Luciana Paula do Carmo Ferruzzi

Qualidade de vida relacionada à saúde bucal de atletas com deficiência

Oral health-related quality of life of athletes with disabilities

Dissertação apresentada à Faculdade de Odontologia da Universidade Federal de Uberlândia, como parte dos créditos para obtenção do Título de Mestre em Odontologia, Área de Clínica Odontológica Integrada.

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Orientadora: Profa. Dra. Alessandra Maia de Castro Prado
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Profa. Dra. Alessandra Maia de Castro Prado
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Prof. Dr. Alfredo Júlio Fernandes Neto
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Uberlândia, 2019

ATA

Ata da defesa de DISSERTAÇÃO DE MESTRADO junto ao Programa de Pós-graduação em Odontologia da Faculdade de Odontologia da Universidade Federal de Uberlândia.

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Linha de pesquisa: Tratamento das deformidades e dor oro-facial e das disfunções temporomandibulares

Projeto de Pesquisa de vinculação: Tratamento das deformidades e dor oro-facial e das disfunções temporomandibulares

As **oito horas** do dia **dezenove de fevereiro de 2019** no Anfiteatro Bloco 4T Campus Umuarama da Universidade Federal de Uberlândia, reuniu-se a Banca Examinadora, designada pelo Colegiado do Programa de Pós-graduação em janeiro de 2019, assim composta: Professores Doutores: Alfredo Júlio Fernandes Neto (UFU); José Irineu Gorla (UNICAMP); e o orientador(a) do(a) candidato(a): Alessandra Maia.

Iniciando os trabalhos o(a) presidente da mesa Dra. Alessandra Maia de Castro Prado apresentou a Comissão Examinadora e o candidato(a), agradeceu a presença do público, e concedeu ao Discente a palavra para a exposição do seu trabalho. A duração da apresentação do Discente e o tempo de arguição e resposta foram conforme as normas do Programa.

A seguir o senhor(a) presidente concedeu a palavra, pela ordem sucessivamente, aos (às) examinador (as), que passaram a arguir o(a) candidato(a). Finalizada a arguição, que se desenvolveu dentro dos termos regimentais, a Banca, em sessão secreta, atribuiu os conceitos finais.

Em face do resultado obtido, a Banca Examinadora considerou o(a) candidato(a) Aprovado(a).

Esta defesa de Dissertação de Mestrado é parte dos requisitos necessários à obtenção do título de Mestre. O competente diploma será expedido após cumprimento dos demais requisitos, conforme as normas do Programa, a legislação pertinente e a regulamentação interna da UFU.

Nada mais havendo a tratar foram encerrados os trabalhos às 10 horas e 45 minutos. Foi lavrada a presente ata que após lida e achada conforme foi assinada eletronicamente pela Banca Examinadora.

Dedicatória

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À Universidade Federal de Uberlândia, à Faculdade de Odontologia UFU, ao Programa de Pós-graduação, em especial às secretárias Brenda e Graça.

"No esporte, quem mais perde é quem não o pratica."

Haroldo Falcão

"Quero que nos vejam como atletas. Sei que há uma história por trás de cada [esportista] paraolímpico, mas nós suamos o mesmo suor que os olímpicos"

Emma Wiggs (Grã-Bretanha),
Ouro na canoagem de velocidade

SUMÁRIO

LISTA DE ABREVIATURAS E SIGLAS

BMW – Brazilian minimum wages

CAL – Clinical attachment loss

CPB – Comitê Paralímpico Brasileiro

CPI – Clinical periodontal index

CPOD – Índice de dentes cariados, perdidos e obturados

DMFT – Decayed, missing and filled teeth index

DP – Desvio padrão

FUTEL – Fundação de esporte, turismo e lazer de Uberlândia

GOHAI – Geriatric oral health assessment index

IPC – International Paralympic Committee

OHIP-14 – Oral health-related quality of life (short form)

OHRQoL – Oral health-related quality of life

OMS – Organização Mundial da Saúde

PD – Pocket depth

QVRSB – Qualidade de vida relacionada à saúde bucal

SD – Standard deviation

SOSS – Special Olympics Special Smiles

RESUMO

Vários estudos têm sugerido que atletas com deficiências experimentam maiores dificuldades para ter acesso ao tratamento dentário do que a população em geral. O objetivo desse estudo foi estimar o impacto de fatores sociodemográficos e socioeconômicos, hábitos de higiene oral e condições clínicas de saúde bucal na QVRSB - qualidade de vida relacionada à saúde bucal (avaliada com o Oral Health Impact Profile – OHIP-14) de uma amostra de atletas com tipos heterogêneos de deficiência em Uberlândia, MG, Brasil. No total, 105 atletas foram avaliados. A coleta de dados foi realizada com uma abordagem transversal incluindo entrevistas para coleta de dados sociodemográficos e socioeconômicos, o OHIP-14 e parâmetros de exames clínicos dentários. A variável resposta foi o escore de severidade do OHIP-14. As variáveis independentes foram sexo, idade, renda mensal familiar, nível de escolaridade, frequência de escovação e uso do fio dental, sangramento gengival, doença periodontal, trauma em incisivos, uso e necessidade de prótese, número de dentes hígidos, índice CPOD (cariados, perdidos e obturados) e seus componentes. O teste de Mann-Whitney foi usado para comparar os escores de severidade do OHIP-14 associados às variáveis independentes. O escore médio do OHIP-14 foi 9,32 (DP 8,99) e o domínio mais afetado foi o da dor física (média 2,63; DP 1,97), seguido do desconforto emocional (média 1,81; DP 2,02). Diferenças significativas nos escores do OHIP-14 foram encontradas em associação com a doença periodontal, uso e necessidade de próteses totais, número de dentes hígidos, índice CPOD e seus componentes isolados. Esses resultados sugerem que os parâmetros clínicos foram preditores de QVRSB prejudicada para essa população. Sendo assim, existe constante necessidade de exames bucais e tratamentos para esse grupo

Palavras-chave: epidemiologia, esportes para pessoas com deficiência, qualidade de vida, saúde bucal.

ABSTRACT

Several studies have suggested that athletes with disabilities experience more difficulties having access to oral health care than the population in general. The aim of this study was to estimate the impact of socio-demographic/socio-economic factors, oral hygiene habits and clinical oral health conditions on the OHRQoL - Oral Health-Related Quality of Life (assessed with the Oral Health Impact Profile 14 – OHIP-14) on a sample of athletes with heterogeneous types of disabilities in Uberlândia, MG, Brazil. Altogether, 105 athletes with disabilities were evaluated. Cross-sectional data was collected including interviews to collect socio-demographic/socio-economic data, the OHIP-14 and clinical oral examinations parameters. The outcome variable was the OHIP-14 severity score. The explanatory variables were sex, age, monthly household income,

level of schooling, frequency of toothbrushing and flossing, gingival bleeding, periodontal disease, trauma in incisors, prosthesis wearing and needs, number of sound teeth, DMFT (decayed, missing and filled teeth) index and its isolate components. Mann-Whitney test was used to compare OHIP-14 severity scores associated to the explanatory variables. The mean OHIP-14 severity score for the sample was 9.32 (SD 8.99) and the most affected domain was physical pain (mean 2.63; SD 1.97), followed by psychological discomfort (mean 1.81; SD 2.02). Significant differences in mean OHIP-14 scores were found for periodontal disease, wearing and need for complete denture, number of sound teeth, DMFT index and its components. These results suggest that these clinical parameters are predictors of impaired OHRQoL for this population. Therefore, there is a constant need for oral health screening and treatment in this group.

Keywords: epidemiology, oral health, quality of life, sports for persons with disabilities.

INTRODUÇÃO

1. INTRODUÇÃO E REFERENCIAL TEÓRICO

Por encarregar-se da prevenção, diagnóstico e tratamento das doenças bucais, bem como reconhecer manifestações buco-dentais e de anexos que caracterizam doenças sistêmicas, a Odontologia é considerada como uma das ciências responsáveis pela saúde humana, sendo elemento fundamental para a melhoria das condições dos desportistas (Costa, 2009).

As duas doenças bucais mais prevalentes são a cárie e a doença periodontal, e suas consequências podem comprometer a alimentação, a fala e a auto-estima dos indivíduos acometidos, produzindo níveis variáveis de impacto no bem-estar dos mesmos (Petersen, 2003).

A saúde bucal é um dos determinantes da qualidade de vida. No entanto, até mesmo atletas de elite podem apresentar problemas importantes de saúde bucal, com efeitos que vão desde dores físicas ou limitações funcionais até impactos psicológicos e sociais (Needleman et al., 2014). Isso pode ser parcialmente compreendido observando-se o fato de que muito poucos Comitês Olímpicos oferecem programas de atendimento odontológico a seus atletas, os quais acabam negligenciando sua saúde bucal (Piccininni & Fasel, 2005). Sendo assim, essa situação pode prejudicar o desempenho dos atletas, pois mesmo efeitos sutis são capazes de interferir em treinos e performance (Needleman et al., 2014).

Em 2014, Ashley e colaboradores conduziram uma revisão sistemática, com 34 estudos selecionados, visando avaliar o estado de saúde bucal de atletas profissionais e de elite, bem como seu impacto no treinamento e desempenho desportivo. O estudo concluiu que a saúde bucal dos atletas avaliados não foi considerada satisfatória. Os principais agravos encontrados nessa população foram a cárie, a periodontite, a erosão dentária, a pericoronarite, a impacção de terceiros molares e o trauma dentário em esportes de risco. Apesar de que poucos dos estudos incluídos enfocaram no impacto da saúde bucal no desempenho dos atletas, variados percentuais de atletas relataram o impacto dos agravos reportados na qualidade de vida, nos treinamentos e no desempenho desportivo. Esses prejuízos poderiam ser evitadoss se medidas preventivas simples fossem efetivamente adotadas, produzindo um grande impacto na saúde bucal desses indivíduos (Needleman et al., 2014).

Quando se trata de atletas com deficiências, diferentes estudos sugerem que esses indivíduos podem ter um estado geral de saúde bucal piorado quando comparado com pessoas sem deficiências (Seirawan et al., 2005; Anders & Davis, 2010; Zhow et al., 2017). As limitações físicas enfrentadas por muitas pessoas com deficiências podem interferir na habilidade para a realização de uma higiene bucal eficiente. Além disso, as dificuldades enfrentadas para se ter acesso ao tratamento odontológico, seja por barreiras físicas ou culturais, e a falta de profissionais preparados para as demandas no atendimento desse público ajudam a explicar essa situação. A preocuparação com a oferta de tratamento odontológico especializado ao crescente número de pessoas com deficiência e com saúde vulnerável levou à criação da especialidade "Special Care Dentistry" no Reino Unido, em 2008 (Dolan, 2013). Em outros países, como por exemplo nos EUA, tem ocorrido discussões objetivando a criação da referida especialidade.

Os conceitos recentes de deficiência fundamentam-se no modelo biopsicossocial, que leva em consideração as limitações funcionais sofridas por uma pessoa com alguma forma de déficit fisiológico, vivenciado em função de barreiras sociais e ambientais (Koneru & Sigal, 2009). De acordo com a OMS (2011), cerca de 15% da população mundial tem agluma forma de deficiência. E ainda, 2% da população mundial experimenta algum tipo considerável de dificuldade funcional que varia de severa a extrema.

Os esportes adaptados representam uma alternativa importante de promoção da reabilitação física e psicológica dessas pessoas, auxiliando-a no engajamento social e na (re)inserção psicossocial (Cardoso, 2011). Os esportes paralímpicos tem ganhado um progressivo número de praticantes, o que pode ser evidenciado pelo crescente número de atletas que participam dos jogos de verão e de inverno (IPC – Historical Results Archive). A primeira participação brasileira nos jogos paralímpicos de verão aconteceu em 1972 (Cardoso, 2011) e, desde então, o Brasil tem participado de todas as edições desse evento, conquistando um número cada vez maior de medalhas em cada competição (CPB - cpb.org.br). Essas evidências reforçam a necessidade de estudos que enfoquem o paradesporto, considerando que atletas com deficiência ainda enfrentam barreiras substanciais para continuar praticando esportes.

Dados científicos sobre o estado de saúde bucal de atletas com tipos heterogêneos de deficiência ainda são insuficientes. A maior parte das informações sobre esse assunto tem sido baseada nos eventos esportivos denominados "Special Olympics" que são

voltados para atletas com deficiências intelectuais. Durante os jogos, os atletas participantes são convidados a frequentar o programa "Special Olympics Special Smiles" (SOSS), no qual passam por exames dentários. A partir dos dados coletados, estudos observacionais transversais foram realizados com o objetivo que conhecer o estado de saúde bucal dos participantes (Turner et al., 2008; Oredugba & Perlman, 2010; Fernandez et al., 2012; Hanke-Herrero et al., 2013) . A coleta dos dados inclui o registro de informações sóciodemográficas, hábitos de higiene bucal, além dos seguints parâmetros: sinais de doença gengival, trauma dentário, fluorose, número de dentes perdidos e obturados, cárie dentária não tratada e edentulismo. Embora esses estudos ofereçam dados importantes sobre o estado de saúde bucal dessa população, argumenta-se que a generalização de seus resultados deve ser evitada, uma vez que os participantes do programa podem ter melhor acesso a atendimento odontológico do que a população geral de pessoas com deficiência (Marks et al., 2018). No Brasil, ainda não foi realizado um estudo nacional que permita conhecer a prevalência dos agravos em saúde bucal da população com deficiência, nem suas necessidades prioritárias de tratamento.

Apesar de que raramente se constituem em situações de vida ou morte, os agravos de saúde bucal persistem como um grande problema de saúde pública, devido a sua prevalência, e existem indícios significativos de que provocam consequências sociais, econômicas e psicológicas acarretando em um impacto na qualidade de vida das pessoas (Hernández et al., 2015). A qualidade de vida relacionada à saúde bucal (QVRSB) foi definida por Gift & Atchison (1995) como sendo "um auto relato referente à saúde bucal, que visa capturar os impactos funcional, social e psicológico das doenças bucais". Contudo, o conceito de QVRSB é bastante subjetivo e deve ser avaliado levando-se em consideração o ambiente sociocultural no qual o indivíduo está inserido, bem como suas crenças e histórico de vida. Por isso, mesmo pacientes com graves condições de saúde bucal podem relatar que desfrutam de boa qualidade de vida, pelo fato de que a QVRSB é singular para cada indivíduo (Hernández et al., 2015).

Parâmetros clínicos de saúde bucal oferecem medidas objetivas de desordens bucais que são inegavelmente importantes para entender o estado de saúde de uma população. No entanto, eles não conseguem fornecer uma visão mais profunda sobre o impacto da doença bucal na vida cotidiana e na qualidade de vida. Um número de questionários com foco na autopercepção dos indivíduos foi desenvolvido para avaliar a QVRSB. Um dos mais amplamente utilizados é a forma abreviada do Oral Health Impact

Profile, o OHIP-14, que é um questionário de 14 itens, traduzido para o português e com boas qualidades psicométricas (De Oliveira & Nadanowsky, 2005). Esse questionário abrange sete domínios conceituais: limitação funcional, dor física, desconforto psicológico, incapacidade física, incapacidade psicológica, incapacidade social e deficiência, também traduzida como desvantagem social. As respostas são dadas de acordo com uma escala codificada como: 0 = nunca, 1 = raramente, 2 = às vezes, 3 = frequentemente e 4 = sempre. Quanto mais alto o valor atribuído pelo respondente, pior é a autopercepção do impacto. O objetivo do OHIP-14 é aferir a autopercepção do impacto social de problemas com os dentes, boca ou próteses no bem-estar das pessoas (Slade, 1997).

2. CAPÍTULO 1

Ferruzzi LPC, Davi LR, Lima DCB, Tavares M, Castro AM. Oral Health-Related Quality of Life of Athletes with Disabilities. *

Oral Health-Related Quality of Life of Brazilian Athletes with Disabilities

Short title: Oral Health Impacts in Athletes with Disabilities

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Oral Health-Related Quality of Life of Athletes with Disabilities

INTRODUCTION:

Oral health is relevant for one's general health as it has influence on quality of life and overall well-being. Nevertheless, even elite athletes may experience poor oral health which could lead to effects ranging from physical pain or functional limitations to psychological impacts (1). When it comes to athletes with disabilities, the scenario tends to be worse since studies have suggested that they may have poorer general oral health status (2) which is often attributed to the manifold difficulties they face to attend dental treatment.

People with disabilities may find in adapted sports a means to foster physical rehabilitation, help them overcome psychological challenges and promote social engagement, thus helping in their psychosocial reintegration process. Paralympic sports have gained an increasing number of practitioners which can be evidenced by the growing number of athletes participating in Paralympic events (3).

International data on the oral health status of athletes with heterogeneous types of disabilities is yet insufficient. Most of the literature in this field has been based on the Special Olympics sporting events which are aimed at athletes with intellectual disabilities (4). Although these studies offer a useful assessment of this population's oral health status, it is argued that the generalization of their results should be avoided, once their participants may have better access to dental care than the general population of people with disabilities (4). As a result, there is a need for studies which assess the oral health status of this population, considering that it is composed of individuals with heterogeneous types of disabilities.

Oral health criteria offer objective measures of oral disorders which are undeniably important to understand a population's health status. Nevertheless, they fail to provide deeper insight into the impact of oral disease on everyday living and quality of life. A number of questionnaires focusing on individuals' self-perception have been developed to assess Oral Health-Related Quality of Life (OHRQoL). The Oral Health Impact Profile short form (OHIP-14) is a short version of the OHIP-49 (5). It is a 14-item questionnaire, which was translated to Portuguese and presents good psychometric

qualities (6). The OHIP-14 measures the self-perception of the social impact of problems with teeth, mouth or dentures on people´s well-being (5).

Despite the fact that previous studies have described a moderate relationship between disease and quality of life (7), the aim of the present study was to evaluate if the OHRQoL (assessed by the OHIP-14 severity score) is affected by socio-demographic/socio-economic factors, oral hygiene habits and clinical oral health conditions on a sample of athletes with heterogeneous types of disabilities. The study hypothesis was that none of the socio-demographic/socio-economic factors, the oral hygiene habits and the clinical oral health status would have an impact on the OHRQoL of the athletes.

MATERIAL AND METHODS

Study Design and Sample Characteristics

This cross-sectional observational study evaluated athletes with heterogeneous disabilities training in Uberlândia, MG, Brazil, congregated by the Uberlândia's Foundation of Tourism, Sports and Leisure (FUTEL). Exclusion criteria comprised subjects who were not able to answer the questionnaires (either themselves or with the aid of a legal caretaker) and/or collaborate during the examination. Altogether, 121 athletes who practice athletics, powerlifting, swimming and boccia, were recruited from their training centers to join this study. Their disabilities included physical, visual and intellectual impairments. A small percentage of the sample depended on their caretakers for the oral hygiene procedures and answering the questionnaires.

Ethical considerations

The Human Research Ethics Committee of the Federal University of Uberlândia, MG, Brazil, approved the study (protocol process number: 98620818.1.0000.5152). Participants signed a statement of informed consent either themselves or with the aid of a legal caretaker.

Training Exercise and Pilot Study

The two dentists who took part in the study underwent a training exercise, composed of a theoretical and a practical phase. A professor of the local School of Dentistry conducted the theoretical stage involving the discussion of the criteria used in the clinical examinations. In the clinical stage, 10 patients, who were undergoing treatment at the local College of Dentistry, were examined by the two dentists. Each dentist was responsible for a set of criteria and performed the same examinations in the whole sample in order to avoid inter-examiner discrepancies.

Subsequently, a pilot study was performed with 10 athletes, not included in the main study. The same athletes were revaluated ten days afterwards and each examiner's results were compared to the preceding ones. The intra-examiner Kappa coefficient was calculated for all the clinical parameters. Kappa values varied from 0.65 to 1.00 and were considered satisfactory, according to the criteria adopted by the Brazilian National Oral Health Survey (8). Based on the pilot study, the necessary adaptations were made to adjust the data collection tool.

Sample size calculation

The minimum sample size required (n=93) was obtained considering the following parameters: a prevalence of the clinical conditions analyzed of 50%, a margin error of 5% and 95% confidence level. Although a pilot study was carried out, as there were several oral conditions being examined, a prevalence of 50% was considered aiming at maximizing the sample (9).

Non-clinical data collection

Every practical stage of this study from the recruitment step to the final examinations took place in the athletes' training centers, using natural illumination, since many participants would face difficulties in displacing to the local School of Dentistry.

Non-clinical data was collected through face-to-face interviews prior to clinical examinations. The instruments used in the interviews were the Brazilian version of the OHIP-14 and an adapted questionnaire. The OHIP-14 comprises seven conceptual domains: functional limitation, physical pain, psychological discomfort, physical

disability, psychological disability, social disability and handicap, with 2 questions each. It measures the frequency of oral impacts on a five-point Likert type scale: 0 = never; 1 = hardly ever; 2 = occasionally; 3 = fairly often; 4 = very often. In the additive method, used to obtain the total OHIP-14 severity score, the ordinal values for the 14 questions are added (range from 0 to 56). The method performs better than the simple count method but has a similar performance as the weighted standardized method when it comes to discriminating between groups (10). The overall and domain OHIP-14 severity scores were calculated. Higher scores denote poorer self-reported OHRQoL (6). Volunteers were instructed to answer the questions considering the previous 12 months. Additionally, the mean score for each domain was calculated.

In the adapted questionnaire participants answered questions about sex, age, monthly household income, level of schooling and oral hygiene habits. Age was divided into three categories: 15-30, 31-45 and 46+ years. Monthly household income was categorized into four groups considering the Brazilian minimum wage (1 BMW current value of US$ 269.00): up to 1 BMW, from > 1 to 3 BMW, from > 3 to 5 BMW and > 5 BMW. Level of schooling was assessed in number of years and grouped as follows: up to 8, from 9 to 12 and more than 12. Toothbrushing was dichotomized into once a day or twice/more daily. Dental flossing was divided into irregularly (if the individual flossed a few days per week/month) or regularly (if the individual flossed every day).

Clinical data collection

Clinical examinations were performed to collect the volunteer's oral findings using adapted guidelines from the World Health Organization (WHO) - Oral Health Surveys Basic Methods (11).

Oral health conditions were assessed according to the following criteria: periodontal condition was evaluated employing the Community Periodontal Index (CPI) and Clinical Attachment Loss (CAL). After gentle probing, gingival bleeding was observed and registered as present or absent. The distance in millimeters from the free gingival margin to the base of the pocket/sulcus was defined as the pocket depth (PD). The distance between epithelial attachment and the cement-enamel junction was used to estimate CAL. The occurrence of periodontitis was determined by the combination of PD

≥ 4 mm and CAL ≥ 4 mm in at least one measured site (12). Traumatism for upper and lower incisors was assessed and dichotomized as absent or present. Dental prosthesis use was categorized into: do not wear, fixed dental prosthesis, removable dental prosthesis and complete dentures. Dental prosthesis needs were classified into: no need, needs to replace one tooth, needs to replace more than one tooth and needs complete dentures. Decayed-missing-filled teeth in permanent dentition (DMFT) index and its components were determined, as well as the number of sound teeth.

Data management and statistical analysis

The outcome variable was the OHIP-14 severity score. The explanatory variables were sex, age, monthly household income, level of schooling, frequency of toothbrushing and flossing, gingival bleeding, periodontal disease, trauma in incisors, prosthesis wearing and needs, number of sound teeth, DMFT index and its isolate components (decayed, missing and filled teeth). Except for DMFT index and number of sound teeth, the other explanatory variables were dichotomized as present or absent. Mann-Whitney test was used to compare OHIP-14 severity scores associated to these variables. Descriptive analysis of the data was performed and the mean OHIP-14 severity score values, standard deviation, median and interquartile range were calculated in association with the explanatory variables. Spearman correlation coefficients were calculated to assess the correlation between number of sound teeth, DMFT index, its isolate components and the OHIP-14 severity scores. For all the statistical tests, a 5% level of significance was adopted.

RESULTS

A total of 105 athletes with disabilities took part in this study. Twelve individuals in addition to the 93 in the minimum sample size were examined. The average age of the participants was 33 (SD 12) years (range 15 to 71 years). Regarding the modalities, 60 athletes practiced athletics, 24 powerlifting, 11 were swimmers and 10 played boccia. Amongst them, 7 athletes needed the help of a caretaker to perform their daily activities, including the oral hygiene procedures.

Among the participants, 82 (78.1%) had a predominant physical impairment, 17 (16.2%) had visual impairments and 8 (7.6%) had intellectual impairments

predominantly. The athletes with physical impairment included: 48 with limitations of the lower limbs, 6 with limitations of the upper limbs, 12 with limitations of both the lower and upper limbs and 12 with hemiplegia (limitations on one side of the body of the lower and upper limbs). The etiology of the impairments comprehended: poliomyelitis, myelomeningocele, hydrocephalus, hypoxia at birth, dwarfism, arthrogryposis, cerebral palsy, autism, glaucoma, congenital toxoplasmosis, stroke, cerebral aneurysm, meningitis, Arnold Chiari syndrome, traffic accident, gunshot trauma and injury from shallow water diving.

The socio-demographic/socio-economic characteristics of the sample are presented in Table 1. Most individuals were males (60.9%), mostly young (46.7% were between 15-30 years old), 63.8% studied between 9 and 12 years and 49.5% had a monthly household income which varied from 1 to 3 Brazilian minimum wages.

The OHIP-14 severity score ranged from 0 to 41.0 (median 6.0; mean 9.32; SD 8.99). There was a skewed distribution of the scores and 45.71% of participants had scores between 0 and 5. As shown in Fig. 1, the analyses per domain revealed that physical pain was the most affected one (mean 2.63; SD 1.97), followed by psychological discomfort (mean 1.81; SD 2.02).

Significant differences in mean OHIP-14 scores were found for periodontal disease, wearing complete dentures, need for complete dentures, number of sound teeth, DMFT index and its components (Table 1). Nevertheless, Spearman correlation coefficients to assess the degree of association between the number of sound teeth, DMFT index and its components and the OHIP-14 severity scores were not strong (Table 2). None of the remainder explanatory variables was associated with significantly worse mean OHIP-14 scores.

Most participants (93.3%) reported that they brush their teeth twice or more daily and 67.6% declared that they floss daily (Table 1).

According to our results, gingival bleeding was observed in 82.9% of the volunteers. Periodontal disease was prevalent in 33.3% of the participants. Twenty-five (23.8%) volunteers have experienced some kind of dental trauma in the incisors. Most volunteers (86.7%) do not wear any kind of prosthesis, however 39 volunteers (37.1%) need some type of prosthesis (Table 1).

Table 3 shows that the number of sound teeth (mean 18.94; SD 7.81) decreased in older age groups. The mean DMFT was 9.92 (SD 7.91) and the 'filled teeth' component was predominant (mean 6.86; SD 6.25) followed by 'missing teeth' (mean 1.99; SD 4.65) and 'decayed teeth' (mean 1.08; SD 1.75). When the different DMFT components were examined, the highest fraction for caries, missing and filled teeth were found in subjects older than 46 years, the lowest fractions in subjects from 15 to 30 years and percentages of caries, tooth loss and filled teeth increased in older age groups.

DISCUSSION

This study evaluated the impact of socio-demographic/socio-economic factors, oral hygiene habits, clinical oral health parameters on OHRQoL (assessed by the OHIP-14) in a sample of athletes with heterogeneous types of disabilities in Uberlândia, MG, Brazil. Contrary to the hypothesis of the study, some of the independent variables analyzed had a significant impact on the OHRQoL.

To the extent of our knowledge, this is the first study to assess OHRQoL and its predictors in a group of athletes with disabilities. Heterogeneity of the study samples may interfere with comparisons of OHRQoL data. Besides, the very concept of health and disease, as well as the nature and magnitude of their impacts, may vary between populations according to their cultural backgrounds (13). Still, the mean OHIP-14 score (9.32) for this study was higher than the one obtained (4.45) in a study conducted with a sample of 326 workers in education (aged from 20 to 75 years) in the Brazil (14). However, it was lower than the mean (12.7) obtained for a sample of 71 hemophiliac patients in another study carried out in Turkey (15).

Concerning the domains, those with the highest means were physical pain and psychological discomfort (Fig. 1). Other studies reported similar results (9,14). A systematic review, which aimed at evaluating the impact of periodontal disease on quality of life, showed that in 4 of the 9 selected studies that adopted OHIP-14 and reported the most affected domains, physical pain was the most affected one followed by psychological discomfort (16). According to Locker (2000), pain may cause physical or psychological discomfort, or even physical, psychological or social disability, defined as restraint or failure in the ability to perform some daily tasks (17).

None of the social-demographic/socio-economic factors evaluated had a positive association with the OHIP-14 scores. These results do not corroborate with the ones obtained in a study that aimed at identifying the determinants of OHRQoL among older people (9), in which higher age and level of schooling were significantly correlated with better OHIP-14 scores.

As for oral hygiene habits, mean OHIP-14 scores were higher for those who reported brushing their teeth twice or more daily and using dental floss regularly, yet those differences were not statistically significant. Dissimilarly, in a study which aimed at comparing the OHRQoL between a sample of 203 patients with spinal cord injury and 203 healthy controls, irregular toothbrushing was a significant predictor of poorer OHRQoL (18). This relationship might be mediated by the disease conditions which are connected to irregular oral hygiene habits.

Despite the fact that dental trauma is the most common sport-related dental implication, the 25 athletes which had suffered trauma in incisors did not report a much worse OHIP-14 score than those who had not had any trauma. This result is quite surprising since dental trauma is often associated with serious consequences related to the aesthetic, functional, economic and psychological aspects (19).

In spite of reporting limitations connected to the lack of standardization of principles and methods, a recent systematic review reported that 25 of the 34 selected cross-sectional studies (most of which employed the OHIP-14) demonstrated that periodontal disease was associated with negative impact on quality of life (16), result which was corroborated by our study. It also states that the greater severity of the disease leads to larger negative impact, since periodontal disease may cause a series of clinical signs and symptoms, such as bleeding, tooth mobility, receding gums, bad breadth, toothache and even implications for the systemic health (20). However gingival bleeding, which may be considered one of the first signs of unhealthy periodontium, did not significantly impact the mean OHIP-14 sores, which is in agreement with the results obtained in another study (9).

Unsurprisingly, wearing and needing complete dentures were predictors of worse OHRQoL, ultimately because they are each, in its own way, connected to one of the poorest public health outcomes: edentulism. Our findings agree with a study in the UK (9) in which wearing a denture was a strong independent predictor of poorer OHRQoL.

In terms of wearing dental prosthesis, only the category 'wearing complete dentures' was significantly correlated to poorer OHIP-14 scores. Dissimilarly, a German population-based study which investigated the association between denture status and OHRQoL, reported that wearing removable prosthesis and complete dentures were found to be strong predictors for impaired OHRQoL (21). The quality of the prostheses, especially when there is poor retention and adjustment, may be one of the reasons for the association between dentures and lower OHRQoL, once unfitting devices can cause traumatic ulcers and stomatitis (22,23). A study with elderly people in Brazil (22) reported that the need for dental prostheses was significantly correlated with moderate and high statuses of negative impact on quality of life, as measured according to the Geriatric Oral Health Assessment Index (GOHAI) questionnaire.

The number of sound teeth, the DMFT index and its components had a weak but statistically significant association with the OHRQoL. Pain originating from decayed teeth may have deeper impact and its consequences may extend further to cause physical, psychological and social damages to the individual (24). However, a study with an elderly sample of individuals from Brazil reported that the presence of decayed teeth had no impact on OHRQoL assessed with the GOHAI (22). Whereas another study which evaluated a group of individuals from Brazil and Canada found a weak but significant association between number of sound teeth and OHRQoL, also assessed with the GOHAI (25).

In conclusion, the present study demonstrated that some of the most prevalent oral health problems, namely tooth decay, tooth loss and periodontal disease, assessed with indices traditionally used in oral research, were associated with impaired OHRQoL in a group of athletes with disabilities. Comprehending which health determinants have the strongest association with welfare may facilitate identifying priorities for preventive measures and choices of treatment. The present findings may assist in the establishment of specific public oral health policies directed at this population, taking into consideration their accessibility needs, as well as, other particularities of their health status. Also, other multicentric studies are necessary to investigate the OHRQoL of athletes with disabilities in different places.

REFERENCES

1. Needleman I, Ashley P, Fine P, Haddad F, Loosemore M, de Medici A, et al. Oral health and elite sport performance. Br J Sports Med 2015; 49: 3–6.

2. Zhou N, Wong HM, Wen YF, Mcgrath C. Oral health status of children and adolescents with intellectual disabilities: a systematic review and meta-analysis. Dev Med Child Neurol 2017; 59(10): 1019–1026.

3. International Paralympic Committe (IPC). Aggregated Database. Results, Rankings and Records – IPC Historical Results Archive. [internet]. 2018 [cited 13 Jan 2019] Available from: <https://www.paralympic.org/sdms4/hira/web>

4. Marks L, Wong A, Perlman S, Shellard A, Fernandez C. Global oral health status of athletes with intellectual disabilities. Clin Oral Invest 2018; 22(4): 1681-1688.

5. Slade GD. Derivation and validation of a short-form oral health impact profile. Community Dent Oral Epidemiol 1997; 25:284–290.

6. De Oliveira BH, Nadanovsky P. Psycometric properties of the Brazilian version of the Oral Health Impact Profile-short form. Community Dent Oral Epidemiol. 2005; 33: 307-314.

7. Masood M, Newton T, Bakri NN, Khalid T, Masood Y. The relationship between oral health and oral health related quality of life among elderly people in the United Kingdom. J Dent 2017; 56:78-83.

8. Brazil: Ministry of Health. Project SB Brazil 2010. Examiner Calibration Manual. Brasília: Department of Primary Care, Health Care Secretary, Ministry of Health; 2010.

9. Martínez-Mesa J, González-Chica DA, Bastos JL, et al. Sample size: how many participants do I need in my research? An Bras Dermatol 2014; 89(4): 609-615.

10. Allen PF, Locker D. Do item weights matter? An assessment using the oral impact profile. Community Dent Health. 1997; 14: 133-138.

11. World Health Organization. Oral health surveys - basic methods. 5th ed. Geneva: World Health Organization; 2013.

12. Peres MA, Antunes JLF, Boing AF, Peres KG, Bastos JLD. Skin colour is associated with periodontal disease in Brazilian adults: a population-based oral health survey. J Clin Periodontol 2007; 34: 196–201.

13. Allison P, Locker D, Jokovic A, Slade G. A Cross-cultural Study of Oral Health Values. J Dent Res 1999; 78(2): 643-649.

14. Guerra MJC, Greco RM, Leite ICG, Ferreira EF, Queiroz de Paula MV. Impact of oral health conditions on the quality of life of workers. Cien Saúde Coletiva 2014; 19(12):477-486.

15. Baskirt EA, Ak G and Zulfikar B. Oral and general health-related quality of life among young patients with haemophilia. Haemophilia 2009; 15:193–198.

16. Ferreira MC, Dias-Pereira AC, Branco-de-Almeida LS, Martins CC, Paiva SM. Impact of periodontal disease on quality of life: a systematic review. J Periodont Res 2017; 52(4):651-665.

17. Locker D. Deprivation and oral health: a review. Community Dent Oral Epidemiol 2000; 28(3):161-169.

18. Pakpour AH, Kumar S, Scheerman JF, Lin CY, Fridlund B, Jansson H. Oral health-related quality of life in Iranian patients with spinal cord injury: A case-control study. Injury 2016; 47(6):1345-52.

19. Soares PV, Tolentino AB, Machado AC, Dias RB, Coto NP. Sports dentistry: a perspective for the future. Rev Bras Educ Fís Esporte 2014; 28(2):351-358.

20. Seymour GJ, Ford PJ, Cullinan MP, Leishman S, Yamazaki K. Relationship between periodontal infections and systemic disease. Clin Microbiol Infect 2007; 13:3–10.

21. John MT, Koepsell TD, Hujoel P, Miglioretti DL, LeResche L, Micheelis W. Demographic factors, denture status and oral health-related quality of life. Community Dent Oral Epidemiol 2004; 32(2):125-32.

22. Andrade FB, Lebrão ML, Santos JL, da Cruz Teixeira DS, de Oliveira Duarte YA. Relationship Between Oral Health–Related Quality of Life, Oral Health, Socioeconomic, and General Health Factors in Elderly Brazilians. J Am Geriatr Soc. 2012; 60(9):1755-1760.

23. Gil-Montoya JA, de Mello AL, Barrios R, Gonzalez-Moles MA, Bravo M. Oral health in the elderly patient and its impact on general well-being: a nonsystematic review. Clin Interv Aging. 2015; 10:461–467.

24. Johansson G, Östberg AL. Oral health-related quality of life in Swedish young adults. Int J Qual Stud Health Well-being 2015; 10:27125.

25. Joaquim AMC, Wyatt CCL, Aleksejunien J, Greghi SLA, Pegoraro LF, Kiyak HA. A comparison of the dental health of Brazilian and Canadian independently living elderly. Gerodontology 2010; 27(4):258-265.

Table 1: Descriptive analyses of the characteristics of athletes with disabilities in Uberlândia, MG – Brazil. Mean, standard deviation, median, interquartile range and p-value (Mann-Whitney test) for total OHIP-14 scores, related to the study variables (n= 105).

Variables		n (%)	OHIP-14 scores				p-value
			Mean	SD	Median	Interquartile Range	
Sociodemographic factors							
Sex	Female	41 (39.1%)	8.292	7.724	5.000	12.000	0.589
	Male	64 (60.9%)	9.984	9.716	6.000	13.750	
Age Group	15 to 30	49 (46.7%)	7.735	7.979	5.000	11.500	0.087
(years)	31 to 45	36 (32.3%)	10.667	10.466	6.000	14.750	0.445
	46+	20 (19.1%)	10.800	8.218	8.500	14.750	0.212
Socioeconomic factors							
Monthly	1 BMW	31 (29.5%)	9.742	8.571	6.000	12.000	0.543
household	> 1 to 3 BMW	52 (49.5%)	9.538	9.314	6.000	15.750	0.972
income	> 3 to 5 BMW	13 (12.4%)	9.692	11.003	6.000	13.000	0.911
	> 5 BMW	9 (8.6%)	6.111	5.255	5.000	10.000	0.356
Level of	Up to 8 years	19 (18.1%)	9.684	7.660	6.000	15.000	0.448
Schooling	9 to 12 years	67 (63.8%)	9.433	9.124	6.000	13.000	0.965
	> 12 years	18 (17.1%)	8.779	10.367	5.500	11.750	0.506
Oral Hygiene Habits							
Toothbrushing	1X a day	7 (6.7%)	13.857	11.437	14.000	18.000	0.236
	2X or + daily	98 (93.3%)	9.999	8.773	6.000	11.500	
Dental	Irregularly	34 (32.4%)	11.470	9.561	9.000	16.250	
flossing	Regularly	71 (67.6%)	8.296	8.583	5.000	10.000	0.088
Clinical Oral Health Parameteres							
Gingival	Absent	18 (17.1%)	7.353	8.170	4.000	10.000	0.234
bleeding	Present	87 (82.9%)	9.816	9.126	6.000	13.000	
Periodontal	Absent	70 (66.7%)	7.843	7.945	5.000	10.500	0.025*
disease	Prevalent	35 (33.3%)	12.286	10.274	9.000	16.000	
Trauma	Absent	80 (76.2%)	9.313	9.449	6.000	12.500	0.539
(incisors)	Present	25 (23.8%)	9.360	7.505	6.000	12.000	
Wearing	Do not wear	91 (86.7%)	9.022	8.777	6.000	12.000	0.577
Dental	Fixed	7 (6.7%)	13.143	8.726	11.000	18.000	0.135
prosthesis	Removable	5 (4.7%)	13.200	12.729	13.000	23.500	0.577
	Complete denture	2 (1.9%)	10.000	14.142	10.000	–	0.027*
Need for	No need	66 (62.9%)	7.682	7.494	5.000	11.000	0.079
dental	Replace 1 tooth	11 (10.0%)	8.636	7.447	10.000	15.000	0.875
prosthesis	Replace > 1 tooth	25 (24.0%)	12.080	11.202	9.000	18.000	0.177
	Complete denture	3 (2.9%)	25.000	6.245	23.000	–	0.005*

*Statistically significant difference (p-value < 0.05 – Mann-Whitney)
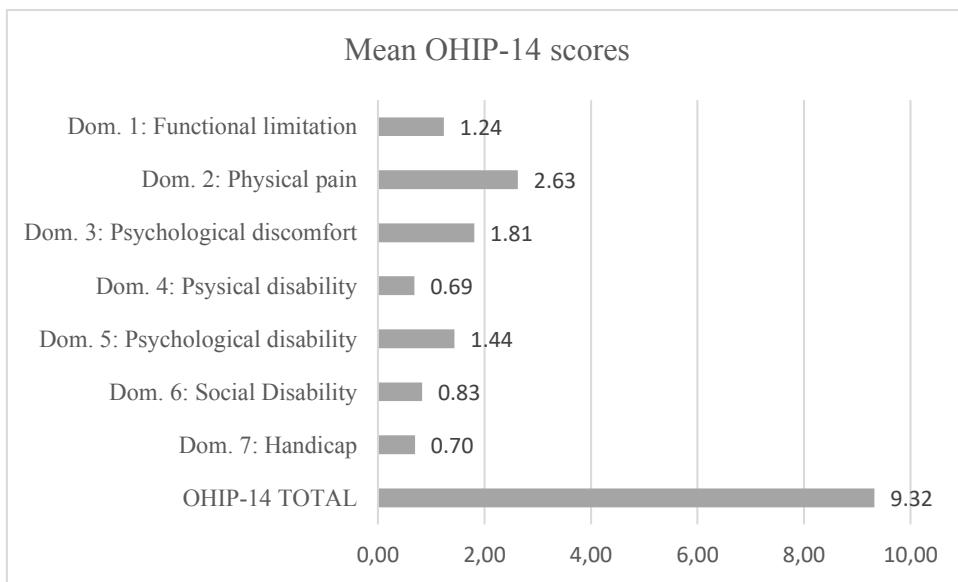
Figure 1 – Mean scores for total OHIP-14 and by domain.

Table 2 – Spearman correlation between OHIP-14 and sound teeth, DMFT index, decayed teeth, missing teeth, filled teeth and p-value.

Variables	Correlation coefficient	p-value
OHIP-14 X Sound teeth	-0.295	0.002*
OHIP-14 X DMFT index	0.329	0.001*
OHIP-14 X Decayed teeth	0.192	0.050*
OHIP-14 X Missing teeth	0.267	0.006*
OHIP-14 X Filled teeth	0.222	0.023*

*Statistically significant difference (p-value < 0.05 – Mann-Whitney)

Table 3 – Means (SD) for sound teeth, DMFT, decayed, missing and filled teeth by age categories (in years) and for the total sample (n= 105).

Age	Sound Teeth	DMFT	Decayed	Missing	Filled
15-30	24.12 (5.0)	4.37 (4.6)	0.92 (1.6)	0.08 (4.2)	3.37 (0.3)
31- 45	16.75 (7.2)	12.33 (7.1)	0.94 (1.1)	2.83 (6.2)	8.56 (6.3)
> 46	10.20 (4.1)	19.20 (4.0)	1.70 (2.8)	5.15 (5.6)	12.35 (4.8)
Total	18.94 (7.8)	9.92 (7.9)	1.08 (1.8)	1.99 (6.3)	6.86 (4.7)

REFERÊNCIAS

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1. Costa SS. Odontologia desportiva na luta pelo reconhecimento. **Rev Odon da Univ Cidade de São Paulo** 2009; 21(2):162-8. https://doi.org/10.26843/ro_unicid.v21i2.452

2. Petersen PE. The World Oral Health Report 2003: continuous improvement of oral health in the 21st century—the approach of the WHO Global Oral Health Programme. **Community Dent Oral Epidemiol** 2003; 31:3–24. https://doi.org/10.1046/j..2003.com122.x

3. Needleman I, Ashley P, Fine P, Haddad F, Loosemore M, de Medici A, et al. Oral health and elite sport performance. **Br J Sports Med** 2015; 49: 3–6. https://doi.org/10.1136/bjsports-2014-093804

4. Piccininni PM, Fasel R. Sports dentistry and the Olympic Games. **J Can Dent Assoc** 2005; 33:471–83.

5. Ashley P, Cole E, Di Iorio A, Tanday A, Needleman I. Oral health of athletes and association with performance: a systematic review. **Br J Sports Med** 2015; 49:14–19. https://doi.org/10.1136/bjsports-2014-093617

6. Seirawan H, Schneiderman J, Greene V, Mulligan R. Interdisciplinary approach to oral health for persons with developmental disabilities. **Spec Care Dentist**. 2008;28(2): 43–52. https://doi.org/10.1111/j.1754-4505.2008.00010.x

7. Anders, P.L.; Davis, E.L. Oral health of patients with intellectual disabilities: A systematic review. **Spec Care Dentist**. 2010, 30(3):110-117. https://doi.org/10.1111/j.1754-4505.2010.00136.x

8. Zhou N, Wong HM, Wen YF, Mcgrath C. Oral health status of children and adolescents with intellectual disabilities: a systematic review and meta-analysis. **Dev Med Child Neurol** 2017; 59(10): 1019–1026. https://doi.org/10.1111/dmcn.13486

9. Dolan T. Professional education to meet the oral health needs of older adults and persons with disabilities. **Spec Care Dent** 2013; 33:190–197. https://doi.org/10.1111/scd.12013
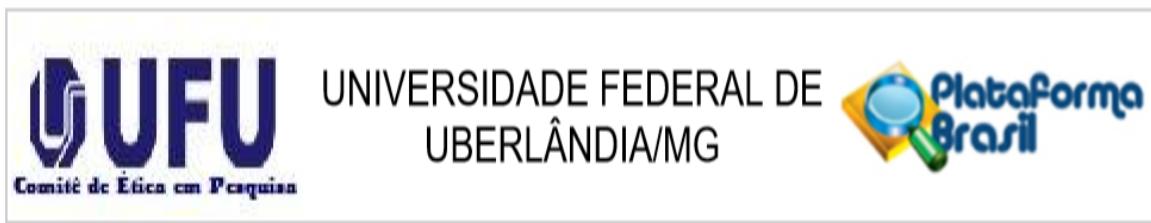
10. Koneru A, Sigal MJ. Access to dental care for persons with developmental disabilities in Ontario. **J Can Dent Assoc** 2009; 75(2):121-121j.

11. World Health Organization. World report on disability. 2011. Disponível em: <http://www.who.int/disabilities/world_report/2011/en/index.html>. Acessado em 24 de janeiro de 2019.

12. Cardoso VD. A reabilitação de pessoas com deficiência através do desporto adaptado. **Rev Bras de Ciências do Esporte** 2011; 33(2):529-539. https://doi.org/10.1590/S0101-32892011000200017

13. International Paralympic Committe (IPC). Aggregated Database. Results, Rankings and Records – IPC Historical Results Archive. [internet]. Disponível em: < https://www.paralympic.org/sdms4/hira/web> Acessado em 24 de janeiro de 2019.

14. CPB; Comitê Paraolímpico Brasileiro. Disponível em: <http://www.cpb.org.br/> Acessado em 24 de janeiro de 2019.

15. Turner S, Sweeney M, Kennedy C, Macpherson L. The oral health of people with intellectual disability participating in the UK Special Olympics. **J Intellect Disabil Res** 2008; 52(1):29–36.

16. Oredugba FA, Perlman SP. Oral health condition and treatment needs of special Olympics athletes in Nigeria. **Spec Care Dent** 2010; 30(5):211–217. https://doi.org/10.1111/j.1754-4505.2010.00155.x

17. Fernandez JB, Lim LJ, Dougherty N, LaSasso J, Atar M, Daronch M. Oral health findings in athletes with intellectual disabilities at the NYC Special Olympics. **Spec Care Dent** 2012;32(5):205-9. https://doi.org/10.1111/j.1754-4505.2012.00268.x

18. Hanke-Herrero R, Valle LML, Sanchez C, Waldman HB, Perlman SP. Latin-American Special Olympics athletes: evaluation of oral health status, 2010. **Spec Care Dent** 2013; 33 (5):209-212. https://doi.org/10.1111/scd.12019

19. Marks L, Wong A, Perlman S, Shellard A, Fernandez C. Global oral health status of athletes with intellectual disabilities. **Clin Oral Invest** 2018; 22(4): 1681-1688. https://doi.org/10.1007/s00784-017-2258-0

20. Hernández JF, Díaz FCA, Vilchis MCV. Oral Health Related Quality of Life. In: Virdi MS. **Emerging Trends in Oral Health Sciences and Dentistry.** Intech Open; 2015. p.691-715. https://doi.org/10.5772/59262

21. Gift HC, Atchison KA. Oral health, health, and health-related quality of life. **Med Care** 1995; 33(11):NS57-NS77. https://doi.org/10.1097/00005650-199511001-00008

22. De Oliveira BH, Nadanovsky P. Psycometric properties of the Brazilian version of the Oral Health Impact Profile-short form. **Community Dent Oral Epidemiol**. 2005; 33: 307-314. https://doi.org/10.1111/j.1600-0528.2005.00225.x

23. Slade GD. Derivation and validation of a short-form oral health impact profile. **Community Dent Oral Epidemiol** 1997; 25:284–290. https://doi.org/10.1111/j.1600-0528.1997.tb00941.x

ANEXOS

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ANEXOS

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Anexo I

PARECER CONSUBSTANCIADO DO CEP

DADOS DO PROJETO DE PESQUISA

Título da Pesquisa: Avaliação da saúde bucal e qualidade de vida de atletas paralímpicos

Pesquisador: Leticia Resende Davi

Área Temática:

Versão: 2

CAAE: 98620818.1.0000.5152

Instituição Proponente: FACULDADE DE ODONTOLOGIA

Patrocinador Principal: Financiamento Próprio

DADOS DO PARECER

Número do Parecer: 3.064.713

Anexo II

Oral Health Impact Profile short version (OHIP-14) (adaptado de Oliveira & Nadanowsky, 2005)

Nos últimos 12 meses, por causa de problemas com seus dentes, boca ou prótese:

1. você teve problemas para pronunciar alguma palavra?

2. você sentiu que o sabor dos alimentos tem piorado?

3. você sentiu dores na sua boca ou nos seus dentes?

4. você se sentiu incomodado ao comer algum alimento?

5. você ficou preocupado?

6. você se sentiu estressado?

7. sua alimentação ficou prejudicada?

8. você teve que parar suas refeições?

9. você encontrou dificuldade para relaxar?

10. você se sentiu envergonhado?

11. você ficou irritado com outras pessoas?

12. você teve dificuldade para realizar suas atividades diárias?

13. você sentiu que a vida, em geral, ficou pior?

14. você ficou totalmente incapaz de fazer suas atividades diárias?

Opções de respostas: Nunca (0), Raramente (1), às vezes (2), Repetidamente (3) e Sempre (4).