



PONTIFÍCIA UNIVERSIDADE CATÓLICA DO RIO GRANDE DO SUL – PUCRS
FACULDADE DE ODONTOLOGIA
PROGRAMA DE PÓS-GRADUAÇÃO EM ODONTOLOGIA
MESTRADO EM CIRURGIA E TRAUMATOLOGIA BUCOMAXILOFACIAL

Roberto Ferreira Zanin

**AVALIAÇÃO DA QUALIDADE DE VIDA DE PACIENTES COM DESORDENS
TEMPOROMANDIBULARES SUBMETIDOS À CIRURGIA ARTICULAR**

Orientador: Prof. Dr. Cláiton Heitz

Porto Alegre

2017

Roberto Ferreira Zanin

**AVALIAÇÃO DA QUALIDADE DE VIDA DE PACIENTES COM DESORDENS
TEMPOROMANDIBULARES SUBMETIDOS À CIRURGIA ARTICULAR**

**Dissertação apresentada ao
Programa de Pós-Graduação da
Faculdade de Odontologia da
Pontifícia Universidade Católica
do Rio Grande do Sul para a
obtenção do grau de Mestre em
Odontologia, área de
concentração em Cirurgia e
Traumatologia Bucomaxilofacial**

BANCA EXAMINADORA

Orientador: Prof. Dr. Cláiton Heitz

Prof. Dr. Ricardo Augusto Conci

Prof. Dr. Guilherme Genehr Fritscher

Porto Alegre

2017



AGRADECIMENTOS

Ao meu orientador, Prof. Dr. Cláiton Heitz, pela amizade, confiança, convivência agradável, conhecimento e experiência transmitidos. Agradeço pela dedicação e disponibilidade, mas principalmente pelo auxílio na idealização e na superação dos empecilhos para que este trabalho se realizasse. Muito obrigado pelo exemplo de profissionalismo, ética e moral.

Ao Prof. Dr. Rogério Belle, por ter me mostrado o caminho a ser seguido, sendo responsável por enorme contribuição neste trabalho.

Ao amigo e colega Dr. Guilherme Omizzolo, pela amizade, paciência e ensinamentos.

Aos meus pais, Roberto e Raquel, pela educação e valores que me ensinaram, pelo carinho e compreensão dados ao longo da minha vida, pelo esforço incansável para que eu realizasse minha formação profissional e pelo amor incondicional!

Aos meus avós Pedro e Oilita, exemplos de caráter e honestidade, pelo amor, carinho e educação.

Aos meus tios, pela presença constante e indispensável contribuição na minha formação profissional e pessoal ao longo destes anos.

Aos meus irmãos e familiares, pelo apoio nessa caminhada e por confiarem em mim e no meu trabalho.

À Pontifícia Universidade Católica do Rio Grande do Sul.

À Coordenação do Curso de Pós-Graduação em Odontologia da Faculdade de Odontologia da PUCRS em nome da Profa. Dr. Ana Maria Spohr, agradeço as oportunidades proporcionadas durante a realização do curso de Mestrado.

À CAPES, pelo apoio financeiro disponibilizado através da bolsa, indispensável para a realização deste curso.

À Faculdade de Odontologia da Pontifícia Universidade Católica do Rio Grande do Sul, pela excelente estrutura e qualidade de ensino proporcionada.

A todos os professores do curso de Mestrado em Cirurgia e Traumatologia Bucomaxilofacial e do Pós-graduação em Odontologia da Faculdade de Odontologia da PUCRS, pelos ensinamentos e convivência que contribuíram para o meu aprimoramento profissional.

Aos funcionários da Secretaria de Pós-Graduação da Faculdade de Odontologia da PUCRS: Davenir, Gabriel, Kléber e Vanessa, pela atenção dada durante o curso e gentileza com que sempre me atenderam.

Enfim, agradeço a todos os demais que contribuíram para que eu pudesse concluir este trabalho.



RESUMO GERAL

As desordens da articulação temporomandibular (ATM) e seu tratamento possuem repercussões físicas e psicológicas na qualidade de vida (QOL). Este estudo avaliou o pré-operatório (T0) e de 3-6 meses de pós-operatório (T1) em 50 pacientes (100 discos articulares) com deslocamento anterior do disco, sem redução bilateral, submetidos à cirurgia para o reposicionamento do disco articular através de âncoras. A QOL relacionada com a saúde bucal foi avaliada usando a versão reduzida do *oral health impact profile* (OHIP-14). Houve uma redução estatisticamente significativa na média geral das pontuações OHIP-14 entre T0 (12.48 ± 5.81) e T1 (3.84 ± 3.00). Em adição, houve uma redução significativa em todos os 7 domínios OHIP-14 ($P < 0,001$). Pacientes mais jovens, na faixa etária entre 28-38 anos ($n=26$), foram beneficiados em todos os domínios avaliados, enquanto que uma melhora significativa pode ser observada apenas no domínio dor física ($P > 0.05$) para os pacientes mais idosos na faixa etária entre 50-60 anos ($n=5$).

Os resultados sugerem que as desordens da ATM afetam os indivíduos em diversos aspectos de suas vidas e que as abordagens das condições específicas e gerais de saúde oral para avaliar a QOL possuem valor em determinar o impacto das desordens articulares na qualidade de vida destes pacientes. O tratamento cirúrgico para a ancoragem de disco da ATM teve um impacto positivo na qualidade nos pacientes avaliados.

Palavras-chave¹: Transtornos da Articulação Temporomandibular; inquéritos e questionários; qualidade de vida; Articulação Temporomandibular; doenças Mandibulares.

¹ Descritores em Ciência da Saúde (DeCS), disponível em <http://decs.bvs.br>. Acesso em: 11 Jan. 2017.



Temporomandibular disorders (TMD) and their treatment have a physical and psychological impact on quality of life (QOL). This study aimed to assess the impact of oral health on QOL by evaluating 50 patients with bilateral anterior disc displacement without reduction preoperatively (T0) and 3–6 months after surgery for anterior disc repositioning and anchoring (T1). Oral health-related QOL was assessed using the short form of the Oral Health Impact Profile (OHIP-14). There was a statistically significant reduction in the mean total OHIP-14 score between T0 (12.48 ± 5.81) and T1 (3.84 ± 3.00). In addition, there was a significant decrease in all 7 OHIP-14 domains ($P < 0.001$). Younger patients (aged 28–38 years, $n=26$) had benefits in all domains, while older patients (aged 50–60 years, $n=5$) showed a significant improvement only in the physical pain domain ($P=0.049$). The results suggest that TMD affect individuals in many aspects of their lives and that general or condition-specific oral health-related QOL measures are valuable tools for determining the impact of joint disorders on patients' QOL. Surgical treatment for articular disc repositioning and anchoring had a positive impact on patients' QOL.

Keywords: Surveys and questionnaires; temporomandibular joint; temporomandibular joint disorders; quality of life.



LISTA DE TABELAS

ARTIGO I - Table 1. Demographic characteristics of the sample (n= 50) 27

ARTIGO I - Table 2. Percentage distribution of responses to individual OHIP-14 items before (T0) and after (T1) surgery (N=50) 28

ARTIGO I – Table 3. Overall comparison of OHIP-14 domains before (T0) and after (T1) surgery (N=50).....29

ARTIGO I - Table 4. Comparison of OHIP-14 domains before (T0) and after (T1) surgery according to patient age (N=50). 30



LISTA DE ABREVIATURAS, SIGLAS E SÍMBOLOS

LISTA DE ABREVIATURAS

CEP	<i>Comitê de Ética em Pesquisa</i>
et al.	<i>e colaboradores</i>
F	<i>Female - feminino</i>
M	<i>Male - masculino</i>
M	<i>Mean – média</i>
n	<i>Número ou amostra</i>
NS	<i>Not Significant – não significante</i>
OHIP	<i>Oral Health Impact Profile</i>
p	Probabilidade de erro
PUCRS	<i>Pontifícia Universidade Católica do Rio Grande do Sul</i>
ATM	<i>Articulação Têmporomandibular</i>
DTM	<i>Desordens Temporomandibulares</i>
TMD	<i>Temporomandibular Disorder</i>
TMJ	<i>Temporomandibular Joint</i>
SD	<i>Standard Deviation - desvio padrão</i>
WHO	<i>World Health Organization</i>
WHOQOL	<i>World Health Organization Quality of Life</i>



SUMÁRIO

Antecedentes e Justificativa.....	11
Materiais e Métodos.....	13
Artigo.....	15
Discussão Geral.....	31
Conclusão Geral.....	35
Referências Gerais.....	36
 ANEXO A – Carta de aprovação do Comitê de Ética em Pesquisa da Faculdade de Odontologia PUCRS.....	 39
 ANEXO B – Comprovante de submissão do artigo intitulado “Assessing change in quality of life using the Oral Health Impact Profile in patients with temporomandibular joint disorders: A pre and postoperative comparison” para o periódico International Journal of Oral & Maxillofacial Surgery.....	 40
 ANEXO C – Normas para publicação – periódico International Journal of Oral & Maxillofacial Surgery.....	 41
 ANEXO D – Modelo de questionário aplicado.....	 53



ANTECEDENTES E JUSTIFICATIVA

Desarranjos internos da articulação temporomandibular (ATM) são mais comumente caracterizados pelo deslocamento anterior ou ântero-medial do disco articular^{1,2}, ocasionando dor, desconforto, limitação dos movimentos mandibulares e um impacto crucial na qualidade de vida dos pacientes.

A dor geralmente está associada com outros sinais e sintomas. Estes incluem limitações, desvios nos movimentos mandibulares, sons durante a função mandibular, mastigação, alterações psicológicas e sociais, o que causa um impacto negativo na qualidade de vida dos indivíduos com disfunções na ATM^{3,4}, no entanto, muitos pacientes são satisfatoriamente tratados por meios tradicionais como fisioterapia e medicação⁵.

O padrão de tratamento aceito internacionalmente para os desarranjos da ATM consiste em um protocolo através de manejo conservador seguido de artroscopia ou artrocentese quando a dor é persistente, ou quando há restrição de movimentos ou travamento devido às causas intra-articulares. Aqueles que não respondam aos meios conservadores, pode-se indicar uma nova avaliação para uma conduta cirúrgica, de maneira que a cirurgia aberta dos desarranjos da ATM tem sido um tratamento estabelecido para pacientes em que houve falha na resposta ao tratamento conservador⁶. Estudos da incidência do tratamento cirúrgico para desarranjos da ATM variam de 1% a 25%^{7,8}, mas a maioria dos autores relata uma média de 5% dos pacientes que necessitam submeter-se à cirurgia⁹.

Historicamente, o tratamento cirúrgico aberto para os desarranjos internos da ATM tem incluído um ou mais dos procedimentos a seguir: plicatura do disco, ancoragem, condilectomia e eminectomia. A condilectomia e a eminectomia foram desenvolvidos para aumentar o espaço articular sem alterar a posição do disco, enquanto que a plicatura e a ancoragem do disco objetivam o retorno do disco à sua posição normal no espaço articular¹⁰.

Através das últimas três décadas o uso de escalas de resultados centrados nos pacientes em medicina e cirurgia tem aumentado substancialmente^{11,12}.

Estas análises têm focado principalmente na própria percepção dos pacientes sobre o impacto da sua saúde na sua qualidade de vida¹³ e têm se provado uma ferramenta útil na avaliação da necessidade de cirurgias, na avaliação da efetividade e eficácia das cirurgias, no auxílio da prática baseada em evidências e priorizando os cuidados de saúde¹⁴.

Além disso, as percepções dos pacientes são importantes na avaliação da necessidade de tratamento, planejamento da terapia apropriada e resultados clínicos¹⁵, considerando que os tratamentos das disfunções da ATM representam um dos mais controversos e estudados temas dentro da especialidade de cirurgia bucomaxilofacial.

Ao longo da última década, a medida de como os pacientes percebem o estado de sua saúde bucal afetando a sua qualidade de vida emergiu como um importante método de avaliação dos resultados¹⁶ e apesar da maioria das doenças bucais não serem fatais, elas aumentam significativamente a morbidade, resultando em consequências físicas, psicológicas e sociais¹⁷.

O uso de indicadores sociodontais, baseados na autopercepção e nos impactos odontológicos, oferece vantagens importantes para o planejamento e provisão dos serviços odontológicos. A principal é a mudança da ênfase de aspectos puramente biológicos para aspectos psicológicos e sociais. Na busca de um diagnóstico mais amplo e preciso, alguns pesquisadores começaram a trabalhar também com medidas subjetivas, visando inserir a percepção do paciente sobre sua condição bucal^{18,19}.

Tratamentos cirúrgicos das desordens da ATM representam hoje uma das maiores controvérsias da especialidade e tratamento cirúrgico apresenta-se em muitos casos como modalidade terapêutica para o tratamento das disfunções temporomandibulares após verificada a indicação e a avaliação de outros quesitos que fundamentam a escolha (magnitude da degeneração, posição do disco articular, oclusão, faixa etária do paciente, amplitude de abertura de boca, limitação dos movimentos mandibulares, dor, entre outros).

Sendo assim, o objetivo deste projeto de pesquisa foi avaliar pacientes que foram submetidos à cirurgia aberta para tratamento das desordens e disfunções da ATM e avaliar objetivamente por meio de anamnese e subjetivamente, por meio de um questionário, a qualidade de vida dos pacientes antes e após a cirurgia.



ARTIGO

1. Artigo

O artigo a seguir intitula-se “***Assessing change in quality of life using the Oral Health Impact Profile in patients with temporomandibular joint disorders: A pre- and postoperative comparison***”. Foi formatado de acordo com as normas do periódico *International Journal of Oral and Maxillofacial Surgery* (Anexo C) e submetido em 11 de Janeiro de 2017 (Anexo B).

Assessing change in quality of life using the Oral Health Impact Profile in patients with temporomandibular joint disorders: A pre and postoperative comparison

Abstract: Temporomandibular disorders (TMD) and their treatment have a physical and psychological impact on quality of life (QOL). This study aimed to assess the impact of oral health on QOL by evaluating 50 patients with bilateral anterior disc displacement without reduction preoperatively (T0) and 3–6 months after surgery for anterior disc repositioning and anchoring (T1). Oral health-related QOL was assessed using the short form of the Oral Health Impact Profile (OHIP-14). There was a statistically significant reduction in the mean total OHIP-14 score between T0 (12.48 ± 5.81) and T1 (3.84 ± 3.00). In addition, there was a significant decrease in all 7 OHIP-14 domains ($P < 0.001$). Younger patients (aged 28–38 years, $n=26$) had benefits in all domains, while older patients (aged 50–60 years, $n=5$) showed a significant improvement only in the physical pain domain ($P=0.049$). The results suggest that TMD affect individuals in many aspects of their lives and that general or condition-specific oral health-related QOL measures are valuable tools for determining the impact of joint disorders on patients' QOL. Surgical treatment for articular disc repositioning and anchoring had a positive impact on patients' QOL.

Keywords: Surveys and questionnaires; temporomandibular joint; temporomandibular joint disorders; quality of life.

INTRODUCTION

Anterior disc displacement is one of the most common types of temporomandibular disorders (TMD). Although this condition can occur at any age, it is more frequent in women aged 20–40 years. Displacement of the temporomandibular joint (TMJ) disc can result in clicking, joint pain, limited mouth opening, and difficulty chewing, among other symptoms. Studies suggest that, without treatment, the articular disc is likely to degenerate and progress to more severe anterior displacement¹. In addition, persistent internal derangement may lead to condylar remodeling and decreased condylar height. Generally, the extent of degenerative changes is proportional to the length of time the disc has been displaced².

Annandale³ first described the surgical repositioning of displaced TMJ discs in 1887. However, it was only in 1978, when Wilkes⁴ used arthrography to describe the anatomy, form and function of the TMJ, that disc repositioning became an accepted surgical technique. McCarty and Farrar⁵ were the first to describe the technique of articular disc repositioning in the treatment of TMD.

The Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD) are a self-report tool widely used to assess chronic pain disability in TMD patients as well as the interaction between psychosocial factors related to chronic pain, such as depression and somatization⁶. TMD is known to be associated with signs and symptoms that can affect one's ability to perform essential functions, such as chewing and speaking, thus leading to psychological and social changes that can have a negative impact on patients' quality of life (QOL)^{7,8}.

The World Health Organization (WHO) defines QOL as "individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is a broad-ranging concept affected in a complex way by the person's physical health, psychological state, social relationships and their relationship to salient features of their environment." It may also be defined as "a person's sense of well-being that stems from satisfaction or dissatisfaction with the areas of life that are important to him/her"⁹. Health-related QOL is typically measured using generic or disease-specific measures. Generic measures, however, are not sensitive to changes in oral health and have limited construct validity¹⁰. The Oral Health Impact Profile (OHIP) is one of the most

widely used questionnaires to assess oral health-related QOL and is based on patients' perceptions of the social impact of oral disease and/or oral conditions on their well-being and QOL¹¹. The original OHIP contains 49 items, but a shorter version with 14 items (OHIP-14) was derived from it to cover specific oral health-related physical, psychological and social aspects of QOL¹².

The objectives of the present study were to 1) assess the impact of oral health on QOL by evaluating patients with TMD preoperatively and 3–6 months after surgery for articular disc repositioning and anchoring using the OHIP-14 and 2) determine relationships between OHIP-14 domains and patient age and assess the impact of treatment outcome on patients.

CONCLUSION

In conclusion, there seems to be a relationship between older age and greater difficulty in achieving satisfactory postoperative results among patients aged 50 years or older, associated with the fact that these patients are more susceptible to developing degenerative diseases such as arthrosis and arthritis. Although there is strong evidence to support these relationships, further studies are needed to establish a connection between evidence related to TMJ dysfunction and patient age as well as causes underlying TMD.

Conflict of Interest: The authors have no conflicts of interest to disclose.

REFERENCES

1. Cai XY, Jin JM, Yang C. Changes in disc position, disc length, and condylar height in the temporomandibular joint with anterior disc displacement: a longitudinal retrospective magnetic resonance imaging study. *J Oral Maxillofac Surg* 2011; 69: e340-346.
2. He D, Yang C, Zhang S, Wilson JJ. Modified temporomandibular joint disc repositioning with miniscrew anchor: part I-surgical technique. *J Oral Maxillofac Surg* 2015; 73: 47 e41-49.
3. Annandale T. On displacement of the interarticular cartilage of the lower jaw and its treatment by operation. 1887: 1: 411.
4. Wilkes CH. Structural and functional alterations of the temporomandibular joint. *Northwest Dent* 1978; 57: 287-294.
5. McCarty WL, Farrar WB. Surgery for internal derangements of the temporomandibular joint. *J Prosthet Dent* 1979; 42: 191-196.
6. Dworkin SF, LeResche L. Research diagnostic criteria for temporomandibular disorders: review, criteria, examinations and specifications, critique. *J Craniomandib Disord* 1992; 6: 301-355.
7. Segu M, Lobbia S, Canale C, Collesano V. [Quality of life in patients with temporomandibular disorders]. *Minerva Stomatol* 2003; 52: 279-287.
8. Tjakkes GH, Reinders JJ, Tenvergert EM, Stegenga B. TMD pain: the effect on health related quality of life and the influence of pain duration. *Health Qual Life Outcomes* 2010; 8: 46.

9. Cunningham SJ, Garratt AM, Hunt NP. Development of a condition-specific quality of life measure for patients with dentofacial deformity: I. Reliability of the instrument. *Community Dent Oral Epidemiol* 2000; 28: 195-201.
10. Lee S, McGrath C, Samman N. Quality of life in patients with dentofacial deformity: a comparison of measurement approaches. *Int J Oral Maxillofac Surg* 2007; 36: 488-492.
11. Slade GD, Spencer AJ. Development and evaluation of the Oral Health Impact Profile. *Community Dent Health* 1994; 11: 3-11.
12. Slade GD. Derivation and validation of a short-form oral health impact profile. *Community Dent Oral Epidemiol* 1997; 25: 284-290.
13. John MT, Patrick DL, Slade GD. The German version of the Oral Health Impact Profile--translation and psychometric properties. *Eur J Oral Sci* 2002; 110: 425-433.
14. Mehra P, Wolford LM. The Mitek mini anchor for TMJ disc repositioning: surgical technique and results. *Int J Oral Maxillofac Surg* 2001; 30: 497-503.
15. Dolwick MF. The role of temporomandibular joint surgery in the treatment of patients with internal derangement. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 1997; 83: 150-155.
16. Al-Moraissi EA. Open versus arthroscopic surgery for the management of internal derangement of the temporomandibular joint: a meta-analysis of the literature. *Int J Oral Maxillofac Surg* 2015; 44: 763-770.
17. Su N, Yang X, Liu Y, Huang Y, Shi Z. Evaluation of arthrocentesis with hyaluronic acid injection plus oral glucosamine hydrochloride for temporomandibular joint osteoarthritis in oral-health-related quality of life. *J Craniomaxillofac Surg* 2014; 42: 846-851.

18. Wang JL. Clinical epidemiology. Shanghai: Shanghai Scientific and Technical Publishers, 2012.
19. Wolford LM, Karras SC. Simultaneous TMJ and orthognathic surgery. J Oral Maxillofac Surg Educational Summaries and Outlines 1994: 52: 98.
20. Brennan DS, Spencer AJ. Mapping oral health related quality of life to generic health state values. BMC Health Serv Res 2006: 6: 96.
21. Liu ZJ, McGrath C, Hagg U. Changes in oral health-related quality of life during fixed orthodontic appliance therapy: an 18-month prospective longitudinal study. Am J Orthod Dentofacial Orthop 2011: 139: 214-219.



CONSIDERAÇÕES FINAIS

Este estudo demonstrou que a cirurgia da ancoragem do disco articular trouxe benefícios aos pacientes operados. Houve melhora significativa da qualidade de vida geral após o procedimento, através da avaliação feita com o questionário Ohip-14, em quase todas as faixas etárias, excetuando-se os pacientes mais idosos. Esse fato pode ter ocorrido devido ao baixo número da amostragem (n=5).

Outra hipótese é a de que parece existir uma relação entre a idade do paciente e uma dificuldade maior de se obterem resultados satisfatórios quando esta se encontra na faixa acima de 50 anos, associado ao fato de que estes pacientes estejam mais susceptíveis às doenças degenerativas como artroses e artrites. Apesar de fortes evidências que possam corroborar com essas hipóteses, ainda são necessários maiores estudos para que se consiga estabelecer uma conexão entre as evidências encontradas relacionadas à saúde da articulação temporomandibular com a idade dos pacientes e as suas causas.



REFERÊNCIAS

REFERÊNCIAS

1. McCarty WL, Farrar WB. Surgery for internal derangement of the temporomandibular joint. *J Prosthet Dent* 1979; 42: 191–196.
2. Buckley MJ, Merrill RG, Braun TW. Surgical management of internal derangement of the temporomandibular joint. *J Oral Maxillofac Surg* 1993; 51(suppl 1): 20–27.
3. Segu M, Lobbia S, Canale C, Collesano V. Quality of life in patients with temporomandibular disorders. *Minerva Stomatol.* 2003;52:279–287.
4. Tjakkes GH, Reinders JJ, Tenvergert EM, Stegenga B. TMD pain: the effect on health related quality of life and the influence of pain duration. *Health Qual Life Outcomes.* 2010;2:39–46.
5. McNeil C, ed. *Temporomandibular disorders – Guidelines for classification, assessment and management*, 2nd ed. Chicago: Quintessence Books. 1993: 81–96.
6. Konstantinos Tzanidakis*, Andrew J. Sidebottom. Outcomes of open temporomandibular joint surgery following failure to improve after arthroscopy: is there an algorithm for success? *British Journal of Oral and Maxillofacial Surgery* 51 (2013) 818–821.

7. Trumpy IG, Lyberg T. Surgical treatment of internal derangement of the temporomandibular joint: long-term evaluation of three techniques. *J Oral Maxillofac Surg* 1995; 53: 740–747.
8. Eriksson L, Westesson PL. Temporomandibular joint discectomy. No positive effect of temporary silicone implant in a 5-year follow-up. *Oral Surg Oral Med Oral Pathol* 1992; 74: 259–272).
9. Dolwick MF, Dimitroulis G. Is there a role for temporomandibular joint surgery. *Br J Oral Maxillofac Surg* 1994; 32: 307–313).
10. R.A. Williamson, D. McNamara, W. McAuliffe. True eminectomy for internal derangement of the temporomandibular joint. *British Journal of Oral and Maxillofacial Surgery* (2000) 38, 554–560 Ware JE. Measuring patients' views: the optimum outcome measure. *Br Med J* 1993; 306: 1429–1430).
11. Sandison AJ, Scriven MW, Foster ME, Lewis MH. Assessment of quality of life in surgery. *Br J Surg* 1992; 79: 1110–1111.
12. Bowling A. *Measuring Disease: A Review of Disease Specific Quality of Life Measurement Scales*. Buckingham: Open University Press, 1995.
13. McLeod RS. Quality-of-life measurement in the assessment of surgical outcome. *Adv Surg* 1999; 33: 293–309.
14. Holman, H; Lorig, K. Patients as partners in managing chronic disease. Partnership is a prerequisite for effective and efficient health care. *BMJ* 2000; 320: 526– 527.
15. Buck D, Newton JT. Non-clinical outcome measures in dentistry: publishing trends 1988–98. *Community Dent Oral Epidemiol* 2001; 29: 2–8.

16. McGrath C, Bedi R. A review of the influences of oral health on the quality of life. *Int J Health Prom & Educ* 1999; 37: 116–119).
17. Bortoli, D. et al. Associação entre percepção de saúde bucal e indicadores clínicos e subjetivos: estudo em adultos de um grupo de educação continuada da terceira idade. *UEPG Ci. Biol. Saúde, Ponta Grossa* 2003; 9(3/4):55-65.
18. Caubi, A.F. et al.- Condyle Fractures: Treatment Methods Employed. *Rev. Cir. Traumat. Buco - Maxilo-Facial*, v.1, n.2, p. 39-45, jul/dez – 2001
19. Coelho, M.P. Avaliação do impacto das condições bucais na qualidade de vida medido pelo instrumento OHIP-14. *UFES Rev Odontol*, 10(3):4-9, 2008.
20. Lee S, McGrath C, Samman N. Quality of life in patients with dentofacial deformity: a comparison of measurement approaches. *Int J Oral Maxillofac Surg* 2007;36:488–92.
21. Cunningham SJ, Garratt AM, Hunt NP. Development of a condition-specific quality of life measure for patients with dentofacial deformity. *Community Dent Oral Epidemiol* 2000;28:195–201.
22. Brennan DS, Spencer AJ. Mapping oral health related quality of life to generic health state values. *BMC Health Serv Res* 2006; 6: 96-105.
23. Liu ZJ, McGrath C, Hagg U: Changes in oral health-related quality of life during fixed orthodontic appliance therapy: an 18-month prospective longitudinal study. *Am J Orthod Dentofacial Orthop* 139: 214e219, 2011.
- 24- Mehra P, Wolford LM: The Milek mini anehor for TMJ disk repositioning: surgical technique and results. *Im J Oral Maxillofac Surg* 2001; 3(1):4y7503.

- 25- Dolwick MF: The role of temporomandibular joint surgery in the treatment of patients with internal derangement. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 83: 150–155, 1997.
- 26- Xie-Yi Cai,, Jia-Min Jin, and Chi Yang, Changes in Disc Position, Disc Length, and Condylar Height in the Temporomandibular Joint With Anterior Disc Displacement: A Longitudinal Retrospective Magnetic Resonance Imaging Study
- 27 E.A. Al-Moraissi . Open versus arthroscopic surgery for the management of internal derangement of the temporomandibular joint: a meta-analysis of the literature: *Int. J. Oral Maxillofac. Surg.* 2015; 44: 763–770.
28. Su N, Yang X, Liu Y, Huang Y, Shi Z. Evaluation of arthrocentesis with hyaluronic acid injection plus oral glucosamine hydrochloride for temporomandibular joint osteoarthritis in oral-health-related quality of life. *J Craniomaxillofac Surg* 2014; 42: 846-851.
- 29.Wang JL: *Clinical epidemiology*, 3rd ed. Shanghai: Shanghai Scientific and Technical Publishers, 2012.
- 30-Wolford LM, Karras SC. Simultaneous TMJ and orthognathic surgery.*J Oral Maxillofac Surg Educational Summaries and Outlines* 1994: 52:98.



ANEXOS

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



SIPESQ
Sistema de Pesquisas da PUCRS



Código SIPESQ: 7076

Porto Alegre, 8 de abril de 2016.

Prezado(a) Pesquisador(a),

A Comissão Científica da FACULDADE DE ODONTOLOGIA da PUCRS apreciou e aprovou o Projeto de Pesquisa "Avaliação da Qualidade de Vida de Pacientes com Desordens Temporomandibulares Submetidos à Cirurgia Articular" coordenado por CLAITON HEITZ. Caso este projeto necessite apreciação do Comitê de Ética em Pesquisa (CEP) e/ou da Comissão de Ética no Uso de Animais (CEUA), toda a documentação anexa deve ser idêntica à documentação enviada ao CEP/CEUA, juntamente com o Documento Unificado gerado pelo SIPESQ.

Atenciosamente,

Comissão Científica da FACULDADE DE ODONTOLOGIA

ANEXO B – Comprovante de submissão do artigo intitulado “Assessing change in quality of life using the Oral Health Impact Profile in patients with temporomandibular joint disorders: A pre- and postoperative comparison”.

A manuscript number has been assigned to Assessing change in quality of life using the Oral Health Impact Profile in patients with temporomandibular joint disorders: A pre- and postoperative comparison



International Journal of Oral & Maxillofacial Surgery <eesserver@eesmail.elsevier.com>

qui 12/01, 15:55

Você ▾



Responder | ▾

Ms. Ref. No.: IJOMS-D-17-00034

Title: Assessing change in quality of life using the Oral Health Impact Profile in patients with temporomandibular joint disorders: A pre- and postoperative comparison
International Journal of Oral & Maxillofacial Surgery

Dear Mr. Zanin,

Your submission entitled "Assessing change in quality of life using the Oral Health Impact Profile in patients with temporomandibular joint disorders: A pre- and postoperative comparison" has been assigned the following manuscript number: IJOMS-D-17-00034.

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/ijoms/>. Your username is Your username is: robertofzanin@hotmail.com.

If you need to retrieve password details,
please go to: http://ees.elsevier.com/ijoms/automail_query.asp

Thank you for submitting your work to this journal.

Kind regards,

Jacqui Merrison
Editorial Office
International Journal of Oral & Maxillofacial Surgery

ANEXO C – 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.

Online Submission Submission and peer-review of all papers is now conducted entirely online, increasing efficiency for editors, authors, and reviewers, and enhancing publication speed. Authors requiring further information on online submission are strongly encouraged to view the system, including a tutorial, at <http://ees.elsevier.com/ijoms> A comprehensive Author Support service is available to answer additional enquiries at authorsupport@elsevier.com. Once a paper has been submitted, all subsequent correspondence between the Editorial Office (ijoms@elsevier.com) and the corresponding author will be by e-mail.

Editorial Policy A paper is accepted for publication on the understanding that it has not been submitted simultaneously to another journal, has been read and approved by all authors, and that the work has not been published before. The Editors reserve the right to make editorial and literary corrections. Any opinions expressed or policies advocated do not necessarily reflect the opinions and policies of the Editors.

Declarations Upon 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.

Conflict of interestAt the end of the main text, all authors must disclose any financial and personal relationships with other people or organisations that could inappropriately influence (bias) their work. Examples of potential

conflicts of interest include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. If an author has no conflict of interest to declare, this should be stated.

Role of the funding sourceAll sources of funding should be declared as an acknowledgement at the end of the text. Authors should declare the role of study sponsors, if any, in the study design, in the collection, analysis and interpretation of data; in the writing of the manuscript; and in the decision to submit the manuscript for publication. If the study sponsors had no such involvement, the authors should so state.

Open accessThis journal offers you the option of making your article freely available to all via the ScienceDirect platform. To prevent any conflict of interest, you can only make this choice after receiving notification that your article has been accepted for publication. The fee of \$3,000 excludes taxes and other potential author fees such as color charges. In some cases, institutions and funding bodies have entered into agreement with Elsevier to meet these fees on behalf of their authors. Details of these agreements are available at <http://www.elsevier.com/fundingbodies>. Authors of accepted articles, who wish to take advantage of this option, should complete and submit the order form (available at <http://www.elsevier.com/locate/openaccessform.pdf>). Whatever access option you choose, you retain many rights as an author, including the right to post a revised personal version of your article on your own website. More information can be found here: <http://www.elsevier.com/authorsrights>.

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.

Patient confidentiality Patients have a right to privacy. Therefore identifying information, including patients' images, names, initials, or hospital numbers, should not be included in videos, recordings, written descriptions, photographs, and pedigrees unless the information is essential for scientific purposes and you have obtained written informed consent for publication in print and electronic form from the patient (or parent, guardian or next of kin where applicable). If such consent is made subject to any conditions, The Editor and Publisher must be made aware of all such conditions. Written consents must be provided to the Editorial Office on request. Even where consent has been given, identifying details should be omitted if they are not essential. If identifying characteristics are altered to protect anonymity, such as in genetic pedigrees, authors should provide assurance that alterations do not distort scientific meaning and editors should so note. *If consent for publication has not been obtained, personal details of patients included in any part of the paper and in any supplementary materials (including all illustrations and videos) must be removed before submission.*

Language Editing Services Papers will only be accepted when they are written in an acceptable standard of English. Authors, particularly those whose first language is not English, who require information about language editing and copyediting services pre- and post-submission should visit <http://www.elsevier.com/wps/find/authorshome.authors/languagepolishing> or contact authorsupport@elsevier.com for more information. Please note, Elsevier neither endorses nor takes responsibility for any products, goods or services offered by outside vendors through our services or in any advertising. For more information please refer to our Terms and Conditions http://www.elsevier.com/wps/find/termsconditions.cws_home/termsconditions.

Article Types The following contributions will be accepted for publication. *Please take careful note of the maximum length where applicable.* Overlength articles will be returned to the authors without peer review: • editorials (commissioned by the editor) • clinical papers: no more than 5000 words and

30 references• research papers: no more than 6000 words and 40 references• review papers - no limit on length or number of references• technical notes (surgical techniques, new instruments, technical innovations) - no more than 2000 words, 10 references and 4 figures• case reports - no more than 2000 words, 10 references and 2 figures• book reviews• letters to the editor - please see detailed guidelines provided at the end of the main guide for authors • IAOMS announcements• general announcements.

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.

Criteria for Publication Papers that will be considered for publication should be:

- focused
- based on a sound hypothesis and an adequate investigation method analysing a statistically relevant series, leading to relevant results that back the conclusion
- well written in simple, scientific English grammar and style
- presented with a clear message and containing new information that is relevant for the readership of the journal

Note the comment above relating to case reports.

Following peer-review, authors are required to resubmit their revised paper within **3 months**; in exceptional circumstances, this timeline may be extended at the editor's discretion.

Presentation of Manuscripts *General points* Papers should be submitted in journal style. Failure to do so will result in the paper being immediately returned to the author and may lead to significant delays in publication.

Spelling may follow British or American usage, but not a mixture of the two.

Papers should be double-spaced with a margin of at least 3 cm all round.

Format Papers should be set out as follows, with each section beginning on a separate page:

- title page
- abstract
- text
- acknowledgements
- references
- tables
- captions to illustrations.

Please note that the qualifications of the authors will not be included in the published paper and should not be listed anywhere on the manuscript.

Title page The title page should give the following information:

- title of the article
- full name of each author
- name and address of the department or institution to which the work should be attributed
- name, address, telephone and fax numbers, and e-mail address of the author responsible for correspondence and to whom requests for offprints should be sent
- sources of support in the form of grants
- key words.

If the title is longer than 40 characters (including spaces), a short title should be supplied for use in the running heads.

Abstract 200 words maximum. Do not use subheadings or abbreviations; write as a continuous paragraph. Must contain all relevant information, including results and conclusion.

Text Please ensure that the text of your paper conforms to the following structure: Introduction, Materials and Methods, Results, Discussion. There is no separate Conclusion section. There should be no mention of the institution where the work was carried out, especially in the Materials and Methods section.

Introduction• Present first the nature and scope of the problem investigated• Review briefly the pertinent literature• State the rationale for the study• Explain the purpose in writing the paper• State the method of investigation and the reasons for the choice of a particular method•; Should be written in the present tense

Materials and Methods• Give the full details, limit references• Should be written in the past tense• Include exact technical specifications, quantities and generic names• Limit the number of subheadings, and use the same in the results section• Mention statistical method• Do not include results in this section

Results• Do not describe methods• Present results in the past tense• Present representations rather than endlessly repetitive data• Use tables where appropriate, and do not repeat information in the text *Discussion*• Discuss - do not recapitulate results• Point out exceptions and lack of correlations. Do not try to cover up or 'fudge' data• Show how results agree/contrast with previous work• Discuss the implications of your findings• State your conclusions very clearly

Headings: Headings enhance readability but should be appropriate to the nature of the paper. They should be kept to a minimum and may be removed by the Editors. Normally only two categories of headings should be used: major ones should be typed in capital letters; minor ones should be typed in lower case (with an initial capital letter) at the left hand margin.

Quantitative analysis: If any statistical methods are used, the text should state the test or other analytical method applied, basic descriptive statistics, critical value obtained, degrees of freedom, and significance level, e.g. (ANOVA, $F=2.34$; $df=3,46$; $P<0.001$). If a computer data analysis was involved, the

software package should be mentioned. Descriptive statistics may be presented in the form of a table, or included in the text.

Abbreviations, symbols, and nomenclature: Only standardized terms, which have been generally accepted, should be used. Unfamiliar abbreviations must be defined when first used. For further details concerning abbreviations, see Baron DN, ed. Units, symbols, and abbreviations. A guide for biological and medical editors and authors, London, Royal Society of Medicine, 1988 (available from The Royal Society of Medicine Services, 1 Wimpole Street, London W1M 8AE, UK). The minus sign should be -. If a special designation for teeth is used, a note should explain the symbols. Scientific names of organisms should be binomials, the generic name only with a capital, and should be italicised in the typescript. Microorganisms should be named according to the latest edition of the

Manual of Clinical Microbiology, American Society of Microbiology.

Drugs: use only generic (non-proprietary) names in the text. Suppliers of drugs used may be named in the Acknowledgments section. Do not use 'he', 'his' etc where the sex of the person is unknown; say 'the patient' etc. Avoid inelegant alternatives such as 'he/she'. Patients should not be automatically designated as 'she', and doctors as 'he'.

*References*The journal's reference style has changed. References should be numbered consecutively throughout the article, beginning with 1 for the first-cited reference. References should be listed at the end of the paper in the order in which they appear in the text (not listed alphabetically by author and numbered as previously).

The accuracy of references is the responsibility of the author. References in the text should be numbered with superscript numerals inside punctuation: for example "Kenneth and Cohen¹⁴ showed..."; "each technique has advantages and disadvantages⁵⁻¹³." Citations in the text to papers with more than two authors should give the name of the first author followed by "et al."; for example: "Wang et al³⁷ identified..."

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.

Titles of journals should be abbreviated according to Index Medicus (see www.nlm.nih.gov.uk). When citing papers from monographs and books, give the author, title of chapter, editor of book, title of book, publisher, place and year of publication, first and last page numbers. Internet pages and online resources may be included within the text and should state as a minimum the author(s), title and full URL. The date of access should be supplied and all URLs should be checked again at proof stage.

Examples:Journal article: Halsband ER, Hirshberg YA, Berg LI. Ketamine hydrochloride in outpatient oral surgery. J Oral Surg 1971; 29: 472-476. When

citing a paper which has a Digital Object Identifier (DOI), use the following style: Toschka H, Feifel H. Aesthetic and functional results of harvesting radial forearm flap. *Int J Oral Maxillofac Surg* 2001; 30: 45-51. doi:

10.1054/ijom.2000.0005Book/monograph: Costich ER, White RP.

Fundamentals of oral surgery.

Philadelphia: WB Saunders, 1971: 201-220. Book chapter: Hodge HC, Smith FA. Biological properties of inorganic fluorides. In: Simons JH, ed.: *Fluorine chemistry*. New York: Academic Press, 1965: 135. Internet resource:

International Committee of Medical Journal Editors. Uniform requirements for manuscripts submitted to biomedical journals. <http://www.icmje.org>

[Accessibility verified March 21, 2008]

Tables Tables should be used only to clarify important points. Double documentation in the form of tables and figures is not acceptable. Tables should be numbered consecutively with Arabic numerals. They should be double spaced on separate pages and contain only horizontal rules. Do not submit tables as photographs. A short descriptive title should appear above each table, with any footnotes suitably identified below. Care must be taken to ensure that all units are included. Ensure that each table is cited in the text.

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.**

Line illustrations: All line illustrations should present a crisp black image on an even white background (127 x 178 mm (5 x 7 in), or no larger than 203 x 254 mm (8 x 10 in). The size of the lettering should be appropriate, taking into account the necessary size reduction.

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.

Size of photographs: The final size of photographs will be: (a) single column width (53 mm), (b) double column width (110 mm), (c) full page width (170 mm). Photographs should ideally be submitted at the final reproduction size based on the above figures.

Funding body agreements and policies Elsevier has established agreements and developed policies to allow authors who publish in Elsevier journals to comply with potential manuscript archiving requirements as specified as conditions of their grant awards. To learn more about existing agreements and policies please visit <http://www.elsevier.com/fundingbodies>

ANEXO D

ANTES DA CIRURGIA	T0	T1	T0	T1	T0	T1	T0	T1	T0	T1
1. Você teve algum problema para pronunciar alguma palavra por causa de problemas com sua boca ou articulação?										
2. tSentiu que seu paladar mudou por causa dos problemas em sua boca ou articulação										
3. Você sentiu dores em sua boca ou articulação?										
4. Você se sentiu desconfortável em mastigar algum alimento por causa de problemas em sua boca ou articulação?										
5. Você ficou preocupado por causa de problemas em sua boca ou articulação?										
6. Você ficou estressado por causa de problemas em sua boca ou articulação?										
7. Sua alimentação ficou prejudicada por causa de problemas em sua boca ou articulação?										
8. Você teve que parar sua refeição por causa de problemas em sua boca ou articulação?										
9. Você encontrou dificuldades em relaxar por causa de problemas em sua boca ou articulação?										
10. Você sentiu-se envergonhado por causa de problemas em sua boca ou articulação?										
11. Você ficou irritado com outras pessoas por causa de problemas em sua boca ou articulação?										
12. Você teve dificuldades e, realizar suas atividades diárias por causa de problemas em sua boca ou articulação?										
13. Você sentiu que a vida em geral ficou pior por causa de problemas em sua boca ou articulação?										
14. Você ficou totalmente incapaz de realizar suas atividades normais por causa de problemas em sua boca ou articulação?										

0 = Nunca/Não sei; 1 = Dificilmente; 2 = Às vezes; 3 =Frequentemente ; 4 = muito frequente.

OHIP 14

APÓS A CIRURGIA	T0	T1	T0	T1	T0	T1	T0	T1	T0	T1
1. Você teve algum problema para pronunciar alguma palavra por causa de problemas com sua boca ou articulação?										
2. Sentiu que seu paladar mudou por causa dos problemas em sua boca ou articulação?										
3. Você sentiu dores em sua boca ou articulação?										
4. Você se sentiu desconfortável em mastigar algum alimento por causa de problemas em sua boca ou articulação?										
5. Você ficou preocupado por causa de problemas em sua boca ou articulação?										
6. Você ficou estressado por causa de problemas em sua boca ou articulação?										
7. Sua alimentação ficou prejudicada por causa de problemas em sua boca ou articulação?										
8. Você teve que parar sua refeição por causa de problemas em sua boca ou articulação?										
9. Você encontrou dificuldades em relaxar por causa de problemas em sua boca ou articulação?										
10. Você sentiu-se envergonhado por causa de problemas em sua boca ou articulação?										
11. Você ficou irritado com outras pessoas por causa de problemas em sua boca ou articulação?										
12. Você teve dificuldades e, realizar suas atividades diárias por causa de problemas em sua boca ou articulação?										
13. Você sentiu que a vida em geral ficou pior por causa de problemas em sua boca ou articulação?										
14. Você ficou totalmente incapaz de realizar suas atividades normais por causa de problemas em sua boca ou articulação?										

0 = Nunca/Não sei; 1 = Dificilmente; 2 = Às vezes; 3 =Frequentemente ; 4 = muito frequente.