	20.5 (2.9)	0.003**
Class III	12.5 (6.9)	21.0 (4.0)	0.000**

SD – standard deviation ^{NS} – not significant
** significant at p≤0.0 * significant at p≤0.05

Table 4. Comparision of the OQLQ preoperatively (T0) and postoperative (T1) (n=74).

	T0	T1	P value
	Mean (SD)	Mean (SD)	
OQLQ score (0-88)	48.0 (22.8)	7.8 (11.9)	0.000**
Social aspects (0-32)	14.8 (10.2)	2.1 (4.0)	0.000**
Facial esthetics (0-20)	13.9 (5.4)	1.8 (2.8)	0.000**
Oral function (0-20)	11.0 (6.3)	2.0 (3.7)	0.000**
Awareness (0-16)	8.3 (4.8)	1.6 (2.7)	0.000**

SD – standard deviation ** significant at p≤0,001

Table 5. Comparision of the OQLQ preoperatively (T0) and postoperative (T1), regarding the patients' deformities (n=74).

	T0	T1	P value
	Mean (SD)	Mean (SP)	
OQLQ escore (0-88)			
Class I	54.4 (19.5)	15.8 (17.2)	0.043*
Class II	38.9 (24.5)	4.6 (5.5)	0.003**
Class III	49.1 (22.7)	7.7 (12.1)	0.000**
Social aspects (0-32)			
Class I	17.6 (10.5)	3.0 (5.7)	0.042*
Class II	10.1 (9.0)	0.8 (2.1)	0.005**
Class III	15.4 (10.3)	2.2 (4.1)	0.000**
Facial esthetics (0-20)			
Class I	16.0 (3.5)	2.0 (2.3)	0.042*
Class II	10.9 (6.3)	0.8 (1.2)	0.005**
Class III	14.3 (5.2)	1.9 (3.0)	0.000**
Oral function (0-20)			
Class I	9.2 (6.5)	5.8 (6.9)	0.109^{NS}
Class II	10.7 (5.8)	2.0 (3.3)	0.005**
Class III	11.2 (6.5)	1.7 (3.3)	0.000**
Awareness (0-16)			
Class I	11.6 (3.8)	4.6 (5.9)	0.043*
Class II	7.2 (6.0)	0.9 (1.8)	0.008**
Class III	8.2 (4.6)	1.5 (2.4)	0.000**

SD – standard deviation ^{NS} – not significant ** significant at p≤0,01

* significant at p≤0,05

Table 6. The OQLQ preoperatively (T0) and postoperative (T1), compared to published articles (n=74).

Research	n	Age mean	OQLQ e domains	T0 mean	T1 mean	P value
Khadka et al., 2011[2]	110 patients 77 F/33 M	22.86	Oral function Awareness Facial esthetics Social aspects	9.12 7.15 11.97 12.57	3.29 3.64 4.46 4.00	p<0.001 NS p=0.001 NS
Murphy et al., 2011[11]	52 patients 30 F/22 M	21.60	Oral function Awareness Facial esthetics Social aspects	7.46 6.9 12.21 10.42	5.69 5.73 7 7.19	p<0.05 p<0.05 p<0.05 p<0.05
Choi et al., 2010 [3]	32 patients 22 F/10 M	23.94	OQLQ Oral function Awareness Facial esthetics Social aspects	44.72 9.31 7.91 13.63 13.88	20.69 2.81 5.44 6.41 6.03	p<0.001 p<0.001 NS p<0.001 p<0.001
Lee et al., 2008[13]	36 patients 25 F/11 M	23.25	OQLQ Oral function Awareness Facial esthetics Social aspects	42.53 9.25 7.58 13.31 12.39	28.11 4.94 6.72 8.36 8.08	p<0.001 p<0.001 NS p<0.001 p<0.001
Al-Ahmad et al., 2009[7]	GAS 36 patients 25 F/11 M GHO 35 patients 23 F/12 M	GAS: 21.9 GHO: 24.5	OQLQ Oral function Awareness Facial esthetics Social aspects	38.77 8.74 8.21 10.09 13.77	18.13 5.00 4.30 4.09 5.97	p<0.001 NS p<0.001 p<0.001 p<0.001
Present study	74 patients 49 F/25 M	28.00	OQLQ Oral function Awareness Facial esthetics Social aspects	48.00 11.0 8.3 13.9 14.8	7.8 2.0 1.6 1.8 2.1	p<0.001 p<0.001 p<0.001 p<0.001 p<0.001

F= female M= male OQLQ= Orthognathic Quality of Life Questionnaire
NS= not significant GAS = group awaiting surgery GHO: group has operated


PUCRS

3 ARTIGO II

O artigo a seguir intitula-se "*Assessing change in quality of life using the Oral Health Impact Profile (OHIP) in patients with several dentofacial deformities: comparing among before and after orthognathic surgery*". Foi formatado de acordo com as normas do periódico *International Journal of Oral & Maxillofacial Surgery* (Anexo D) e submetido em 12 de novembro de 2013 (Anexo E).

Assessing change in quality of life using the Oral Health Impact Profile (OHIP) in patients with several dentofacial deformities: comparing among before and after orthognathic surgery

Abstract: Dentofacial deformities and their treatment can have psychological repercussions, mainly on body image, self-confidence and quality of life. This study evaluated the impact of oral health problems in related quality of life in adults with dentofacial deformities, before and after orthognathic surgery. 74 patients, with an average age of 28.0 ± 9.0 years, answered the questionnaire OHIP-14 before (T0) and 4-6 months after (T1) surgery. There was a statistically significant reduction ($p \leq 0.01$) between the average overall score of OHIP-14 preoperatively (T0 = 13.10 ± 6.1), to the post-treatment period (T1 = 3.20 ± 3.8), and also in the evaluated domains. The orthodontic treatment combined with orthognathic surgery had a positive impact on the oral health of patients evaluated in this study and highlights significant changes in quality of life related to oral health after orthognathic surgery.

Keywords: Orthognathic surgery, questionnaire, quality of life, oral health, dentofacial deformity, OHIP.

Introduction

The orthognathic surgery combined with orthodontic treatment is a well established treatment modality for the correction of moderate to severe dentofacial deformities, and has been routinely performed for over 100 years. It is safe, despite sequelae and postoperative morbidity, and has as primary objectives to correct the skeletal discrepancy to assist orthodontic therapy to correct residual occlusion and to produce a more harmonious appearance[1-3].

The possible psychological repercussions and effects of dentofacial deformities and their treatment on body image has been approached by several studies[4,5], which have reported improved self-confidence[6] and quality of life[2,3]. World Health Organization (WHO) defines quality of life as "an individual's perception of

their position in life in the context of culture and value systems in which they live and about their goals, expectations, standards and concerns". It is a vast and comprehensive concept, affected in a complex way by the person's physical health, psychological state, social relationships and environment. It can also be defined as "sense of well-being of a person who derives satisfaction or dissatisfaction with areas of life that are important to them"[7-10].

Determining the impact of diseases and conditions of quality of life is a complex task, because quality of life is an ambiguous concept. There are several approaches (instruments of generic measures of general health, oral health measures and specific conditions)[4]. The questionnaires present generic or specific items, and are proven tools for evaluation people's perceptions[9]. One of the most used questionnaires, the Oral Health Impact Profile (OHIP) measures the individual's perception about the social impact of current oral diseases and/or oral conditions on their well-being and quality of life [2-4, 8-12].

OHIP was originally developed in Australia by Slade and Spencer (1994), in order to evaluate dysfunction, discomfort and disability attributed to oral conditions in adults or elderly people, and presents 49 items grouped into seven domains. A shorter version with 14 items was also developed, and has well-documented psychometric properties[5,11,13]. This questionnaire covers specific aspects of oral health, functional limitation, disability, psychological and social aspects of disability and deficiencies[8].

The goal of this research was to use the Oral Health Impact Profile (OHIP) in its shorter version, to evaluate the impact of oral health problems in related quality of life in adults with dentofacial deformities before and after surgical-orthodontic treatment.

Materials and Methods

The study protocol was reviewed and approved by the regional research ethics committee. Informed consent was obtained from each patient, and they were assured about the confidentiality of the questionnaires. Patients with dentofacial

deformities who presented for treatment between 2006 and 2012 were recruited for this study. Patients underwent previous orthodontic treatment and were considered healthy. We excluded from this study patients with cleft lip and palate, syndromes, facial deformities due to trauma or congenital malformation, pregnant women, children younger than 15 years old and patients with pre-existing systemic disease. The study included patients with dentofacial deformities and malocclusion Angle Classes I, II and III. Patients were asked to answer a questionnaire with questions before surgery (T0) and another in an average of 4-6 months of postoperative follow-up (T1). The Oral Health Impact Profile (OHIP-14) presents 14 questions, divided into seven evaluation domains: functional limitation (questions 1 and 2), physical pain (questions 3 and 4), psychological distress (questions 5, 6 and 10), physical disability (questions 7, 8, and 14), psychological disability (question 9), social disability (questions 11, 12 and dysfunction (question 13). Each question evaluates a frequency, with five possible answers, ranging from "never" (score zero) to “often” (score 4). Total scores range 0-56, with higher scores indicating worse impact on oral health. The Statistical Package for Social Sciences (SPSS version 16.0, SPSS Inc., Chicago, IL) was used to perform the data analysis. Fisher's exact and nonparametric Wilcoxon tests were used.

Results

Seventy-four patients took part in this study and answered the questionnaires before (T0) and after surgery (T1). The demographic characteristics of the patients are presented in Table 1. Through the results of the Fisher exact test, it was found that variables such as gender and age had no significant association with the type of deformity and type of surgery performed.

All patients reported that they would recommend the surgery to other people, and 97.3% said they would do the surgery again. Only two male patients would not do again the orthognathic surgery. It was observed a statistically significant reduction (WILCOXON, $p \leq 0.01$) between the average overall score of OHIP-14 preoperatively ($T0 = 13.10 \pm 6.1$), for the post-treatment period ($T1 = 3.20 \pm 3.8$), and also in the seven evaluated domains (Table 2), noting that the treatment performed had a positive impact on the oral health of patients evaluated in this study.

This significant reduction in general and domains scores after orthognathic surgery was similar for both genders, between age groups, between the types of surgery performed and between groups of deformities. However, when analyzing the types of deformity in relation to the domains evaluated by OHIP-14 (Table 3), it was observed that patients with dentofacial deformities type Angle Class I obtained significant improvements with a treatment in the psychological disability domain only, while Class III patients have benefited in all domains evaluated, and Class II patients showed no significant benefit regarding functional limitation.

The frequency of answers obtained before (T0) and after (T1) surgery are presented in Table 4. It can be noted that, in time T0, the answers were distributed variably, showing that the evaluated items quite frequently worried the patients ("often", "several times", "occasionally", etc). In time T1, most of the evaluated items were no longer a problem for these patients as they "hardly" or "never" worried them.

Discussion

The impact of oral diseases and interventions in the perception of the patient's oral health and quality of life related to oral health is increasingly recognized as an important component of health[13]. The aim of this study was to evaluate the impact that orthognathic surgery had on the quality of life related to oral health through questionnaires answered by patients before and after treatment for dentofacial deformities correction. It is important to determine and report the effects of orthognathic surgery on quality of life of the patient, and, specially, what to expect from the surgery and what to endure in order to achieve expected final result[2,3], for patients who report unexpected effects after orthognathic surgery are more susceptible to dissatisfaction with the treatment[13].

The reasons for patients requesting orthognathic surgery are many and diverse, but the desire for aesthetic improvement and reduction of functional problems are the two most important[1]. One factor that contributes to the overwhelming desire for facial change can be the strong emphasis on physical attractiveness in society and the central role that media stereotypes play in the creation and exacerbation of dissatisfaction.

The face is a key feature in determining human physical attractiveness, and people with dentofacial deformities have worse quality of life in many aspects[4]. Patients have reported high satisfaction, increased self-confidence and more social skills, improved appearance and psychosocial benefits after orthognathic surgery[1]. In general, improvement in appearance caused by orthognathic surgery is associated to improvement in psychosocial adjustment, and psychological factors and aesthetic have a strong influence on the quality of life[8].

In this study, there were observed a significant reduction in overall OHIP and its domains scores after orthognathic surgery; it was similar for both genders, across age groups and between the types of surgery performed[8]. However, women were twice as likely to report negative impacts of their malocclusion on quality of life related to oral health than men[5]. This might be explained by the higher level of aesthetic standard that women have and the greater importance they give to appearance.

When analyzing the types of deformity in relation to the domains evaluated by the OHIP-14, this study found that patients with dentofacial deformities type Angle Class I obtained significant improvements to the treatment only on psychological disability, while Class III patients are benefited in all domains evaluated, and Class II patients showed no significant benefit regarding functional limitation. For Class I patients, who do not have a functionally limiting and/or disabling deformity, orthognathic surgery did not significantly improve the oral function and facial aesthetics, because the corrections, for the most part, are small and do not generate an easily observed impact, but the procedure results led to an improvement in the psychological aspect.

On their turn, patients who have dentofacial deformity type Class III begin to show signs of developmental disorders during childhood and become physically and psychosocially affected by this deformity. These patients benefit from surgical treatment in all involved aspects and evaluated domains, from oral function and facial aesthetics to interpersonal and psychological aspects, such as self-esteem and self-confidence. However, in order to correct the large dentofacial discrepancy, the mandibular setback and maxillary advancement made performed on Class III

patients can lead to an extreme change in appearance and a radical change in facial profile, with decreased facial convexity. This could contribute to a significant delay in getting used to the new appearance[9], but this factor was not observed in our study.

The literature has attempted to provide evidence of the relationship between psychological and physical variables, and the effects of such relationships in the treatment of patients with dentofacial deformity. Symptoms of depression and lower quality of life related to oral health have been detected in patients with dentofacial deformity when compared to patients without deformities[10].

Several studies[1,3,5,8] have concluded that patients with dentofacial deformities benefit psychologically from surgery combined with orthodontics, with improved facial and dental appearance and social well-being, resulting in a higher level of postoperative satisfaction. It was observed that post-treatment satisfaction is usually high as a result of a greater positive self-image. And this is consistent with the findings of this study, where the preoperative evaluations showed more negative impacts on the quality of life in oral health than the postoperative evaluations.

When analyzing the answer distribution for each questionnaire item, after surgical treatment, few patients still classified in the answers scores 3 or 4, indicating that this treatment reduces the frequency and the severity of the impact of quality of life in oral health. However, the answers related to these higher scores were related to characteristics of feeding and chewing, which are still in recovery and adaptation to the new occlusion. Research shows that, in the initial post-operative period, from 6 weeks to 6 months, there may be a transient and significant deterioration in OHIP scores, especially in the fields appearance and functional limitation, linked to postoperative morbidity, when there presence of pain, edema, neurosensory disorders, limited mouth opening and decreased masticatory efficiency are commom[2,3]. However, after 6 months, there is a continuous improvement of quality of life, with decreased scores over time, indicating health gain and supporting the hypothesis that orthognathic surgery improves oral health. Thus, the belief that the early evaluations of the impact of the surgery results will not prove information accuracy.

Regarding the evaluation instrument, OHIP is a valid and reliable instrument when used as a self-completion questionnaire, because it is sufficiently categorizing and evaluative of psychometric properties and is suitable for cross-sectional and longitudinal studies, and multinational investigations due to lack of substantial difference in the concepts of cross-cultural quality of life related to oral health[13]. However, we believe that the OHIP answers format, based on frequency, often leads patients to a subjective evaluation, because we do not know if they think in terms of absolute numbers or in an average of the frequencies in a given period. There may be also a deviation of answers, where respondents forget the experienced impacts, which leads them to underestimate their true levels. We must also be careful in interpreting findings as health states, because they tend to be slightly over estimated, in this case, individuals seemingly healthier than direct measurement, unless disabled and/or deformed[12]. Nonetheless, based on the widespread use of international OHIP, and in a situation in which there is no unanimity on the agreed definition of quality of life, this instrument is widely accepted in clinical trials and health research.

This study highlights significant changes in quality of life related to oral health after orthognathic surgery. Orthognathic surgery has many favorable effects, and patients who underwent it, experienced functional and psychosocial benefits after this treatment. Based on these results, it is concluded that the improvements in psychosocial and aesthetic after ortho-surgical treatment can be more emphasized when comparing orthognathic surgery with alternative approaches to treatment.

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Table 1. Demographic characteristics of patients.

	n (%)
Gender	
Female	49 (66.2)
Male	25 (33.8)
Age mean ± SD (range)	28.0 ± 9.0 (15-53 years)
≤ 25 years	39 (52.7)
26-35 years	23 (31.1)
≥ 36 years	12 (16.2)
Type of deformity	
Class I	5 (6.8)
Class II	11 (14.9)
Class III	58 (78.4)
Type of surgery	
Bimaxilar	65 (87.8)
Unimaxilar	9 (12.2)

SD – Standard Deviation

Table 2. Comparision of the OHIP-14 preoperatively (T0) and postoperative (T1).

	T0	T1	*P value*
	M (SD)	*M (SD)*	
OHIP-14 score [0-56]	13.10 (6.1)	3.20 (3.8)	0.000**
Functional limitation [0-8]	1.51 (1.13)	0.59 (0.64)	0.000**
Physical pain [0-8]	2.10 (1.20)	0.73 (0.84)	0.000**
Psychological discomfort [0-8]	2.69 (1.12)	0.45 (0.73)	0.000**
Physical disability [0-8]	1.52 (1.26)	0.53 (0.89)	0.000**
Psychological disability [0-8]	2.14 (1.02)	0.41 (0.72)	0.000**
Social disability [0-8]	1.56 (1.11)	0.25 (0.61)	0.000**
Handicap [0-8]	1.71 (1.23)	0.31 (0.69)	0.000**

M – Mean SD – Standard Deviation ** significant at p≤0.01

Table 3. Preoperative (T0) and postoperative (T1) OHIP-14 domains comparision between the types of deformity.

	T0	T1	*P value*
	M (SD)	*M (SD)*	
OHIP-14 score [0-56]			
Class I (N=5)	13.28 (3.99)	5.38 (4.86)	0.043*
Class II (N=11)	10.87 (4.37)	3.40 (3.57)	0.003**
Class III (N=58)	13.46 (6.43)	2.97 (3.80)	0.000**
Functional limitation [0-8]			
Class I	1.30 (0.97)	0.80 (0.76)	NS
Class II	0.87 (1.08)	0.55 (0.65)	NS
Class III	1.65 (1.13)	0.57 (0.64)	p≤0.01**
Physical pain [0-8]			
Class I	2.46 (1.39)	1.40 (1.38)	NS
Class II	2.06 (0.94)	0.57 (0.70)	p≤0.01**
Class III	2.08 (1.24)	0.70 (0.80)	p≤0.01**
Psychological discomfort [0-8]			
Class I	3.11 (0.56)	1.02 (1.27)	NS
Class II	2.45 (1.07)	0.50 (0.59)	p≤0.01**
Class III	2.70 (1.16)	0.39 (0.69)	p≤0.01**
Physical disability [0-8]			
Class I	1.50 (1.32)	1.10 (1.13)	NS
Class II	1.40 (0.97)	0.55 (1.05)	p≤0.05*
Class III	1.55 (1.32)	0.48 (0.84)	p≤0.01**
Psychological disability [0-8]			
Class I	2.48 (0.99)	0.56 (0.82)	p≤0.05*
Class II	1.96 (0.96)	0.53 (0.73)	p≤0.01**
Class III	2.14 (1.05)	0.38 (0.73)	p≤0.01**
Social disability [0-8]			
Class I	1.40 (0.93)	0.65 (0.99)	NS
Class II	1.08 (0.91)	0.27 (0.61)	p≤0.01**
Class III	1.66 (1.14)	0.21 (0.57)	p≤0.01**
Handicap [0-8]			
Class I	1.32 (0.62)	0.44 (0.43)	NS
Class II	1.45 (0.83)	0.47 (0.71)	p≤0.05*
Class III	1.80 (1.33)	0.26 (0.71)	p≤0.01**

M- Mean SD – Standard Deviation ^{NS} – Not significant
** significant at p≤0.01 * significant at p≤0.05

Table 4. Percent distribution of responses to each question of the OHIP-14 at preoperative (T0) and postoperative (T1) (n=74).

Statement	0		1		2		3		4	
	T0	T1	T0	T1	T0	T1	T0	T1	T0	T1
1.Have you had trouble pronouncing any words because of problems with your mouth or joint?	20.3	43.2	23.0	37.8	29.7	12.2	20.3	6.8	6.8	-
2. Have you felt that your sense of taste has worsened because of problems with your mouth or joint?	37.8	73.0	24.3	20.3	13.5	6.8	17.6	-	6.8	-
3. Have you had painful aching in your mouth or joint?	25.7	58.1	28.4	21.6	16.2	17.6	17.6	2.7	12.2	-
4. Have you found it uncomfortable to eat any foods because of problems with your mouth or joint?	9.5	51.4	16.2	24.3	29.7	21.6	18.9	1.4	25.7	1.4
5. Have you been self-conscious because of your mouth or joint?	4.1	68.9	9.5	21.6	21.6	8.1	28.4	1.4	36.5	-
6. Have you felt tense because of problems with your mouth or joint?	5.4	68.9	16.2	20.3	24.3	6.8	24.3	2.7	29.7	1.4
7. Has your diet been unsatisfactory because of problems with your mouth or joint?	28.4	63.5	24.3	21.6	23.0	6.8	9.5	5.4	14.9	2.7
8. Have you had to interrupt meals because of problems with your mouth or joint?	33.8	73.0	21.6	17.6	18.9	5.4	16.2	1.4	9.5	2.7
9. Have you found it difficult to relax because of problems with your mouth or joint?	25.7	67.6	20.3	24.3	18.9	5.4	24.3	1.4	10.8	1.4
10. Have you been a bit embarrassed because of problems with your mouth or joint?	1.4	79.7	10.8	9.5	24.3	8.1	40.5	-	23.0	2.7
11. Have you been a bit irritable with other people because of problems with your mouth or joint?	33.8	85.1	21.6	10.8	21.6	1.4	20.3	2.7	2.7	-
12. Have you had difficulty doing your usual jobs because of problems with your mouth or joint?	20.3	82.4	27.0	10.8	27.0	4.1	16.2	2.7	9.5	-
13. Have you felt that life in general was less satisfying because of problems with your mouth or joint?	17.6	77.0	21.6	14.9	20.3	4.1	21.6	1.4	18.9	2.7
14. Have you been totally unable to function because of problems with your mouth or joint?	36.5	85.1	23.0	10.8	24.3	2.7	10.8	1.4	5.4	-

0 = Never/ I don't know; 1 = Hardly ever or nearly never; 2 = Occasionally; 3 = Fairly often or many times; 4 = Very often.


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4 DISCUSSÃO GERAL

As deformidades dentofaciais são alterações na forma, tamanho e estrutura óssea e que afetam a dentição, levando a significativa assimetria facial e problemas funcionais. Além dos problemas visíveis, os pacientes tendem a apresentar problemas psicológicos, no trabalho e na adaptação social (DE ÁVILA et al., 2013; KHADKA et al., 2011; RYAN; BARNARD; CUNNINGHAM, 2012). Os problemas com a imagem corporal podem ser grandes e levar à baixa autoestima e problemas comportamentais de externalização, como agressão, ansiedade, depressão, inibição social e introversão (DE SOUSA, 2008).

A principal opção de tratamento para pacientes com deformidades dentofaciais, onde há discrepância significativa que não pode ser satisfatoriamente tratada apenas com ortodontia, é o tratamento combinado ortodôntico-cirúrgico (CHENG; ROLES; TELFER, 1998). Os pacientes optam pela cirurgia ortognática na esperança de que o procedimento irá melhorar sua qualidade de vida. Embora as razões mais relatadas sejam a melhoria na aparência facial e função oral (MODIG; ANDERSSON; WÅRDH, 2006; RUSTEMEYER; GREGERSEN, 2012; VARGO; GLADWIN; NGAN, 2003), as expectativas de benefícios psicossociais também desempenham um papel importante na sua decisão, com mudança na imagem corporal, no estado emocional e cognitivo, melhoria das relações interpessoais e nas reações da sociedade (DE ÁVILA et al., 2013; LITNER et al., 2008).

Geralmente os pacientes relatam que o tratamento orto-cirúrgico é benéfico para autoestima e vida social, e relatam satisfação com a qualidade geral do tratamento (WILLIAMS; TRAVESS; WILLIAMS, 2004; WILLIAMS et al., 2008). Este estudo mostrou que a cirurgia ortognática foi capaz de promover melhora na qualidade de vida geral e na qualidade de vida relacionada à saúde bucal, quando se comparou os resultados pré e pós-operatórios, no grupo de pacientes observados.

De modo geral, observou-se que a satisfação pós-tratamento se tornou elevada como resultado da uma autoimagem positivamente maior, sendo que as avaliações pré-operatórias mostravam impactos mais negativos da qualidade de vida

na saúde oral do que as avaliações pós-operatórias. Gerzanic, Jagsh e Watzke (2002) sugerem que o aumento na atratividade, como resultado da cirurgia ortognática, reduz os sentimentos de insegurança e preocupação com a aparência. Rustemeyer e Gregersen (2012) apóiam a hipótese de que a melhoria na aparência está associada à melhora no ajustamento psicossocial, e que fatores psicológicos e estéticos exercem forte influência na qualidade de vida.

Este estudo observou que os pacientes se beneficiaram com o tratamento cirúrgico, mostrando melhora da aparência facial e dentária, bem-estar social e um maior nível de qualidade de vida pós-operatória (GUHAN et al., 2008; WILLIAMS; TRAVESS; WILLIAMS, 2004). Porém, não foi encontrado benefício no domínio social no grupo de pacientes com mais de 36 anos, provavelmente porque este grupo de indivíduos já tem um estilo de vida (pessoal e profissional) e grupo de relações consolidados, e a deformidade dentofacial apresentada antes da cirurgia não influenciava no seu bem-estar social, ou porque o impacto do resultado do tratamento foi pequeno a ponto de não refletir neste domínio.

Em relação ao tipo de deformidade dentofacial apresentada, os pacientes Classe I de Angle, não se beneficiaram, de forma significante, quanto à qualidade de vida geral. Isto pode ser atribuído à ausência de discrepâncias ântero-posteriores que causam maior impacto estéticos. Contudo, na avaliação da qualidade de vida relacionada à saúde bucal, esse grupo de indivíduos apresentou melhora significativa na maior parte dos domínios avaliados, exceto para a função oral. Já os pacientes Classe II e III, mostraram resultados semelhantes. Porém, Gerzanic, Jagsch e Watze (2002) sugeriram diferenças marcantes entre esses grupos. Para os autores, a cirurgia ortognática tem um efeito benéfico maior na atratividade, nos pacientes Classe III. Já nos pacientes Classe II, o ganho de atratividade existe, mas a autoimagem corporal permanece inalterada, e estes pacientes podem ainda apresentar preocupação e insegurança após o tratamento. Sendo assim, o entendimento dessas diferenças deve orientar o atendimento a esses pacientes, com atenção especial ao grupo de indivíduos Classe I e II, ou então com pequenas discrepâncias e assimetrias, que precisam ser informados de que irão experimentar a melhoria na sua atratividade num período mais tarde no curso pós-operatório.

A cirurgia ortognática requer uma rápida integração das novas características faciais na autopercepção, colocando assim demandas imediatas sobre as competências de adaptação do paciente. Ainda, a imagem corporal é moldada por variáveis passadas e presentes, como a opinião dos familiares quanto à aparência, experiências interpessoais, grau de desenvolvimento psicológico e resiliência. A própria opinião da sua aparência muitas vezes é diferente da forma como os outros o vêem. Para muitas pessoas, o julgamento de terceiros é importante na formação de um senso de identidade, identidade social e imagem corporal. Os pacientes decidem procurar atratividade porque eles vêm o que os outros vêem, e são direta ou indiretamente afetados pelas reações dos outros a sua aparência. Alguns pacientes fizeram alusão a ideais de atratividade da sociedade e à pressão que a mídia exerce sobre a estética (CADOGAN; BENNUN, 2011).

Muitos pacientes relataram que a adaptação a nova face é um processo confuso, porém sentiam-se mais confiantes e menos inseguros. Talvez por este motivo, alguns estudos não mostraram melhoras no quesito consciência da aparência dentofacial (CHOI et al., 2010; KHADKA et al., 2011; LEE; MCGRATH; SAMMAN, 2008) . Este fato não foi observado neste trabalho, tendo este domínio apresentado melhora após a cirurgia ortognática, e em todos os tipos de deformidades apresentadas.

Enquanto este e outros estudos (AL-AHMAD et al., 2009; CHOI et al., 2010; MODIG et al., 2006; RUSTEMEYER; GREGERSEN, 2012) observaram que a maioria das pessoas se beneficiam fisicamente e psicologicamente, o processo de ajuste interno da autopercepção à uma alteração de um aspecto exterior é por vezes problemática. De Sousa (2008) e ∅land et al. (2010) sugerem que deva ser oferecido apoio psicológico aos pacientes que expressam problemas com autoestima, imagem corporal e interação social antes e após o tratamento, e assim melhorar seu bem-estar social e aumentar a satisfação e qualidade de vida com o tratamento.

Cabe ressaltar que os pacientes podem ser beneficiados se um profissional da área da psicologia estiver envolvido na equipe multidisciplinar de tratamento, seja para avaliar as motivações ou psicopatologias preexistentes ou para auxiliar o

paciente na fase de adaptação às novas características faciais. Assim, espera-se melhorar sua consciência quanto a imagem corporal, seu bem-estar social, satisfação e qualidade de vida.

CONCLUSÕES GERAIS

5 CONCLUSÕES GERAIS

Este estudo demonstrou que a cirurgia ortognática trouxe benefícios aos pacientes operados. Houve melhora significativa da qualidade de vida geral após a cirurgia ortognática, através da avaliação feita com o questionário Whoqol-bref, exceto nos pacientes Classe I de Angle e no grupo com mais de 36 anos, que em relação ao domínio social, não demonstraram resultados estatisticamente significantes.

Também houve melhora significativa da qualidade de vida relacionada à saúde bucal após a cirurgia ortognática, através da avaliação feita com o OQLQ. Porém, esses benefícios não foram estatisticamente significativos nos pacientes Classe I de Angle, quanto à função oral.

O tratamento das deformidades dentofaciais através da cirurgia ortognática teve um impacto positivo sobre a saúde oral, através da avaliação feita com o OHIP-14. Contudo, não houve um impacto estatisticamente significativo para os pacientes Classe I de Angle, na maior parte dos domínios avaliados.


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ANEXO A – Carta de aprovação do Comitê de Ética em Pesquisa da Faculdade de Odontologia PUCRS

PONTIFÍCIA UNIVERSIDADE CATÓLICA DO RIO GRANDE DO SUL
PRÓ-REITORIA DE PESQUISA E PÓS-GRADUAÇÃO
COMITÊ DE ÉTICA EM PESQUISA - CEP - PUCRS

Ofício nº 232/06-CEP

Porto Alegre, 17 de março de 2006.

Senhor(a) Pesquisador(a)

O Comitê de Ética em Pesquisa da PUCRS apreciou e aprovou seu protocolo de pesquisa registro CEP 05/02890, intitulado: "Estudo clínico transversal do uso de mini-placas e parafusos de titânio em Cirurgia e Traumatologia Bucomaxilofacial".

Sua investigação está autorizada a partir da presente data.

Relatório parcial e final devem ser apresentados ao CEP. Inicialmente, em 17/09/2006.

Atenciosamente,

Prof. Dr. José Roberto Goldim
COORDENADOR do CEP-PUCRS

Ilmo(a) Sr(a)
Rogério Belle de Oliveira
N/Universidade

ANEXO B – Normas para publicação – periódico *British Journal of Oral and Maxillofacial Surgery*

Disponíveis em ***http://www.bjoms.com/authorinfo***

BRITISH JOURNAL OF ORAL AND MAXILLOFACIAL SURGERY

Official Journal of the British Association of Oral and Maxillofacial Surgeons

The following types of paper are published in the journal:

Full length articles: maximum length 2500 words; abstract maximum 250 words, 25 references, normally no more than 6 figures or tables (note that composite or multi-part figures are not accepted).

Short communications: maximum length 750 words; abstract maximum of 150 words, 10 references, 3 figures or tables (note that composite or multi-part figures are not accepted). Normally no more than 4 authors.

Technical notes: maximum length 500 words, 5 references, 4 figures or tables (note that composite or multi-part figures are not accepted), no abstract, no introduction or discussion. Normally no more than 4 authors.

Letters: Maximum length 400 words, 3 references, 1 figure or table. Letters about a published paper should be headed with the full reference to that paper. Original letters should have their own heading.

Review articles are usually commissioned by the editor.

Leading Articles - by invitation only: these are planned for each edition and will cover the whole remit of the specialty. They will provide up-to-date knowledge by a recognised expert in the field and are by invitation only from the editor. Length 2500 words, up to 40 references, maximum 6 figures or tables (note that composite or multi-part figures are not accepted). Please contact the Editor, Professor Peter Brennan, (peter.brennan@porthosp.nhs.uk) if you are interested in writing a leading article.

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PLEASE STATE WHICH TYPE OF PAPER YOU ARE SUBMITTING IN YOUR COVER LETTER

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http://ees.elsevier.com/bjoms/

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Authors requesting further information on online submission are strongly encouraged to view the system, including a tutorial, at http://ees.elsevier.com/bjoms. A comprehensive Author Support service is also available to answer additional enquiries, at http://support.elsevier.com.

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Fax: +44 (0) 1865 843992
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ANEXO C – Comprovante de submissão do artigo intitulado "*Changes in health-related quality of life in patients with several dentofacial deformities: a comparision between pre and postoperative findings*" para o periódico *British Journal of Oral and Maxillofacial Surgery*

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Para: jugoelzer@hotmail.com

Ms. Ref. No.: BJOMS-D-13-00672
Title: Changes in health-related quality of life in patients with several dentofacial deformities: a comparision between pre and postoperative findings.
The British Journal of Oral & Maxillofacial Surgery

Dear Dr. Göelzer,

Your submission entitled: Changes in health-related quality of life in patients with several dentofacial deformities: a comparision between pre and postoperative findings. has been forwarded to the editor and assigned the following manuscript number: BJOMS-D-13-00672.

You may check on the progress of your paper by logging on to the Elsevier Editorial System as an author. The URL is http://ees.elsevier.com/bjoms/.

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Kind regards,

Jacqui Merrison
Editorial Office
The British Journal of Oral & Maxillofacial Surgery

ANEXO D – Normas para publicação – periódico *International Journal of Oral & Maxillofacial Surgery*

Disponíveis em http://www.elsevier.com/journals/international-journal-of-oral-and-maxillofacial-surgery/0901-5027/guide-for-authors

Guide for Authors

Would authors please note that the reference style for the journal has now changed. Please pay special attention to the guidelines under the heading "References" below

Authors wishing to submit their work to the journal are urged to read this detailed guide for authors and comply with all the requirements, particularly those relating to manuscript length and format. This will speed up the reviewing process and reduce the time taken to publish a paper following acceptance.

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DeclarationsUpon submission you will be required to complete and upload this form (pdf version or word version) to declare funding, conflict of interest and to indicate whether ethical approval was sought. This information must also be inserted into your manuscript under the acknowledgements section with the headings below. If you have no declaration to make please insert the following statements into your manuscript: Funding: NoneCompeting interests: None declaredEthical approval: Not requiredPatient permission: Not required

PLEASE NOTE that all funding must be declared at first submission, as the addition of funding at acceptance stage may invalidate the acceptance of your manuscript.

AuthorshipAll authors should have made substantial contributions to all of the following: (1) the conception and design of the study, or acquisition of data, or analysis and interpretation of data(2) drafting the article or revising it critically for important intellectual content(3) final approval of the version to be submitted.

Normally one or two, and no more than three, authors should appear on a short communication, technical note or interesting case/lesson learnt. Full length articles may contain as many authors as appropriate. Minor contributors and non-contributory clinicians who have allowed their patients to be used in the paper should be acknowledged at the end of the text and before the references.

The corresponding author is responsible for ensuring that all authors are aware of their obligations.

Before a paper is accepted all the authors of the paper must sign the Confirmation of Authorship form. This form confirms that all the named authors agree to publication if the paper is accepted and that each has had significant input into the paper. Please download the form and send it to the Editorial Office. (pdf version or word version) It is advisable that to prevent delay this form is submitted early in the editorial process.

AcknowledgementsAll contributors who do not meet the criteria for authorship as defined above should be listed in an acknowledgements section. Examples of those who might be acknowledged include a person who provided purely technical help, writing assistance, or a department chair who provided only general support. Authors should disclose whether they had any writing assistance and identify the entity that paid for this assistance.

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EthicsWork on human beings that is submitted to the International Journal of Oral and Maxillofacial Surgery should comply with the principles laid down in the Declaration of Helsinki (Recommendations guiding physicians in biomedical research involving human subjects. Adopted by the 18th World Medical Assembly, Helsinki, Finland, June 1964, amended by the 29th World Medical Assembly, Tokyo, Japan, October 1975, the 35th World Medical Assembly, Venice, Italy, October 1983, and the 41st World Medical Assembly, Hong Kong, September 1989). The manuscript should contain a statement that the work has been approved by the appropriate ethical committees related to the institution(s) in which it was performed and that subjects gave informed consent to the work. Studies involving experiments with animals must state that their care was in accordance with institution guidelines. Patients' and volunteers' names, initials, and hospital numbers should not be used.

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Please note: Case reports will be considered for publication only if they add new information to the existing body of knowledge or present new points of view on known diseases.

All authors must have contributed to the paper, not necessarily the patient treatment. Technical notes

and case reports are limited to a maximum of 4 authors, in exceptional circumstances, 5.
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All references cited in the text must be included in the list of references at the end of the paper. Each reference listed must include the names of all authors. Please see section "Article Types" for guidance on the maximum number of reference for each type of article.
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*Figures*All illustrations (e.g. graphs, drawings or photographs) are considered to be figures, and should be numbered in sequence with Arabic numerals. Each figure should have a caption, typed double-spaced on a separate page and numbered correspondingly. **The minimum resolution for electronically generated figures is 300 dpi.**
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Photographs and radiographs: Photomicrographs should show magnification and details of any staining techniques used. **The area(s) of interest must be clearly indicated with arrows or other symbols.**
Colour images are encouraged, but the decision whether an illustration is accepted for reproduction in colour in the printed journal lies with the editor-in-chief. Figures supplied in colour will appear in colour in the online version of the journal.
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ANEXO E – Comprovante de submissão do artigo intitulado "*Assessing change in quality of life using the Oral Health Impact Profile (OHIP) in patients with several dentofacial deformities: compating among before and after orthognathic surgery*" para o periódico *International Journal of Oral & Maxillofacial Surgery*

Submission Confirmation for Assessing change in quality of life using the Oral Health Impact Profile (OHIP) in patients with several dentofacial deformities: comparing among before and after orthognathic surgery

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Dear Dr. Göelzer,

We acknowledge, with thanks, the receipt of your manuscript submitted to International Journal of Oral & Maxillofacial Surgery.

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Your manuscript will be given a reference number once an Editor has been assigned. Your paper will then be forwarded to the expert reviewers of the Editorial Board for review. Once the results of the reviewing process are available we will advise you.

Thank you for showing your interest in publishing in the International Journal of Oral and Maxillofacial Surgery.

Kind regards,

Jacqui Merrison
IJOMS Editorial Office

ANEXO F – Modelo dos questionários aplicados

WHOQOL-bref

	ANTES DA CIRURGIA ORTOGNÁTICA	Muito ruim	Ruim	Nem ruim nem boa	Boa	Muito boa
1	Como você avaliaria sua qualidade de vida?					

	ANTES DA CIRURGIA	Muito insatisfeito	Insatisfeito	Nem satisfeito nem insatisfeito	Satisfeito	Muito satisfeito
2	Quão satisfeito(a) você estava com sua saúde?					

	ANTES DA CIRURGIA ORTOGNÁTICA	Nada	Muito pouco	Mais ou menos	Bastante	Extrema mente
3	Em que medida você acha que sua dor (física) impedia você de fazer o que você precisava?					
4	O quanto você precisava de algum tratamento médico para levar sua vida diária?					
5	O quanto você aproveitava a sua vida?					
6	Em que medida você achava que a sua vida tinha sentido?					
7	O quanto você conseguia se concentrar?					
8	Quão seguro(a) você se sentia em sua vida diária?					
9	Quão saudável era o seu ambiente físico (clima/barulho/poluição/atrativos)?					

	ANTES DA CIRURGIA ORTOGNÁTICA	Nada	Muito pouco	Médio	Muito	Completa mente
10	Você tinha energia suficiente para seu dia-a-dia?					
11	Você era capaz de aceitar sua aparência física?					
12	Você tinha dinheiro suficiente para satisfazer suas necessidades?					
13	Quão disponíveis para você estavam as informações que precisa no seu dia-a-dia?					
14	Em que medida você tinha oportunidades de atividade de lazer?					

	ANTES DA CIRURGIA ORTOGNÁTICA	Muito ruim	Ruim	Nem ruim nem bom	Bom	Muito bom
15	Quão bem você era capaz de se locomover?					

	ANTES DA CIRURGIA ORTOGNÁTICA	Muito insatisfeito	Insatis feito	Nem satisfeito nem insatisfeito	Satisfei-to	Muito satisfeito
16	Quão satisfeito(a) você estava com o seu sono?					
17	Quão satisfeito(a) você estava com sua capacidade de desempenhar as atividades do seu dia-a-dia?					
18	Quão satisfeito(a) você estava com sua capacidade para o trabalho?					
19	Quão satisfeito(a) você estava consigo mesmo?					
20	Quão satisfeito(a) você estava com suas relações pessoais (amigos, parentes, conhecidos, colegas)?					
21	Quão satisfeito(a) você estava com sua vida sexual?					
22	Quão satisfeito(a) você estava com o apoio que você recebia de seus amigos?					
23	Quão satisfeito(a) você estava com suas condições de trabalho?					
24	Quão satisfeito(a) você estava com o seu acesso aos serviços de saúde?					
25	Quão satisfeito(a) você estava com o seu meio de transporte?					

	ANTES DA CIRURGIA ORTOGNÁTICA	Nunca	Algumas vezes	Frequen-temente	Muito frequentemente	Sempre
26	Com que freqüência você tinha sentimentos negativos tais como mau humor, desespero, ansiedade, depressão?					

WHOQOL-bref

	APÓS A CIRURGIA ORTOGNÁTICA	Muito ruim	Ruim	Nem ruim nem boa	Boa	Muito boa
1	Como você avalia sua qualidade de vida?					

	APÓS A CIRURGIA	Muito insatisfeito	Insatisfeito	Nem satisfeito nem insatisfeito	Satisfeito	Muito satisfeito
2	Quão satisfeito(a) você está com sua saúde?					

	APÓS A CIRURGIA ORTOGNÁTICA	Nada	Muito pouco	Mais ou menos	Bastante	Extrema-mente
3	Em que medida você acha que sua dor (física) impede você de fazer o que você precisa?					
4	O quanto você precisa de algum tratamento médico para levar sua vida diária?					
5	O quanto você aproveita a vida?					
6	Em que medida você acha que a sua vida tem sentido?					
7	O quanto você consegue se concentrar?					
8	Quão seguro(a) você se sente em sua vida diária?					
9	Quão saudável é o seu ambiente físico (clima/barulho/poluição/atrativos)?					

	APÓS A CIRURGIA ORTOGNÁTICA	Nada	Muito pouco	Médio	Muito	Completa mente
10	Você tem energia suficiente para seu dia-a-dia?					
11	Você é capaz de aceitar sua aparência física?					
12	Você tem dinheiro suficiente para satisfazer suas necessidades?					
13	Quão disponíveis para você estão as informações que precisa no seu dia-a-dia?					
14	Em que medida você tem oportunidades de atividade de lazer?					

	APÓS A CIRURGIA ORTOGNÁTICA	Muito ruim	Ruim	Nem ruim nem bom	Bom	Muito bom
15	Quão bem você é capaz de se locomover?					

	APÓS A CIRURGIA ORTOGNÁTICA	Muito insatisfeito	Insatisfei-to	Nem satisfeito nem insatisfeito	Satisfeito	Muito satisfeito
16	Quão satisfeito(a) você está com o seu sono?					
17	Quão satisfeito(a) você está com sua capacidade de desempenhar as atividades do seu dia-a-dia?					
18	Quão satisfeito(a) você está com sua capacidade para o trabalho?					
19	Quão satisfeito(a) você está consigo mesmo?					
20	Quão satisfeito(a) você está com suas relações pessoais (amigos, parentes, conhecidos, colegas)?					
21	Quão satisfeito(a) você está com sua vida sexual?					
22	Quão satisfeito(a) você está com o apoio que você recebe de seus amigos?					
23	Quão satisfeito(a) você está com suas condições de trabalho?					
24	Quão satisfeito(a) você está com o seu acesso aos serviços de saúde?					
25	Quão satisfeito(a) você estava com o seu meio de transporte?					

	APÓS A CIRURGIA ORTOGNÁTICA	Nunca	Algumas vezes	Frequen-temente	Muito frequentemente	Sempre
26	Com que freqüência você tem sentimentos negativos tais como mau humor, desespero, ansiedade, depressão?					

OQLQ

	ANTES DA CIRURGIA....	não se aplica/não incomoda	incomoda pouco	incomoda um pouco mais	incomoda mais	incomoda muito
1	Eu ficava inseguro com a aparência dos meus dentes					
2	Eu tinha problemas para morder					
3	Eu tinha problemas para mastigar					
4	Eu evitava comer alguns alimentos devido a forma como meus dentes se encontram					
5	Não gostava de comer em lugares públicos					
6	Eu tinha dores no meu rosto ou maxilares					
7	Eu não gostava de ver meu rosto de lado (perfil)					
8	Eu passava muito tempo analisando meu rosto no espelho					
9	Eu passava muito tempo analisando meus dentes no espelho					
10	Não gostava que tirassem fotografia de mim					
11	Não gostava de ser visto em vídeo					
12	Costumava olhar fixamente para os dentes das pessoas					
13	Costumava olhar fixamente para os rostos de outras pessoas					
14	Ficava inseguro com a aparência do meu rosto					
15	Tentava cobrir minha boca quando encontrava pessoas pela primeira vez					
16	Eu me preocupava em encontrar pessoas pela primeira vez					
17	Preocupava-me que as pessoas iriam fazer comentários que magoam sobre minha aparência					
18	Sinto falta de confiança quando saia socialmente					
19	Não gostava de sorrir quando me encontrava com pessoas					
20	As vezes ficava deprimido por causa da minha aparência					
21	As vezes achava que as pessoas estavam me encarando					
22	Comentários sobre minha aparência realmente me chateavam, mesmo quando sei que as pessoas estão apenas brincando					

OQLQ

	APÓS A CIRURGIA....	não se aplica/não incomoda	incomoda pouco	incomoda um pouco mais	incomoda mais	incomoda muito
1	Eu ficava inseguro com a aparência dos meus dentes					
2	Eu tinha problemas para morder					
3	Eu tinha problemas para mastigar					
4	Eu evitava comer alguns alimentos devido a forma como meus dentes se encontram					
5	Não gostava de comer em lugares públicos					
6	Eu tinha dores no meu rosto ou maxilares					
7	Eu não gostava de ver meu rosto de lado (perfil)					
8	Eu passava muito tempo analisando meu rosto no espelho					
9	Eu passava muito tempo analisando meus dentes no espelho					
10	Não gostava que tirassem fotografia de mim					
11	Não gostava de ser visto em vídeo					
12	Costumava olhar fixamente para os dentes das pessoas					
13	Costumava olhar fixamente para os rostos de outras pessoas					
14	Ficava inseguro com a aparência do meu rosto					
15	Tentava cobrir minha boca quando encontrava pessoas pela primeira vez					
16	Eu me preocupava em encontrar pessoas pela primeira vez					
17	Preocupava-me que as pessoas iriam fazer comentários que magoam sobre minha aparência					
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19	Não gostava de sorrir quando me encontrava com pessoas					
20	As vezes ficava deprimido por causa da minha aparência					
21	As vezes achava que as pessoas estavam me encarando					
22	Comentários sobre minha aparência realmente me chateavam, mesmo quando sei que as pessoas estão apenas brincando					

OHIP-14

	ANTES DA CIRURGIA	Nunca	Quase nunca	Ocasional-mente	Bastante vezes	Frequen-temente
1	Tinha dificuldade em pronunciar algumas palavras devido a problemas com os seus dentes/boca?					
2	Sentiu piora do seu paladar devido a problemas com os seus dentes/boca?					
3	Tinha alguma dor persistente/continuada na boca?					
4	Sentia desconforto quando comia algum alimento devido a problemas com os seus dentes/boca?					
5	Sentia-se constrangido(a) devido a problemas com os seus dentes/boca?					
6	Sentia-se tenso(a) devido a problemas com os seus dentes/boca?					
7	A sua dieta era insatisfatória devido a problemas com seus dentes/boca?					
8	Tinha que interromper refeições devido a problemas com seus dentes/boca?					
9	Tinha dificuldade em relaxar/descansar devido a problemas com seus dentes/boca?					
10	Tinha vergonha devido a problemas com seus dentes/boca?					
11	Tinha dificuldades em desempenhar as suas tarefas habituais devido a problemas com seus dentes/boca?					
12	Sentia-se irritável com outras pessoas devido a problemas com seus dentes/boca?					
13	Sentia que a sua vida em geral era menos satisfatória devido a problemas com seus dentes/boca?					
14	Sentia-se incapaz funcionalmente devido a problemas com seus dentes/boca?					

OHIP-14

	APÓS A CIRURGIA	Nunca	Quase nunca	Ocasional-mente	Bastante vezes	Frequen-temente
1	Tem tido dificuldade em pronunciar algumas palavras devido a problemas com os seus dentes/boca?					
2	Tem sentido que o seu paladar tem piorado devido a problemas com os seus dentes/boca?					
3	Teve alguma dor persistente/continuada na boca?					
4	Tem sentido algum desconforto quando come algum alimento devido a problemas com os seus dentes/boca?					
5	Tem-se sentido constrangido(a) devido a problemas com os seus dentes/boca?					
6	Tem-se sentido tenso(a) devido a problemas com os seus dentes/boca?					
7	A sua dieta tem sido insatisfatória devido a problemas com seus dentes/boca?					
8	Tem tido que interromper refeições devido a problemas com seus dentes/boca?					
9	Tem sentido dificuldade em relaxar/descansar devido a problemas com seus dentes/boca?					
10	Tem-se sentido um pouco envergonhado(a) devido a devido a problemas com seus dentes/boca?					
11	Tem tido dificuldades em desempenhar as suas tarefas habituais devido a devido a problemas com seus dentes/boca?					
12	Tem-se sentido um pouco irritável com outras pessoas devido a devido a problemas com seus dentes/boca?					
13	Sentiu que a sua vida em geral tem sido menos satisfatória devida a devido a problemas com seus dentes/boca?					
14	Tem-se sentido completamente incapaz funcionalmente devido a devido a problemas com seus dentes/boca?					